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Texas Parks & Wildlife

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MEP ENGINEER:

PROJECT

VILLAGE CREEK STATE PARK FACILITY DAMAGE REPAIRS

PROJECT NO: 128695

DATE: MARCH 06, 2019

INDEX OF DRAWINGS

SHEET NO. **DESCRIPTION** COVER SHEET GENERAL NOTES & PROJECT INFORMATION LIMITS OF CONSTRUCTION CABIN: STRUCTURAL REPAIR PLAN CABIN: STRUCTURAL REPAIR DETAILS **GROUP PAVILION: STRUCTURAL REPAIR PLAN & ELEVATIONS** PEDESTRIAN BRIDGE: TOPOGRAPHIC & REPAIR PLANS PEDESTRIAN BRIDGE: STRUCTURAL REPAIR ELEVATIONS PEDESTRIAN BRIDGE: STRUCTURAL REPAIR DETAILS VEHICLE BRIDGE: STRUCTURAL REPAIR DETAILS CABIN: RENOVATION FLOOR PLANS CABIN: FINISH FLOOR PLAN & DETAILS **CABIN: INTERIOR ELEVATIONS** CABIN: MILLWORK DETAILS CABIN: TYPICAL ROOFING DETAILS CABIN: ADD. ALTERNATE 2 TYPICAL ROOFING DETAILS **ELECTRICAL SYMBOLS LEGEND ELECTRICAL SPECIFICATIONS** ELECTRICAL DEMOLITION PLAN LIGHTING PLAN MECHANICAL SYMBOL LEGEND MECHANICAL SCHEDULES MECHANICAL DEMOLITION PLAN

BUILDING CODE SUMMARY

INTERNATIONAL CODE COUNCIL
i. BUILDING CODE

ii. RESIDENTIAL CODE iii. EXISTING BUILDINGS v. PLUMBING CODE

vi. MECHANICAL CODE

vii. ENERGY CODE

viii. GAS CODE

INTERNATIONAL BUILDING CODE 2015 INTERNATIONAL RESIDENTIAL CODE 2015 **INTERNATIONAL EXISTING BUILDINGS CODE 2015 INTERNATIONAL BUILDING CODE 2015** INTERNATIONAL PLUMBING CODE 2015 **INTERNATIONAL MECHANICAL CODE 2015 INTERNATIONAL ENERGY CODE 2015**

INTERNATIONAL FUEL GAS CODE 2015

MECHANICAL PLAN

MECHANICAL DETAILS MECHANICAL SPECIFICATIONS PLUMBING SYMBOLS LEGEND

PLUMBING DEMOLITION PLAN

NATIONAL ELECTRICAL CODE 2017 ii. FIRE CODE NATIONAL NATIONAL FIRE PROTECTION ASSOCIATION, NFPA 1, FIRE CODE 2015 III. LIFE SAFETY CODE NATIONAL FIRE PROTECTION ASSOCIATION. NFPA 101, LIFE SAFETY CODE 2015

STATE ENERGY CONSERVATION OFFICE (SECO)/TEXAS COMPTROLLERS OFFICE i. ENERGY CODES FOR STATE BUILDINGS ENERGY CONSERVATION DESIGN STANDARDS: TEXAS ADMINISTRATIVE CODE, TITLE 34, PART 1, CH. 19, SUBCHAPTER C ii. WATER CONSERVATION STANDARDS FOR STATE BUILDINGS - ENERGY CONSERVATION DESIGN STANDARDS TEXAS ADMINISTRATIVE CODE, TITLE 34, PART 1, CH. 19, SUBCHAPTER C

i. U.S. DEPT. OF JUSTICE, 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN ii. U.S. DEPT. OF JUSTICE, ARCHITECTURAL BARRIERS ACT, ACCESSIBILITY GUIDELINES FOR OUTDOOR DEVELOPED AREAS ON FEDERAL LANDS. EFFECTIVE NOVEMBER 25, 2013.

SCOPE OF WORK

SCOPE OF WORK IS DEFINED BY THESE DRAWINGS AND SPECIFICATIONS, INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT TO ACCOMPLISH

CABIN - REPAIR CABIN INTERIOR, RELOCATE AND STABILIZE PIERS, PROVIDE CLSM BACKFILL, REPLACE ROOF AND MEP COMPONENTS. REMOVE EXISTING SIDING REFER TO DETAIL 4/A2.1, INSTALL CONTINUOUS VAPOR BARRIER, REPLACE EXISTING SIDING

GROUP PAVILION - RESTORE SCOURED AREAS, REINSTALL TABLE PEDESTRIAN BRIDGE - RESTORE / STABILIZE STRUCTURAL COMPONENTS AND SURROUNDING EMBANKMENT

TRAFFIC BRIDGE GUARDRAIL - REPAIR RAIL ALONG PEDESTRIAN PORTION OF BRIDGE

ADD - ALTERNATE #2: METAL ROOF SYSTEM ON CABIN IN LIEU OF ASPHALT SHINGLE ROOF, REFER TO R2.1 AND R2.3. ADD - ALTERNATE #3: PROVIDE NEW GENERATOR AND PLATFORM, REFER TO \$2.0, \$2.1 AND E3.1.

ADD - ALTERNATE #4: TEXTURED AND PAINTED GYPSUM BOARD AT CEILING OF CABIN IN LIEU OF PAINTING EXPOSED STRUCTURE, REFER TO 1/A2.0. ADD - ALTERNATE #5: REMOVAL OF SECOND LAYER OF ROOFING, IF PRESENT

RELEASED FOR SOLICITATION

IRECTOR, INFRASTRUCTURE DIVISION





TEXAS PARKS AND WILDLIFE

INFRASTRUCTURE DIVISION

4200 SMITH SCHOOL ROAD · AUSTIN, TEXAS 78744-3292

SCOPE OF WORK IS DEFINED BY THESE DRAWINGS AND SPECIFICATIONS, INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT TO ACCOMPLISH THE WORK. THE SCOPE GENERALLY INCLUDES:

BASE BID:

CABIN - REPAIR CABIN INTERIOR, RELOCATE AND STABILIZE PIERS, PROVIDE CLSM BACKFILL, REPLACE ROOF AND MEP COMPONENTS. REMOVE EXISTING SIDING, INSTALL CONTINUOUS VAPOR BARRIER, REPLACE EXISTING SIDING. **GROUP PAVILION - RESTORE SCOURED AREAS,** REINSTALL TABLE PEDESTRIAN BRIDGE - RESTORE / STABILIZE STRUCTURAL COMPONENTS AND SURROUNDING EMBANKMENT TRAFFIC BRIDGE GUARDRAIL - REPAIR RAIL ALONG PEDESTRIAN PORTION OF BRIDGE

ADD - ALTERNATE #1:

WAINSCOT SUBSTRATE AND CHAIR RAIL IN CABIN, REFER TO 5/A2.1.

ADD - ALTERNATE #2:

METAL ROOF SYSTEM ON CABIN IN LIEU OF ASPHALT SHINGLE ROOF, REFER TO R2.1 AND R2.3.

ADD - ALTERNATE #3:

PROVIDE NEW GENERATOR AND PLATFORM, REFER TO \$2.0, S2.1, AND E3.1.

ADD - ALTERNATE #4:

TEXTURED AND PAINTED GYPSUM BOARD AT CEILING OF CABIN IN LIEU OF PAINTING EXPOSED STRUCTURE, REFER TO 1/A2.0.

ADD - ALTERNATE #5:

REMOVAL OF SECOND LAYER OF ROOFING, IF PRESENT.

COORDINATION

1. THE CONTRACTOR SHALL COORDINATE WORK BETWEEN ALL TRADES AND BRING ANY CONFLICTS TO THE ENGINEER'S ATTENTION PRIOR TO THE WORK BEING PERFORMED. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS FOR CORRECTIONS ASSOCIATED WITH THE CONTRACTOR'S FAILURE TO PROPERLY COORDINATE THE WORK.

FAMILIARITY WITH CONDITIONS

- 1. THE CONTRACTOR SHALL THOROUGHLY EXAMINE AND BECOME FAMILIAR WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- 2. THE CONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED WORK AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS RELATING TO THE CONSTRUCTION, LABOR, FACILITIES INVOLVED. DIFFICULTIES. RESTRICTIONS, AND THE LOGICAL EXTENSIONS OF THE SCOPE ATTENDING THE PERFORMANCE OF THE CONTRACT.
- 3. THE CONTRACTOR SHALL IN NO WAY BE RELIEVED OF ANY OBLIGATION UNDER THE CONTRACT BECAUSE OF THE CONTRACTOR'S FAILURE TO RECEIVE OR EXAMINE ANY REQUIRED FORMS AND LEGAL DOCUMENTS, OR VISIT THE SITE AND BECOME FULLY INFORMED OF ANY AND ALL CONDITIONS AND REQUIREMENTS THAT MAY IN ANY MANNER AFFECT THE WORK TO BE PERFORMED.

DOCUMENTATION OF PRE-CONSTRUCTION PHOTOGRAPHS

1. THE CONTRACTOR SHALL PHOTOGRAPH AND/OR VIDEO DOCUMENT AND TAKE WRITTEN NOTES OF EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF THE WORK ON THE SITE. COPIES OF ALL DOCUMENTATION SHALL BE SUBMITTED TO THE OWNER OR ENGINEER PRIOR TO COMMENCING WORK.

EXISTING CONDITIONS

- 1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS. DIMENSIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE, AND FIELD MEASUREMENTS AND VERIFICATION WILL BE REQUIRED TO COMPLETE THE WORK. CONTRACTOR SHALL OBTAIN ALL FIELD MEASUREMENTS AS NECESSARY TO COORDINATE WITH, AND MATCH NEW CONSTRUCTION TO **EXISTING CONDITIONS.**
- 2. SOME INFORMATION SHOWN IN THE DRAWINGS, IN REGARDS TO EXISTING FEATURES, IS NECESSARILY CONJECTURAL DUE TO HIDDEN CONDITIONS AT THE TIME OF PREPARATION. IF CONDITIONS EXIST THAT DIFFER FROM THE DRAWINGS, OR ARE NOT ADEQUATELY DETAILED, INFORM THE OWNER AND ENGINEER AND ADDITIONAL DETAILS OR INTERPRETATION WILL BE PROVIDED. DO NOT PROCEED WITHOUT VERIFICATION FROM THE ENGINEER.

SAFETY

1. CONTRACTOR AND ALL OF ITS SUBCONTRACTORS ARE SOLELY RESPONSIBLE FOR THEIR MEANS AND METHODS OF INSTRUCTION. AND SHALL PERFORM ALL WORK IN A SAFE AND CONSCIENTIOUS MANNER TO PREVENT INJURIES. REFERENCE TPWD UNIFORM GENERAL CONDITIONS.

- 2. CONTRACTOR IS SOLELY RESPONSIBLE FOR JOBSITE SAFETY, AND SHALL ENSURE THEIR COMPLIANCE WITH OSHA STANDARDS FOR JOB SAFETY AND WORKER PROTECTION. SAFETY MEASURES INCLUDE, BUT ARE NOT LIMITED TO ADEQUATE FALL PROTECTION, ERECTION BRACING, BARRICADES, FENCING, SIGNS, FIRST-AID STATIONS, ETC.
- 3. CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING, AND SHEETING REQUIRED FOR SAFETY AND PROPER EXECUTION OF THE WORK.
- 4. THE CONTRACTOR SHALL PROVIDE WARNING SIGNS, BARRIERS OR BARRICADES. AS REQUIRED AND OTHERWISE NECESSARY TO SEPARATE THE WORK AREAS FROM THE PUBLIC, TO PREVENT PEDESTRIANS AND TRAFFIC FROM ENTERING THE WORK AREAS AND TO PROVIDE A SAFE AND ORDERLY FLOW OF PEDESTRIAN AND VEHICLE TRAFFIC THROUGH REQUIRED ENTRANCES AND EXITS DURING THE REPAIR WORK.

FIRE PROTECTION

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIRE PROTECTION AND FIRE WATCH DURING ALL CONSTRUCTION OPERATIONS.
- 2. NO SMOKING SHALL BE PERMITTED ONSITE. CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY FIRE EXTINGUISHERS UNTIL SUBSTANTIAL COMPLETION.

PROTECTION OF BUILDING & SITE

- 1. CONTRACTOR SHALL PROTECT ALL EXISTING BUILDING SURFACES FOR THE DURATION OF THE PROJECT. ANY DAMAGE TO THE EXISTING STRUCTURE OR BUILDING CONTENTS THAT HAS BEEN DETERMINED TO BE CAUSED BY THE CONTRACTOR, OR CONSTRUCTION PRACTICES THAT OCCUR FOLLOWING THE NOTICE TO PROCEED, SHALL BE CORRECTED TO PRE-CONSTRUCTION CONDITION AT NO EXPENSE TO THE OWNER.
- 2. CONTRACTOR SHALL PROTECT ALL EXISTING TREES LANDSCAPING, SITE LIGHTING, SIDEWALKS, AND SITE FEATURES FROM DAMAGE FOR THE DURATION OF THE PROJECT. IF DAMAGED DURING THE COURSE OF WORK, THE CONTRACTOR SHALL REPAIR THE DAMAGED AREAS TO PRE-CONSTRUCTION CONDITION PRIOR TO THE COMPLETION OF THE PROJECT AT NO EXPENSE TO THE OWNER.
- 3. DO NOT PLACE LOADS ON THE STRUCTURE OR STORE DEMOLISHED MATERIALS ON THE STRUCTURE IN A MANNER THAT WILL ENDANGER THE STRUCTURE.
- 4. CONTRACTOR SHALL KEEP THE BUILDING SECURE AND WEATHER-TIGHT AT ALL TIMES.
- 5. ALL CONSTRUCTION MATERIALS KEPT IN ELEVATED AREAS SHALL REMAIN SECURED TO ENSURE THE MATERIALS DO NOT BECOME AIRBORNE AND CAUSE INJURY OR DAMAGE TO THE BUILDING OR ITS OCCUPANTS.

BUILDING MAINTENANCE

- 1. CONTRACTOR SHALL AT ALL TIMES. KEEP THE SITE AND THE WORK CLEAN AND FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH MATERIAL CAUSED BY SITE CONSTRUCTION.
- 2. CONTRACTOR SHALL ADEQUATELY SECURE ALL WORK AT THE END OF EACH WORK DAY.
- 3. AREAS THAT ARE NOT DIRECTLY UNDER CONSTRUCTION THAT ARE USED AS PATHWAYS TO TRANSPORT MATERIALS, OR TO REMOVE TRASH, ARE TO BE KEPT CLEAN AT ALL TIMES. THIS MAINTENANCE INCLUDES. BUT NOT LIMITED TO DUSTING. SWEEPING, MOPPING, AND PICKING UP TRASH AS REQUIRED TO KEEP THE AREAS FREE OF WASTE MATERIALS, DEBRIS, AND RUBBISH.

QUALITY ASSURANCE

- 1. WHERE APPLICABLE. THE CONTRACTOR SHALL BE A LICENSED APPLICATOR OR INSTALLER OF ALL SPECIFIED PROPRIETARY PRODUCTS AND MATERIALS.
- 2. THE PRESENCE OF THE ENGINEER OR TESTING AGENCY AT THE JOBSITE DOES NOT RELIEVE CONTRACTOR OF THE OBLIGATION TO PERFORM THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- 3. THE OWNER AND ENGINEER SHALL NOT HAVE CONTROL OVER OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND SAFETY PROGRAMS IN CONNECTION WITH THE PROJECT.
- 4. THE OWNER AND ENGINEER MAY PERFORM QUALITY CONTROL TESTS ON A RANDOM BASIS FROM TIME TO TIME TO EVALUATE INSTALLATION OF THE NEW CONSTRUCTION FOR CONFORMANCE TO THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL MAKE ACCESS AVAILABLE TO INSPECT AND TEST THE SPECIFIED AREA AND MAKE APPROPRIATE REPAIRS (BASED ON UNIT COSTS) AFTER COMPLETION OF INSPECTION. ANY DEFECTIVE WORK WILL BE REPAIRED AT NO COST TO THE OWNER.

WARRANTY

1. ALL WORK PERFORMED SHALL BE WARRANTED BY THE GENERAL CONTRACTOR AS REQUIRED BY THE CONTRACT.

TECHNICAL NOTES

BUILDING & STRUCTURAL CODES

- THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH THE **FOLLOWING CODES:**
- 1. THE INTERNATIONAL EXISTING BUILDINGS CODE, 2015 EDITION.
- 2. THE INTERNATIONAL BUILDING CODE, 2015 EDITION.
- 3. THE INTERNATIONAL RESIDENTIAL CODE, 2015 EDITION.
- 4. ASCE 7-10, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
- 5. STRUCTURAL TIMBER: NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION, AMERICAN WOOD COUNCIL, 2015 EDITION.
- 6. STRUCTURAL STEEL: SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, AMERICAN INSTITUTE OF STEEL CONSTRUCTION, 13TH EDITION.
- 7. STRUCTURAL CONCRETE: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY, AMERICAN CONCRETE INSTITUTE, 2014 EDITION.
- ALL CODES AND SPECIFICATIONS LISTED ABOVE SHALL INCLUDE ALL AMENDMENTS AND ADDENDA IN FORCE AT THE DATES OF THE CONTRACT DOCUMENTS. WHERE CONFLICT EXISTS BETWEEN THE VARIOUS PUBLICATIONS AS SPECIFIED HEREIN, THE STRICTEST REQUIREMENTS OF THE VARIOUS PUBLICATIONS SHALL GOVERN UNLESS NOTED OTHERWISE. WHERE CONFLICT EXISTS AMONG THE VARIOUS PARTS OF THE CONTRACT DOCUMENTS, DRAWINGS, NOTES, SPECIFICATIONS, THE STRICTEST REQUIREMENTS SHALL GOVERN.

DESIGN LOADS

1. LIVE LOADS: PRINCIPAL DESIGN LIVE LOADS ARE SHOWN BELOW. ALL LIVE LOADS WHETHER LISTED BELOW OR NOT ARE BASED ON THE REQUIREMENTS OF THE 2015 INTERNATIONAL EXISTING BUILDING CODES.

A. ROOF LIVE LOAD:

20 PSF

(ENCLOSED BLDG.)

40 PSF

B. INTERIOR LIVE LOADS:

C. PEDESTRIAN BRIDGE LIVE LOADS:

DEAD LOADS: DESIGN DEAD LOADS INCLUDE THE SELF-WEIGHT OF THE STRUCTURAL AND ARCHITECTURAL ELEMENTS. ANY CHANGES FROM THE CONSTRUCTION MATERIALS FROM THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE REPORTED BY THE GENERAL CONTRACTOR TO THE STRUCTURAL ENGINEER FOR VERIFICATION OF THE LOAD CARRYING CAPACITY OF THE STRUCTURE.

3. WIND DESIGN DATA:

130 MPH A. WIND SPEED: B. RISK CATEGORY: C. EXPOSURE CATEGORY: D. INTERNAL PRESSURE COEFFICIENT: +/-0.18

GENERAL

- 1. SHOP DRAWINGS SHALL BE PREPARED AS REQUIRED BY SPECIFICATIONS AND SUBMITTED FOR REVIEW BY THE ENGINEER. CONTRACT DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS. ALL ITEMS DEVIATING FROM THE CONTRACT DRAWINGS OR FROM PREVIOUSLY SUBMITTED SHOP DRAWINGS SHALL BE CLOUDED.
- 2. THE DETAILS OR NOTES DESIGNATED AS "TYPICAL" APPLY GENERALLY TO THE DRAWINGS IN ALL AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED AS TYPICAL.
- 3. ANY SUBSTITUTIONS CAUSING OR REQUIRING CHANGES TO THE STRUCTURE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE.
- 4. ANY REQUIRED CHANGES TO THE DRAWINGS DUE TO THE ACCEPTANCE OF ALTERNATES AND/OR SUBSTITUTES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBMITTED TO THE OWNER AND ENGINEER FOR APPROVAL.
- 5. IF CONDITIONS EXIST THAT ARE NOT ADEQUATELY DETAILED, INFORM THE OWNER AND ENGINEER AND ADDITIONAL DETAILS OR INTERPRETATION WILL BE PROVIDED. DO NOT PROCEED WITHOUT VERIFICATION FROM THE ENGINEER.

6. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL LOCATE AND UNCOVER ALL UTILITY CROSSINGS AND TIE-INS TO VERIFY LOCATIONS AND ELEVATIONS. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

ALTERNATES & SUBSTITUTIONS

ALL REQUESTS FOR SUBSTITUTIONS OF MATERIALS OR DETAILS SHOWN ON THE CONTRACT DOCUMENTS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO THEIR USE.

DEMOLITION

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE EXISTING STRUCTURE AND SURROUNDING BUILDINGS DURING CONSTRUCTION. THE CONTRACTOR WILL REPLACE ANY DAMAGED MEMBER OF THE STRUCTURE OR ADJACENT STRUCTURE AS DIRECTED BY THE ENGINEER AT NO EXTRA COST TO THE OWNER.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE HANDLING, STORAGE, HAULING AND REMOVAL OF THE MATERIALS TO BE REMOVED.

TEMPORARY BRACING, FALSEWORK, AND FORMWORK

1. THE DESIGN, CONSTRUCTION, AND SAFETY OF ALL TEMPORARY SUPPORTS SUCH AS GUYS, FALSEWORK, FORMWORK, SHORES AND BRACING REQUIRED FOR THE EXECUTION OF THE CONTRACT ARE NOT INCLUDED IN THE DRAWINGS AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DESIGN FOR STRUCTURAL SUPPORT AT ALL LOCATIONS SHOULD BE PERFORMED BY A QUALIFIED, LICENSED PROFESSIONAL ENGINEER.

NON-CODE COMPLIANT ITEMS REQUIRING VARIANCES

THE OWNER REQUESTS THAT THE AUTHORITY HAVING JURISDICTION ALLOW THE FOLLOWING EXISTING CONDITIONS TO REMAIN, RATHER THAN REMEDIATING THEM AS REQUIRED BY THE 2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC) AND 2015 INTERNATIONAL BUILDING CODE (IBC):

- 1. THE GROUND FLOOR IS TO REMAIN AT ITS EXISTING ELEVATION OF 23.5 FT MSL. THIS IS BELOW THE MINIMUM ELEVATION OF 29 FT MSL REQUIRED BY IBC SECTION 1612.5.
- 2. BUILDING STRUCTURE HAS NOT BEEN MODIFIED TO RESIST THE EFFECTS OF FLOOD HAZARDS AND FLOOD LOADS **REQUIRED BY IBC SECTION 1612.1.** 3. BUILDING STRUCTURE HAS NOT BEEN DESIGNED FOR FLOOD
- LOADS IN ACCORDANCE WITH CHAPTER 5 OF ASCE 7 AND ASCE 24 PER IBC SECTION 1612.4. 4. BUILDING STRUCTURE WILL NOT PROVIDE FOR EQUALIZATION

OF HYDROSTATIC FLOOD FORCES AND WAS NOT DESIGNED IN

*REFER TO LETTER FROM WJE TO TPWD DATED DECEMBER 13, 2018 FOR ADDITIONAL INFORMATION RELATED TO THE

ACCORDANCE WITH ASCE 24 PER IBC SECTION 1612.5

REQUESTED VARIANCES.

*CABIN IS TO BE EVACUATED IF THERE IS RISK OF FLOODING.

PROJECT ABBREVIATIONS

A.F.F.

ADD'L.

ARCH.

A/C

B.F.F.

B.O.

B.O.C.

B.O.S.

B.O.W.

CLSM

CONC.

CMU

CONT

C.J.

DL

DIAG.

DIM(S).

DIA.

DS

DBL.

DN

EA.

E.F.

E.W.

ELEC.

EQUIP.

EQ.

EXP.

EXT.

F.F.

FD

F.V.

GA.

GALV.

GWB

H.D.

HSA

HSS

HORIZ.

INFO.

INT.

ISO.

KLF

KSF

LSL

MFR.

MAX.

MECH.

MIN.

MISC.

N.I.C.

N.T.S.

O.C.

OSB

ovs

PERP.

P.T.

PSF

PSI

REINF.

REQ'D.

SCHED.

SPEC'D.

S.S.M.R.

STRUCT'L.

S.I.D

SIM.

SF

S.S.

SSL

STD.

TEMP.

T.O.M.

T.O.N.

T.O.F.F.

T.O.S.

T.O.W.

TYP.

U.N.O.

VERT.

VTR

WWF

W/

T.O.

RD

RTU

No. or #

O.H. or OPP.

EL. or ELEV.

ARCH'L

APPROX

AND ABOVE FINISH FLOOR ADDITIONAL(LY) **APPROXIMATE ARCHITECT ARCHITECTURAL** AIR CONDITIONER **BELOW FINISH FLOOR** BOTTOM OF ----" " CONCRETE " " WALL CENTERLINE

CONTROLLED LOW

CONTINUOUS(LY)

PENNY (NAIL SIZE)

CONCRETE

DEAD LOAD

DIAGONAL

DIAMETER

DOUBLE

DOWN

EACH

EACH FACE

EACH WAY

ELEVATION

EQUAL(LY)

EQUIPMENT

EXPANSION

EXTERIOR

FINISH FLOOR

FLOOR DRAIN

FIELD VERIFY

GALVANIZED

HORIZONTAL

INTERIOR

LIVE LOAD

MAXIMUM

MINIMUM

NUMBER

PLATE

RADIUS

REQUIRED

ROOF DRAIN

ROOF TOP UNIT

SLOPE IN DECK

SQUARE FEET

STAINLESS STEEL

SHORT SLOTTED HOLE

STANDING SEAM METAL

TONGUE AND GROOVE

TEMPORAR(Y) (ILY)

" " CONCRETE

" " FINISH FLOOR

TUBE STEEL SECTION

VENT THROUGH ROOF

WELDED WIRE FABRIC

UNLESS NOTED OTHERWISE

SCHEDULE(D)

SIMILAR(LY)

SPECIFIED

STANDARD

STRUCTURAL

TOP OF ----

" " BEAM

" " SLAB

" " WALL

TYPICAL(LY)

VERTICAL

WITH

ON CENTER

INFORMATION

KIPS (1000 lbs.)

GAGE OR GAUGE

GYPSUM WALL BOARD

HOT-DIP (GALVANIZING)

HEADED STUD ANCHOR

HOLLOW STEEL SECTION

ISOCYANURATE INSULATION

KIPS PER LINEAR FOOT

KIPS PER SQUARE FOOT

LONG LEG HORIZONTAL

LONG LEG VERTICAL

LONG SLOTTED HOLE

MANUFACTURE(D)(R)

MECHANICAL(LY)

MISCELLANEOUS

NOT TO SCALE

OPPOSITE HAND

OVERSIZED HOLE

PERPENDICULAR

ORIENTED STRAND BOARD

PRESERVATIVE TREATED

POUNDS PER SQUARE FOOT

POUNDS PER SQUARE INCH

REINFORCE(D) (MENT) (ING)

NOT IN CONTRACT

ELECTRIC(AL)

DIMENSION(S)

DOWN SPOUT

STRENGTH MATERIAL

CONSTRUCTION JOINT

CONCRETE MASONRY UNIT

133109 CENSE

KATELYN LOW 03-06-2019

TEXAS

PARKS &

WILDLIFE

WJE ARCHITECTS MATERIALS SCIENTS

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X **A** $\boldsymbol{\Phi}$ Ш Ш S r+1 CRE CILIT GE

DATE: 03.06.2019 DESIGNED BY: KSL DRAWN BY: CLM REVIEWED BY: CJL

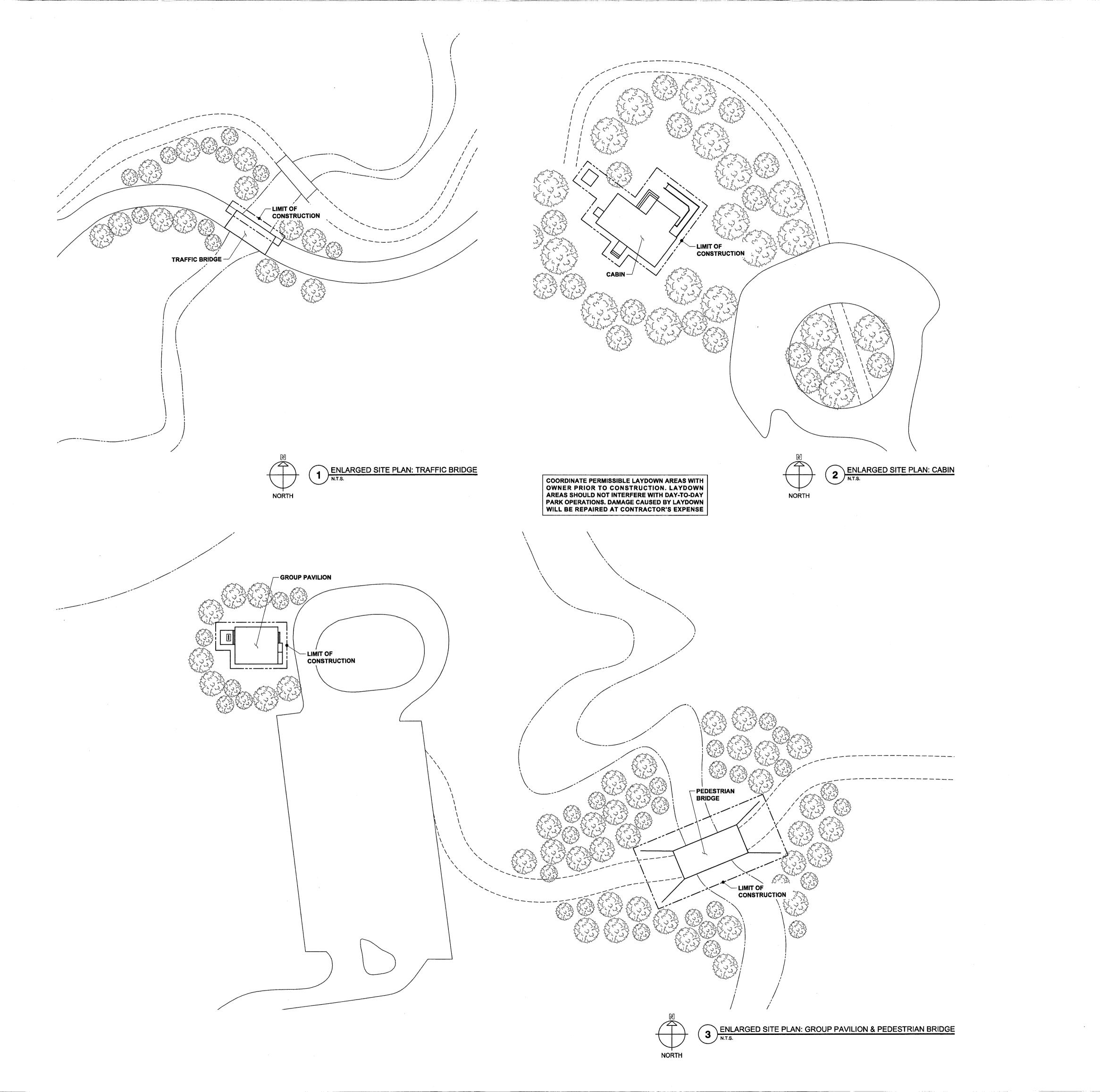
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SHEET TITLE **GENERAL NOTES & PROJECT**

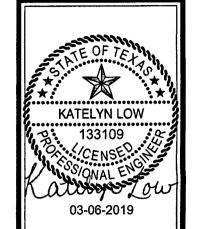
SHEET NUMBER

INFORMATION

G1.0 2 of 30







ARK CREEK

DATE: 03.06.2019
DESIGNED BY: KSL
DRAWN BY: CLM
REVIEWED BY: CJL

KEY PLAN: NOT TO SCALE

NORTH

REVISED:

G1.1

SHEET NUMBER



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512 257.4800 tel | 512 219.9883 fax
TEXAS REGISTERED ENGINEERING FIRM F-0083
Mendiparities & Laboratories Notificots, lincia
Attant | Austin | Sosten (Texas) (Cleveteri Colaste) (Devert Distant | Dever Of Letter)
Processon | San Francisco | Seetia | South Piorica | Washington, D.C.



VILLAGE CREEK STATE PARK FACILITY DAMAGE REPAIRS PROJECT NUMBER: 128695

DATE: 03.06.2019
DESIGNED BY: KSL
DRAWN BY: CLM
REVIEWED BY: CJL

REVISED:

REVISED:

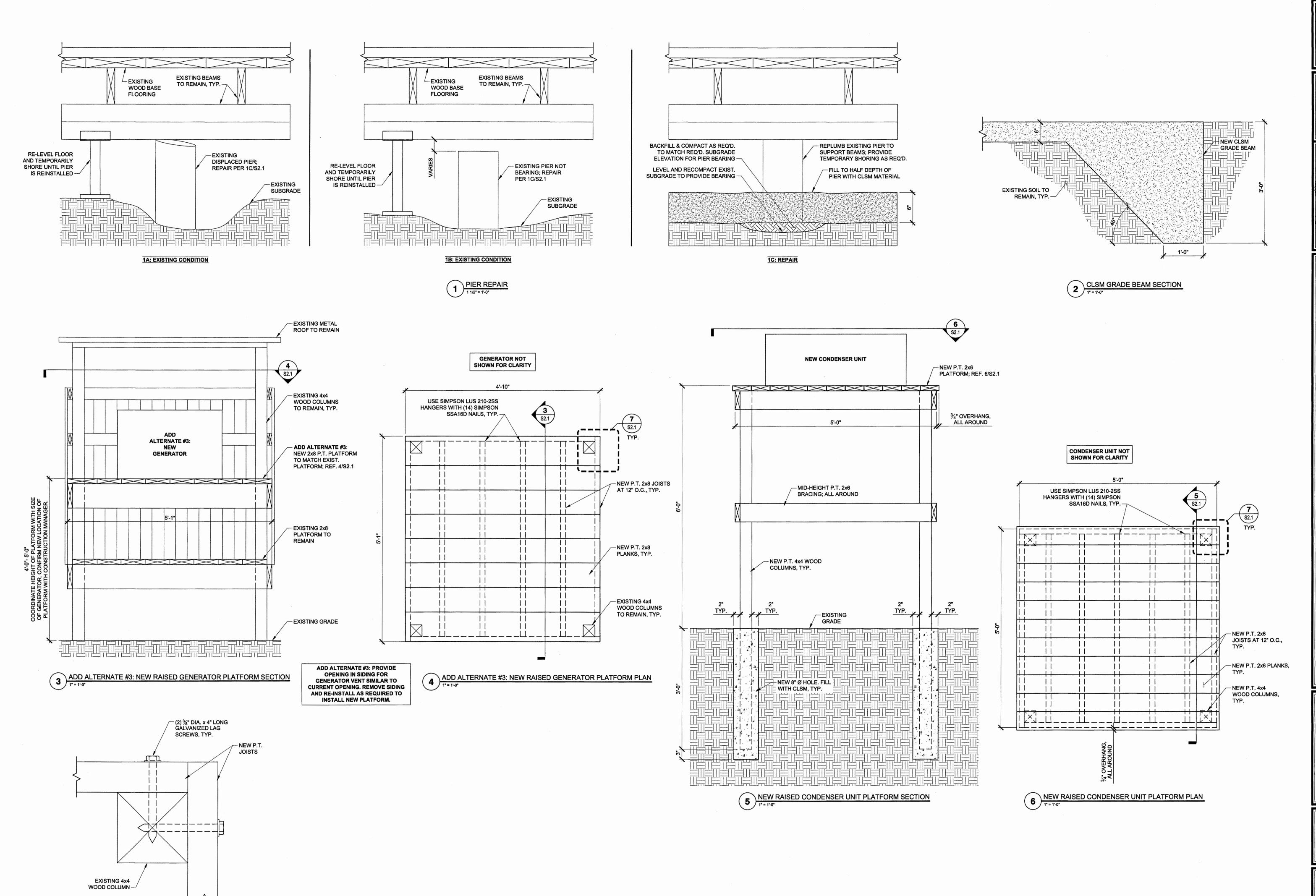
REVISED:

SHEET TITLE

STRUCTURAL REPAIR PLAN

SHEET NUMBER

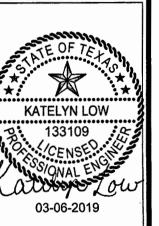
S2.0



ADD ALTERNATE #3: CORNER CONNECTION DETAIL

TEXAS PARKS & WILDLIFE

WJE | ENGINEERS | ARCHITECTS | MATERIALS SCIENTIST TEXAS REGISTERED ENGINEERING FIRM F-00



AR **JEK** CRE **PROJECT** ACILITY

DATE: 03.06.2019 DESIGNED BY: KSL DRAWN BY: CLM REVIEWED BY: CJL

REVISED: REVISED:

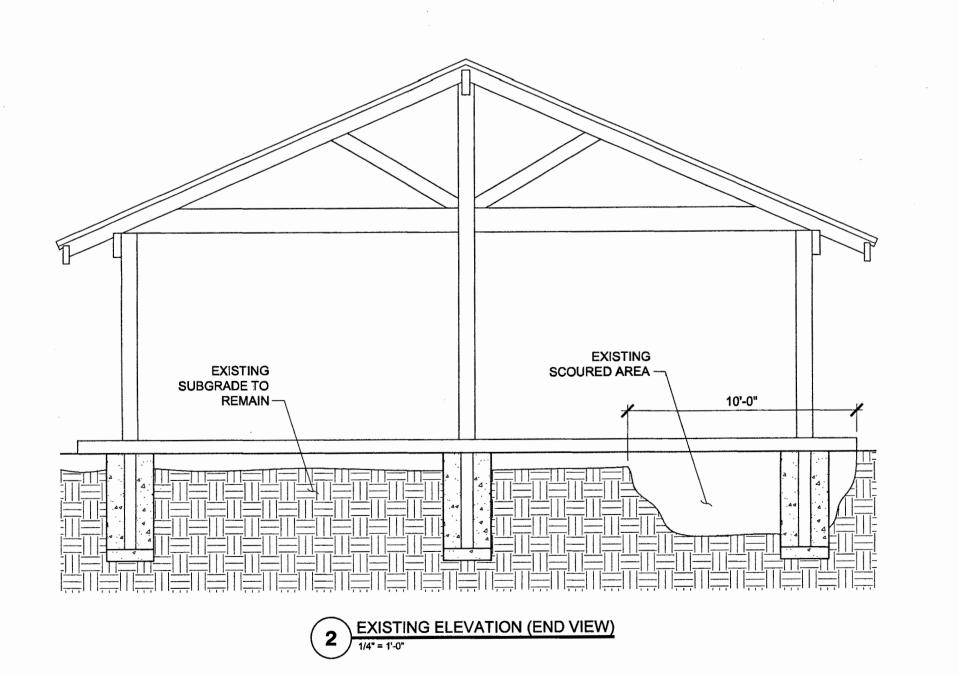
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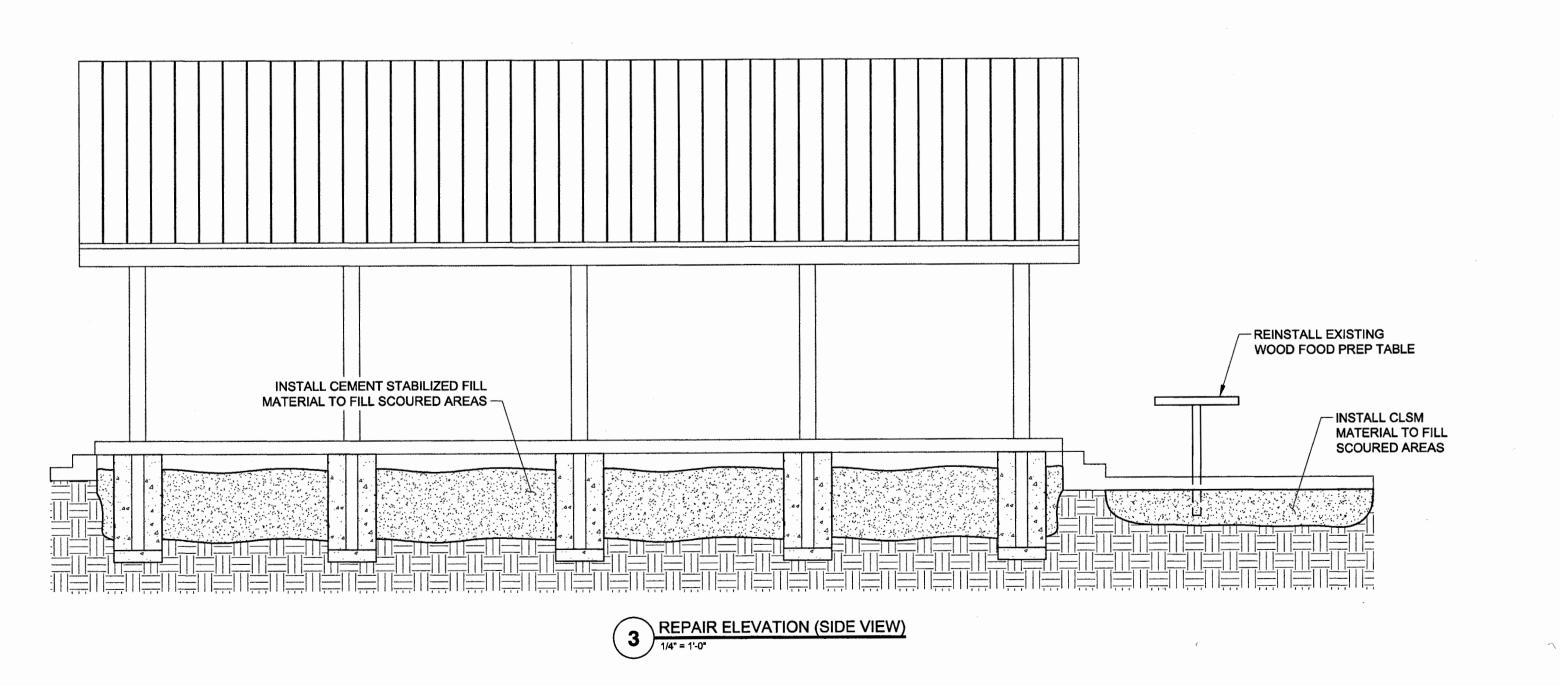
CUMENTS

RUCTION

CABIN: STRUCTURAL REPAIR DETAILS

SHEET NUMBER





TEXAS
PARKS &
WILDLIFE

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9511 N. Lako Croek Parkusy
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TEXAS REGISTERED ENGINEERING FRM F-0083
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(Doston) Los Arquiss | Microsopia | New Yorks
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VILLAGE CREEK STATE PA FACILITY DAMAGE REPAIRS PROJECT NUMBER: 128695

DATE: 03.06.2019
DESIGNED BY: KSL
DRAWN BY: CLM
REVIEWED BY: CJL

REVISED: REVISED:

REVISED:

SHEET TITLE

GROUP PAVILION:
STRUCTURAL
REPAIR PLAN &
ELEVATIONS

SHEET NUMBER

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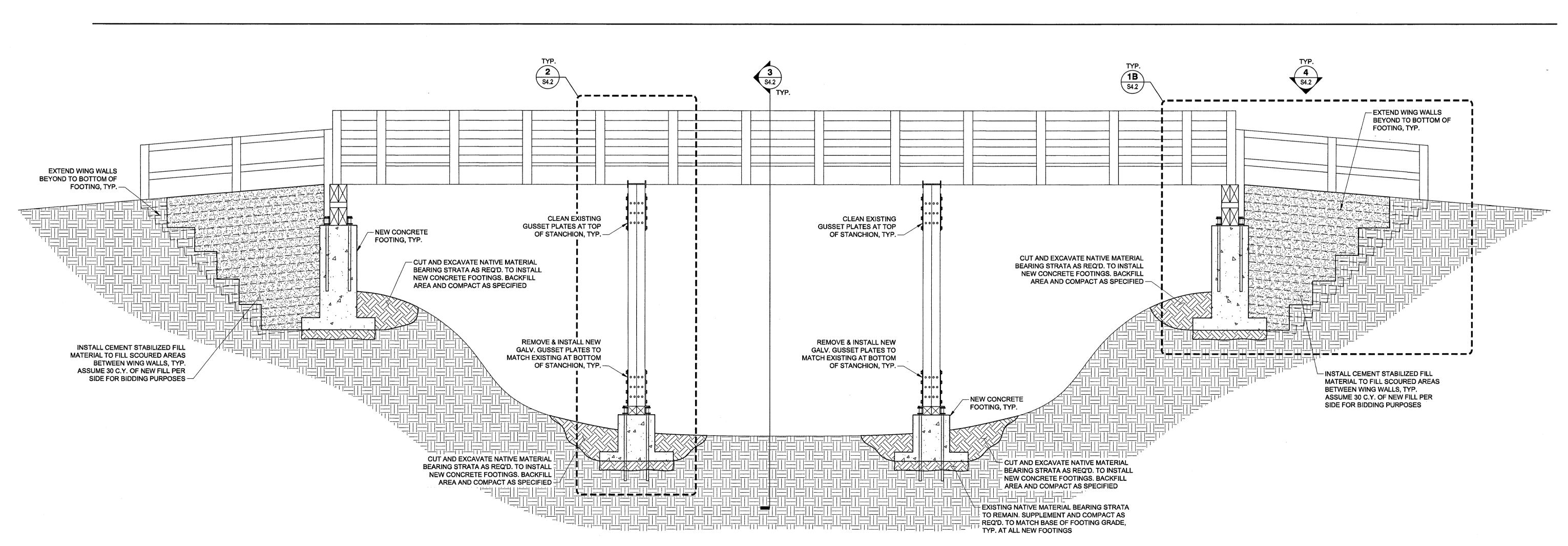
DATE: 03.06.2019
DESIGNED BY: KSL
DRAWN BY: CLM
REVIEWED BY: CJL

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> SHEET TITLE **PEDESTRIAN** BRIDGE: TOPOGRAPHIC & **REPAIR PLANS**

SHEET NUMBER



PARKS &

WILDLIFE WJE ROCINEERS ARCHITECTS MATERIALS SCIENTIST





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DATE: 03.06.2019 DESIGNED BY: KSL DRAWN BY: CLM REVIEWED BY: CJL

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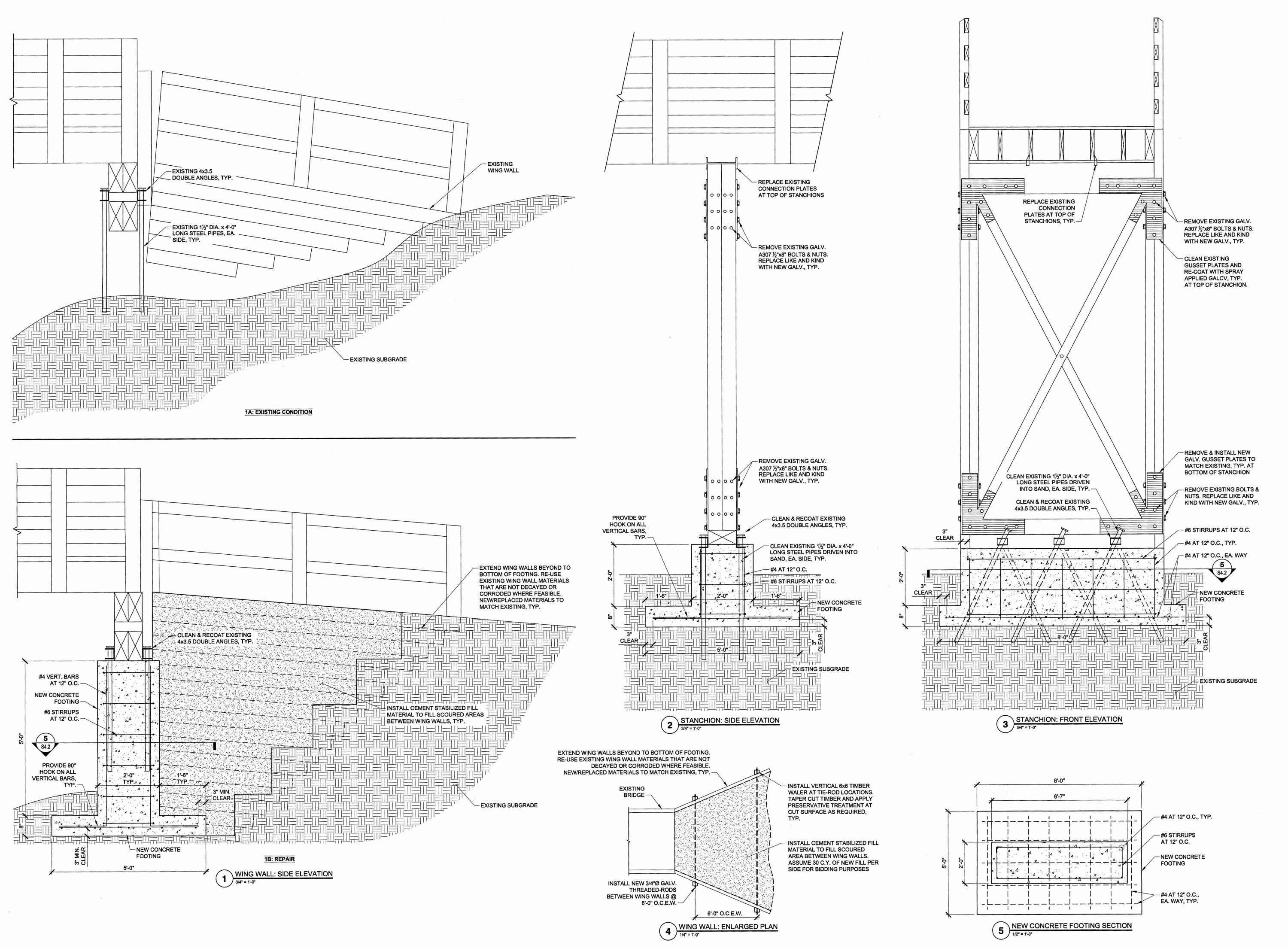
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SHEET TITLE **PEDESTRIAN BRIDGE:** STRUCTURAL REPAIR ELEVATIONS

SHEET NUMBER

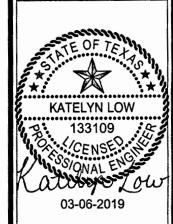
8 of 30

1B: REPAIR



PARKS & WILDLIFE

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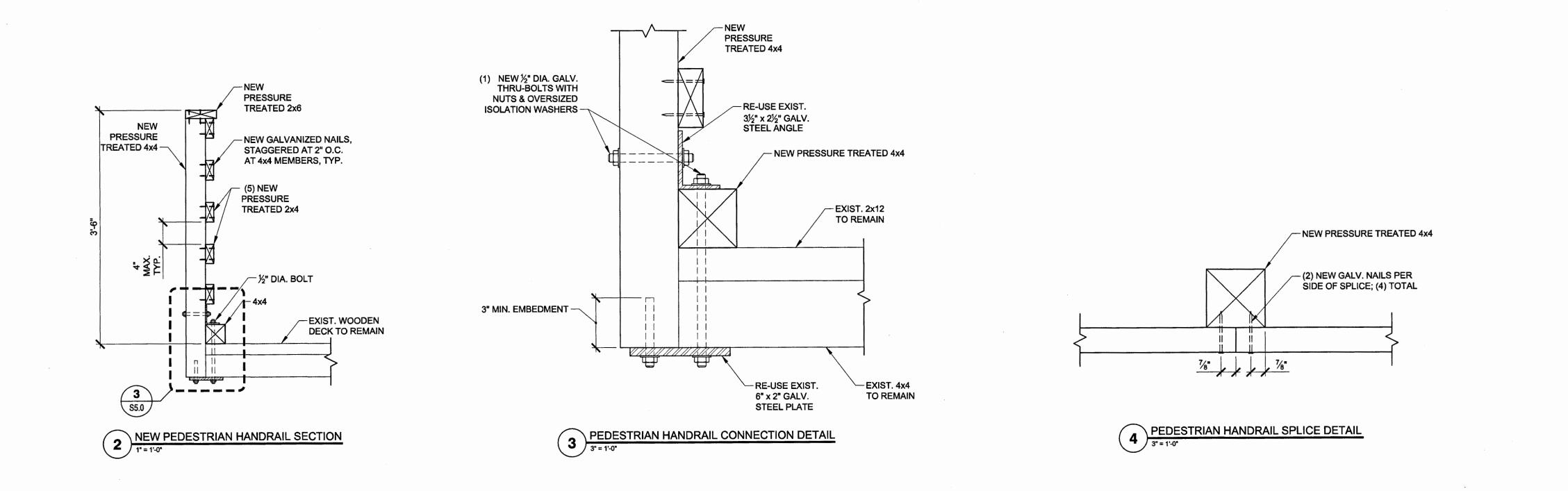
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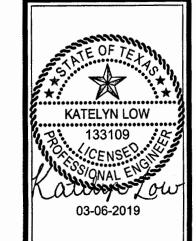
CUMENTS SHEET TITLE PEDESTRIAN BRIDGE: STRUCTURAL **REPAIR DETAILS**

SHEET NUMBER



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Headquarters & Labonatories Horbitoci, Brios
Alexal Jauesi [South Picasos] (Inc.) Horodal | Houston | Law Angeles | Mannegories | Head Parken | New York
Princeton | See Francisco | Seede | South Parkies | Wearington, D.C.



VILLAGE CREEK STATE PAR
FACILITY DAMAGE REPAIRS
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VEHICLE BRIDGE:

STRUCTURAL

REPAIR DETAILS

SHEET NUMBER

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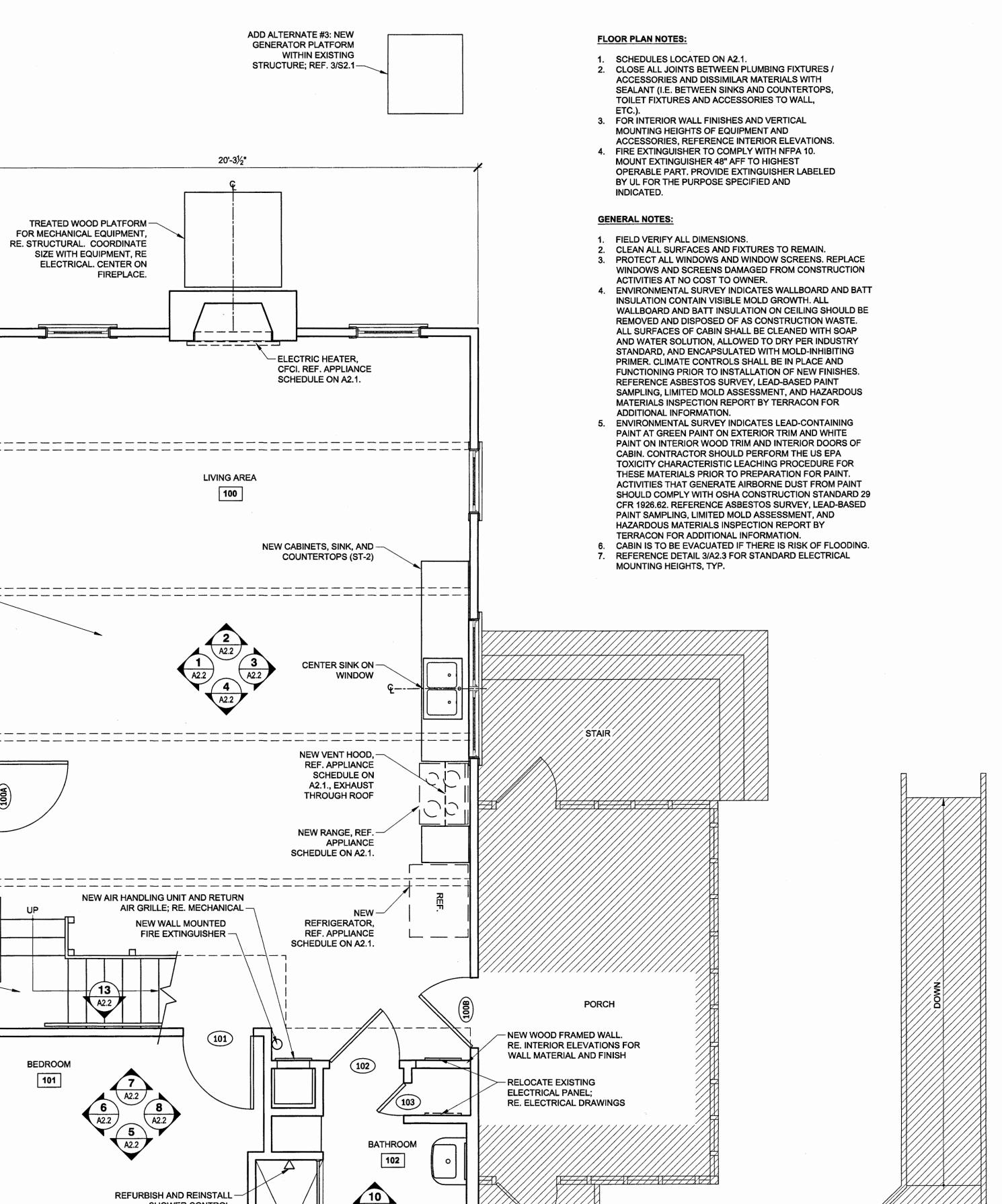
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CUMENTS

SHEET TITLE RENOVATION

SHEET NUMBER

FLOOR PLANS



INSTALL NEW TOILET, SINK, TOILET PAPER

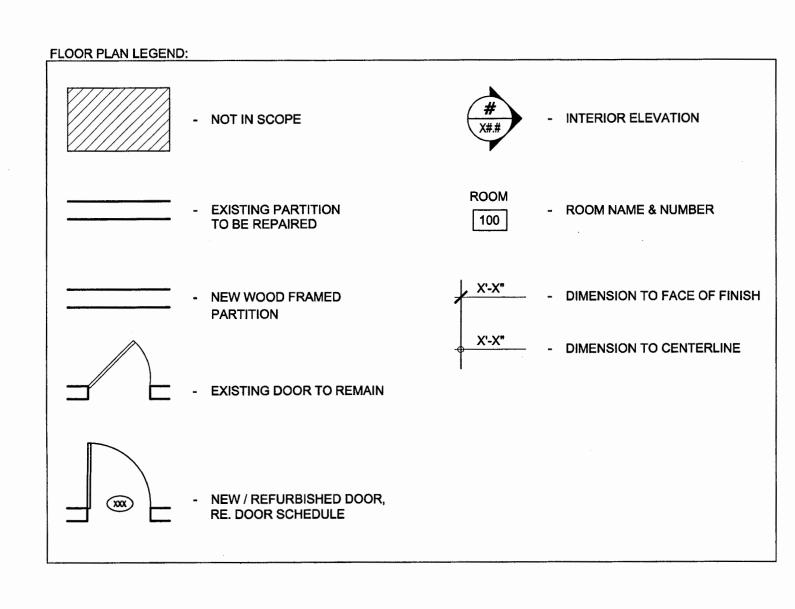
HOLDER, AND MIRROR. REFURBISH AND RE-INSTALL SHOWER ROD, AND GRAB BARS. PROVIDE BLOCKING FOR RE-INSTALLATION OF

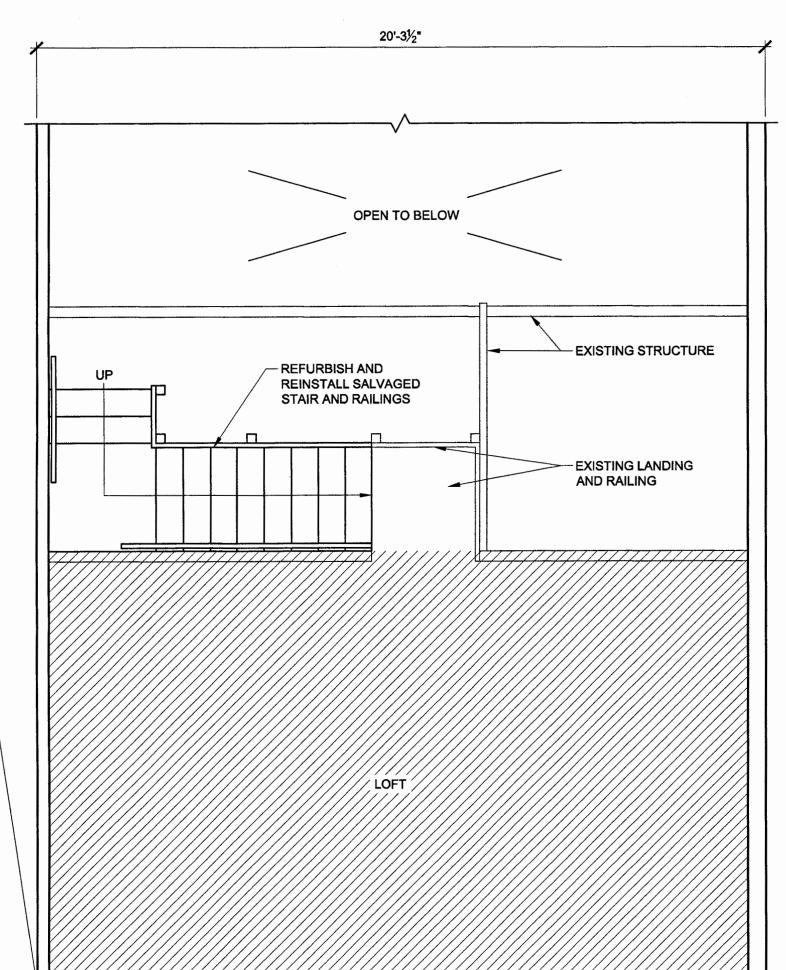
GRAB BARS AND MIRROR.

WITH EXISTING RAFTERS. ________ ______ NEW AIR HANDLING UNIT AND RETURN AIR GRILLE; RE. MECHANICAL -**NEW WALL MOUNTED** FIRE EXTINGUISHER -REFURBISH AND -REINSTALL SALVAGED STAIR AND RAILINGS BEDROOM REFURBISH AND REINSTALL - SHOWER CONTROL.

EXISTING SHOWER TO-

REMAIN.





REMOVE AND SALVAGE EXTERIOR -WOOD BOARD AND BATTEN SIDING AND EXTERIOR TRIM FOR REUSE. ASSUME REPLACEMENT OF 800SF OF SIDING, MATCH EXISTING (SEE BID FORM TO PROVIDE UNIT COST IN CASE OF ADDITIONAL REPLACEMENT).

REMOVE AND DISCARD EXISTING INSULATION AND EXISTING FELT.

INSTALL NEW CONTINUOUS TYVEK COMMERCIAL WRAP WEATHER BARRIER. INSTALL UNDAMAGED, SALVAGED (OR NEW) BOARD AND BATTEN SIDING AND TRIM.

INSTALL R-15 MINERAL INSULATION. REFER TO INTERIOR ELEVATIONS AND SCHEDULES FOR INTERIOR WALL MATERIAL AND FINISH.

LEVEL ONE RENOVATION FLOOR PLAN

TREATED WOOD PLATFORM — FOR MECHANICAL EQUIPMENT,

SIZE WITH EQUIPMENT, RE

ELECTRICAL. CENTER ON

FIREPLACE.

RE. STRUCTURAL. COORDINATE

REMOVE AND SALVAGE EXTERIOR -

WOOD BOARD AND BATTEN SIDING

AND EXTERIOR TRIM FOR REUSE.

SIDING, MATCH EXISTING (SEE BID

FORM TO PROVIDE UNIT COST IN

REMOVE AND DISCARD EXISTING

INSULATION AND EXISTING FELT.

INSTALL NEW CONTINUOUS TYVEK

COMMERCIAL WRAP WEATHER

BARRIER. INSTALL UNDAMAGED

SALVAGED OR NEW BOARD AND

INSTALL R-15 MINERAL INSULATION. REFER TO INTERIOR ELEVATIONS AND

SCHEDULES FOR INTERIOR WALL

REMOVE EXISTING PLASTER CEILING

NEW PAINTED AND TEXTURED

GYP BD TO BE INSTALLED FLUSH

OVER ENTIRE CABIN. CONTACT TPWD CONSTRUCTION MANAGER TO INSPECT PRIOR TO PAINTING AND LEAVING AS EXPOSED STRUCTURE

BATTEN SIDING AND TRIM.

MATERIAL AND FINISH.

ADD ALTERNATE #4:

ASSUME REPLACEMENT OF 800SF OF

CASE OF ADDITIONAL REPLACEMENT).

LOFT LEVEL RENOVATION FLOOR PLAN

13/4"

NEW

PT-3

3, 5

REFURBISH, REFINISH, AND REINSTALL EXISTING DOORS.

HCWD

103

NEW

REFURBISH AND REINSTALL EXISTING DOOR HARDWARE.

. NEW 1x4 WOOD TRIM AT DOORS, FINISH TO MATCH ADJACENT WALL U.N.O., RE: ELEVATIONS AND FINISH MATERIAL SCHEDULE.

VERIFY

4. NEW DOOR TO MATCH EXISTING SHAPE AND STYLE, RE. SHEET A2.2 AND FIELD VERIFY. 5. COORDINATE WIDTH OF DOOR WITH NEW ELECTRICAL WORK.

PT-3

DOOM FINISH SCHEDIII E

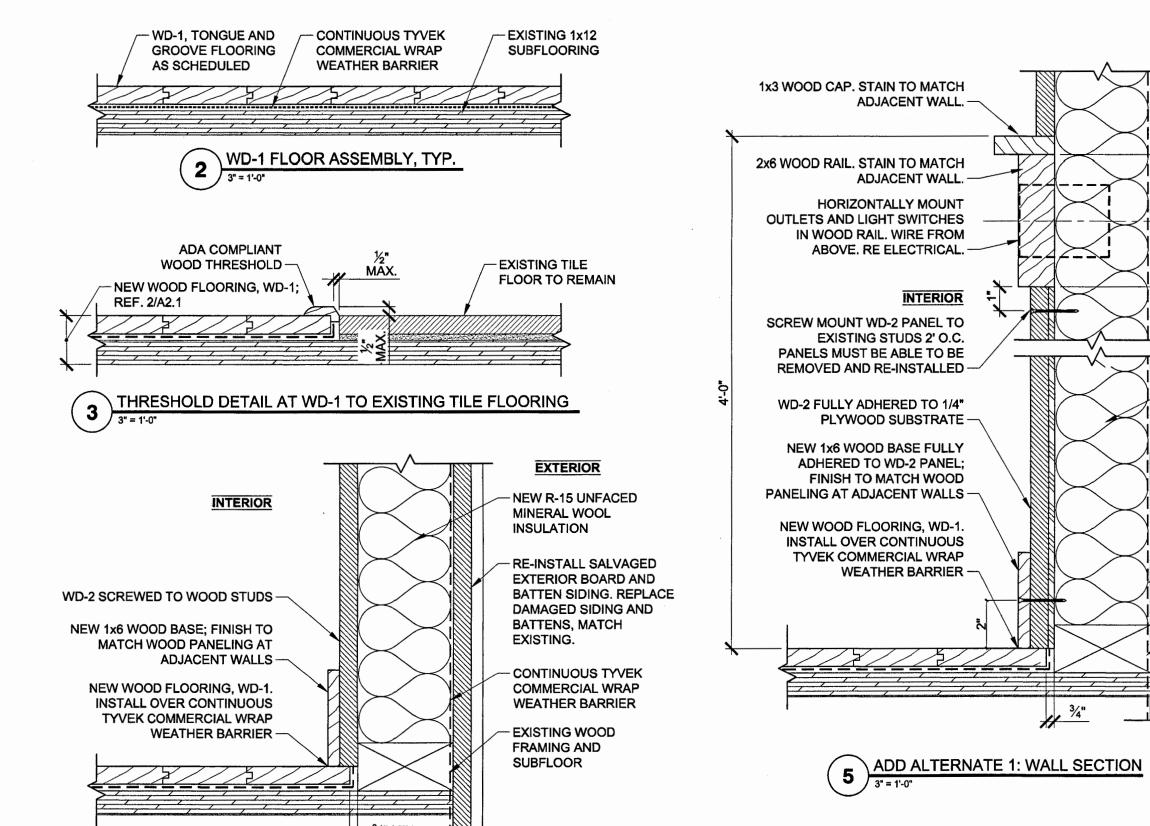
4'-0"

				ROC	OM FINISH	SCHEDUL	E		
ROOM	ROOM	FLC	OOR		WA	LLS		OF ILINO	DEMARKS
No.	NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	CEILING	REMARKS
100	LIVING	WD-1	RE. 1/A2.1	WD-2, EXISTING	WD-2	WD-2, EXISTING	WD-2	PT-2	REMOVE EXST PLASTER CLG THROUGHOUT CABIN. CONTACT TPWD CONSTRUCTION MGR TO INSPECT UNCOVERED STRUCTURE. IF APPROVED BY TPWD, PT EXST STRUCTURE AND LEAVE EXPOSED. IF REJECTED BY TPWD, INSTALL NEW PTD GYP CLG FLUSH W EXST RAFTERS PER ADD ALTERNATE #4. REF. BID FORM FOR UNIT PRICING.
101	BATH	EXISTING	CT-1	PT-1	PT-1, CT-2	PT-1, CT-2	PT-1	EXISTING, PT-2	REPAIR AND PREP EXISTING WOOD CEILING AS REQUIRED
102	BEDROOM	WD-1	RE. 1/A2.1	WD-2	WD-2	WD-2	WD-2	EXISTING, PT-2	REPAIR AND PREP EXISTING WOOD CEILING AS REQUIRED
103	LOFT	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	PT-2	REMOVE EXST PLASTER CLG THROUGHOUT CABIN. CONTACT TPWD CONSTRUCTION MGR TO INSPECT UNCOVERED STRUCTURE. IF APPROVED BY TPWD, PT EXST STRUCTURE AND LEAVE EXPOSED. IF REJECTED BY TPWD, INSTALL NEW PTD GYP CLG FLUSH W EXST RAFTERS PER ADD ALTERNATE #4. REF. BID FORM FOR UNIT PRICING.

				FINISH MATERIAL	SCHEDULE	
KEY	MATERIAL	MANUFACTURER	FINISH / COLOR	SIZE	LOCATION	REMARKS
PT-1	PAINT	SHERWIN WILLIAMS	EGGSHELL ENAMAL / TBD	-	WALLS	WATER BASED; 1/2" GYPSUM BOARD OR CEMENT BACKERBOARD (AT WET AREAS) SUBSTRATE U.N.O.
PT-2	PAINT	SHERWIN WILLIAMS	FLAT / TBD	-	CEILINGS	WATER BASED
PT-3	PAINT	SHERWIN WILLIAMS	SEMI-GLOSS ENAMEL / MATCH EXISTING	-	DOORS	WATER BASED
GT-1	GROUT	LATICRETE	SPECTRALOCK PRO 56 DESERT KHAKI	FIELD VERIFY	BATHROOM	-
SS-1	SOLID SURFACE	DUPONT CORIAN	ALL SPICE	RE. ELEVATIONS	KITCHEN	-
CT-1	CERAMIC TILE	AMERICAN OLEAN	FUSION COTTO	6"x13" BASE	BATHROOM	CUT TILE AS REQUIRED. FILE ALL SHARP EDGES. PAINT EXPOSED TILE EDGE TO MATCH COLOR OF TILE, 1/2" CEMENT BACKERBOARD AT TILE LOCATIONS
CT-2	CERAMIC TILE	AMERICAN OLEAN	FUSION COTTO	13"x13" STACKED BOND	BATHROOM	1/2" CEMENT BACKERBOARD AT TILE LOCATIONS
WD-1	WOOD	SHERWIN WILLIAMS	BONA CRAFT OIL 2K, SATIN / NEUTRAL	1" X 6" TONGUE IN GROOVE	LIVING AREA & BEDROOM FLOOR	YELLOW PINE CLEAR OR BETTER; INSTALL CONTINUOUS TYVEK COMMERCIAL WRAP WEATHER BARRIER BETWEEN SUBFLOOR AND FINISH FLOOR; FINISH AS SPECIFIED
WD-2	WOOD	•	SEMI-GLOSS / STAIN TO MATCH EXISTING PANELING AT NORTH GABLE WALL, U.N.O.	1" X	LIVING AREA & BEDROOM WALLS	MATCH WIDTH, WOOD SPECIES, AND GRADE OF THE EXISTING WOOD PANELING IN THE LIVING AREA AT THE NORTH GABLE WALL

REFER TO INTERIOR ELEVATIONS FOR FINISH TAGS AND ROOM FINISH SCHEDULE.

2. PROVIDE FINISH SAMPLES TO OWNER FOR APPROVAL.



	APPLIANCE SO	CHEDULE	
APPLIANCE	MANUFACTURER	MODEL NO.	REMARKS
ELECTRIC HEATER	DIMPLEX	XHD26G	PROVIDE ADDITIONAL SUPPORT AS REQUIRED. FIELD VERIFY WIDTH OF MODEL WITH EXISTING CONDITIONS. EXISTING SURROUND TO REMAIN.
ELECTRIC RANGE	GENERAL ELECTRIC	JS645SLSS	ADA COMPLIANT
RANGE HOOD	SAMSUNG	NK30K700WS	ADA COMPLIANT
REFRIGERATOR	GENERAL ELECTRIC ENERGY STAR	GTE18ISHSS	18.2 CU.FT, TOP-FREEZER

PROVIDE PRODUCT INFORMATION TO OWNER FOR APPROVAL.

ACCESSORIES SCHEDULE

-LIVING AREA-

100

FLOOR DIRECTION

CONTINUE WOOD

- FLOORING UNDER

- STAIR

_BEDROOM...

101

LEVEL ONE FINISH FLOOR PLAN
3/8" = 1'-0"

- NEW R-15 UNFACED

RE-INSTALL SALVAGED

EXTERIOR BOARD AND

DAMAGED SIDING AND

BATTENS, MATCH

- CONTINUOUS TYVEK

COMMERCIAL WRAP

WEATHER BARRIER

-EXISTING WOOD

FRAMING AND

SUBFLOOR

BATTEN SIDING. REPLACE

MINERAL WOOL

INSULATION

EXISTING.

ACCESSORY	MANUFACTURER	MODEL NO.	REMARKS						
SHOWER ROD	MOEN	CSR2145CH	CHROME						
MIRROR	-	-	FRAMELESS, ¹ / ₄ " THICK, PROVIDE BLOCKING FOR SUPPORT. PAINT EXPOSED BLOCKING TO MATCH ADJACENT WALL FINISH						
TOILET PAPER HOLDER	MOEN	YB0408CH	CHROME						
36" GRAB BAR	BOBRICK	B-5806x36	SATIN FINISH, PROVIDE BLOCKING FOR SUPPORT SUPPORT FOR GRAB BARS TO WITHSTAND MIN 250 MIN LBS OF FORCE.						
42" GRAB BAR	BOBRICK	B-5806x42	SATIN FINISH, PROVIDE BLOCKING FOR SUPPORT SUPPORT FOR GRAB BARS TO WITHSTAND MIN 250 MIN LBS OF FORCE.						

FINISH FLOOR PLAN NOTES:

1. CLEAN ALL EXISTING FINISHES TO REMAIN.

2. PROTECT EXISTING AND NEW WORK AS REQUIRED FROM CONSTRUCTION ACTIVITIES. REPAIR OR REPLACE MATERIALS AND FINISHES DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES TO OWNER'S SATISFACTION.

FINISH FLOOR PLAN LEGEND:

EXISTING BRICK HEARTH TO REMAIN

> EXISTING TILE FLOORING TO REMAIN

NEW WOOD FLOORING, RE. 2/A2.1

NOT IN SCOPE

- CARRY FLOORING UNDER TOE KICK, APPLIANCES & BASE CABINET AT SINK

A2.1

PORCH

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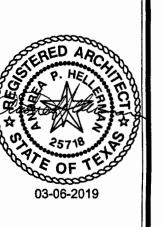
SHEET TITLE CABIN: FINISH FLOOR PLAN

SHEET NUMBER

12 of 30

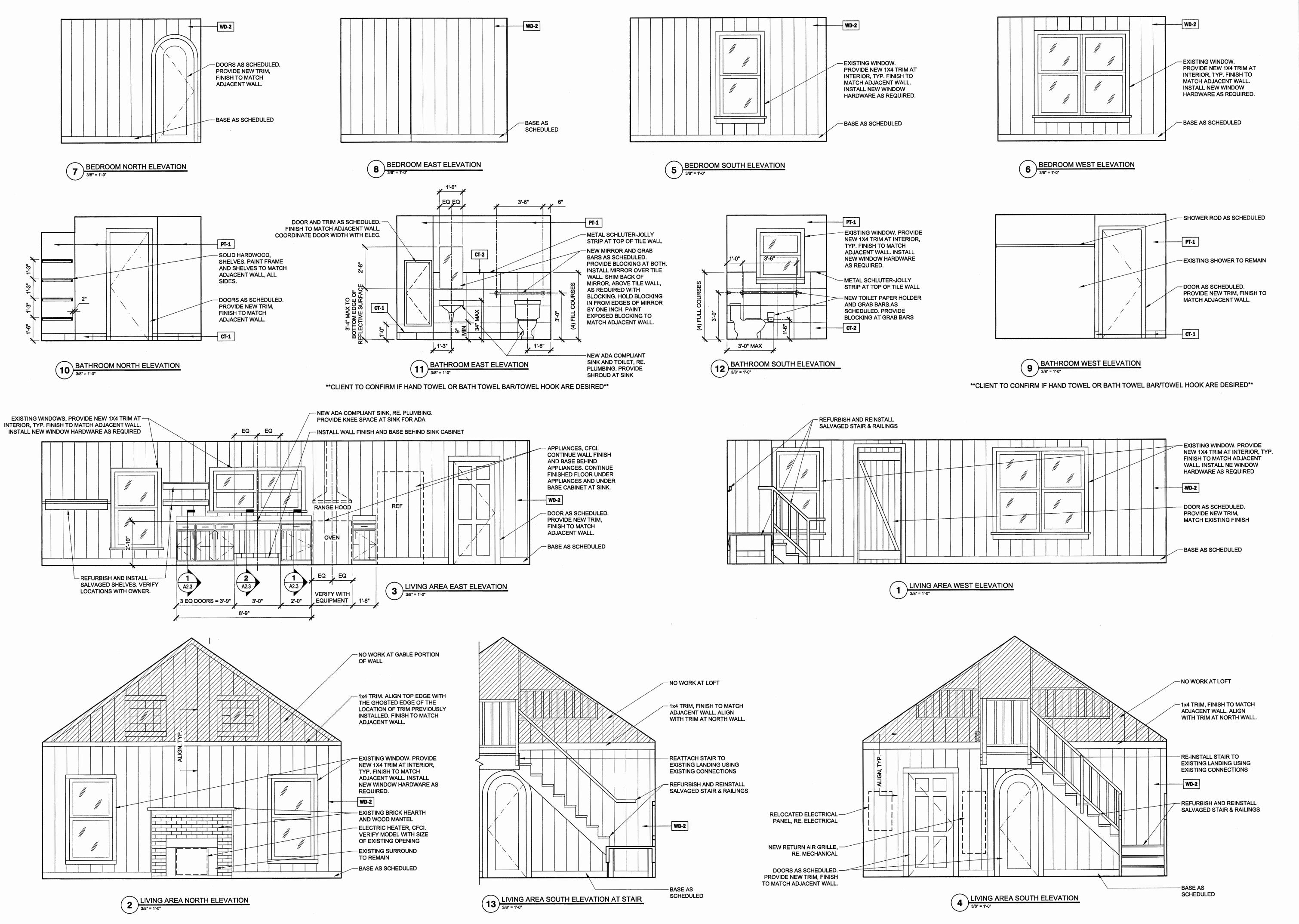
PARKS & WILDLIFE

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AR REPAIRS 4 H CRE

& DETAILS



TEXAS PARKS & **WILDLIFE**

WJE ENGINEERS
ARCHITECTS
MATERIALS SCIENTS Wiss, Janney, Eirther Associates, Inc. 9511 N. Lake Creek Parkway Austin, Texas 78717 512.257.4800 tel | 512.219.9883 fax



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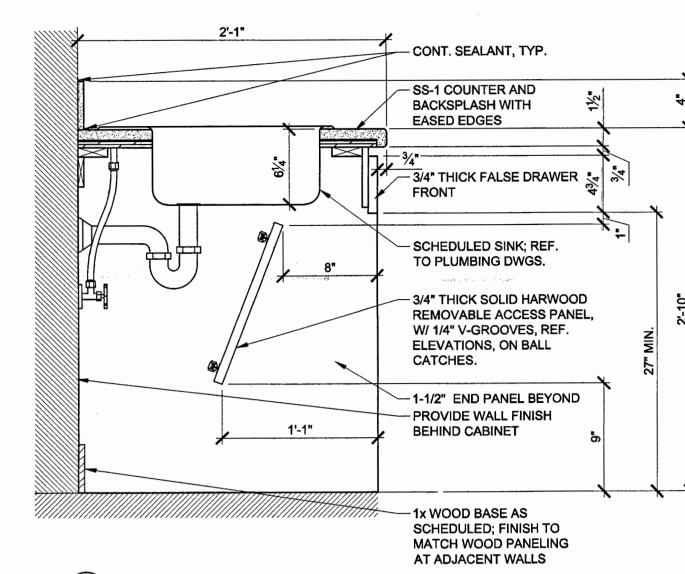
SHEET TITLE **CABIN: INTERIOR** COMENTS

ELEVATIONS

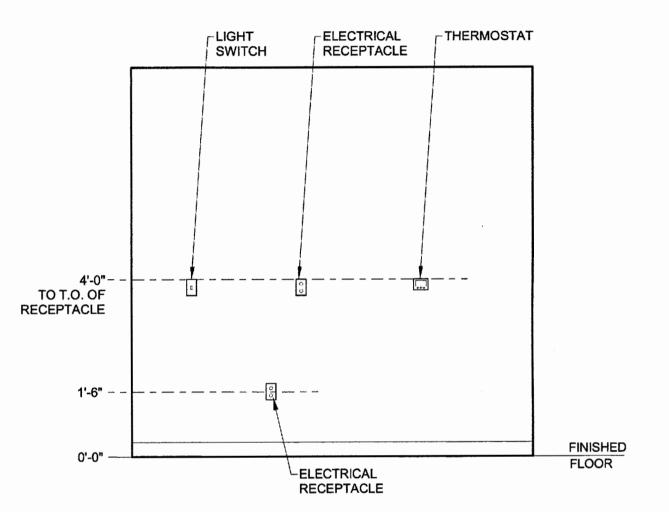
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BASE CABINET WITH DRAWER SECTION
1 1/2" = 1'-0"

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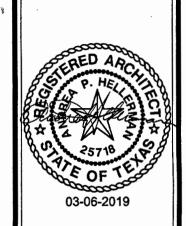
BASE CABINET WITH SINK SECTION
1 1/2" = 1'-0"



- RE. 5/A2.1 FOR MOUNTING HEIGHTS AT ADD ALTERNATE 1.
 MOUNT AS MANY ELECTRICAL RECEPTACLES AT 4'-0" AS ELECTRICAL CODE WILL ALLOW. WIRE FROM ABOVE. RE. ELECTRICAL.
- 3 STANDARD ELECTRICAL MOUNTING HEIGHTS, TYP.

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/ILLAGE CREEK STATE PARK FACILITY DAMAGE REPAIRS
PROJECT NUMBER: 128695

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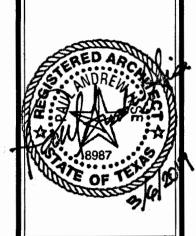
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CABIN:
MILLWORK DETAILS

SHEET NUMBER

2.3



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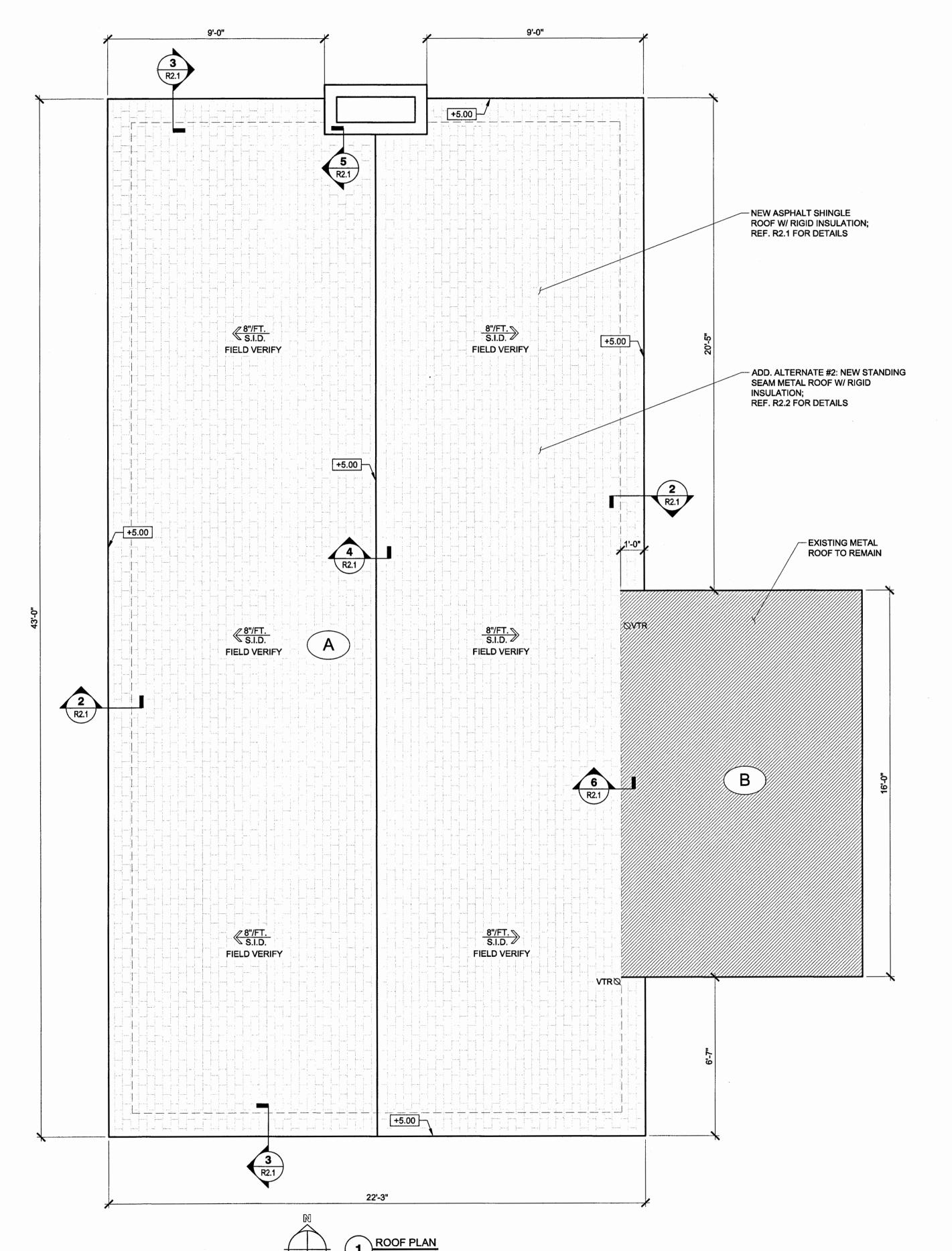
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SHEET NUMBER

ROOF PLAN

15 of 30





ROOF IDENTIFICATION ---- - WALL BELOW - DIRECTION OF SLOPE (SLOPE IN DECK) INSULATION THICKNESS (EXCLUDING COVER BOARD)

REF. R2.3 FOR ADD. ALTERNATE #2 STANDING SEAM METAL ROOFING DETAILS

ASSUME 10% ROOF DECKING REQUIRES REPLACEMENT AND INCLUDE IN BASE BID

UPLIFT DATA

BUILDING AND ROOF AREA INPUT DATA

APPROXIMATE ROOF AREA: 934 SQ. FT. MEAN ROOF HEIGHT: 14' ROOF SLOPE: 8":12 OR LESS PARAPETS: NO BUILDING CONFIGURATION: ENCLOSED **EXPOSURE:** B OCCUPANCY CATEGORY: 2 DECK TYPE: WOOD ROOF COVERING: ASPHALT SHINGLES (ALT. 2 SSMR)

ROOF SYSTEM WIND RESISTANT ZONES

	ROOF STSTEM WIND RESISTANT ZONES													
ZONE	TYPE	WIDTH	WIND SPEED	UPLIFT PRESSURE	FM EQUIV.									
I	FIELD	N/A	130 MPH	-34.0 PSF	FM I-90									

NOTE: ROOF SYSTEM SHALL BE A TESTED ASSEMBLY THAT MEETS OR EXCEEDS THE REQUIRED WIND UPLIFT PRESSURES AS INDICATED IN THE TABLE ABOVE. A FACTOR OF SAFETY OF 2.0 SHALL BE APPLIED TO THE TESTED ASSEMBLY LOADS, PER *Ansi/Spri WD-1* AND *FM GLOBAL*.

7 FLASHING AT VTR / VENT PIPE PENETRATIONS
N.T.S.



WJE ARCHITECTS
MATERIALS SCIENTISTS Heedquartere & Leboratorise: Northbrook, Binols Alanta | Austin | Boaton | Chicago | Cleveland | Delave | Del Honoluku | Houston | Los Angeles | Minnesquise | New Haven | New Princeson | Ben Francisco | Seatte | South Florida | Washington, D



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SHEET TITLE CABIN: **TYPICAL ROOFING DETAILS**

CUMENTS

SHEET NUMBER

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ENGINEERS
ARCHITECTS
MATERIALS SCIENTIS



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SHEET TITLE CABIN: ADD. ALTERNATE #2 **TYPICAL ROOFING DETAILS**

SHEET NUMBER

INSTALLATION OF THE BOOT FLASHINGS. PENETRATIONS SHALL NOT BE LOCATED AT PANEL RIBS. BOOT FLASHING MUST BE APPROX. 3" MIN. FROM PANEL RIBS.

1. RELOCATE PIPE PENETRATIONS AS REQUIRED TO PENETRATE THE

CENTER OF THE METAL ROOF PANEL AND ALLOW FOR PROPER

NOT TO DECK SO AS NOT TO FIX PANEL AT PENETRATION

OPENING IN ROOF DECK-(NOT IN ROOF PANEL)

STRUCTURAL -STANDING SEAM

METAL ROOF PANEL

- STAINLESS STEEL DRAWBAND

PRE-FINISHED UMBRELLA

- SET SECUREMENT RING

IN CONTINUOUS BEAD

- 24 GA. GALV.

OF SEALANT

TE. ALL STRIBULES STREET	WIN AIRE NOT NECESSARIET OSED ON DIRAWINGS)	S	SYMBOL LEGEND	
	IICHTINC			
	LIGHTING ALL LIGHT FIXTURES IN THE ROOM ARE THE TYPE INDICATED UNLESS OTHERWISE NOTED. FLUORESCENT LIGHTING FIXTURE. LETTER INDICATES TYPE. INCANDESCENT, COMPACT FLUORESCENT OR HIGH INTENSITY DISCHARGE LIGHTING FIXTURE. WALL MOUNTED INCANDESCENT, COMPACT FLUORESCENT OR HIGH	C TC PE •	CONTACTOR, RATING AND POLES AS INDICATED. TIME CLOCK, RATING AS INDICATED. PHOTO—ELECTRIC CONTROL. EMERGENCY POWER OFF "EPO" SWITCH. DRY TYPE TRANSFORMER.	
Ю I⊟ A 1⊕ì ⊗	INTENSITY DISCHARGE LIGHTING FIXTURE. EXIT LIGHTING FIXTURE. ARROW, WHEN USED, INDICATES DIRECTION. (BRACKET WHEN USED INDICATES WALL MOUNTED). SHADED AREA(S) INDICATE FACE(S).		ELECTRICAL METER	
S 3 4 P T WP D	EMERGENCY BATTERY POWERED LIGHTING UNIT. FLUORESCENT EMERGENCY. "NL" DESIGNATION DEPICTS NIGHT LIGHTING FIXTURE. SINGLE POLE SWITCH (3 INDICATES A THREE—WAY SWITCH) (4 INDICATES A FOUR—WAY SWITCH) (P INDICATES A SWITCH WITH PILOT LIGHT) (T INDICATES AN INTERVAL TIMER SWITCH) (WP INDICATES A WEATHERPROOF SWITCH) (D INDICATES A DIMMER SWITCH. 600 WATT MINIMUM)		GROUNDING GROUND ROD. GROUND CONDUCTOR. GROUND CONNECTION. GROUND CONNECTION (EXOTHERMIC WELD)	
OS P	CORRIDOR OCCUPANCY SENSOR. CEILING MOUNTED ROOM OCCUPANCY SENSOR. WALL MOUNT AT SWITCH HEIGHT. ROOM OCCUPANCY SENSOR. CEILING MOUNT. OCCUPANCY SENSOR POWER PACK.	FACP ANN F	FIRE ALARM SYSTEM FIRE ALARM CONTROL PANEL. FIRE ALARM SYSTEM REMOTE ANNUNCIATOR. FIRE ALARM MANUAL PULL STATION.	
⊖ _{CLK}	WIRING DEVICES SIMPLEX RECEPTACLE (CLK INDICATES CLOCK HANGER RECEPTACLE)	© _F	FIRE ALARM SYSTEM SMOKE DETECTOR. MOUNT ON CEILING U.O.N. SUBSCRIPT "F", WHEN USED, INDICATES DETECTOR UNDER RAISED FLOOR. DUCT MOUNTED SMOKE DETECTOR. MAGNETIC DOOR HOLDER.	
I.G. GFCI WP	DUPLEX RECEPTACLE. (I.G. INDICATES ISOLATED GROUND) (G.F.C.I. INDICATES INTERNAL GROUND FAULT PROTECTION) (W.P. INDICATES WEATHERPROOF) DUPLEX RECEPTACLE. MOUNT 48" A.F.F. OR 6" ABOVE COUNTER TOP WHERE COUNTER IS INDICATED. ALL DUPLEX RECEPTACLES	E • T WF SS	FIRE ALARM HORN. REMOTE FIRE ALARM SYSTEM TROUBLE BELL (OR BUZZER). SPRINKLER SYSTEM FLOW SWITCH. SPRINKLER SYSTEM SUPERVISERY SWITCH.	
⊕ © ● ▼	ABOVE COUNTERTOPS TO BE MOUNTED HORIZONTALLY. QUADRAPLEX RECEPTACLE. FLUSH FLOOR DUPLEX RECEPTACLE. FLUSH WITH FLOOR COMBINATION DUPLEX RECEPTACLE AND TELEPHONE RECEPTACLE.		SPRINKLER SYSTEM PRESSURE SWITCH. KITCHEN HOOD FIRE EXTINGUISHING SYSTEM SWITCH FIRE ALARM SYSTEM HEAT DETECTOR FIRE ALARM SYSTEM AUDIO/VISUAL DEVICES.	
	FLUSH WITH FLOOR COMBINATION DUPLEX RECEPTACLE TELEPHONE AND DATA RECEPTACLES. SPECIAL PURPOSE RECEPTACLE. SIZE AND NEMA CONFIGURATION AS INDICATED ON DRAWING.	V ⊢© _{DF}	FIRE ALARM SYSTEM VISUAL DEVICE. CLOCK & BELL SYSTEM DOUBLE FACE CLOCK, WALL MOUNTED @ 78" A.F.F.	
	CONDUIT AND WIRE CONCEALED BRANCH CIRCUIT 1/2"C — 2#12 & 1#12 GROUND U.O.N CONDUIT OTHER THAN 1/2" AND CONDUCTORS OTHER THAN 2#12 & 1#12 GROUND SHALL BE PER THE MORE STRINGENT REQUIREMENTS OF THE DRAWINGS OR SPECIFICATIONS. SWITCH LEG. PROVIDE ADDITIONAL BRANCH CIRCUITRY AS	F F⊕ F© _M F© _{SF}	4" BELL, WALL MOUNTED @ 78" A.F.F. CLOCK MASTER CONTROLLER SINGLE FACE CLOCK, WALL MOUNTED @ 78" A.F.F.	
	REQUIRED TO ACCOMPLISH THE SWITCHING INIDICATED INDICATES AN EXPOSED CONDUIT RUN.	© □	SECURITY SYSTEM MAGNETIC DOOR CONTACTS ELECTRIC DOOR STRIKE SWITCH	
——————————————————————————————————————	HOMERUN TO PANEL. NUMBER OF ARROWS INDICATES NUMBER OF POLE CONNECTIONS. EXCLUDING NEUTRALS AND GROUNDS. CAPPED CONDUIT CONDUIT TURNED UP. CONDUIT TURNED DOWN. CONDUIT TRANSITION FROM CONCEALED TO EXPOSED EMPTY CONDUIT RUN. SIZE AS INDICATED. PROVIDE WITH PULLWIRE. CABLE TRAY.	\(\rangle \Phi \rangle \Phi \r	REQUEST TO EXIT MOTION DETECTOR KEYPAD ACCESS/ CARD READER DURESS ALARM SWITCH INTRUSION DETECTOR MAGNETIC INTRUSION SWITCH CLOSED CIRCUIT T.V. CAMERA CLOSED CIRCUIT T.V. MONITOR	
	SURFACE METAL RACEWAY.		D AND PUBLIC ADDRESS SYSTEM	
(J) (E)	DISTRIBUTION & CONTROLS JUNCTION BOX WITH COVER PLATE EQUIPMENT CONNECTION. (PROVIDE ALL BRANCH CIRCUITRY REQUIRED TO CONNECT TO EQUIPMENT)	S +S S M	SPEAKER CEILING SPEAKER WALL MOUNTED, 7' A.F.F. LOCAL INTERCOM SPEAKER LOCAL INTERCOM MASTER	
	MOTOR CONNECTION, HP INDICATED. PANELBOARD (480/277 VOLT). PANELBOARD (208/120 VOLT).	M S _V AMP S	MICROPHONE VOLUME CONTROL MOUNT 48" A.F.F. SOUND SYSTEM AMPLIFIER AND PROGRAM EQUIPMENT VOLUME CONTROL MOUNT 48" A.F.F.	
☐₽ ☐₽ 3P/60/40/3R	ENCLOSED CIRCUIT BREAKER MOUNT 54" A.F.F. FUSED DISCONNECT SWITCH. IN NEMA 1 ENCLOSURE U.O.N. 3P = NO. OF POLES, 60 = SWITCH RATING, 40 = FUSE RATING 3R = NEMA 3R.		TELEPHONE AND DATA 4'X8'X3/4" GRADE A/B FIRE TREATED PLYWOOD TELEPHONE TERMINAL BACKBOARD.	
□+ 3P/60/3R ☑ ☑ S _M	NON-FUSED DISCONNECT SWITCH. IN NEMA 1 ENCLOSURE U.O.N. 3P = NO. OF POLES, 60 = SWITCH RATING, 3R = NEMA 3R. MAGNETIC MOTOR STARTER. MINIMUM NEMA SIZE 1. COMBINATION MAGNETIC STARTER AND DISCONNECT. MANUAL MOTOR STARTER WITH THERMAL OVERLOADS.	▼ ◄ W	FLUSH FLOOR TELEPHONE OUTLET. TELEPHONE OUTLET. MOUNT 15" A.F.F. UNLESS U.O.N. BY DWG'S OR SPECIFICATIONS PROVIDE A 4" SQ. BOX W/ SINGLE DEVICE PLASTER RING, 3/4" E.C. WITH PULLSTRING STUBBED INTO NEAREST ACCESSIBLE. CEILING. SUBSCRIPT "W" WHEN USED INDICATES WALL MOUNTED DEVICE. MOUNT 48" A.F.F.	

PAY TELEPHONE OUTLET MOUNT 15" A.F.F. UNLESS U.O.N. BY DWG'S OR SPECIFICATIONS PROVIDE A 4" SQ. BOX W/ SINGLE DEVICE PLASTER RING, 3/4" E.C. WITH PULLSTRING STUBBED INTO NEAREST ACCESSIBLE. CEILING. DATA OUTLET MOUNT 15" A.F.F. UNLESS DIRECTED OTHERWISE BY DWG'S OR SPECIFICATIONS PROVIDE A 4" SQ. BOX W/ SINGLE DEVICE PLASTER RING, 3/4" E.C. WITH PULLSTRING STUBBED INTO NEAREST ACCESSIBLE. CEILING. COMBINATION VOICE AND DATA OUTLET MOUNT 15" A.F.F. UNLESS OTHERWISE DIRECTED BY DWG'S OR SPECIFICATIONS. PROVIDE A 4" SQ. BOX W/ SINGLE DEVICE PLASTER RING, 1" E.C. WITH PULLSTRING STUBBED INTO NEAREST ACCESSIBLE. CEILING. THE SUBSCRIPT 2V/2D INDICATES THAT THE QUANTITY OF VOICE JACKS IS TWO AND THE QUANTITY OF DATA JACKS IN TWO MINIMUM. GENERAL NOTE REFERENCE NUMBER. ROOM NUMBER INDICATION DEMOLITION HATCHING INDICATES REMOVAL OF EXISTING EQUIPMENT OR ITEM. REMOVE EXISTING TO THIS POINT. POINT OF CONNECTION. NEW TO EXISTING.



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DATE: 03/06/2019 DESIGNED BY: HMG DRAWN BY: HMG REVIEWED BY: EC

REVISED:

REVISED:

SHEET TITLE **ELECTRICAL** SYMBOLS LEGEND

- 2. ALL MATERIALS SHALL BE NEW AND CONFORM TO THE APPLICABLE STANDARDS OF RECOGNIZED TESTING AND/OR APPROVAL AGENCIES AND SHALL BE U.L. LISTED.
- 3. REFER TO THE CONDITIONS OF THE CONTRACT (GENERAL AND SUPPLEMENTARY) AND DIVISION 1 SECTION: SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES FOR SUBMITTAL DEFINITIONS, REQUIREMENTS, AND PROCEDURES. SUBMIT MANUFACTURERS PRODUCT DATA ON RACEWAY, INSULATED CONDUCTORS, BOXES AND FITTINGS, WIRING DEVICES, OCCUPANCY SENSORS, DISCONNECT SWITCHES, OVERCURRENT PROTECTIVE DEVICES, PANELBOARDS, MOTOR STARTERS, LIGHT FIXTURES AND FIRE ALARM SYSTEM.

THE ACCEPTABLE MANUFACTURERS LISTED IN THIS SPECIFICATION ARE USED TO ESTABLISH STANDARDS OF DESIGN, PERFORMANCE, QUALITY AND SERVICEABILITY AND NOT TO LIMIT COMPETITION, NOT DISCRIMINATE AGAINST AN "APPROVED EQUAL" PRODUCT OF ANOTHER MANUFACTURER. EQUIPMENT OF EQUAL DESIGN TO THAT SPECIFIED WILL BE ACCEPTABLE UPON APPROVAL BY THE ENGINEER. WRITTEN REQUEST FOR SUBSTITUTION WILL BE CONSIDERED IF RECEIVED ONE WEEK PRIOR TO BID DATE. AFTER BID DATE, REQUESTS FOR SUBSTITUTION WILL BE CONSIDERED ONLY IN CASES OF PRODUCT UNAVAILABILITY OR OTHER CIRCUMSTANCES BEYOND THE CONTROL OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE TO:

INVESTIGATE THE PROPOSED SUBSTITUTE PRODUCT TO DETERMINE THAT IS HAS ALL OF THE SAME ACCESSORIES AND IS EQUAL OR SUPERIOR IN ALL RESPECTS TO THE SPECIFIED PRODUCT.

PROVIDE THE SAME GUARANTEE FOR THE SUBSTITUTE PRODUCT AS THE SPECIFIED PRODUCT.

COORDINATE THE INSTALLATION OF THE EQUIPMENT WHICH HE PROPOSES TO SUBSTITUTE WITH ALL OTHER TRADES AND INCLUDES THE COST OF ANY CHANGES REQUIRED TO COMPLETE THE INSTALLATION. PREPARE SHOP DRAWINGS WHEN REQUIRED BY THE ENGINEER.

PROVIDE AN COMPLETE DESIGN AND PERFORMANCE DATA.

- 4. PRIOR TO THE SUBMITTING OF BIDS, THE CONTRACTOR SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS PARAGRAPH WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING ALL NECESSARY WORK SHOWN ON THE DRAWINGS.
- 5. THE CONTRACT DOCUMENTS REFLECT THE LOCATION, VOLTAGE, CAPACITY, SIZE AND MANNER OF ROUTING OF ALL UTILITIES KNOWN TO BE REQUIRED ON THIS PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE IN ORDER TO CONFIRM THE EXACT REQUIREMENTS FOR ALL ELECTRICAL UTILITY WORK REQUIRED BY THESE DOCUMENTS.

CONTRACTOR SHALL ARRANGE FOR AND PROVIDE ELECTRICAL SERVICE ON THIS SITE WHICH MAY TO USED FOR TEMPORARY CONSTRUCTION POWER. THE CONTRACTOR SHALL PAY FOR ALL TEMPORARY POWER.

- 6. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN CHARACTER AND CANNOT SHOW EVERY CONNECTION IN DETAIL OR EVERY LINE OF CONDUIT IN IT'S EXACT LOCATION. THESE DETAILS ARE SUBJECT TO THE REQUIREMENTS OF LOCAL ORDINANCES AND ALSO STRUCTURAL AND ARCHITECTURAL CONDITIONS. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE STRUCTURAL AND FINISH CONDITIONS AND SHALL COORDINATE WITHALL OTHER TRADES IN ORDER TO AVOID INTERFERENCE BETWEEN THE VARIOUS PHASES OF WORK.
- 7. AS-BUILT DRAWINGS WILL BE REQUIRED. THROUGHOUT THE PROGRESS OF THE WORK OF THIS CONTRACT, MAINTAIN AN ACCURATE RECORD OF ALL CHANGES IN THE CONTRACT DOCUMENTS. UPON COMPLETION OF THE WORK TRANSFER THESE CHANGES TO THE CONTRACT DOCUMENTS FILES DELIVER THE FILES ALONG WITH A HARD COPY OF THE DOCUMENTS TO THE ARCHITECT. AND REFER TO DIVISION 1 FOR REQUIREMENTS.
- 8. PROVIDE OPERATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT. THE MANUALS SHALL INCLUDE PRODUCT DATA, SHOP DRAWINGS, MANUFACTURER'S INSTALLATION AND OPERATION INSTRUCTIONS AND PARTS LISTS FROM THE MANUFACTURER. SUBMIT THE MANUALS TO THE ARCHITECT AS REQUIRED IN DIVISION 1.
- 9. ALL EQUIPMENT SHALL BE LABELED USING ENGRAVED PHENOLIC PLASTIC NAMEPLATES WITH 3/16" HIGH LETTERING. SWITCHGEAR SHALL BE IDENTIFIED BY NAME AND VOLTAGE CHARACTERISTICS. IDENTIFY ALL LOADS SERVED.

ALL PANELBOARDS SHALL BE PROVIDED WITH A TYPED CIRCUIT DIRECTORY. THE LOAD DESCRIPTION ALONG WITH ROOM NUMBERS SHALL BE INCLUDED.

IDENTIFY ALL JUNCTION AND PULL BOXES. THE IDENTIFICATION SHALL INDICATE THE CIRCUITS CONTAINED WITHIN THE ENCLOSURE.

10. GUARANTEE ALL MATERIALS AND LABOR FOR A PERIOD OF ONE YEAR PAST DATE OF BENEFICIAL OCCUPANCY.

SECTION 26 05 19 - INSULATED CONDUCTORS

- 1. ACCEPTABLE MANUFACTURERS SHALL BE AS FOLLOWS:
 COPPER CONDUCTOR MANUFACTURERS SHALL BE AMERICAN
 INSULATED WIRE, ENCORE WIRE LTD., SOUTHWIRE, SENATOR WIRE &
 CABLE COMPANY AND UNITED COPPER INDUSTRIES.
- 2. ALL WIRES SHALL BE COPPER WITH THHN—THWN, 600V INSULATION. MINIMUM SIZE OF WIRE SHALL BE 12 AWG. CONDUCTOR SIZE 10 AWG AND SMALLER SHALL BE SOLID. CONDUCTOR SIZE 8 AWG OR LARGER SHALL BE STRANDED.
- WIRING SHALL BE COLOR CODED AS REQUIRED BY LOCAL CODE. CONDUCTORS NUMBER 10 AND SMALLER SHALL HAVE COLORED INSULATION. CONDUCTORS NUMBER 8 AND LARGER SHALL BE COLOR CODE BY MEANS OF FIELD APPLIED TAPE.
- 4. INSTALL SPLICES AND TAPS WHICH HAVE EQUIVALENT—OR—BETTER MECHANICAL STRENGTH AND INSULATION RATINGS THAN CONDUCTORS BEING SPLICED. KEEP CONDUCTOR SPLICES TO MINIMUM. ALL SPLICES SHALL BE ACCESSIBLE. DO NOT SPLICE CONDUCTORS IN PANELBOARDS. USE SPLICE AND TAP CONNECTORS WHICH ARE COMPATIBLE WITH CONDUCTOR MATERIAL.
- 5. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTORS AND TERMINALS TO COMPLY WITH TIGHTENING TORQUES SPECIFIED IN UL STD 486A AND B.
- 6. NO MORE THAN THREE CURRENT CARRYING CONDUCTORS SHALL BE INSTALLED IN A CONDUIT UNLESS SO NOTED ON THE PLANS.

SECTION 26 05 26 - GROUNDING

- 1. EXTENT OF ELECTRICAL GROUNDING AND BONDING WORK IS AS SPECIFIED HEREIN. PROVIDE A COMPLETELY GROUNDED SYSTEM SIZED IN ACCORDANCE WITH ARTICLE 250 OF THE N.E.C. EACH PIECE OF ELECTRICAL APPARATUS SHALL BE SOLIDLY GROUNDED WITH SEPARATE INSULATED GREEN GROUND WIRE.
- 2. PROVIDE ELECTRICAL GROUNDING CONDUCTORS FOR GROUNDING SYSTEM CONNECTIONS THAT MATCH POWER SUPPLY WIRING MATERIALS AND ARE SIZED ACCORDING TO NEC WITH A GREEN JACKET.
- 3. GROUNDING ELECTRODES SHALL BE SOLID COPPER, 3/4" DIA. BY 10 FEET.
- 4. THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF THE FOLLOWING: THE GROUNDED SERVICE CONDUCTOR AT THE SERVICE ENTRANCE SWITCHGEAR. THE BUILDING STRUCTURAL STEEL SHALL BE GROUNDED BY MEANS OF A BONDING JUMPER OR CONDUCTOR CONNECTED TO THE GROUNDING ELECTRODE SYSTEM. METAL UNDERGROUND WATER PIPE (IF AVAILABLE) SHALL BE BONDED TO THE GROUND ELECTRODE SYSTEM. A CONCRETE ENCASED GROUNDING ELECTRODE SHALL BE PROVIDED. THE ELECTRODE SHALL BE INSTALLED PER ARTICLE 250.52 OF THE NEC AND AUSTIN'S LOCAL AMENDMENTS TO THE CODE. THE ELECTRODE SHALL BE A MINIMUM OF 20 FEET OF BARE COPPER GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH 250.66 BUT IN NO CASE LESS THAN #4 AWG.

IN INSTANCES WHERE 1/2" STEEL REINFORCING BARS ARE PRESENT IN THE FOUNDATION, THE GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED TO THE 1/2" REINFORCING BAR IN THE FOUNDATION. THE REINFORCING BAR SHALL BE A MINIMUM OF 20 FEET IN LENGTH.

PROVIDE A SCHEDULE 40 PVC SLEEVE AT THE POINT WHERE THE CONDUCTOR EXITS THE FOUNDATION FOR PHYSICAL PROTECTION.

THE GROUNDING IN THE FOUNDATION SHALL BE INSPECTED BY A TPWD ELECTRICAL INSPECTOR PRIOR TO POURING THE FOUNDATION.

PROVIDE A PLATE ELECTRODE AS PART OF THE GROUNDING SYSTEM IN ACCORDANCE WITH THE CITY OF AUSTIN AMENDMENTS TO THE NEC. THE PLATE ELECTRODE SHALL BE INSTALLED NOT LESS THAN 30" BELOW FINISHED GRADE. THE PLATE ELECTRODE SHALL COMPLY WITH NEC.

- 5. PROVIDE BONDING JUMPERS AROUND INSULATED PIPE JOINTS AS REQUIRED.
- 6. TERMINATE FEEDER AND BRANCH CIRCUIT INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH GROUNDING LUG OR BUS.
- 7. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND AND PROTECTIVE DEVICES IN SHORTEST AND STRAIGHTEST PATHS AS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
- 8. APPLY CORROSION—RESISTANT FINISH TO FIELD—CONNECTIONS, BURIED METALLIC GROUNDING AND BONDING PRODUCTS, AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED, WHICH ARE SUBJECTED TO CORROSIVE ACTION.
- WELD GROUNDING CONDUCTORS TO UNDERGROUND GROUNDING ELECTRODES.
- INSTALL CLAMP—ON CONNECTORS ON CLEAN METAL CONTACT SURFACES, TO ENSURE ELECTRICAL CONDUCTIVITY AND CIRCUIT INTEGRITY.
- 11. ALL CONNECTIONS (EXCLUDING BURIED OR ENCASED) SHALL BE ACCESSIBLE FOR INSPECTION AND TESTING.
- 12. UPON COMPLETION OF THE ELECTRICAL GROUNDING AND BONDING SYSTEM, MEASURE THE RESISTANCE TO EARTH USING THE "FALL OF POTENTIAL METHOD" WITH A GROUND RESISTANCE TESTER. THE RESISTANCE TO GROUND SHALL BE 10 OHMS OR LESS. PROVIDE ADDITIONAL GROUNDING ELECTRODES AS REQUIRED TO MEET 10 OHM MAXIMUM RESISTANCE REQUIREMENT.

SECTION 26 05 33 - RACEWAYS

1. ACCEPTABLE MANUFACTURERS SHALL BE AS FOLLOWS:

RGS, IMC AND EMT METALLIC CONDUIT MANUFACTURERS SHALL BE ALLIED TUBE & CONDUIT CORP., MAVERICK TUBE CORP., WESTERN TUBE AND CONDUIT CORP. AND WHEATLAND.

FMC AND LFMC CONDUIT MANUFACTURERS SHALL BE ALFLEX, ELECTRIFLEX AND ANAMET CORP.

PVC CONDUIT MANUFACTURERS SHALL BE CARLON, CONDUX AND CANTEX INDUSTRIES.

- FEEDERS AND EXPOSED CONDUIT SHALL BE RIGID GALVANIZED STEEL. IMC CONDUIT MAY BE USED IN INTERIOR DRY LOCATIONS.
- EMT MAY BE USED WHERE WORK IS CONCEALED IN WALLS OR CEILING SPACES INSIDE THE BUILDING. FITTINGS SHALL BE STEEL SET SCREW.
- 4. PVC CONDUIT AND FITTINGS MAY BE USED FOR EXTERIOR UNDERGROUND WORK AND IN THE FLOOR SLAB. MINIMUM BURIAL DEPTH SHALL BE 24" BELOW GRADE TO THE TOP OF THE CONDUIT. ALL TRANSITIONS TO ABOVE GRADE OR OUT OF THE FLOOR SLAB SHALL BE MADE WITH RIGID STEEL CONDUIT. TRANSITION TO RIGID STEEL PRIOR TO THE ELBOW. THESE ELBOWS SHALL BE PVC COATED OR WRAPPED WITH TAPE IN THE FIELD.
- 5. ALL RACEWAYS ARE TO BE CONCEALED UNLESS OTHERWISE SPECIFICALLY INDICATED ON THE DRAWINGS. WHEN EXPOSED THE EXACT ROUTING SHALL BE CONFIRMED IN THE FIELD WITH THE ARCHITECT/ENGINEER PRIOR TO ROUGHIN.
- 6. ALL WIRING SHALL BE IN NEC APPROVED RACEWAYS SIZED AS SHOWN ON THE DRAWINGS, OR, IF NOT SIZED ON THE DRAWINGS, IN ACCORDANCE WITH THE NEC. WIRING OF EACH TYPE AND SYSTEM MUST BE INSTALLED IN SEPARATE RACEWAYS.
- 7. CONTRACTOR TO INSTALL RACEWAY SYSTEMS WHERE INDICATED ON THE DRAWINGS, COMPLETE WITH ALL J-BOXES AND PULLBOXES AS NECESSARY AND NOTED ON PLANS.
- 8. PROVIDE RACEWAY EXPANSION JOINTS FOR EXPOSED AND CONCEALED RACEWAYS WITH NECESSARY BONDING CONDUCTOR AT BUILDING EXPANSION JOINTS AND OR STRUCTURES WHERE REQUIRED TO COMPENSATE FOR RACEWAY OR BUILDING THERMAL EXPANSION AND CONTRACTION.
- 9. ALL CONDUIT SYSTEMS MUST BE INSTALLED COMPLETE BEFORE CONDUCTORS ARE PULLED. METAL CONDUIT SYSTEMS SHALL BE ELECTRICALLY CONTINUOUS THROUGHOUT. CONDUIT SUPPORTED FROM CEILING, FIXTURE, OR MECHANICAL SYSTEM SUPPORTS WILL NOT BE ACCEPTED.
- 10. ALL CONDUITS SHALL BE INSTALLED PERPENDICULAR AND PARALLEL TO THE BUILDING LINES; ALL BREAKS AND TURNS IN EXPOSED CONDUIT RUNS SHALL BE MADE WITH CAST FITTINGS WITH CADMIUM OR HOT GALVANIZED COVERS. ALL CONDUIT FITTINGS SHALL MEET OR EXCEED THE RECOMMENDATIONS OF THE MANUFACTURER OF THE CONDUIT. APPROVAL OF THE ARCHITECT/ENGINEER MUST BE OBTAINED FOR LOCATION AND AESTHETICS OF EACH AND EVERY RUN OF EXPOSED RACEWAY PRIOR TO INSTALLATION.
- 11. NO CONDUIT SMALLER THAN 3/4" SHALL BE INSTALLED IN FLOOR SLABS OR BELOW GRADE.

12. ALL CONDUITS SHALL BE SECURELY FASTENED IN PLACE ON MAXIMUM OF 10' INTERVALS AND WITHIN 3' OF EACH OUTLET BOX, JUNCTION BOX, CABINET OR FITTING. HANGERS, SUPPORTS OR FASTENINGS SHALL BE PROVIDED AT EACH ELBOW AND AT THE END OF EACH STRAIGHT RUN TERMINATING AT A BOX OR CABINET.

SECTION 26 05 33.01 - ELECTRICAL BOXES

1. ACCEPTABLE MANUFACTURERS SHALL BE AS FOLLOWS:

APPLETON, BOWERS, COOPER, CROUSE HINDS, RACE AND THOMAS & BETTS.

- 2. OUTLET BOXES: PROVIDE GALVANIZED FLAT ROLLED SHEET—STEEL OUTLET WIRING BOXES, OF SHAPES, CUBIC INCH CAPACITIES, AND SIZES, INCLUDING BOX DEPTHS AS INDICATED, SUITABLE FOR INSTALLATION AT RESPECTIVE LOCATIONS. CONSTRUCT OUTLET BOXES WITH MOUNTING HOLES, AND WITH CABLE AND CONDUIT—SIZE KNOCKOUT OPENINGS IN BOTTOM AND SIDES. PROVIDE BOXES WITH THREADED SCREW HOLES, WITH CORROSION—RESISTANT COVER AND GROUNDING SCREWS FOR FASTENING SURFACE AND DEVICE TYPE BOX COVERS, AND FOR EQUIPMENT TYPE GROUNDING. PLASTIC BOXES ARE NOT ACCEPTABLE.
- 3. CAST BOXES SHALL BE USED FOR ALL EXTERIOR LOCATIONS AND FOR EXPOSED INTERIOR LOCATIONS. PROVIDE FS OR FD BOXES AS
- 4. ALL BOXES SHALL BE RIGIDLY AND SECURELY FASTENED TO THE STRUCTURAL SURFACE TO WHICH THEY ATTACH. ALL BOXES MUST BE SUPPORTED FROM A STRUCTURAL PORTION OF THE BUILDING INDEPENDENT OF THE RACEWAY SYSTEM.

SURFACE MOUNTED BOXES SHALL BE FASTENED BY MEANS OF WOOD SCREWS TO WOOD, EXPANSION BOLTS ON CONCRETE, TOGGLE BOLTS ON HOLLOW MASONRY UNITS AND MACHINE SCREWS ON METAL CONSTRUCTION.

EXPOSED BOXES SHALL BE SUPPORTED BY MEANS OF ALL—THREAD RODS 1/4" DIAMETER MINIMUM. THE ALL—THREAD RODS SHALL BE SECURED TO THE STRUCTURE.

BOXES CONCEALED IN WALLS SHALL BE SECURED TO THE WALL STUD WITH A MINIMUM OF TWO FASTENERS. USE WOOD SCREWS IN WOOD AND MACHINE SCREWS IN METAL. BOXES THAT ATTACH TO METAL STUDS SHALL BE FASTENED TO A SECOND WALL STUD BY MEANS OF A BACKING BRACE OR ROD.

BOXES EMBEDDED IN CONCRETE OR MASONRY BOXES SHALL HAVE INTEGRAL METAL EARS THAT EMBED INTO THE CONCRETE OR MASONRY GROUT.

SECTION 26 24 16 - PANELBOARDS

- 1. ACCEPTABLE MANUFACTURERS SHALL BE EATON, GENERAL ELECTRIC, SCHNEIDER ELECTRIC, SIEMENS ENERGY AND AUTOMATION.
- 2. EACH PANELBOARD, SHALL HAVE A SHORT CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE RATING SHOWN ON THE PANELBOARD SCHEDULE OR ON THE ONE—LINE DIAGRAM. THE RATING SHALL BE PER UNDERWRITER'S LABORATORIES STANDARD UL 67. THE SHORT CIRCUIT RATING SHALL BE BASED SOLELY ON THE RATINGS OF THE BRANCH BREAKERS IN THE PANEL. SERIES RATING OF STANDARD AIC BRANCH BREAKERS WITH HIGH AIC INTEGRAL OR REMOTE MAIN/FEEDER BREAKERS IS NOT ACCEPTABLE. PANELBOARDS SHALL BE MARKED WITH THEIR MAXIMUM SHORT CIRCUIT CURRENT RATING AT THE SUPPLY VOLTAGE AND SHALL BE UL LISTED. 240 VOLT MAXIMUM PANELS SHALL BE RATED 10,000 AIC RMS SYMMETRICAL MINIMUM. 480 VOLT MAXIMUM PANELS SHALL BE RATED 14,000 AIC RMS SYMMETRICAL MINIMUM.
- 3. PROVIDE ALL SPACES SPECIFIED ON THE SCHEDULES COMPLETE WITH ALL BREAKER MOUNTING ACCESSORIES REQUIRED TO ACCOMMODATE THE BREAKER FRAME SIZE SPECIFIED.
- 4. PROVIDE NAMEPLATES FOR ALL PANELBOARDS.
- 5. ALL PANELBOARDS SHALL BE SUPPLIED WITH A SEPARATE DEDICATED GROUND BUS. ALL BUSSING SHALL BE COPPER.
- 6. PROVIDE FULL SIZE NEUTRAL BUS BARS IN ALL PANELS AS REQUIRED BY THE PANEL SCHEDULE AND/OR ONE LINE DIAGRAM.
- 7. CIRCUIT BREAKERS SHALL BE BOLT-ON THERMAL-MAGNETIC, MOLDED CASE CIRCUIT BREAKERS.
- 8. PANELBOARD BUS STRUCTURE AND MAIN LUGS OR MAIN CIRCUIT BREAKER SHALL HAVE CURRENT RATINGS AS SHOWN ON THE PANELBOARD SCHEDULE. SUCH RATINGS SHALL BE ESTABLISHED BY HEAT RISE TESTS, CONDUCTED IN ACCORDANCE WITH UL STANDARD 67. BUS STRUCTURE SHALL BE INSULATED. BUS BAR CONNECTIONS TO THE BRANCH CIRCUIT BREAKERS SHALL BE THE "DISTRIBUTED PHASE" OR PHASE SEQUENCE TYPE. ALL CURRENT CARRYING PARTS OF THE BUS STRUCTURE SHALL BE PLATED.
- 9. THE PANELBOARD BUS ASSEMBLY SHALL BE ENCLOSED IN A NEMA 1 (3R) LOCKABLE STEEL CABINET. THE RIGIDITY AND GAUGE OF STEEL TO BE AS SPECIFIED IN UL STANDARD 50 FOR CABINETS. WIRING GUTTER SPACE SHALL BE IN ACCORDANCE WITH UL STANDARD 67 FOR PANELBOARDS. A CIRCUIT DIRECTORY FRAME AND CARD WITH A CLEAR PLASTIC COVERING SHALL BE PROVIDED ON THE INSIDE OF THE DOOR.
- 10. FASTEN ENCLOSURES FIRMLY TO WALLS AND STRUCTURAL SURFACES, ENSURING THAT THEY ARE PERMANENTLY AND MECHANICALLY ANCHORED. ALL PANELS SHALL BE MOUNTED PLUMB AND LEVEL.
- 11. THE PANELBOARD'S CIRCUIT DIRECTORY SHALL BE TYPED INDICATING WHAT EACH CIRCUIT SERVES WITH SPARES AND SPACES INDICATED IN PENCIL.
- 12. ALL WIRING IN THE PANELBOARD'S GUTTERS SHALL BE NEATLY LACED USING "TY-WRAPS" AS MANUFACTURED BY PANDUIT, OR APPROVED FOLIAL

SECTION 26 27 26 - WIRING DEVICES

1. 1ACCEPTABLE MANUFACTURERS SHALL BE ARROW HART, HUBBELL, LEVITON AND PASS & SEYMOUR.

PROVIDE HEAVY—DUTY, AC, QUIET SWITCHES THE SWITCHES SHALL BE HUBBELL 1221 (CS1221) OR EQUAL. 120—277 VOLT, 20 AMPERE. SWITCHES SHALL BE SINGLE POLE, DOUBLE POLE, THREE WAY, FOUR WAY, KEY OPERATED AS REQUIRED BY THE DRAWINGS. SWITCH SHALL BE SELF GROUNDING.

- 2. PROVIDE HEAVY—DUTY DUPLEX RECEPTACLES, HUBBELL 5362 (5262) 2— POLE, 3—WIRE, GROUNDING, 20—AMPERES, SPECIFICATION GRADE 125—VOLT WITH METAL PLASTER EARS, DESIGN FOR SIDE AND BACK WIRING WITH SPRING LOADED, SCREW ACTIVATED PRESSURE PLATE, WITH NEMA CONFIGURATION 5—20R UNLESS OTHERWISE INDICATED.
- 3. PROVIDE "FEED—THRU" TYPE GROUND—FAULT CIRCUIT INTERRUPTERS, WITH HEAVY—DUTY DUPLEX RECEPTACLES, HUBBELL GF5362 (GF5262) CAPABLE OF PROTECTING CONNECTED DOWNSTREAM RECEPTACLES ON SINGLE CIRCUIT, AND OF BEING INSTALLED IN A 2-3/4" DEEP OUTLET BOX WITHOUT ADAPTER, GROUNDING TYPE UL—RATED CLASS

- A, GROUP 1, RATED 20—AMPERES, 120—VOLTS, 60 HZ; WITH SOLID—STATE GROUND—FAULT SENSING AND SIGNALING; WITH 5 MILLIAMPERES GROUND—FAULT TRIP LEVEL; WITH NEMA CONFIGURATION 5—20R. ALL GFCI RECEPTACLES LOCATED EXTERIOR TO THE BUILDING SHALL BE WEATHER RESISTANT. THE DEVICE SHALL TRIP IF THE LINE OR LOAD SIDE WIRING CONNECTIONS ARE INCORRECTLY INSTALLED.
- 4. WEATHERPROOF OUTLETS SHALL HAVE A TAYMAC COVER THAT MEETS UL 514 FOR CONTINUOUS USE IN A WET LOCATION.
- DEVICE COVER PLATES SHALL BE IMPACT RESISTANT NYLON PLASTIC. (STAINLESS STEEL). THE COVER PLATE SHALL MATCH THE STYLE OF WRING DEVICE AND FINISH COLOR OF THE WIRING DEVICE.
- 6. PROVIDE WIRING DEVICES AND COVER PLATES IN FINISH COLORS AS SELECTED BY THE ARCHITECT.
- 7. TEST ALL RECEPTACLES WITH A RECEPTACLE TESTER TO ASSURE THAT ALL RECEPTACLES ARE PROPERLY WIRED AND FUNCTIONAL.

SECTION 26 28 13 - OVERCURRENT PROTECTIVE DEVICES

1. ACCEPTABLE MANUFACTURERS SHALL BE AS FOLLOWS:

CIRCUIT BREAKERS MANUFACTURERS SHALL BE EATON, GENERAL ELECTRIC, SCHNEIDER ELECTRIC AND SIEMENS ENERGY AND AUTOMATION.

FUSE MANUFACTURERS SHALL BE COOPER BUSSMAN AND MERSEN.

2. PROVIDE MOLDED—CASE THERMAL MAGNETIC CIRCUIT BREAKERS.
PROVIDE BREAKERS WITH PERMANENT THERMAL AND INSTANTANEOUS
MAGNETIC TRIPS IN EACH POLE. TWO AND THREE POLE BREAKERS
SHALL BE COMMON TRIP. THE MINIMUM SHORT CIRCUIT RATING OF
THE CIRCUIT BREAKERS SHALL MEET THE SHORT CIRCUIT RATING OF
THE PANELBOARD AS SCHEDULED ON THE DRAWINGS. PROVIDE ARC
FAULT INTERRUPTING CIRCUIT BREAKERS WHERE CALLED FOR ON THE
DRAWINGS AND IN LOCATIONS REQUIRED BY THE NEC.

TRACE CABLES AND OTHER SIMILAR SYSTEMS. THE BREAKERS SHALL HAVE A 30MA TRIP RATING.

PROVIDE GROUND FAULT INTERRUPTING CIRCUIT BREAKERS FOR HEAT

3. FUSES RATED UP TO 600 AMPERES SHALL BE UL CLASS RK1.
FUSES ABOVE 600 AMPERES TO 6000 AMPERES SHALL BE UL CLASS

SECTION 26 28 16 - ENCLOSED SWITCHES

FURNISHED WITH NEMA 3R ENCLOSURES.

- 1. ACCEPTABLE MANUFACTURERS SHALL BE EATON, GENERAL ELECTRIC, SCHNEIDER ELECTRIC, SIEMENS ENERGY AND AUTOMATION.
- 2. PROVIDE HEAVY-DUTY SAFETY SWITCHES. ALL SAFETY SWITCHES SHALL BE NEMA TYPE HD AND BE UL LISTED. SWITCHES SHALL BE
- 3. THE OPERATING HANDLE SHALL BE SUITABLE FOR PADLOCKING THE HANDLE IN THE OFF POSITION WITH AS MANY AS THREE PADLOCKS. THE COVER SHALL BE INTERLOCKED WITH THE OPERATING MECHANISM TO PREVENT THE OPENING OF THE COVER WHEN THE SWITCH IS IN THE ON POSITION.
- 4. PROVIDE THE SWITCHES WITH FUSES IF REQUIRED BY THE DRAWINGS. PROVIDE GROUNDING LUGS IN EACH SWITCH. PROVIDE FULL RATED NEUTRAL TERMINAL BLOCKS FOR SWITCHES WITH A NEUTRAL CONDUCTOR.
- 5. PROVIDE THE SWITCHES WITH AN ENGRAVED NAMEPLATE.
- SECTION 26 29 13 MOTOR STARTERS

 1. ACCEPTABLE MANUFACTURERS SHALL BE AS EATON, GENERAL ELECTRIC, SCHNEIDER ELECTRIC AND SIEMENS ENERGY AND
- 2. PROVIDE COMBINATION FULL VOLTAGE NON-REVERSING MAGNETIC MOTOR STARTERS WITH A DISCONNECT. THE STARTERS SHALL BE MINIMUM NEMA SIZE "O" WITH THERMAL OVERLOAD PROTECTION AND DINGLE PHASE PROTECTION. PROVIDE A SOLID STATE PROTECTIVE RELAY TO MONITOR THE THREE PHASE SYSTEM AND TRIP THE STARTER UNDER THE FOLLOWING CONDITIONS; UNDER VOLTAGE (10-20% OF NOMINAL VOLTAGE); PHASE IMBALANCE ADJUSTABLE FROM 2-4%; PHASE LOSS AND PHASE REVERSAL WITH A 50MILLISECOND TRIP TIME AND IT SHALL ALSO PREVENT THE MOTOR FROM STARTING IF THERE IS A PHASE LOSS.
- 3. THE DISCONNECT SHALL BE INTERLOCKED WITH THE DOOR OF THE ENCLOSURE TO PREVENT THE DOOR FROM OPENING WHILE THE DISCONNECT IS IN THE ON POSITION. PROVIDE THE DISCONNECT WITH A THERMAL MAGNETIC CIRCUIT BREAKER OR FUSE AS CALLED FOR ON THE DRAWINGS. THE ENCLOSURE SHALL BE NEMA 1 UNLESS OTHERWISE NOTED.
- 4. PROVIDE NAMEPLATES FOR ALL MOTOR STARTERS.

SECTION 26 51 13 - LIGHTING

AUTOMATION.

- LIGHTING FIXTURES ARE SPECIFIED IN THE LIGHT FIXTURE SCHEDULE ON THE DRAWINGS. SUBMIT COMPLETE PRODUCT DATA INFORMATION FOR EACH FIXTURE TYPE ON THE SCHEDULE.
- 2. LED LIGHT FIXTURES SHALL CONSIST OF AN ASSEMBLY THAT UTILIZES LEDS AS THE LIGHT SOURCE COMPLETE WITH A HOUSING, REFLECTOR, LED ARRAY, ELECTRONIC DRIVER (BALLAST) AND INTEGRAL CONTROLS AS SPECIFIED ON HEREIN AND ON THE LIGHT FIXTURE SCHEDULE. THE FIXTURES SHALL BE DESIGNED TO OPERATE IN AN AVERAGE 25 DEGREE C AMBIENT TEMPERATURE AND BE CAPABLE OF OPERATING IN A 0-25 DEGREE C ENVIRONMENT. THE LUMEN OUTPUT SHALL NOT DECREASE BY MORE THAN 20% OVER AN OPERATIONAL LIFE OF 50,000 HOURS.

INDIVIDUAL LEDS SHALL BE ELECTRICALLY CONNECT SO THAT THE FAILURE OF ONE LED DOES NOT AFFECT THE OTHER LEDS IN THE ARRAY. THE LED BOARDS SHALL BE SERVICEABLE FROM BELOW THE CEILING AND PLUG IN CONNECTOR SHALL BE USED SO THAT THE LED BOARDS ARE FIELD REPLACEABLE.

THE CRI SHALL BE 80 OR GREATER. THE CORRELATED COLOR TEMPERATURE (CCT) SHALL BE AS SPECIFIED IN THE FIXTURE SCHEDULE ON THE DRAWINGS.

PROVIDE ACCUDRIVE, 120-277 VOLT, UL LISTED, CSA CERTIFIED DRIVES. THE DRIVERS SHALL BE OVER 90% (P.F.=.90) EFFICIENT AND SOUND RATED A. THE DRIVER SHALL BE CAPABLE OF FULL RANGE DIMMING WITHOUT FLICKER OVER A RANGE OF 100% TO 5% OF RATED LUMEN OUTPUT. PROVIDE A DRIVER DISCONNECTING MEANS

3. SUPPORT FIXTURES FROM THE BUILDING STRUCTURE. METAL CHANNELS SHALL BE USED AS REQUIRED TO ATTACH TO THE BUILDING STRUCTURE AND SUPPORT THE LIGHT FIXTURES AS REQUIRED. LAY IN LIGHT FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE WITH 12 GAUGE GALVANIZED CARBON STEEL (ASTM-A-641) SOFT TEMPER HANGING WIRES. PROVIDE ONE HANGER AT EACH CORNER OF EACH LAY IN LIGHT FIXTURE 12" AND WIDER.

- SUPPORTING THE FIXTURES FROM THE CEILING SUPPORTS IS NOT ACCEPTABLE.
- FASTEN SURFACE MOUNTED AND PENDANT FIXTURES SECURELY TO STRUCTURAL SUPPORTS. ALL PENDANT FIXTURES SHALL BE PLUMB AND LEVEL.
- 5. CLEAN ALL LIGHTING FIXTURES OF DIRT AND CONSTRUCTION DEBRIS UPON COMPLETION OF INSTALLATION. CLEAN FINGERPRINTS AND SMUDGES FROM LENSES.

DEMOLITION NOTES

- . RELOCATE AND RECONNECT ACTIVE PORTIONS OF THE ELECTRICAL SYSTEM OUTSIDE OF THE SCOPE OF DEMOLITION, AS REQUIRED TO MAINTAIN A COMPLETE AND OPERATING SYSTEM THAT IS FUNCTIONALLY EQUIVALENT TO THE PRE-EXISTING SYSTEM PRIOR TO DEMOLITION.
- 2. ALL EXISTING CONDUIT AND CONDUCTORS SERVING THE AREA UNDER CONTRACT NOT TO BE RE-USED SHALL BE TERMINATED AT LAST PORTION OF CIRCUIT REQUIRING ENERGIZATION BEFORE THE DEMOLITION AREA. IF A CIRCUIT SERVICES ONLY THE DEMOLITION AREA, REMOVE ALL CONDUITS AND CONDUCTORS BACK TO THE PANELBOARD BUILDING GRID BOX AND DE-ENERGIZE THE CIRCUIT BREAKER, MAKING IT A SPARE. NOTE "SPARE" ACCORDINGLY ON PANELBOARD CIRCUIT DIRECTORY FOR ALL UNUSED CIRCUITRY.
- 3. REMOVE ALL EXISTING UNUSED ELECTRICAL EQUIPMENT, CONTROLS, CONDUIT, HANGERS, WIRING, ETC.. FROM ABOVE CEILINGS.
- 4. REMOVE ALL ABANDONED "LOW VOLTAGE" CABLING INCLUDING FIRE ALARM CABLING, TELEPHONE/DATA CABLING, AND SECURITY CABLING FROM ABOVE CEILINGS.
- 5. REFER TO ARCHITECTURAL PLANS FOR WALL AND PARTITIONS TO BE REMOVED CONTRACTOR SHALL PROVIDE ELECTRICAL DEMOLITION AS DESCRIBED ABOVE.
- 6. THE OWNER SHALL HAVE THE OPTION OF RETAINING ANY ITEMS REMOVED DURING DEMOLITION. ITEMS REJECTED BY THE OWNER SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR.
- REMOVE ALL EXISTING CONDUIT AND WIRING THAT IS SUPPORTED FROM THE CEILING GRID VIA CADDY CLIPS, ETC. AND REPLACE WITH MATCHING CONDUIT AND WIRING PROPERLY SUPPORTED FROM STRUCTURE ABOVE.
- 8. ITEMS SHOWN ON THE DEMOLITION DRAWINGS ARE GIVEN AS AN AID TO THE CONTRACTOR IN PRICING AND ARE BASED ON VISUAL INSPECTION AND REVIEW OF OLD CONSTRUCTION DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND DETERMINE THE ACTUAL CONDITIONS PRIOR TO BID OR PERFORMING WORK.
- 9. EXISTING CIRCUIT NUMBERS AND ROUTING HAS BEEN SHOWN ON THE DEMOLITION DRAWINGS. THE EXISTING BRANCH CIRCUITING INFORMATION WAS OBTAINED FROM THE ORIGINAL WORKING DRAWINGS AND INTERIM REMODEL DRAWINGS AND MAY NOT REFLECT THE ACTUAL "AS BUILT" CONDITIONS. EXISTING BRANCH CIRCUITING HAS NOT BEEN SHOWN IN THE AREAS WHERE INFORMATION WAS NOT AVAILABLE. SEE NOTE 8.

3.13 TESTING

A. SYSTEM TESTS

MULTI-METER.

DEBRIS, AND FINGERPRINTS.

- A. TESTING

 A. TESTS TO BE COMPLETED BY THE CONTRACTOR SHALL BE OF TWO TYPES. DURING CONSTRUCTION, SYSTEM TESTING SHALL BE ACCOMPLISHED TO DETERMINE WHETHER SYSTEMS ARE SUITABLY WIRED, AND IF SYSTEMS OPERATED AS SPECIFIED. LATER, DEMONSTRATION TESTING SHALL BE ACCOMPLISHED FOR THE PURPOSE OF SHOWING THAT THE SYSTEMS OPERATED AS DESIGNED.
- 1. PROVIDE RECORDS OF TESTS FOR INDMIDUAL TESTS AS REQUIRED BELOW.
 THE TESTS RECORDS SHALL INCLUDE THE RESULTS OF THE TEST, AND THE
 PERSONS CONDUCTING. THESE TESTS SHALL BE INCLUDED IN THE OPERATION
 AND MAINTENANCE MANUAL UNDER THE TEST SECTION.
- 2. FOLLOWING EACH DEMONSTRATION TEST, A CERTIFIED RECORD OF EACH TEST SHALL BE MADE. ALL DEMONSTRATION TESTING SHALL BE WITNESSED BY THE ARCHITECT OR HIS REPRESENTATIVE AND THE OWNER'S REPRESENTATIVE. THE RECORDS OF THE DEMONSTRATION TESTING SHALL BE SIGNED BY THE PERSONS CONDUCTING AND WITNESSING THE TEST. DEMONSTRATION TESTS WILL NOT BE CONSIDERED COMPLETE UNLESS A SIGNED CERTIFICATE IS
- PROVIDED FOR EACH TEST.

 3. THE CONTRACTOR SHALL PROVIDE ALL TEST EQUIPMENT, TEMPORARY WIRING, LABOR, ETC., REQUIRED TO PERFORM THE TESTING.
- 1. AFTER THE BRANCH CIRCUIT CONDUCTORS HAVE BEEN INSTALLED, BUT BEFORE THEY HAVE BEEN CONNECTED TO THE ASSOCIATED WIRING DEVICES, TEST ALL CONDUCTORS FOR SHORT CIRCUITS, OPEN CIRCUITS. THESE TESTS SHALL BE PERFORMED BY READING RESISTANCE IN OHMS WITH A
- 2. WITH THE SYSTEM ENERGIZED, MAKE LINE—TO—LINE VOLTAGE AND LINE CURRENT MEASUREMENTS AT ALL MOTORS UNDER FULL LOAD CONDITIONS. SHOULD THE MEASURED VALUES DEVIATE +/- 5% FROM THE NAMEPLATE RATINGS, THE CONDITION SHALL BE CORRECTED. NOTIFY THE ARCHITECT IMMEDIATELY SHOULD DEVIATIONS OCCUR. SUBMIT TEST RESULTS IN THE
- OPERATION AND MAINTENANCE MANUALS.

 3.14 CONDITIONS OF EQUIPMENT AT FINAL ACCEPTANCE
- A. AT TIME OF ACCEPTANCE, THE CONTRACTOR SHALL HAVE INSPECTED ALL INSTALLED SYSTEMS TO ASSURE THE FOLLOWING HAS BEEN COMPLETED:
 1. FIXTURES ARE OPERATING, LENSES AND REFLECTORS ARE FREE OF DUST,
- 2. PANELBOARDS HAVE ALL CONDUCTORS NEATLY FORMED, LACED AND MADE—UP TIGHT. ENCLOSURES SHALL BE VACUUM CLEANED, SURFACES CLEAN OF STRAY PAINT, DUST, GREASE AND FINGERPRINTS. ALL CIRCUIT DIRECTORIES TO BE NEATLY TYPED AND IN PLACE.
- 3. WALL PLATES AND EXPOSED SWITCH AND RECEPTACLE PARTS TO BE CLEAN, FREE OF PAINT, PLASTER, ETC.

4. SAFETY AND DISCONNECT SWITCHES AND MOTOR STARTERS TO BE VACUUM

- CLEANED OF DEBRIS, DUST AND ALL SURFACES FREE OF STRAY PAINT,
 GREASE AND FINGERPRINTS.

 5. SWITCHGEAR, TRANSFORMERS AND SYSTEM DEVICES SHALL BE CLEANED
 INTERNALLY AND EXTERNALLY AND HAVE ALL SURFACES RESTORED TO INITIAL
- SURFACE CONDITIONS.

 6. TOUCH—UP ALL SCRATCHED SURFACES USING PAINT MATCHING THE EXISTING EQUIPMENT PAINT. WHERE PAINT CANNOT BE MATCHED, THE ENTIRE SURFACE SHALL BE REPAINTED IN A COLOR AND MANNER APPROVED BY THE
- 7. ALL ELECTRICAL EQUIPMENT SHALL BARE PROPER LABELING AS SPECIFIED

UNDER THIS SECTION. 3.15 GUARANTEE

A. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF TWELVE (12) MONTHS AFTER THE FINAL ACCEPTANCE OF WORK.

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Alaria | Austin | Soutin | Oricing |
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Austin |
Austin | Oricing |
Austin |

TLLAGE CREEK STATE PARK FACILITY DAMAGE REPAIRS

DATE: 03/06/2019 DESIGNED BY: HMG DRAWN BY: HMG REVIEWED BY: EC

REVISED:

REVISED:

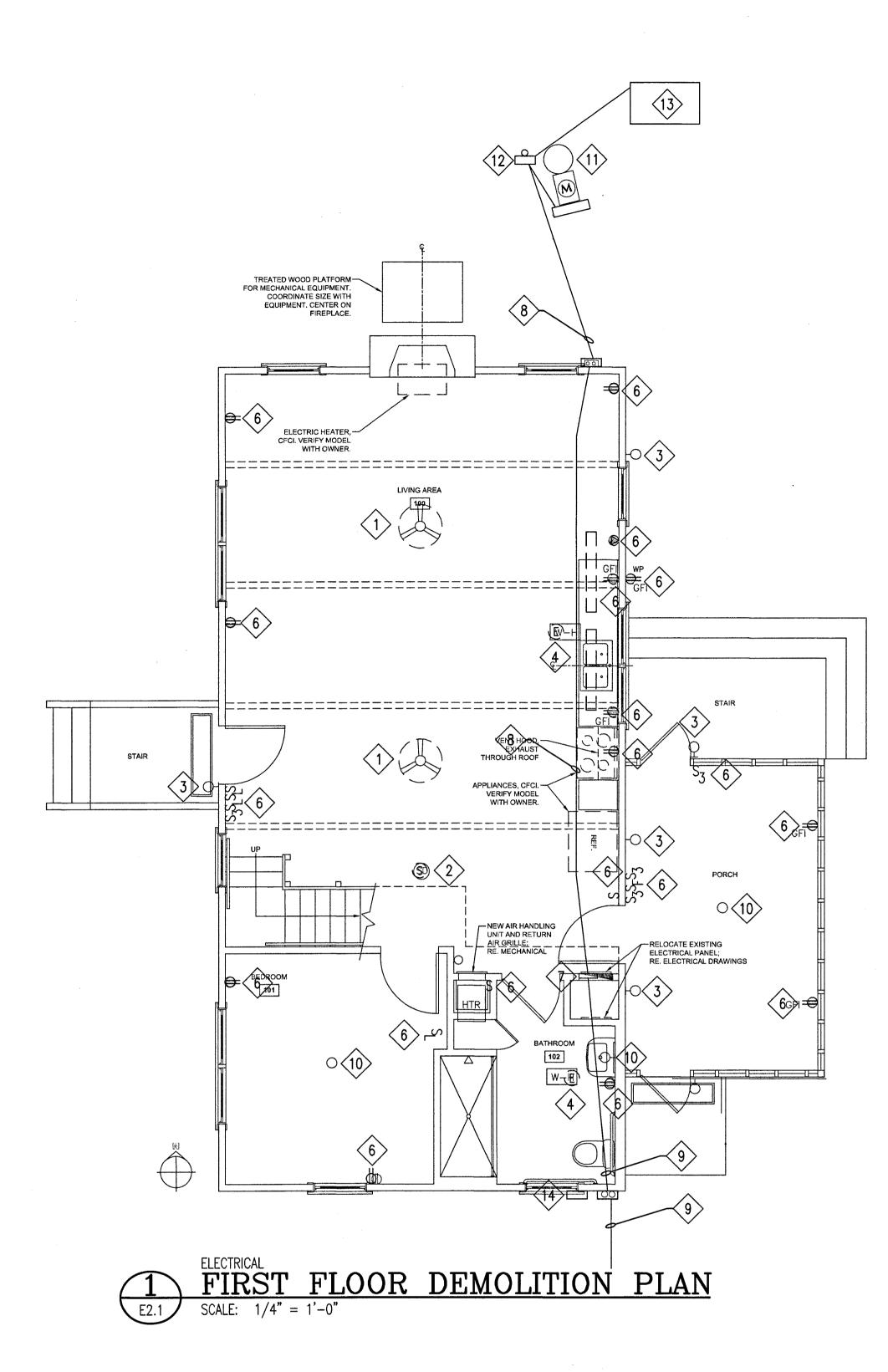
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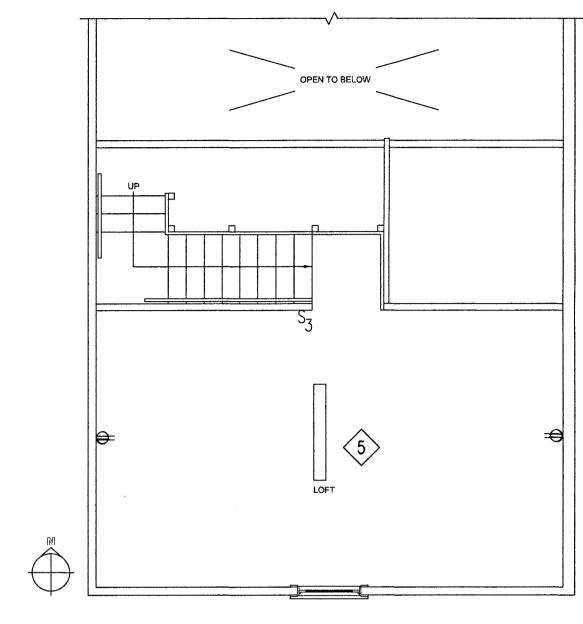
SHEET TITLE

ELECTRICAL

SPECIFICATIONS

SHEET NUMBER





SECOND FLOOR DEMOLITION PLAN

KEYED NOTES

- EXISTING CEILING FAN TO REMAIN. REMOVE EXISTING CONDUCTOR SERVING THE CEILING FAN.
- 2 REMOVE EXISTING SMOKE DETECTOR AND CIRCUIT.
- EXISTING EXTERIOR LIGHTING FIXTURE TO REMAIN. REMOVE EXISTING CONDUCTORS.
- 4 EXISTING WATER HEATER AND ASSOCIATED CIRCUITRY TO BE REMOVED.
- ALL DEVICES, LIGHTING FIXTURES, AND BRANCH CIRCUITRY ON THE SECOND FLOOR TO REMAIN.
- REMOVE ALL RECEPTACLES, BOXES, AND THE BRANCH CIRCUITS SERVING THE DEVICES. ALL CIRCUITRY FED UNDER THE FLOOR SHALL
- 7 REMOVE EXISTING PANELBOARD.
- REMOVE EXISTING FEEDER CONDUCTORS. REMOVE EXPOSED PORTIONS OF EXISTING CONDUIT. EXISTING PORTION OF UNDERGROUND CONDUIT SHALL BE ABANDONED IN PLACE.
- 9 REMOVE EXISTING BRANCH CIRCUIT CONDUCTORS AND CONDUIT SERVING AREA LIGHTING AT THE BOAT RAMP.
- EXISTING LIGHTING FIXTURE TO REMAIN. REMOVE EXISTING CONDUCTORS.
- EXISTING UTILITY POLE AND UTILITY METER TO REMAIN. REMOVE EXISTING SERVICE DISCONNECT.
- REMOVE EXISTING AUTOMATIC TRANSFER SWITCH AND THE ASSOCIATED FEEDERS.
- REMOVE THE EXISTING GENERATOR AND ASSOCIATED FEEDER AND BRANCH CIRCUITS.
- EXISTING PHOTOCELLS CONTROLLING EXISTING AREA LIGHTING SHALL REMAIN.

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WILDLIFE

DATE: 03/06/2019 DESIGNED BY: HMG DRAWN BY: HMG REVIEWED BY: EC

REVISED: REVISED:

REVISED:

SHEET TITLE **ELECTRICAL**

SHEET NUMBER

20 OF 30

DEMOLITION PLAN

SHEET NUMBER

POWER PLAN

LOFT LIGHTING SINK AREA RECEPTS PORCH LIGHTS MAIN ROOM RECEPTS EXISTING SITE LIGHTS 15/2 CONDENSING UNIT 9 KITCHEN WATER HEATER 13 BATHROOM WATER HEATER AREA SITE LIGHTING 17 SPARE BOAT RAMP LIGHTING 19 BATTERY CHARGER 21 2ND FLOOR HVAC INDOOR HVAC UNIT RECEPTACLES (15) 27 MICROWAVE 29 FIREPLACE INSERT 20/1 SPARE 20/1 SPARE 33 SPARE 20/1 SPARE 39 SPARE 20/1 SPARE 41 SPARE 16.7 14.2 **Total in KVA**

PANELBOARD

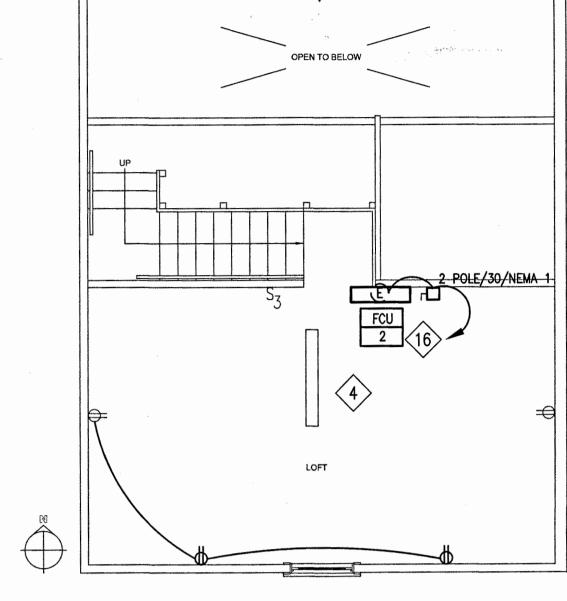
 Panel: 1ø, 3W,
 240/120V
 NEMA:
 1

 Location:
 CABIN
 ISCR:
 10K

Circuit Use

SCHEDULE

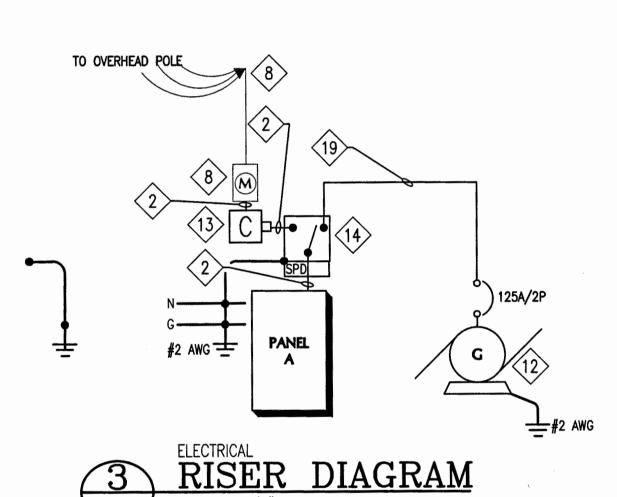
Circuit Use



SECOND FLOOR ELECTRICAL PLAN

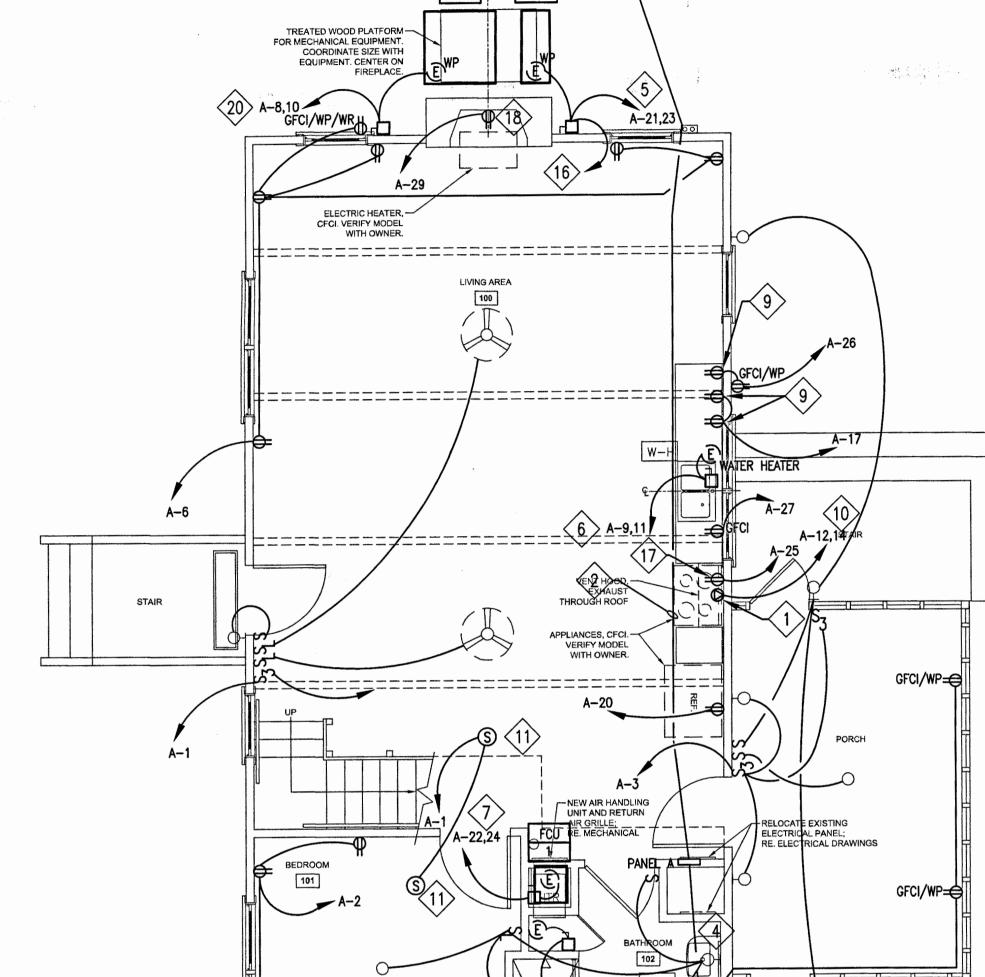
KEYED NOTES

- PROVIDE 3 POLE, 240 VOLT, 50 AMP RECEPTACLE. VERIFY EXACT RATING OF RANGE PRIOR TO PROCUREMENT.
- INSTALL 3 #1/0 AWG AND 1 #6 GROUND IN 1 1/2" CONDUIT.
- 1" CONDUIT ROUTED TO EXISTING AREA LIGHTING. PROVIDE 2 #6, 2 #12, AND 1 #12 GROUND FOR 2-120 VOLT LIGHTING CIRCUITS AT CABIN PARKING AND BOAT RAMP PARKING. CONNECT TO A-16 AND A-18.
- RECONNECT DEVICES AND LIGHTING FIXTURES IN THIS ROOM TO THE NEW PANELBOARD. CONNECT TO BRANCH CIRCUIT #1.
- 5 3/4" CONDUIT. 2 #10 AND 1 #10 GROUND. PROVIDE A 2 POLE, 30 AMP NEMA 3R SAFETY SWITCH.
- 6 3/4" CONDUIT. 2 #8 AND 1 #10 GROUND. PROVIDE A 2 POLE, 60 AMP, NEMA 3R SAFETY SWITCH.
- 7 3/4" CONDUIT. 2 #6 AND 1 #10 GROUND. PROVIDE A 2 POLE, 60 AMP DISCONNECT SWITCH.
- 8 EXISTING METER AND WEATHERHEAD TO REMAIN.
- 9 PROVIDE RECEPTACLE WITH ONE DUPLEX OUTLET AND TWO USB OUTLETS.
- 10 3/4" CONDUIT. 3 #8 AND 1 #10 GROUND.
- SINGLE STATION, COMBINATION 120 VOLT AUDIO VISUAL/SMOKE DETECTOR MOUNTED AT THE TOP OF THE STRUCTURE.
- NEW 20 KW, 25 KVA, 240/120 VOLT, 10, PROPANE DRIVEN GENERATOR. REFER TO GENERAL NOTE 3 ON THIS SHEET FOR ADDITIONAL INFORMATION.
- PROVIDE NEW 2 POLE, 150 AMP, 25 KAIC, ENCLOSED CIRCUIT BREAKER IN A NEMA 3R ENCLOSURE. INSTALL ON EXISTING POLE BELOW THE METER.
- NEW 3 POLE, 150 AMP, 25 KAIC AUTOMATIC TRANSFER SWITCH IN A NEMA 3R ENCLOSURE WITH BUILT IN SURGE SUPPRESSION DEVICE.
- 215 PROVIDE A COMBINATION AFCI/GFCI CIRCUIT BREAKER.
- PROVIDE CONTROL WIRING BETWEEN THE OUTDOOR UNIT AND THE 2ND FLOOR UNIT. COORDINATE EXACT REQUIREMENTS WITH THE 2ND FLOOR UNIT. COORDINATE EXACT REQUIREMENTS WITH THE MANUFACTURER.
- 17 LOCATE FOR CONNECTION TO HOOD.
- 18 RECEPTACLE FOR ELECTRIC FIREPLACE. VERIFY EXACT REQUIREMENTS AND LOCATION WITH THE MANUFACTURER AND INSTALLER. AND LOCATION WITH THE MANUFACTURER AND INSTALLER.
- (19) 1 1/2" CONDUIT. 4 #2 AND 1 #8 GROUND.
- (20) 3/4" CONDUIT. 2 #12 AND 1 #12 GROUND.



GENERAL NOTES

1. REFERENCE THE G SERIES SHEETS FOR MOUNTING HEIGHT DIAGRAMS FOR ALL DEVICES INCLUDING SWITCHES AND RECEPTACLES. 2. ROUTE CONDUIT AND WIRING AS HIGH AS POSSIBLE. COORDINATE EXACT ROUTING WITH THE OWNER AND ARCHITECT. 3. THE GENERATOR, TRANSFER SWITCH, AND NEW PLATFORM FOR THE GENERATOR ARE A PART OF ALTERNATE #3. THE CONDUIT AND WIRING ASSOCIATED WITH THE GENERATOR AND TRANSFER SWITCH ARE PART OF THE BASE BID. UNDER THE BASE BID, TERMINATE THE FEEDER FOR THE GENERATOR IN A 12" X 12" X 6" DEEP WEATHERPROOF JUNCTION BOX INSTALLED FLUSH WITH GRADE. 4. ALL WIRING DEVICES IN THE CABIN SHALL BE ARC FAULT STYLE, TAMPER RESISTANT RECEPTACLES PER NEC SECTION 210 OF THE NATIONAL ELECTRICAL CODE.



FIRST FLOOR ELECTRICAL AND POWER PLAN

ELECTRICAL D	ESIGN LOA	AD SUM	MARY
LOAD SERVED	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
1,100 SQ. FT.			
GENERAL LOADS:			
1100 X 3	3.3		
SMALL APPLIANCE AND LAUNDRY	4.5		
DISPOSAL DISHWASHER	.94 1.5		
MICROWAVE/HOOD	1.5 1.5		
OVEN WATER HEATERS	8.0 16.8		
			01.0
TOTAL	37.0		21.0 9.0
HVAC	9.0		9.0
TOTAL	46.0	_	30.0
30.0KVA = 125 AMPS @ 240 VOLT, 10. PROVIDE A 150 AMP, 240/120 VOLT, 10.			

MECHANICAL LECEND

	SYMBOL	LE	GEND		
	DUCTWORK		G]	ENERAL	NOTES
	DUCTWORK SIZE, 1st NO. VISIBLE DIMENSION	1.	THESE GENERAL NOTES APPLY TO A	ALL SHEETS	
	DUCTWORK TURNING VANES	2.	IN ANY CASE WHERE A PIPE OR DUTHAT SHOWN IN A SCHEMATIC OR DISHOWN.		
	BRANCH DUCT TAKEOFF	3.	PIPING SHOWN ON EACH PLAN IS R IT IS SHOWN UNLESS OTHERWISE NO	OTED.	
	DUCT TEE	4.	MOUNT THERMOSTATS 48 INCHES AE THE LIGHT SWITCHES WHERE BOTH OTHERWISE NOTED.		
Ţ		5.	NORMAL DESIGN CONDITIONS:		OUTSIDE
	TRANSITION (RECTANGULAR)			SUMMER: WINTER:	98 °F db, 78 °F w
	TRANSITION (RECTANGULAR TO ROUND)				
\sim ,	FLEXIBLE DUCT	6.	ALL DUCT DIMENSIONS SHOWN ARE	CLEAR AIRSTREAM D	IMENSIONS.
		7.	DO NOT RUN AIR HANDLERS OR EX PAINTING IS COMPLETE. THE CLEANII		
	FLEXIBLE CONNECTION		TO PAINT OR CONSTRUCTION DEBRIS CONTRACTOR.		
	VOLUME DAMPER	8.	CONTRACTOR SHALL COMPLY WITH C LOCAL AMENDMENTS TO THE ENERGY		0408-051 AND 25-12
	FIRE DAMPER OR SMOKE DAMPER				
	SUPPLY DUCT SECTION RECTANGULAR, FLAT, OVAL, ROUND				
	RETURN/EXHAUST/OUTSIDE AIR DUCT SECTION				
	SIDEWALL GRILLE OR REGISTER (SUPPLY)				
+	SIDEWALL GRILLE OR REGISTER (RETURN OR EXHAUST)				
	CEILING GRILLE OR REGISTER (SUPPLY)				
	CEILING GRILLE OR REGISTER (EXHAUST OR RETURN)				
SD	SMOKE DETECTOR				
oximes	HUMIDISTAT				
\bigcirc	THERMOSTAT				
	PIPING				
	CONDENSATE DRAIN				
CD					
	NATURAL GAS				
	·				

GENERAL NOTES GENERAL NOTES APPLY TO ALL SHEETS CASE WHERE A PIPE OR DUCT SHOWN ON A PLAN SHEET DIFFERS FROM HOWN IN A SCHEMATIC OR DETAIL, USE THE LARGER OF THE TWO SIZES SHOWN ON EACH PLAN IS RUN ABOVE THE CEILING ON THE FLOOR WHERE HOWN UNLESS OTHERWISE NOTED. THERMOSTATS 48 INCHES ABOVE FINISHED FLOOR AND CENTERED ABOVE GHT SWITCHES WHERE BOTH OCCUR IN THE SAME LOCATION, UNLESS VISE NOTED. L DESIGN CONDITIONS: OUTSIDE INSIDE SUMMER: 98 °F db, 78 °F wb 75 °F db, 50% RH WINTER: 20 °F db 75 °F db CT DIMENSIONS SHOWN ARE CLEAR AIRSTREAM DIMENSIONS. T RUN AIR HANDLERS OR EXHAUST FANS UNTIL ALL INTERIOR CLEANING AND G IS COMPLETE. THE CLEANING OF FOULED COILS OR FAN ASSEMBLIES DUE

D DW	DISTILLED WATER
DIW	DEIONIZED WATER LINE
L D	CONDENSATE DRAIN LINE
F FS	FIRE SPRINKLER
FC0	FLOOR CLEANOUT
F	FIRE LINE (BUILDING MAIN)
FD (OR) SD	FIRE / SMOKE DAMPER
NPW	NON-POTABLE WATER (COLD)
NPHW	NON-POTABLE WATER (HOT)
N ₂	NITROGEN
N_2 0	NITROUS OXIDE
© %	OXYGEN
OA, RA, EXH	O.A.,R.A. EXH. AIR DUCT
RED.	REDUCER
Т	TEMP. INDICATOR (THERMOMETER)
T.&P.	TEMP. & PRESS. RELIEF VALVE
VAC VAC	VACUUM
VD	VOLUME DAMPER
VTR	VENT THRU ROOF
V	SANITARY VENT





ARK **ACILITY DAMAG** CREEK

DATE: 03/06/2019 DESIGNED BY: HMG DRAWN BY: HMG REVIEWED BY: BH

REVISED:

MECHANICAL SYMBOLS LEGEND

	FAN SCHEDULE												
MARK SERVICE TYPE CFM SP H2O WATTS/ FAN INTERLOCK TYPE REMARKS PH/HZ PH/HZ								REMARKS					
EF-1	TOILET ROOM	WALL MOUNT	50	0.5"	52/115/1/60	1188	WALL SWITCH	DIRECT	PANASONIC FV-08WQ1 WALL MOUNTED FAN				

(1) PROVIDE WITH WALL MOUNTING KIT FOR A WALL MOUNTED FAN, EXACT PAINT COLOR TO BE DETERMINED BY THE ARCHITECT.

•					D	IFFUSE1	R & GRI	LLE SCHEDULE	
MARK	MARK CFM RANGE NAME AND		PATTERN	REMARKS					
A	0-300	•			LOUVERED FACE	10" X 8"	4-WAY	TITUS 272 W/ O.B.D.	
В	0-700	•			LOUVERED FACE	18" X 10"	4-WAY	TITUS 272 W/ O.B.D.	
С	0-1000		•	•	LOUVERED FACE	SEE DRAWINGS	-	TITUS 23RL	

NOTE: ALL FRAMES TO BE COMPATIBLE WITH CEILING AND/OR WALL SYSTEM IN WHICH THEY ARE INSTALLED AND APPROVED BY THE ARCHITECT. ARCHITECT TO REVIEW COLORS/FINISHES OF ALL AIR DEVICES. ALL AIR DEVICES SHALL BE PRIMED AT THE FACTORY AND FIELD PAINTED. PAINT COLOR PER THE ARCHITECT.

	SPLIT SYSTEM SCHEDULE															
	CONDENSING UNIT											FA	N COIL U	JNIT		
	TOTAL	TOT MG /				COMPRESSOR	CONDENSER	DEMARKS	MADIZ	ELECTRICAL			COOLING COIL			REMARKS
MARK	CAPACITY BTUH	PH/HZ	MCA	MCB	MIN. SEER	NO.	AMBIENT TEMP °F	REMARKS	MARK	HEATER KW	MCA	мсв	TOTAL CAPACITY BTUH	SENSIBLE CAPACITY BTUH	REFRIGERANT	KEMAKKS
CU-1	30,000	240/1/60	10	15	15.4	1	105*	TRANE 4TTA3030	FCU-1	7.7	32	42	30,000	24,900	R-410A	TRANE TAM4AOA30

NOIES:

(1) PROVIDE EACH UNIT WITH A SINGLE-POINT ELECTRICAL CONNECTION.

(2) PROVIDE UNIT WITH FAN AND CONDENSER COIL HAIL GUARDS.

(3) PROVIDE SPLIT SYSTEM WITH WIRED 7-DAY PROGRAMMABLE REMOTE CONTROLLER CONNECTED (BATTERY OPERATED REMOTE CONTROLLER IS NOT ACCEPTABLE).

(4) CONTRACTOR TO VERIFY LENGTH OF REFRIGERANT PIPING ROUTING BETWEEN INDOOR AND OUTDOOR UNITS AND PROVIDE ADDITIONAL REFRIGERANT AS NEEDED TO PROVIDE SCHEDULED CAPACITIES.

(5) INSTALL ALL WIRING, CONDENSATE LINES, THERMOSTATS, ETC. AS HIGH AS POSSIBLE.

MINI SPLIT SYSTEM SCHEDULE								:			
CONDENSING UNIT								IND	OOR UNI	Γ	
MADY	TOTAL	TOTAL	TOTAL WOLTS /	OTAL MOLTIC	TOTAL VOLUE (DEMARKS	MADE	COOLING COIL			REMARKS
MARK	CAPACITY BTUH	VOLTS/ PH/HZ	MCA	MCB	MIN. SEER	REMARKS	MARK	TOTAL CAPACITY BTUH	SENSIBLE CAPACITY BTUH	REFRIGERANT	REMARKS
CU-2	12,000	240/1/60	10	15	15.4	LG LSN120HSV5	FCU-2	12,000	9,900	R-410A	LG LSN120HSV5

NOTES:

(1) PROVIDE EACH UNIT WITH A SINGLE-POINT ELECTRICAL CONNECTION. INDOOR UNIT IS TO BE POWER FROM THE OUTDOOR UNIT.

(2) PROVIDE UNIT WITH FAN AND CONDENSER COIL HAIL GUARDS.

(3) PROVIDE SPLIT SYSTEM WITH WIRED 7-DAY PROGRAMMABLE REMOTE CONTROLLER CONNECTED (BATTERY OPERATED REMOTE CONTROLLER IS NOT ACCEPTABLE).

(4) CONTRACTOR TO VERIFY LENGTH OF REFRIGERANT PIPING ROUTING BETWEEN INDOOR AND OUTDOOR UNITS AND PROVIDE ADDITIONAL REFRIGERANT AS NEEDED TO PROVIDE SCHEDULED CAPACITIES.

(5) INSTALL ALL WIRING, CONDENSATE LINES, THERMOSTATS, ETC. AS HIGH AS POSSIBLE.

TEXAS
PARKS &
WILDLIFE

WISE, Janney, Elstner Associates, Inc.
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TEXAS REGISTERED ENGINEERING FIRM F-0093
Hadeparties & Laboratofer Northroot, Illinois
Alteria (Marie) (Boster) (Clingo) (Deviner) (Debis)
Horodali (Hoaston) (La Appale) (Marragolie) (Pere Northroot) (Northroot) (Pere Northroot) (Sen Frenchoo) (Sentia (South Rords) (Weshington, D.C.



/ILLAGE CREEK STATE PARI FACILITY DAMAGE REPAIRS PROJECT NUMBER: 128695

DATE: 03/06/2019 DESIGNED BY: HMG DRAWN BY: HMG REVIEWED BY: BH

REVISED:

REVISED:

SHEET TITLE

MECHANICAL

SCHEDULES

SHEET NUMBER

M1.1

PARKS & WILDLIFE

Wise, Janney, Eistner Associates, Inc. 9511 N. Laka Croek Parkway Austin, Tawas 78717 512257 4900 tsi | 512219,9883 fax TEXAS REGISTERED ENGINEERING FIRM F-00



PARK EEK

DATE: 03/06/2019 DESIGNED BY: HMG DRAWN BY: HMG REVIEWED BY: BH

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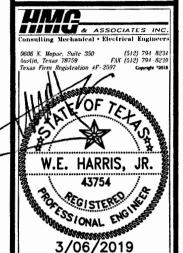
> SHEET TITLE **MECHANICAL**

SHEET NUMBER

DEMOLITION PLAN

FUTURE FLOOD DAMAGE.

PARKS & WILDLIFE



LAGE CREEK
FACILITY DAMAG

DATE: 03/06/2019 DESIGNED BY: HMG DRAWN BY: HMG REVIEWED BY: BH

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SHEET TITLE

SHEET NUMBER

MECHANICAL PLAN

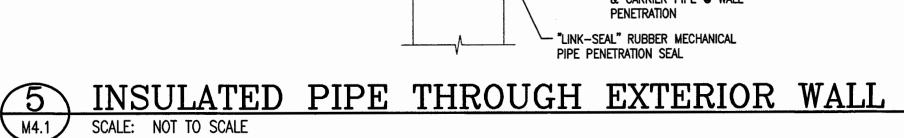
M3.1

25 OF 30

4 CONDENSATE DRAIN PIPING DETAIL

M4.1 SCALE: NOT TO SCALE

OUT PLUG



SHEET NUMBER

M4.1 26 OF 30

- 1. IT IS THE INTENT OF THE CONTRACT DOCUMENTS TO PROVIDE AN INSTALLATION COMPLETE IN EVERY RESPECT. IN THE EVENT THAT ADDITIONAL DETAILS OF SPECIAL CONSTRUCTION MAY BE REQUIRED FOR WORK INDICATED OR SPECIFIED IN THIS SECTION OR WORK SPECIFIED IN OTHER SECTIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SAME AS WELL AS TO PROVIDE MATERIAL AND EQUIPMENT USUALLY FURNISHED WITH SUCH SYSTEMS OR REQUIRED TO COMPLETE THE INSTALLATION, WHETHER MENTIONED OR NOT
- 2. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE BASE BUILDING SPECIFICATIONS AND OWNERS BUILDING STANDARDS, AND IN STRICT ACCORDANCE WITH THE MOST RECENTLY REVISED VERSIONS OF ALL APPLICABLE CITY, STATE, AND NATIONAL CODES AND STANDARDS. MODIFICATIONS REQUIRED BY THE ABOVE SAID AUTHORITIES SHALL BE MAD WITHOUT ADDITIONAL CHARGE TO THE OWNER. WHERE ALTERATIONS TO AND DEVIATIONS FROM THE CONTRACT DOCUMENTS ARE REQUIRED BY SAID AUTHORITY, REPORT THE REQUIREMENTS AND SECURE APPROVAL BEFOR STARTING WORK. WHERE CONTRACT DOCUMENT REQUIREMENTS ARE IN EXCESS OF CODE REQUIREMENTS, THE CONTRACT DOCUMENTS SHALL GOVERN. THE CONTRACTOR SHALL OBTAIN A COPY OF THE BASE BUILDING SPECIFICATIONS AND OWNERS BUILDING STANDARDS PRIOR TO STARTING WORK.
- 3. THIS WORK INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS, EQUIPMENT, FIXTURES, APPARATUS, AND APPURTENANCES REQUIRED FOR COMPLETE INSTALLATION OF OPERATING HEATING, VENTILATING, AIR CONDITIONING, AND PLUMBING SYSTEMS AS INDICATED AND SPECIFIED, IN PLACE AND READY FOR
- 4. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. NOTIFY THE ARCHITECT/ ENGINEER OF ANY DISCREPANCIES FOUND PRIOR TO SUBMITTING A BID. THE DRAWINGS ARE SCHEMATIC IN NATURE AND INDICATE APPROXIMATE LOCATIONS OF THE HVAC AND PLUMBING SYSTEMS. ALL ITEMS ARE SHOWN APPROXIMATELY TO SCALE AND ATTEMPT SHOW HOW THESE ITEMS SHOULD BE INTEGRATED INTO THE BUILDING CONSTRUCTION. LOCATE ALL ITEMS BY ON-THE-JOB MEASUREMENTS. CONFORMANCE WITH DRAWINGS AND CODE REQUIREMENTS. COOPERATE WITH OTHER TRADES TO ENSURE PROJECT COMPLETION AS INDICATED.
- CONSIDERATION WILL NOT BE GRANTED FOR MISUNDERSTANDING OF THE AMOUNT OF WORK TO BE PERFORMED. TENDER OF A PROPOSAL CONVEYS FULL CONTRACTOR AGREEMENT OF THE ITEMS AND CONDITIONS SPECIFIED. SHOWN ON THE DRAWINGS, SCHEDULED, AND/OR REQUIRED BY THE NATURE OF THIS PROJECT.
- 6. ARRANGE ALL WORK IN A NEAT, WELL-ORGANIZED MANNER WITH SERVICES RUNNING PARALLEL WITH PRIMARY LINES OF THE BUILDING CONSTRUCTION. LOCATE OPERATING AND CONTROL EQUIPMENT PROPERLY TO PROVIDE EASY ACCESS AND ARRANGE ENTIRE WORK WITH ADEQUATE ACCESS FOR OPERATION AND MAINTENANCE, AND FOR PROPER CODE CLEARANCES.
- 7. THE CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL NEW EQUIPMENT, CONTROLS, AND FIXTURES TO BE PROVIDED. SUBMIT FOUR (4) COPIES FOR APPROVAL. ALL EQUIPMENT PROVIDED SHALL BE TESTED IN THE PRESENCE OF THE BUILDING ENGINEER.

CONSTRUCTION NOTES:

PRE-CONSTRUCTION SERVICE CHECK-OUT:

THE SUCCESSFUL HVAC CONTRACTOR SHALL PERFORM THE FOLLOWING PRE-CONSTRUCTION SERVICE CHECK-OUT, AFTER THE AWARD OF CONTRACT, AND BEFORE BEGINNING CONSTRUCTION:

- A. TEST COOLING AND HEATING CYCLE OF EACH EXISTING VAV TERMINAL UNIT SERVING THIS LEASE. VERIFY THAT ALL CONTROLLERS, ACTUATORS, THERMOSTATS, AND OTHER CONTROLS ARE FULLY OPERATIONAL.
- B. VERIFY THAT THE BASE BUILDING AHU IS OPERATIONAL, THAT THE UNIT IS ACHIEVING PROPER LEAVING AIR TEMPERATURES, AND THAT FILTERS ARE IN
- C. TEST COOLING AND HEATING CYCLE OF EACH EXISTING FAN COIL UNIT, HEAT PUMP, OR OTHER SELF-CONTAINED EQUIPMENT. VERIFY THAT ALL COMPONENTS AND CONTROL DEVICES ARE FULLY OPERATIONAL. VERIFY THAT COOLING COILS ARE CLEAN AND FILTERS ARE IN PLACE. VERIFY THAT BELTS AND SHEAVES ARE

THE SUCCESSFUL PLUMBING CONTRACTOR SHALL PERFORM THE FOLLOWING PRE-CONSTRUCTION SERVICE CHECK-OUT, AFTER THE AWARD OF CONTRACT, AND BEFORE BEGINNING CONSTRUCTION:

A. TEST ALL EXISTING FIXTURES, EQUIPMENT, AND WATER HEATERS TO VERIFY ALL ITEMS ARE FULLY OPERATIONAL AND REQUIRE NO REPAIRS.

THE CONTRACTOR SHALL NOTIFY THE BUILDING OWNER IN WRITING OF ANY DEFICIENCIES FOUND AND SHALL OBTAIN WRITTEN INSTRUCTIONS FROM THE BUILDING OWNER PRIOR TO BEGINNING CONSTRUCTION REGARDING ANY ACTION TO BE TAKEN. ITEMS NOT ADDRESSED IN THE PRE-CONSTRUCTION SERVICE CHECK-OUT SHALL BE CORRECTED BY THE CONTRACTOR PRIOR TO COMPLETION OF CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.

PROJECT CLOSE-OUT:

THE HVAC CONTRACTOR AND PLUMBING CONTRACTOR SHALL PERFORM THE FOLLOWING TASKS UPON PROJECT COMPLETION. ALL REQUIRED REPORTS AND AS-BUILTS SHALL BE SUBMITTED WITHIN TWO (2) WEEKS OF DATE OF SUBSTANTIAL COMPLETION OR OWNER OCCUPANCY.

- A. PROVIDE AND INSTALL CLEAN FILTERS FOR ALL EQUIPMENT SERVING THIS LEASE. INCLUDING THE BASE BUILDING AIR HANDLING UNIT.
- B. SUBMIT TWO (2) COPIES OF HVAC TEST-ADJUST-BALANCE REPORTS TO THE ARCHITECT/ENGINEER AND ONE (1) COPY TO THE BUILDING ENGINEER FOR
- C. SUBMIT "AS-BUILT" RECORD DRAWINGS INDICATING ACTUAL AS-BUILT CONDITIONS TO THE ARCHITECT/ENGINEER FOR REVIEW. RECORD DRAWINGS SHALL BE STAMPED "AS-BUILT" AND SHALL HAVE THE NAME, ADDRESS, AND TELEPHONE NUMBER OF THE CONTRACTOR. ALL ENGINEERS' SEALS SHALL BE REMOVED FROM THE DRAWINGS. PROVIDE "AS-BUILT" DRAWINGS ON CAD (AUTOCAD VERSION 2000) ALONG WITH TWO (2) SETS OF BLUELINES.
- D. SUBMIT TWO (2) COPIES OF OWNER'S MAINTENANCE MANUALS TO THE ARCHITECT/ENGINEER FOR REVIEW. ONE (1) COPY SHALL BE SUBMITTED TO THE BUILDING ENGINEER FOR REVIEW. THE MANUALS SHALL INCLUDE RATINGS, CAPACITIES, PARTS LISTS, WIRING DIAGRAMS, SERVICE/MAINTENANCE RECOMMENDATIONS. WARRANTIES, AND MSDS DATA SHEETS FOR ALL MATERIAL PROVIDED AND UTILIZED IN THE INSTALLATION.
- E. SUBMIT WRITTEN RESPONSE TO ALL FIELD REPORTS INDICATING CORRECTIVE ACTIONS TAKEN AND DATE CORRECTIVE ACTION WAS TAKEN TO THE ARCHITECT/ENGINEER AND THE BUILDING ENGINEER FOR REVIEW.
- F. ALL EQUIPMENT SHALL BE TESTED. BUILDING ENGINEER SHALL BE PRESENT DURING TESTING OF THE EQUIPMENT. PROVIDE LETTERS OF COMPLIANCE WITH TEST RESULTS TO THE BUILDING ENGINEER FROM CONTRACTOR OR EQUIPMENT

MECHANICAL GENERAL NOTES:

- 1. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS TO DETERMINE EXACT LOCATIONS OF ALL AIR DISTRIBUTION DEVICES.
- 2. DUCT SIZES INDICATED ARE FREE AREA SIZES. ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK SHALL BE SHEET METAL CONSTRUCTED IN STRICT ACCORDANCE WITH SMACNA STANDARDS.
- 3. DUCTWORK RUNOUTS TO AIR DEVICES SHALL BE RIGID ROUND SHEET METAL FLEXIBLE DUCT MAY BE UTILIZED FOR THE LAST 72 INCHES OF THE RUNOUT.
- 4. SEAL ALL (NEW AND EXISTING) LONGITUDINAL AND TRANSVERSE SEAMS IN ALL DUCTWORK WITHIN THE SPACE UNDER CONSTRUCTION, WITH A NON-HARDENING MASTIC DUCT SEALER RATED FOR SYSTEM OPERATING PRESSURES AND TEMPERATURES. SEALANT SHALL BE EQUAL TO HARDCAST "IRON GRIP" WATER BASED SEALANT #601.
- 5. ALL CONCEALED SUPPLY DUCTWORK AND BACK OF DIFFUSERS WITHIN INSULATED CEILING PLENUMS SHALL BE EXTERNALLY INSULATED WITH 1-1/2 INCH THICKNESS R-6 FIRERGLASS DUCT WRAP WITH DRAFT-SCRIM-FOIL VAPOL BARRIER JACKET. ALL SUPPLY DUCTWORK WITHIN UNINSULATED PLENUMS OR IN ATTIC SPACES SHALL BE EXTERNALLY INSULATED WITH 2-INCH THICKNESS R-6 FIBERGLASS DUCT WRAP WITH KRAFT-SCRIM-FOIL VAPOR BARRIER JACKET. ON DUCTS OVER 18-INCES WIDE APPLY WELDCLIPS OR STICKCLIPS TO BOTTOM OF DUCT SPACED 18-INCHES ON CENTER EACH WAY MAXIMUM. SEAL ALL LONGITUDINAL AND TRANSVERSE SEAMS AND ALL PUNCTURES CAUSED BY WELDCLIPS WITH 2-INCH WIDE SMACNA LABELED DUCT TAPE AND MASTIC
- 6. ALL FLEXIBLE DUCT USED WITHIN INSULATED CEILING PLENUMS SHALL BE MINIMUM OF R-6 INSULATION VALUE. ALL FLEXIBLE DUCT USED WITHIN UNINSULATED PLENUMS OR IN ATTIC SPACES SHALL BE MINIMUM OF R-6 INSULATION VALUE. FLEX DUCT SHALL BE FACTORY FABRICATED ASSEMBL' CONSISTING OF A ZINC-COATED SPRING STEEL OR SPIRAL ALUMINUM HELIX SEAMLESS INNER LINER SHALL BE CPE FILM MECHANICALLY LOCKED TO HELIX WITHOUT ADHESIVES. INSULATION SHALL BE FACTORY WRAPPED FIBERGLASS BLANKET. VAPOR BARRIER SHALL BE FIRE RETARDANT REINFORCED ALUMINUM IATERIAL. FLEX DUCT SHALL BE RATED FOR 4000 FPM VELOCITY, 6—INCH W.G. POSITIVE WORKING PRESSURE, 1-INCH NEGATIVE WORKING PRESSURE. FLEX DUCT SHALL BE UL CLASS I DUCT WITH FLAME SPREAD OF NOT OVER 25 AND A SMOKE DEVELOPED RATE OF NOT OVER 50. WHERE FLEXIBLE DUCT LENGTH EXCEEDS 72-INCHES, HORIZONTAL SUPPORT IS REQUIRED. DUCT SHALL BE SUSPENDED ON 36-INCH CENTERS WITH A MINIMUM 3/4" WIDE BAND STRAP AND A MINIMUM 6-INCH WIDE SHEET METAL PROTECTIVE SADDLE. ALL JOINTS and connections of flexible duct shall be made by INSTALLING "PANDUIT" STRAPS ON INNER JACKET, SEALING OUTER JACKET WITH 2-WRAPS OF SMACNA APPROVED DUCT TAPE, AND INSTALLING AN ADDITIONAL "PANDUIT" STRAP OVER DUCT TAPE.
- 7. ALL ROUND SPIN-IN TAPS IN LOW PRESSURE DUCTWORK DOWNSTREAM OF VAV BOXES SHALL BE MADE WITH A DAMPER EXTRACTOR SPIN-IN COLLAR. SPIN-INS SHALL BE INSTALLED WITH THE DAMPER AXIS PARALLEL TO AIR FLOW.
- 8. PIPING MATERIALS:
- A. CHILLED WATER PIPING: SCHEDULE 40 BLACK STEEL WITH CLASS 150 VALVES AND FITTINGS.

B. CONDENSATE DRAIN PIPING: HARD DRAIN COPPER TUBING WITH MATCHING

A. STOP VALVES 2-INCHES AND SMALLER SHALL BE FULL PORT CLASS 150

- SOLDER END FITTINGS. 9. PIPING ACCESSORIES:
- 10. INSULATE INDOOR CHILLED WATER PIPING WITH 2-INCH THICKNESS PHENOLIC INSULATION/ASJ INSULATION. INSULATE CONDENSATE DRAIN PIPING WITH 1/2" ARMAFLEX. PROVIDE SHEET METAL SADDLES AT ALL HANGERS.
- 11. SEAL ALL NEW AND EXISTING PIPE, CONDUIT, AND DUCT PENETRATIONS THROUGH FIRE RATED WALLS WITH FIRE CAULKING. FIRE CAULKING SHALL BE EQUAL TO 3M BRAND CP25WP FIRE CAULK. INSTALL CAULKING IN STRICT ACCORDANCE WITH ALL MANUFACTURERS' RECOMMENDATIONS AND WRITTEN INSTRUCTIONS AND IN ACCORDANCE WITH ALL APPLICABLE UL DETAILS.
- 12. WHERE THERMOSTATS ARE LOCATED ADJACENT TO LIGHTING FIXTURE SWITCHES, THE THERMOSTAT SHALL BE ALIGNED WITH THE LIGHT SWITCH.
- 13. UPON COMPLETION, THE CONTRACTOR SHALL SUBMIT (2) COPIES OF OWNER MAINTENANCE MANUALS TO THE ARCHITECT/ENGINEER AND ONE (1) COPY TO THE BUILDING ENGINEER FOR APPROVAL.
- 14. THE CONTRACTOR SHALL PROVIDE REPRODUCIBLE "AS-BUILT" RECORD DRAWINGS TO THE OWNER UPON COMPLETION OF WORK.
- 15. VERIFY ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS AND FROM ACTUAL
- 16. INSTALL DUCTWORK AND PIPING TIGHT TO STRUCTURE UNLESS NOTED
- 17. COORDINATE WORK WITH ALL OTHER TRADES.

MEASUREMENTS AT THE JOBSITE.

- 18. THE EQUIPMENT AND MATERIALS SPECIFIED ON THESE PLANS AND DIVISION 15 SPECIFICATIONS SHALL CONTAIN NO ASBESTOS OR PCB. THE CONTRACTOR SHALL VERIFY IN WRITING THAT THE EQUIPMENT AND MATERIALS INSTALLED IN THIS PROJECT UNDER THIS DIVISION 15 CONTAIN NO ASBESTOS OR PCB. PROVIDE MSDS DATA SHEETS FOR ALL MATERIAL PROVIDED AND UTILIZED IN THE
- 19. COMBINATION SMOKE FIRE DAMPER SHALL FAIL CLOSED. REFER TO ELECTRICAL DRAWINGS FOR ACTUATOR POWER AND FIRE ALARM INTERLOCK.
- 20. IDENTIFICATION LABELS SHALL BE PROVIDED FOR EACH VAV OR FPT, WHICH SHALL BE ATTACHED TO CEILING GRID ADJACENT TO FILTER ACCESS TILE. LETTERING SHALL BE 7/8" HIGH, BLACK ON WHITE BACKGROUND.
- 21. COORDINATE WITH THE BUILDING OWNER'S OPERATION ENGINEER FOR ALL COOLING AND HEATING THERMOSTAT SETPOINTS. PROVIDE OPERATOR TRAINING FOR ALL NEW CONTROLS AND SYSTEMS PROVIDED. PROVIDE CONTROLS O&M MANUALS TO THE OPERATIONS ENGINEER UPON COMPLETION OF THE CONTROLS SYSTEM. ALL JOBS TO INCLUDE UPDATED FLOOR PLAN GRAPHICS FOR THE HVAC CONTROL COMPUTER.
- 22. PROVIDE WHITE PVC SLEEVES ON REFRIGERATION LINES. APPLY ARMAFLEX TO ALL INSULATED REFRIGERANT PIPING ON ROOF. REFER TO MANUFACTURER'S SPECIFICATIONS FOR APPLICATION.
- 23. ROOFS ARE TO BE CLEANED AND DEBRIS FEE AFTER ANY WORK.
- 24. ENGINEERS TO BE NOTIFIED PRIOR TO TILE PLACEMENTS TO CONDUCT OVERHEAD
- 25. PROVIDE CONDENSING UNITS AND ASSOCIATED REFRIGERANT PIPING CONDUIT, ETC. ON THY-CURB EQUIPMENT RAILS.

TEMPERATURE CONTROL NOTES:

- 1. ALL HVAC CONTROL WORK TO BE PERFORMED BY TRANE.
- 2. CONTROLS SHALL BE INSTALLED TO MATCH EXISTING BUILDING STANDARD CONTROLS, INCLUDING SUPPORTING FUNCTIONS OF THE EXISTING ENERGY MANAGEMENT CONTROL SYSTEM. LOW VOLTAGE WIRING SHALL BE PROVIDED AND INSTALLED BY THE CONTROLS CONTRACTOR. LINE VOLTAGE WIRING SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL COORDINATE EXACT REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO BID.
- 3. TEMPERATURE SENSORS SHALL BE BUILDING STANDARD.
- 4. THE CONTROLS CONTRACTOR SHALL VERIFY PROPER OPERATION OF EXISTING VAV TERMINAL UNITS AND ELECTRIC HEATING COILS. THE CONTROLS CONTRACTOR SHALL CONTACT THE BUILDING OWNER FOR PARTS OR COMPONENTS REQUIRED TO MAKE ALL EXISTING SYSTEMS FULLY FUNCTIONAL.
- 5. THE CONTROLS CONTRACTOR SHALL TEST ALL NEW CONTROL EQUIPMENT, ACCESSORIES, AND PROGRAMMING UPON COMPLETION. PROVIDE WRITTEN DOCUMENTATION TO THE ARCHITECT SIGNED BY A CORPORATE OFFICER OF THE CONTROLS CONTRACTOR VERIFYING ITEM TESTED, DATE TESTED, AND NAME OF PERSON WHO PERFORMED THE TEST. THE CONTROLS CONTRACTOR SHALL DEMONSTRATE SYSTEM OPERATION TO THE ENGINEER.
- 6. REFER TO BASE BUILDING TEMPERATURE CONTROLS SEQUENCE OF OPERATION FOR ADDITIONAL TEMPERATURE CONTROLS REQUIREMENTS.
- COORDINATE WITH THE BUILDING OWNER'S OPERATION ENGINEER FOR ALL COOLING AND HEATING THERMOSTAT SETPOINTS. PROVIDE OPERATOR TRAINING FOR ALL NEW CONTROLS AND SYSTEMS PROVIDED. PROVIDE CONTROLS O&M MANUALS TO THE OPERATIONS ENGINEER UPON COMPLETION OF THE CONTROLS SYSTEM. ALL JOBS TO INCLUDE UPDATED FLOOR PLAN GRAPHICS FOR THE HVAC CONTROL COMPUTER. UPDATED FLOOR PLAN GRAPHICS TO INCLUDE DUCTWORK, VARIABLE AIR VOLUME BOXES, FAN POWERED BOXES. ARCHITECTURAL FLOOR PLAN AND THERMOSTAT LOCATIONS.

HVAC TEST-ADJUST-BALANCE

UPON COMPLETION OF HVAC WORK, AND PRIOR TO TENANT OCCUPANCY, ALL AIR AND WATER SYSTEMS SHALL BE ADJUSTED AND BALANCED TO WITHIN 10% OF INDICATED DESIGN AIR QUANTITIES AND IN ACCORDANCE WITH ALL NEBB OR AABO RECOMMENDATIONS AND PROCEDURES. THE HVAC TEST-ADJUST-BALANCE CONTRACTOR SHALL HAVE CURRENT NEBB OR AABC CERTIFICATION. ALL. INSTRUMENTS USED SHALL BE PROPERLY CALIBRATED. TABULATE ALL TEST DATA ON NEBB OR AABC FORMS. IF PROBLEMS ARE ENCOUNTERED DURING BALANCING, THE HVAC TEST-ADJUST-BALANCE CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR AND IF NECESSARY, THE ARCHITECT/ENGINEER FOR INSTRUCTIONS BEFORE COMPLETION OF TESTING AND BALANCING. COORDINATE WITH TEMPERATURE controls contractor or owner's building engineer as necessary to UPDATE/PROGRAM ALL REQUIRED SYSTEM STATIC PRESSURE SETPOINTS AND OTHER BASE BUILDING TEMPERATURE CONTROLS SYSTEM CONTROL POINTS AS DETERMINED THROUGH THE TEST—ADJUST—BALANCE. UPON COMPLETION OF TEST-ADJUST-BALANCE, TABULATED TEST DATA SHALL BE TURNED OVER TO THE BUILDING ENGINEER.

FIRE SPRINKLER SYSTEM NOTES:

- 1. THE SPRINKLER CONTRACTOR SHALL RELOCATE EXISTING SPRINKLER HEADS AND PIPING, AND SHALL PROVIDE NEW SPRINKLER HEADS AND PIPING AS REQUIRED TO PROVIDE FULL COVERAGE OF THIS LEASE SPACE IN STRICT ACCORDANCE WITH NFPA-13, AND ALL CITY, STATE, AND NATIONAL CODES AND STANDARDS NEW SPRINKLER HEADS SHALL MATCH EXISTING BUILDING STANDARD HEADS. COVERAGE AND DENSITY SHALL MATCH EXISTING BUILDING
- 2. THE SPRINKLER CONTRACTOR SHALL REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS TO DETERMINE EXACT LOCATIONS OF ALL SPRINKLER HEADS. RELOCATE EXISTING SPRINKLER HEADS AND BRANCH PIPING WHERE LIGHTING FIXTURE CONFLICTS OCCUR. ALL SPRINKLER HEADS TO BE FULLY CONCEALED AND CENTERED IN THE CEILING TILES.

DEMOLITION NOTES:

- 1. DEMOLISH ALL DUCT BRANCHES PREVIOUSLY SERVING AIR DEVICES, WHICH ARE TO BE REMOVED OR RELOCATED. CAP ALL UNUSED DUCT TAPS.
- 2. EXISTING AIR DEVICES MAY BE REUSED WHERE DEVICES ARE IN "LIKE NEW CONDITION AND WHERE EXISTING DEVICES MEET SCHEDULED PERFORMANCE. CLEAN ALL REUSED DEVICES. FIELD VERIFY EXACT QUANTITIES OF AIR DEVICES TO BE REUSED PRIOR TO SUBMITTING A BID.
- 3. REMOVE ALL EXISTING UNUSED MECHANICAL EQUIPMENT, CONTROLS, PIPING, HANGERS, WIRING, ETC. FROM ABOVE CEILINGS.
- 4. DEMOLISH ALL UNUSED PLUMBING SANITARY, VENT, CW, AND HW PIPING BACK TO EXISTING CORE STUBOUTS. REMOVE ALL UNUSED PIPE HANGERS.

CODE REQUIREMENTS AND PERMITS PERFORM WORK IN ACCORDANCE WITH APPLICABLE STATUTES, ORDINANCES, CODES, AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION. OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS.

IMMEDIATELY PRIOR TO FINAL ACCEPTANCE OF PROJECT, REPLACE DISPOSABLE TYPE AIR FILTERS. IF AIR HANDLING UNITS ARE OPERATING DURING CONSTRUCTION, INSTALL HIGH EFFICIENCY FILTERS IN UNITS AND REPLACE AT END OF

GUARANTEE WORK FOR 1 YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE PROJECT AND DURING THAT PERIOD MAKE GOOD ANY FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP.

ENGINEER'S APPROVAL OF SUBMITTED MATERIAL CONSTITUTES AN ACKNOWLEDGMENT ONLY AND IN NO WAY RELIEVES THE CONTRACTOR OF FULL RESPONSIBILITY FOR PROVIDING ALL SYSTEMS COMPLETE IN ACCORDANCE WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR CONFIRMIN AND CORRELATING DIMENSIONS AT JOB SITE, FOR INFORMATION WHICH PERTAINS T FABRICATION PROCESSES OR CONSTRUCTION TECHNIQUES AND FOR COORDINATION OF WORK WITH ALL OTHER TRADES. ANY MATERIALS OR EQUIPMENT PROVIDED BY THIS CONTRACTOR WITHOUT APPROVED SHOP DRAWINGS CONSTITUTES THE CONTRACTOR'S AGREEMENT TO COMPLY WITH THE ENGINEER'S INTENT WHETHER SPECIFIED, SHOWN OR IMPLIED.

CONTRACTOR SHALL PROVIDE AN AIR BALANCE OF ALL DUCTED SYSTEMS. ADJUST SHEAVES, BELTS, DRIVES, DAMPERS, ETC., TO OBTAIN AIR QUANTITIES SHOWN.
VERIFY PROPER OPERATION OF ALL SYSTEMS. VERIFY ALL VOLUME DAMPERS ARE INSTALLED. PERFORM TAB OPERATIONS AS REQUIRED BY THE NEBB TEST AND ANCE PROCEDURES MANUAL AND RECORD TESTS (OF REPORT AND SUBMIT TO THE ARCHITECT AND ENGINEER FOR REVIEW.

PROVIDE AND INSTALL ALL WIRING, CONDUIT AND OTHER DEVICES REQUIRED FOR A COMPLETE AND WORKING HVAC SYSTEM. THIS INCLUDES BUT IS NOT LIMITED TO 120 VOLT AND LOW VOLTAGE WIRING. MATERIALS AND METHOD OF EXECUTION ARE SPECIFIED IN DIVISION 16 - ELECTRICAL. ALL CONTROLS TO MATCH BUILDING STANDARD. DDC TO CONTROL VAV BOXES. UPDATE ALL GRAPHICS IN DDC SYSTEM. ALL CONTROLS SYSTEM COMPONENTS ARE TO BE CALIBRATED AND ADJUSTED.

FIT WITH SLEEVES ALL PIPES PASSING THROUGH MASONRY AND CONCRETE CONSTRUCTION. FABRICATE SLEEVES OF SCHEDULE 40 GALVANIZED STEEL PIPE. SIZE SLEEVE FOR MINIMUM CLEARANCE BETWEEN PIPE OR INSULATION AND SLEEVE. EXTEND EACH SLEEVE THROUGH THE FLOOR OR WALL. CUT THE SLEEVE FLUSH WITH EACH SURFACE, EXCEPT THAT IN EXPOSED LOCATIONS, EXTEND FLOOR SLEEVES 3 INCHES FROM FINISHED WALL OR ABOVE FINISHED FLOOR LINE. CAULK ALL SLEEVES WATER AND AIRTIGHT. SEAL ANNULAR SPACE BETWEEN PIPES AND SLEEVES WITH FIRE STOP MATERIAL, SEE SPECIFICATION ON FIRE STOPPING FOUND ELSEWHERE IN THIS SPECIFICATION. INSTALL PER MANUFACTURER'S RECOMMENDATIONS TO MEET OR EXCEED FIRE RATING OF PENETRATED WALL (MINIMUM 1-1/2 HOUR). REFERENCE ARCHITECTURAL DRAWINGS FOR WALL FIRE SLEEVE PIPE THROUGH CONCRETE FOUNDATIONS, BELOW GRADE WITH THUNDERLINE LINK-SEAL WALL PENETRATION SEALS. EQUIP SEALS WITH STAINLESS STEEL NUTS, BOLTS AND PRESSURE PLATE.

ALL PIPING, TUBING, DUCTWORK, CONDUIT, ETC. PASSING THROUGH FIRE RATED FLOORS AND/OR WALLS SHALL HAVE THE VOID AREA BETWEEN THE MATERIAL PASSING THROUGH FLOOR AND/OR WALL SEALED WITH AN APPROVED FIRE-STOP MATERIAL TO MAINTAIN THE FIRE RATING OF THE FLOOR AND/OR WALL. DEPENDING ON THE PARTICULAR INSTALLATION, THE CONTRACTOR SHALL USE FS900 SERIES FIRE STOP CAULK OR FS500/600 SERIES FIRE-STOP COMPONENTS AS MANUFACTURED BY INTERNATIONAL PROTECTIVE COATINGS OR APPROVED EQUIVALENT. ALL FIRE STOP SYSTEMS SHALL BE INSTALLED AS REQUIRED BY THE MANUFACTURER

AND U.L. REQUIREMENTS FOR EACH APPLICATION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOSS OR DAMAGE TO THE EXISTING FACILITIES AS USED BY HIS WORKMEN, AND SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING SUCH LOSS OR DAMAGE. THE CONTRACTOR SHALL SEND PROPER NOTICES AND RECEIVE WRITTEN PERMISSION FROM THE OWNER TO ENTER EXISTING AREAS. BEFORE BEGINNING WORK IN EXISTING AREAS, MAKE THE NECESSARY ARRANGEMENTS AND PERFORM OTHER SERVICES REQUIRED FOR THE CARE, PROTECTION, AND IN SERVICE MAINTENANCE OF ALL ELECTRICAL, COMMUNICATION PLUMBING, HEATING, AIR CONDITIONING, AND VENTILATING SERVICES FOR EXISTING FACILITIES. THE CONTRACTOR SHALL ERECT TEMPORARY BARRICADES WITH NECESSARY SAFETY DEVICES, AS REQUIRED TO PROTECT PERSONNEL FROM INJURY REMOVING ALL SUCH TEMPORARY PROTECTION UPON COMPLETION OF THE WORK. THI CONTRACTOR SHALL PROVIDE TEMPORARY OR NEW SERVICES TO ALL EXISTING Facilities as required to maintain their proper operation when normal SERVICES ARE DISRUPTED AS A RESULT OF THE WORK BEING ACCOMPLISHED UNDER THIS PROJECT. WHERE EXISTING CONSTRUCTION IS REMOVED TO PROVIDE WORKING AND EXTENSION ACCESS TO EXISTING UTILITIES, THE CONTRACTOR SHALL REMOVE DOORS. PIPING. CONDUIT. OUTLET BOXES, WIRING, LIGHT FIXTURES, AIR CONDITIONING DUCTWORK, AND EQUIPMENT, ETC., TO PROVIDE THIS ACCESS AND SHALL REINSTALL SAME UPON COMPLETION OF WORK IN THE AREAS AFFECTED. WHERE PARTITIONS, ALLS, FLOORS, OR CEILINGS OF EXISTING CONSTRUCTION ARE INDICATED TO B REMOVED AND EQUIPMENT LOCATED IN THESE AREAS IS REQUIRED TO REMAIN I OPERATION. THE CONTRACTOR SHALL REMOVE AND REINSTALL ALL EQUIPMENT REQUIRED FOR THE OPERATION OF THE REMAINING ELECTRICAL SYSTEMS. THIS IS TO INCLUDE BUT IS NOT LIMITED TO ELECTRICAL SWITCHES, RELAYS, FIXTURES,

OUTAGES OF SERVICES AS REQUIRED BY THE PROJECT WILL BE PERMITTED BUT ONLY AT TIME APPROVED BY THE OWNER. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING TWO WEEKS IN ADVANCE OF THE REQUESTED OUTAGE IN ORDER TO SCHEDULE REQUIRED OUTAGES. NO OUTAGES SHALL BE TAKEN UNLESS WRITTEN APPROVAL HAS FIRST BEEN RECEIVED FROM THE OWNER. THE TIME ALLOWED FOR OUTAGES WILL NOT BE DURING NORMAL WORKING HOURS UNLESS OTHERWISE APPROVED BY THE OWNER. ALL COSTS OF OUTAGES, INCLUDING OVERTIME CHARGES, SHALL BE INCLUDED IN THE CONTRACT AMOUNT.

ACCESS DOORS

THIS SECTION PROVIDES FOR FURNISHING AND INSTALLING ACCESS DOORS IN ALL WALL OR CEILING LOCATIONS AS REQUIRED OR SHOWN FOR ACCESS TO VALVES, CONTROLS, WATER HAMMER ARRESTORS, TRAP PRIMERS, AND OTHER EQUIPMENT REQUIRING MAINTENANCE, ADJUSTMENT OR OPERATION. PROVIDE ACCESS DOORS TO PROVIDE ACCESS TO ALL MECHANICAL ITEMS REQUIRING SERVICE OR MAINTENANCE, WHETHER SHOWN ON DRAWINGS OR NOT.

LOW TEMPERATURE PIPING INSULATION

THIS SECTION PROVIDES FOR INSTALLING AND FURNISHING LOW TEMPERATURE PIPING INSULATION OF FIBERGLASS OR ARMAFLEX AP AS NOTED BELOW. THE INSULATION WILL BE USED FOR LOW TEMPERATURE APPLICATION INCLUDING DOMESTIC COLD WATER, CONDENSATE DRAINS, AND HORIZONTAL PORTIONS OF WASTE LINES ABOVE GRADE WHICH RECEIVE CONDENSATE FROM EVAPORATORS.

USE PREMOLDED FIBERGLASS PIPE INSULATION, 4 PCF DENSITY, WITH FACTORY-APPLIED, ALL SERVICE REINFORCED VAPOR BARRIER JACKET HAVING INTEGRAL LAMINATED ALUMINUM VAPOR BARRIER, OR CLOSED CELL, FLEXIBLE, ELASTOMERIC THERMAL INSULATION, WHICH IS 25/50 RATED.

INSULATED UNIT THICKNESS (INCHES)

1/2" - ARMAFLEX AP

1" - FIBERGLASS

REFRIGERANT SUCTION 1/2" UP TO 1-1/2" PIPE; 1-1/2" FOR LARGER THAN 1-1/2" PIPE. DOMESTIC COLD WATER PIPING (NEW)

PROVIDE MOLDED OR MITERED COVERS FOR FLANGES, VALVES AND FITTINGS.

FIELD FABRICATED. USE SECTIONS OF HIGH DENSITY FIBERGLASS INSULATION THAT WILL SUPPORT THE BEARING AREA AT HANGERS AND SUPPORTS. FURTHER SUPPORT INSULATION AT HANGERS AND SUPPORTS WITH A SHIELD OF GALVANIZED METAL EXTENDING NOT LESS THAN 4 INCHES ON EITHER SIDE OF THE SUPPORT BEARING AREA, COVERING AT LEAST HALF OF THE PIPE CIRCUMFERENCE.

SEALANT, ADHESIVE AND FINISH (LOW-VOC) SEALANT. USE BENJAMIN FOSTER 95-44 TO BE USED AT VALVE COVERS. ADHESIVE. FURNISH BENJAMIN FOSTER 85-20 TO SEAL LONGITUDINAL LAPS OF THE VAPOR BARRIER JACKET AND TO ADHERE BUTT JOINT COVERS. SELF-SEALING LAPS AND BUTT STRIPS ARE ALLOWED.

FINISH (LOW-VOC) USE BENJAMIN FOSTER 30-35 WITH GLASS FABRIC REINFORCEMENT. FINISH ARMAFLEX AP INSULATION INSTALLED OUTDOORS WITH MINIMUM 2-COATS OF ARMSTRONG FINISH PER MANUFACTURER'S RECOMMENDATIONS.

HIGH TEMPERATURE PIPING INSULATION (FIBERGLASS)

THIS SECTION PROVIDES FOR FURNISHING AND INSTALLING HIGH TEMPERATURE PIPING INSULATION, INCLUDING DOMESTIC HOT WATER PIPING.

USE PREMOLDED FIBERGLASS PIPE INSULATION, 4 PCF DENSITY, WITH A FACTORY-APPLIED, ALL SERVICE REINFORCED JACKET HAVING INTEGRAL LAMINATED ALUMINUM VAPOR BARRIER. PROVIDE INSULATION THICKNESS AS LISTED.

INSULATING UNIT THICKNESS (INCHES) DOMESTIC HOT WATER PIPING, 1-1/2" AND SMALLER, 1" THICK

ADHESIVE, FINISH AND CEMENT ADHESIVE. FURNISH BENJAMIN FOSTER 85-20 TO SEAL LONGITUDINAL LAPS OF VAPOR BARRIER JACKET AND TO ADHERE JOINT BUTT COVERS. FINISH. USE BENJAMIN FOSTER 30—35 WITH GLASS FABRIC REINFORCEMENT. CEMENT. FURNISH JOHNS-MANVILLE NO. 460 ON INSULATED FITTINGS, FLANGES AND

EXTERNAL DUCT INSULATION WORK INCLUDED

THIS SECTION PROVIDES FOR THE FURNISHING AND INSTALLATION OF EXTERNAL NSULATION ON LOW-VELOCITY SUPPLY AIR DUCTS. EXTERNAL INSULATION OF CONCEALED AND EXPOSED DUCTS IS INCLUDED IN THIS SECTION. INTERNAL ACOUSTIC DUCT LININGS ARE SPECIFIED UNDER DUCTWORK AND NOT INCLUDED IN THIS SECTION.

DIVISION 15 - MECHANICAL. INSULATION - GENERAL.

INSULATION

DUCT, ROUND, FLAT OVAL, OR RECTANGULAR. PROVIDE FLEXIBLE GLASS FIBER INSULATION WITH FACTORY—APPLIED, REINFORCED FOIL—KRAFT FACING. A MINIMUM THERMAL RESISTANCE OF 8.0 (SQ.FT. X DEGREES F X HRS. PER BTU) AT 75°F IS REQUIRED. AFTER INSTALLATION (NOT IN BAG). PROVIDE MINIMUM 1-POUND DENSITY INSULATION, WHICH COMPLIES WITH SPECIFICATION H-B-100B.

COATING AND ADHESIVE (LOW VOC) COATING. PROVIDE BENJAMIN FOSTER 30-35 VAPOR BARRIER COATING. ADHESIVE. PROVIDE BENJAMIN FOSTER 85-20 VAPOR BARRIER ADHESIVE.

DUCT, ROUND, OR RECTANGULAR INSULATION SHALL BE WRAPPED TIGHTLY ON THE DUCTWORK WITH ALL CIRCUMFERENTIAL JOINTS BUTTED AND LONGITUDINAL JOINTS OVERLAPPED A MINIMUM OF 2 INCHES. IN ADDITION, SECURE INSULATION TO THE BOTTOM OF RECTANGULAR DUCTWORK OVER 24 INCHES WIDE BY THE USE OF MECHANICAL FASTENERS AT NO MORE THAN 18 INCHES ON CENTER.

PIPING FOR EQUIPMENT DRAINS

THIS SECTION PROVIDES FOR FURNISHING AND INSTALLING PIPING AND PIPING APPURTENANCES TO DRAIN AIR HANDLERS AND OTHER EQUIPMENT REQUIRING DRAINS. DUCTWORK (SHEETMETAL)

DUCT WORK TO BE FABRICATED AND INSTALLED PER LATEST EDITION OF SMACNA. GUARANTEE ALL DUCTWORK FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. THE GUARANTEE WILL COVER WORKMANSHIP. NOISE, CHATTER, WHISTLING, OR VIBRATION. DUCTWORK MUST BE FREE FROM PULSATION UNDER ALL CONDITIONS OF

ERECT ALL DUCTS IN THE GENERAL LOCATIONS SHOWN, BUT CONFORM TO ALL STRUCTURAL AND FINISH CONDITIONS OF THE BUILDING. BEFORE FABRICATING ANY DUCTWORK, CHECK THE PHYSICAL CONDITIONS AT THE JOB SITE AND MAKE ALL NECESSARY CHANGES IN CROSS SECTIONS, OFFSETS, AND SIMILAR ITEMS, WHETHER THEY ARE SPECIFICALLY INDICATED OR NOT.

EXCEPT AS OTHERWISE INDICATED, SHEET METAL DUCTWORK MATERIAL AND INSTALLATION SHALL COMPLY WITH THE FIFTH EDITION OF SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS.

SEALING OF SEAMS AND JOINTS (NOT FOR EXPOSED DUCTWORK) THE ENTIRE DUCT SYSTEM SHALL BE SEALED. THE SEAMS AND JOINTS SHALL BE SEALED BY USE OF HARDCAST DT TAPE WITH FTA-20 (INDOOR) ADHESIVE. DUCT SHALL BE THOROUGHLY CLEANED PRIOR TO APPLICATION.

PROVIDE MINIMUM OF 3-DIAMETERS OF STRAIGHT DUCT AT INLET TO ALL VAV BOXES.

CONSTRUCTION STANDARDS. USE CONSTRUCTION METHODS WHICH FOLLOW THE REQUIREMENTS OUTLINED IN PARAGRAPH 1.5. AS WELL AS SMACNA BALANCING AND ADJUSTING PUBLICATIONS, UNLESS OTHERWISE INDICATED IN THESE SPECIFICATIONS OR ACCOMPANYING DRAWINGS REINFORCEMENT. REINFORCE DUCTS HAVING ONE SIDE EQUAL TO 25 INCHES OR MORE IN ACCORDANCE WITH RECOMMENDED CONSTRUCTION PRACTICE OF SMACNA. CROSS BREAKING OR BEADING. CROSS BREAK OR BEAD SHEET METAL FOR RIGIDITY, EXCEPT DUCTS WHICH ARE 12 INCHES OR LESS IN THE LONGEST DIMENSION. WALL PENETRATIONS. WHERE DUCTS PASS THROUGH WALLS IN EXPOSED AREAS, INSTALL SUITABLE ESCUTCHEONS MADE OF SHEET METAL ANGLES AS CLOSERS. AT ALL LOCATIONS WHERE DUCTWORK PASSES THROUGH FLOORS, PROVIDE WATERTIGHT SLEEVES PROJECTING 3 INCHES ABOVE FINISHED FLOOR AND FLUSH WITH BOTTOM OF FLOOR SLAB. FABRICATE SLEEVES OF 1/8-INCH THICK STEEL, GALVANIZED AFTER FABRICATION. ANCHOR INTO ADJACENT FLOOR SLAB AS REQUIRED. SLEEVES ARE REQUIRED INSIDE AS WELL AS OUTSIDE CHASES. SUPPORT DUCTS WHERE PASSING THROUGH FLOORS WITH STEEL STRUCTURAL ANGLES OF ADEQUATE BEARING SURFACE, GALVANIZED AFTER FABRICATION AND RESTING ON TOP OF THE SLEEVE.

RECTANGULAR. WHERE SQUARE ELBOWS ARE SHOWN, OR ARE REQUIRED FOR GOOD AIR FLOW, PROVIDE AND INSTALL BARBER-COLMAN OR EQUAL DOUBLE-WALL AIR FOIL TURNING VANES. USE RADIUS ELBOWS WITH A CENTER LINE RADIUS OF NOT LESS THAN 1-1/2 TIMES THE DUCT WIDTH. RADIUS ELBOWS MAY BE PROVIDED IN LIEU OF VANED ELBOWS WHERE SPACE AND AIR FLOW REQUIREMENTS PERMIT. ROUND DUCT. PROVIDE ELBOWS WITH A CENTERLINE RADIUS OF 1-1/2 TIMES THE DUCT DIAMETER OR DUCT WIDTH. FOR ROUND DUCTS, FURNISH SMOOTH ELBOWS OR 5-PIECE, 90° ELBOWS AND 3-PIECE, 45° ELBOWS. LOW PRESSURE INSULATED FLEXIBLE DUCT. DO NOT EXCEED 6 FEET IN LENGTH WITH ANY FLEXIBLE DUCT. IN NOISE SENSITIVE AREAS USE FLEXMASTER 8M ONLY. SUPPORT DUCT INDEPENDENTLY OF LIGHTS, CEILING AND PIPING.

FLEXIBLE CONNECTIONS WHERE DUCTS CONNECT TO FANS, MAKE FLEXIBLE AIRTIGHT CONNECTIONS USING "VENTGLAS" FABRIC. THE FABRIC MUST BE FIRE-RESISTANT, WATERPROOF AND MILDEW RESISTANT WITH A WEIGHT OF APPROXIMATELY 30 OUNCES PER SQUARE YARD. PROVIDE A MINIMUM OF 1/2-INCH SLACK IN THE CONNECTIONS, AND A MINIMUM OF 2-1/2-INCHES DISTANCE BETWEEN THE EDGES OF THE DUCTS. ALSO PROVIDE A MINIMUM OF 1-INCH SLACK FOR EACH INCH OF STATIC PRESSURE ON THE FAN SYSTEM. SECURELY FASTEN FABRIC TO APPARATUS AND TO ADJACENT DUCTWORK BY MEANS OF GALVANIZED FLATS OR DRAW BANDS. ACCESS DOORS INSTALL DUCTWORK ACCESS DOORS IN STRUCTURAL ANGLE FRAMES AND PROVIDE

WITH SASH LOCKS AND HINGES ARRANGED FOR CONVENIENT ACCESS. CONSTRUCT

DOORS WHICH OCCUR IN INSULATED DUCTS WITH AN INSULATION FILLER.

ALLOWABLE LEAKAGE. MAXIMUM ALLOWABLE LEAKAGE IS 5% OF TOTAL FLOW.

PAINT DEVICES WITH FACTORY STANDARD WHITE ENAMEL FINISH.

LOUVERED. PROVIDE LOUVERED, FIXED-PATTERN, 4-CONE DIFFUSERS WITH REMOVABLE CENTER CONE, FRAMES AND WHITE FACTORY FINISH MODEL PRICE ASCDA, TITUS OR OTHER APPROVED 4-CONE DIFFUSER SELECT FACES AND NECKS THAT ARE CIRCULAR, RECTANGULAR OR SQUARE, OF THE SIZE AND CONFIGURATION INDICATED. CONSTRUCT DIFFUSERS AND FRAMES OF ALUMINUM.

USE A FRAME COMPATIBLE WITH THE TYPE OF CEILING IN WHICH THE DIFFUSER IS DAMPERS. FURNISH AN OPPOSED-BLADE DAMPER EASILY ADJUSTABLE THROUGH THE OUTLET FOR ALL DIFFUSERS. PROVIDE OPERATING ROD EXTENSIONS AS REQUIRED

FOR DAMPER ADJUSTMENT

FOR CEILING RETURN, PROVIDE ALUMINUM EGG-CRATE TYPE, WITH WHITE FACTORY FINISH. USE CONSTRUCTION AND FRAME STYLES AS SPECIFIED FOR CEILING DIFFUSERS. USE NECK SIZES AS SHOWN. FOR WALL RETURN, PROVIDE A FIXED-BLADE, ALUMINUM GRILLE, ESSENTIALLY SIGHTPROOF, HAVING CURVED OR ANGULAR BREAK, INCLINED BLADES. SPACE THE BLADES AT 1/2-INCH CENTERS TO ACHIEVE SIGHTPROOF FEATURE. FURNISH HEMMED OR FULLY ROUNDED LEADING EDGES. PROVIDE EXTRUDED ALUMINUM GRILLE FRAMES WITH WELDED AND MITERED CORNERS. INCLUDE MOUNTING GASKETS.

SUPPLY. PROVIDE DOUBLE-DEFLECTION SUPPLY REGISTERS WITH ALUMINUM, VERTICAL FACE BLADES AND HORIZONTAL REAR BLADES. USE AN INTEGRAL, KEY-OPERATED, OPPOSED BLADE DAMPER. FURNISH SOLID, EXTRUDED ALUMINUM BLADES WHICH ARE INDIVIDUALLY ADJUSTABLE. SPACE NOT MORE THAN 3/4-INCH CENTERS FOR REAR BLADES AND 1/2-INCH CENTERS FOR FACE BLADES AND NOT LESS THAN 5/8-INCH DEEP. EMPLOY GRILLE FRAMES OF EXTRUDED ALUMINUM WITH WELDED AND MITERED CORNERS AND MOUNTING GASKETS. RETURN AND EXHAUST. FURNISH RETURN AND EXHAUST REGISTERS IDENTICAL TO RETURN GRILLES EXCEPT FOR THE ADDITION OF AN INTEGRAL KEY-OPERATED,

EXECUTION INSTALLATION

OPPOSED-BLADE DAMPER.

DIFFUSERS. ATTACH THE FRAME ASSEMBLY BY A CONCEALED HINGE ASSEMBLY TO AN OUTER FRAME COMPATIBLE WITH THE TYPE OF CEILING ON WHICH THE DIFFUSER

DIFFUSERS. ATTACH THE FRAME ASSEMBLY BY A CONCEALED HINGE ASSEMBLY TO AN OUTER FRAME COMPATIBLE WITH THE TYPE OF CEILING ON WHICH THE DIFFUSER IS INSTALLED.

ADDITIONAL CONTROLS

CONTROLS CONTRACTOR TO PROVIDE AFTER-HOURS TREND LOGGING. IN ADDITION, EXISTING BUILDING FLOOR PLAN GRAPHICS (SUMMIT SOFTWARE) ARE TO BE UPDATED TO INCLUDE TENANT DUCTWORK, DIFFUSERS, VAV BOXES, FURNITURE LAYOUT AND TENANT WALLS.

ONLY A TRANE REPRESENTATIVE MAY MODIFY/REMOVE/RELOCATE ANY COMMUNICATION WIRING FOR VAV BOXES. PRIOR TO ANY HVAC/VAV DEMOLITION, A TRANE REPRESENTATIVE MUST SURVEY ALL VAV BOXES IN THE SCOPE OF WORK TO VERIFY ADDRESSES.

OPERATION AND MAINTENANCE MANUALS PROVIDE O&M MANUALS TO OWNER.

"VAV BOXES AND THERMOSTATS" SHALL BE LABELED WITH ETCHED LABELS AS APPROVED BY BUILDING OWNER.

PROVIDE BASIC COMMISSIONING REVIEWED BY COA CODE.

PARKS & WILDLIFE

WJE ENGINEERS
ARCHITECTS
MATERIALS SCIENTISTS Wiss, Janney, Eistner Associates, Inc. 9511 N. Lake Creek Parkway



3/06/2019

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DATE: 03/06/2019 DESIGNED BY: HMG DRAWN BY: HMG REVIEWED BY: BH

REVISED: REVISED:

REVISED:

SHEET TITLE MECHANICAL

SPECIFICATIONS

SHEET NUMBER

PLUMBING LEGEND

	SYMBOL	LEGEND	
	VALVES		
	UNION		SANITARY VENT
——	BUTTERFLY VALVE	SD	STORM DRAIN
 \$	TEMPERATURE/ PRESSURE RELIEF VALVE	EOD-	EMERGENCY OVERFLOW DRAIN
T' > X	GLOBE VALVE		DIRECTION OF FLOW
		G	NATURAL GAS
	CHECK VALVE	HPG	HIGH PRESSURE GAS
	GATE VALVE	-	WATER HAMMER ARRESTOR (PLAN)
	GATE VALVE WITH C.I. VALVE BOX		WATER HAMMER ARRESTOR (ISOMETRIC)
	PRESSURE REDUCING VALVE	⊘ _{FCO}	FLOOR CLEANOUT
——————————————————————————————————————	- STRAINER W/ BLOWDOWN GATE VALVE	wco	WALL CLEANOUT
	THERMOWELL W/ THERMOMETER (TI)	⊙G	P - TRAP
\bigcirc			ELBOW TURNING DOWN
<u> </u>	PRESSURE GAUGE W/ GAUGE COCK (PI)		ELBOW TURNING UP
—ф—	BALL VALVE		CAPPED PIPE
$-\!$	CIRCUIT SETTER, BALANCING VALVE (B&G CB—SERIES)		FLEXIBLE CONNECTION
і ФІ	PLUG VALVE		CONCENTRIC PIPE REDUCER/INCREASE
—— ↓——	NEEDLE VALVE		ECCENTRIC PIPE REDUCER/INCREASER
	VALVE IN VERTICAL		PIPE SLEEVE
<u></u>	DIRT LEG (6" LONG)	SLOPE	DIRECTION OF SLOPE (DNWARD)
Ш	PIPING		FLOOR DRAIN
	DOMESTIC COLD WATER (DOMESTIC/POTABLE)		VENT THRU ROOF (RISER)
	DOMESTIC HOT WATER SUPPLY (120'F)		VENT THRU ROOF (PLAN)
	DOMESTIC HOT WATER RETURN (120°F)		CANITADY WATE
	SANITARY SEWER	P 1	SANITARY WASTE OR VENT STACK WASTE OR VENT NO.
cD	HVAC CONDENSATE DRAIN (UNDERGROUND)	DS	STORM DRAIN DOWNSPOUT
CD	HVAC CONDENSATE DRAIN (ABOVE GROUND)		STORM DRAIN DOWNSPOUT NO.

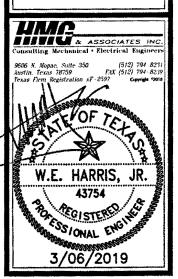
	ABBREVIATIONS					
B	B. VA. BAL. VA.	BALL VALVE CKT. SETTER BALANCING VALVE				
	CO	CLEANOUT DOM. COLD WTR. (POTABLE)				
D	D	CONDENSATE DRAIN LINE				
E	EOD EXT FCO	EMERGENCY OVERFLOW DRAIN EXTERIOR FLOOR CLEANOUT				
F	FCO FD (OR) SD	FLOOR CLEANOUT FIRE / SMOKE DAMPER				
G	GT. V GL. V G	GATE VALVE GLOBE VALVE NATURAL GAS				
H	HPG HW	HIGH PRESSURE NATURAL GAS DOMESTIC HOT WATER 140°F				
N	NPW	NON-POTABLE WATER (COLD)				
P	PW	DOMESTIC COLD WATER				
L	PI	PRESSURE INDICATOR (GAUGE)				
R	RED.	REDUCER				
S	SAN	SOIL & WASTE (ABOVE GRADE)				
	SD	STORM DRAIN				
T	TI T.&P,	TEMP. INDICATOR (THERMOMETER) TEMP. & PRESS. RELIEF VALVE				
	VD	VOLUME DAMPER				
	VTR	VENT THRU ROOF				
	٧	SANITARY VENT				
W	WHA WCO	WATER HAMMER ARRESTOR WALL CLEANOUT				

	PLUMBING FIXTURE SCHEDULE						
MARK	FIXTURE	TRIM & ACCESSORIES	SUPPORT	REMARKS			
<u>wc-1</u>	WATER CLOSET, FLOOR MOUNTED FLUSH TANK, ADA, AMERICAN STANDARD NO. 211AA.104.020 (KOHLER, OR CRANE EQUAL)	STOP: McGUIRE NO. 2169-YK SEAT: BEMIS NO. 1955 CT FLOOR FLANGE: JONES NO. CF4-SERIES	FLOOR MOUNTED	ADA COMPLIANT, 1.28-GPF			
LAV-1	LAVATORY, WALL HUNG, ADA AMERICAN STANDARD NO. 0355.041	FAUCET: SLOAN NO. EBF650 MIXING VALVE: SYMMONS NO. 4-10(B) OFFSET STRAINER: McGUIRE NO. 155WC STOPS: CHICAGO FAUCET NO. 1006 TRAP: McGUIRE NO. 8872-C-F STOP& TRAP COVERS: PLUMBEREX 'HANDY SHIELD'	ROUGH-IN BRACKET - SIOUX CHIEF "PIPE TITAN" NUMBER 572-2X SERIES ZURN NO. ZR-1224/ -SERIES LAVATORY CARRIER	ADA COMPLIANT, 0.5 GPM AERATOR			
<u>SK-1</u>	SINK, SINGLE COMPARTMENT, ADA ELKAY "GOURMET LUSTERTONE" NO. LRAD2222	FAUCET: MOEN COMMERCIAL NO. 8225 OFFSET STRAINER:MCGUIRE NO. 1151AWC STOPS: CHICAGO FAUCET NO. 1006 TRAP: McGUIRE NO. 8912—C—F STOP & TRAP COVERS: PLUMBEREX	ROUGH—IN BRACKET — SIOUX CHIEF "PIPE TITAN" NUMBER 572—2X SERIES	ADA COMPLIANT, 1.5 GPM AERATOR			
WATER SUPPLY BALL VALVES (ABV. GRD.)	APOLLO 70-100	600 PSI, TEFLON SEAT, CAST BRASS, BLOMENT PROOF STEM, FULL PORT, CHROME BALL, THREADED END	IN LINE				

	PLUMBING FIXTURE CONNECTION SCHEDULE						
MARK	FIXTURE	COLD WATER	HOT WATER	WASTE (SANITARY)	VENT (SANITARY)		
<u>WC-1</u>	WATER CLOSET, FLOOR MOUNTED FLUSH TANK, VITREOUS CHINA, ADA	1/2*		4"	2*		
LAV-1	LAVATORY, UNDERMOUNT, VITREOUS CHINA, ADA	1/2*	1/2"	2*	2*		
<u>SK-1</u>	SINK, SINGLE COMPARTMENT STAINLESS STEEL, ADA	1/2"	1/2"	2",W/ 2"WCO	2"		

	PIPIN	G SCHEDU	JLE		
SYMBOL	SERVICE	PIPE MATERIAL	TYPE JOINT	FITTINGS	TEST
	SANITARY WASTE	ASTM D-1785-93, D2665 & D-3311,		ASTM D-1785-93, D2665 & D-3311,	
	SANITARY VENT	SCHEDULE 40 PVC-DWV	D-2564 W/ F-656 PRIMER.	SCHEDULE 40 PVC-DWV	
	DOMESTIC WATER & EQUIPMENT DRAIN (SIZES 2-1/2 INCHES IN DIAMETER AND SMALLER)	TYPE 'L' HARD DRAWN COPPER (TYPE 'K' FOR UNDERGROUND)	SWEAT WITH LEAD FREE SOLDER, SILVER SOLDER FOR UNDERGROUND	WROUGHT COPPER (CONTINUOUS NO JOINTS UNDER— FLOOR SLAB)	150 ft. FOR 24 HOURS

TEXAS WILDLIFE



STATE PARK GE REPAIRS VILLAGE CREEK

DATE: 03/06/2019
DESIGNED BY: HMG
DRAWN BY: HMG
REVIEWED BY: BH

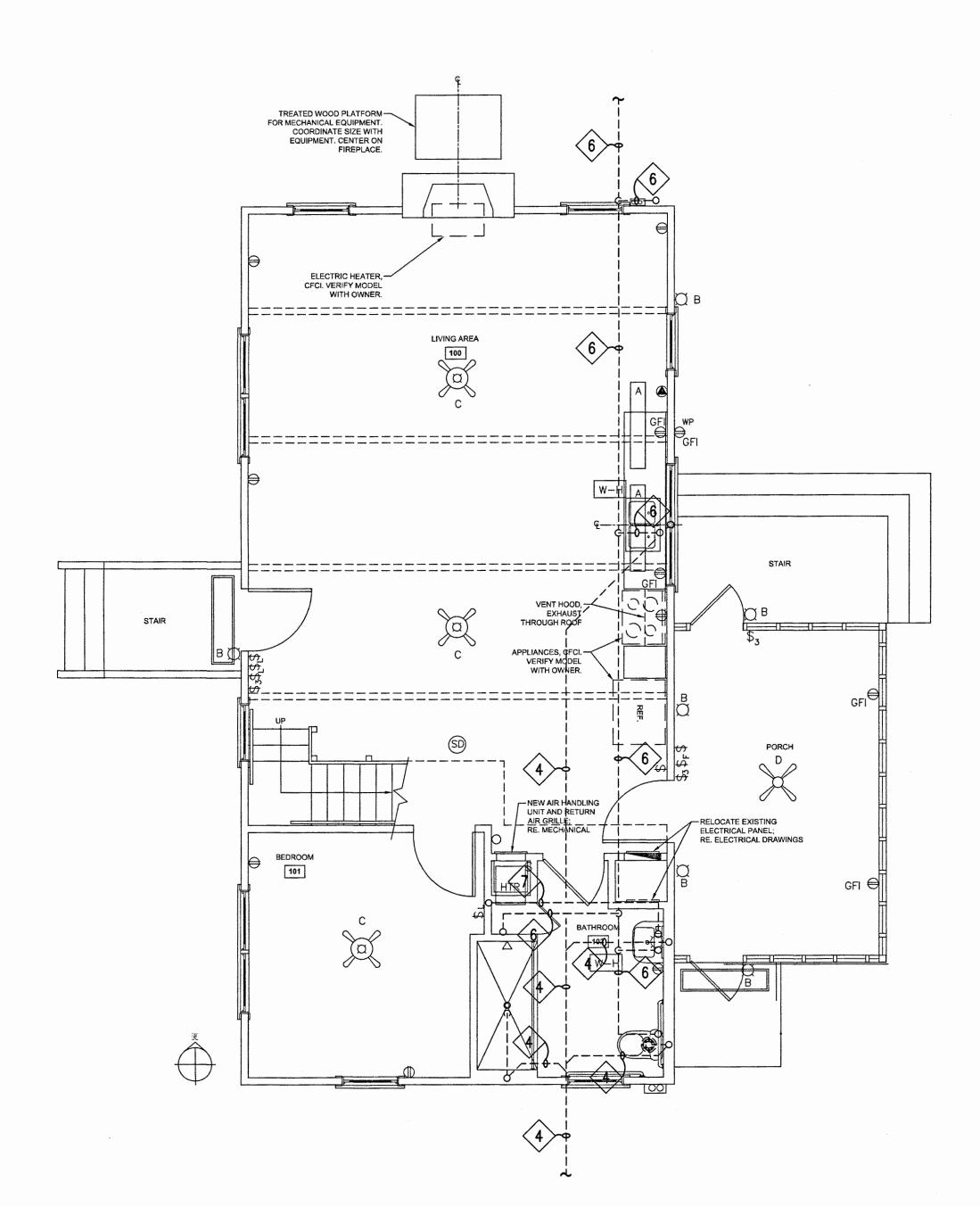
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SHEET TITLE PLUMBING SYMBOLS

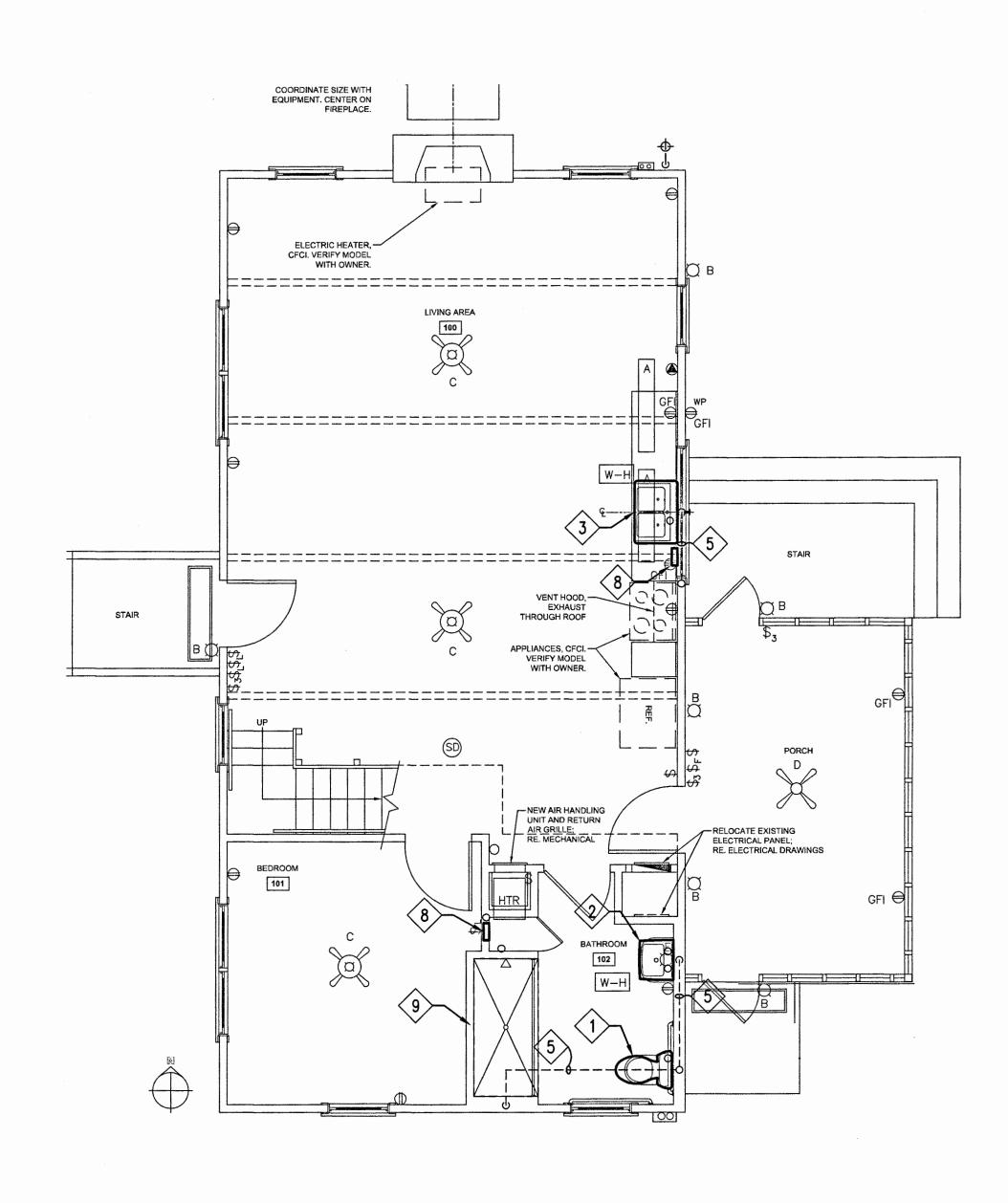
PLUMBING DEMOLITION PLAN

P2.1



PLUMBING UNDERFLOOR DEMOLITION PLAN

SCALE: 1/4" = 1'-0"

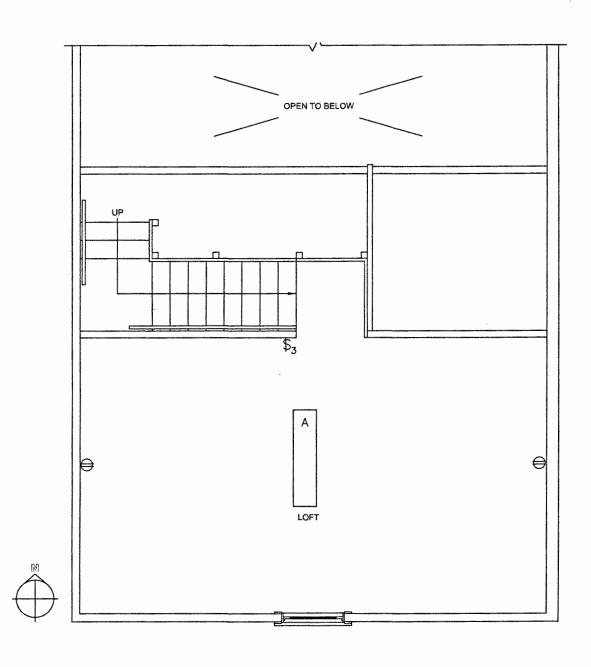


PLUMBING FIRST FLOOR DEMOLITION PLAN SCALE: 1/4" = 1'-0"

KEYED NOTES

- REMOVE EXISTING WATER CLOSET, COMPLETE. REMOVE ENTIRE FIXTURE INCLUDING FIXTURE, SUPPLY STOPS, FLOOR FLANGE, UNDERFLOOR PIPING, INDIVIDUAL VENT, AND WATER SUPPLY ROUGH—IN. REMOVE ALL ASSOCIATED WATER SUPPLY PIPING INCLUDING PIPE SUPPORTS, HANGERS, STRAPS, PIPE INSULATION, FITTINGS AND VALVES. REMOVE AND REPLACE EXISTING WALL CONSTRUCTION AS REQUIRED TO ACCOMMODATE NEW WORK. REFERENCE ARCHITECTURAL DRAWINGS FOR TILE REPLACEMENT. SEE GENERAL NOTES.
- REMOVE EXISTING LAVATORY, COMPLETE. REMOVE ENTIRE FIXTURE INCLUDING EXISTING FAUCET, P-TRAP, SUPPLY STOPS, WASTE TRAP ARM LINE IN WALL, UNDERFLOOR PIPING, INDIVIDUAL VENT, WATER SUPPLY ROUGH-IN, CW & HW PIPING, PIPE SUPPORTS, HANGERS, AND ALL ASSOCIATED APPURTENANCES. REMOVE AND REPLACE EXISTING WALL AS REQUIRED TO ACCOMMODATE NEW WORK. REFERENCE ARCHITECTURAL DRAWINGS FOR TILE REPLACEMENT. SEE GENERAL NOTES.
- REMOVE EXISTING SINK, COMPLETE. REMOVE ENTIRE FIXTURE INCLUDING EXISTING FAUCET, P—TRAP, SUPPLY STOPS, WASTE TRAP ARM LINE IN WALL, UNDERFLOOR PIPING, INDIVIDUAL VENT, WATER SUPPLY ROUGH—IN, CW & HW PIPING, PIPE SUPPORTS, HANGERS, AND ALL ASSOCIATED APPURTENANCES. REMOVE AND REPLACE EXISTING WALL AS REQUIRED TO ACCOMMODATE NEW WORK. REFERENCE ARCHITECTURAL DRAWINGS FOR TILE REPLACEMENT. SEE GENERAL NOTES.

- EXISTING SANITARY WASTE LINE TO REMAIN. (FIELD VERIFY EXACT SIZE AND LOCATION.)
- EXISTING SANITARY VENT LINE TO REMAIN. (FIELD VERIFY EXACT SIZE AND LOCATION.)
- 6 EXISTING CW LINE TO REMAIN. (FIELD VERIFY EXACT SIZE AND LOCATION.)
- 27 EXISTING HW LINE TO REMAIN. (FIELD VERIFY EXACT SIZE AND LOCATION.)
- REMOVE EXISTING WATER HEATER, COMPLETE. REMOVE TANK, DRAIN PAN, PIPE SUPPORTS, HANGERS, AND ALL ASSOCIATED APPURTENANCES. SEE GENERAL NOTES.
- 9 EXISTING SHOWER TO REMAIN.



PLUMBING
SECOND FLOOR DEMOLITION PLAN

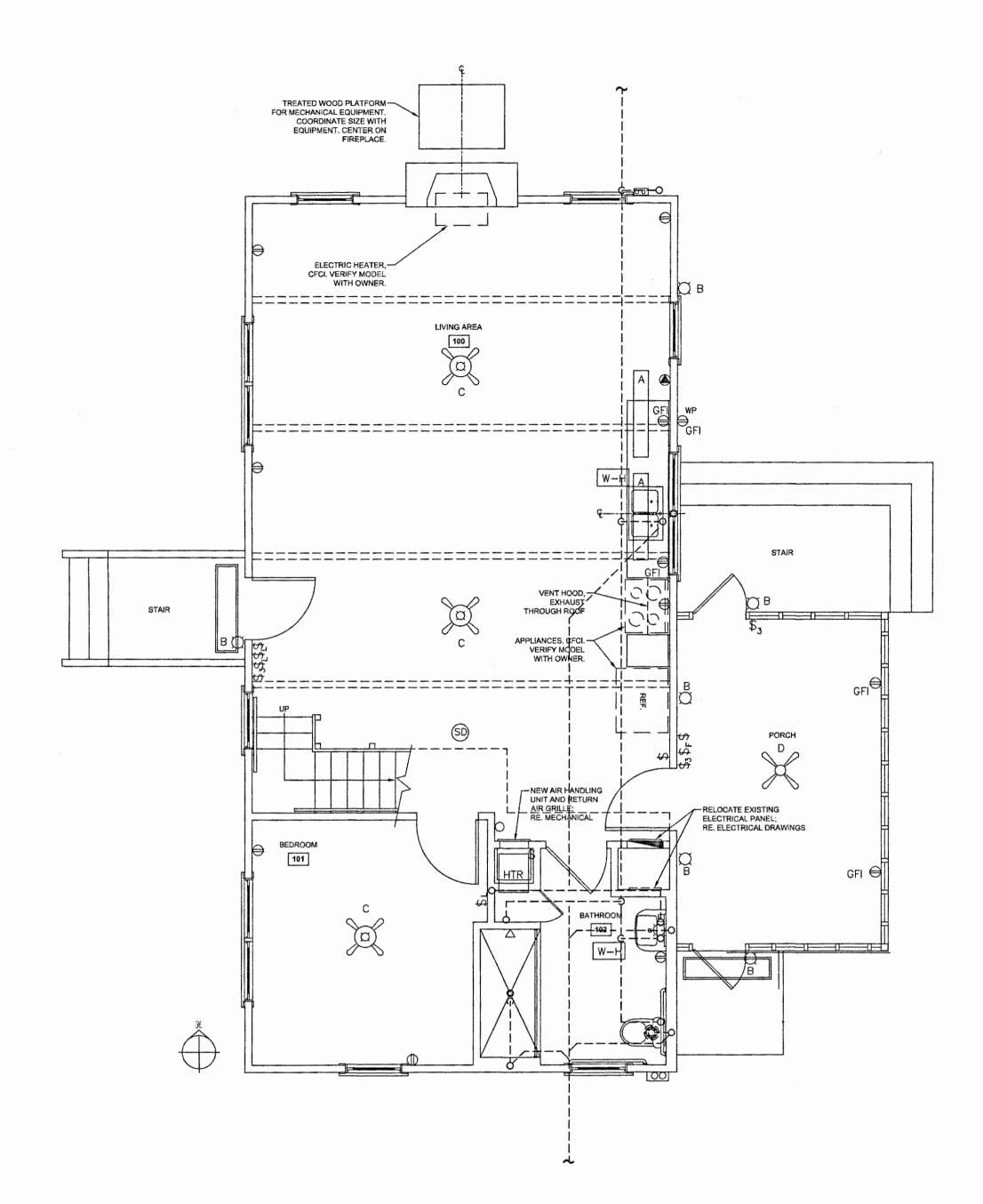
SCALE: 1/4" = 1'-0"

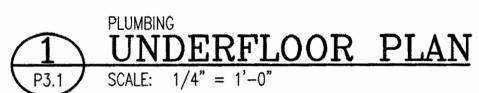
GENERAL NOTES

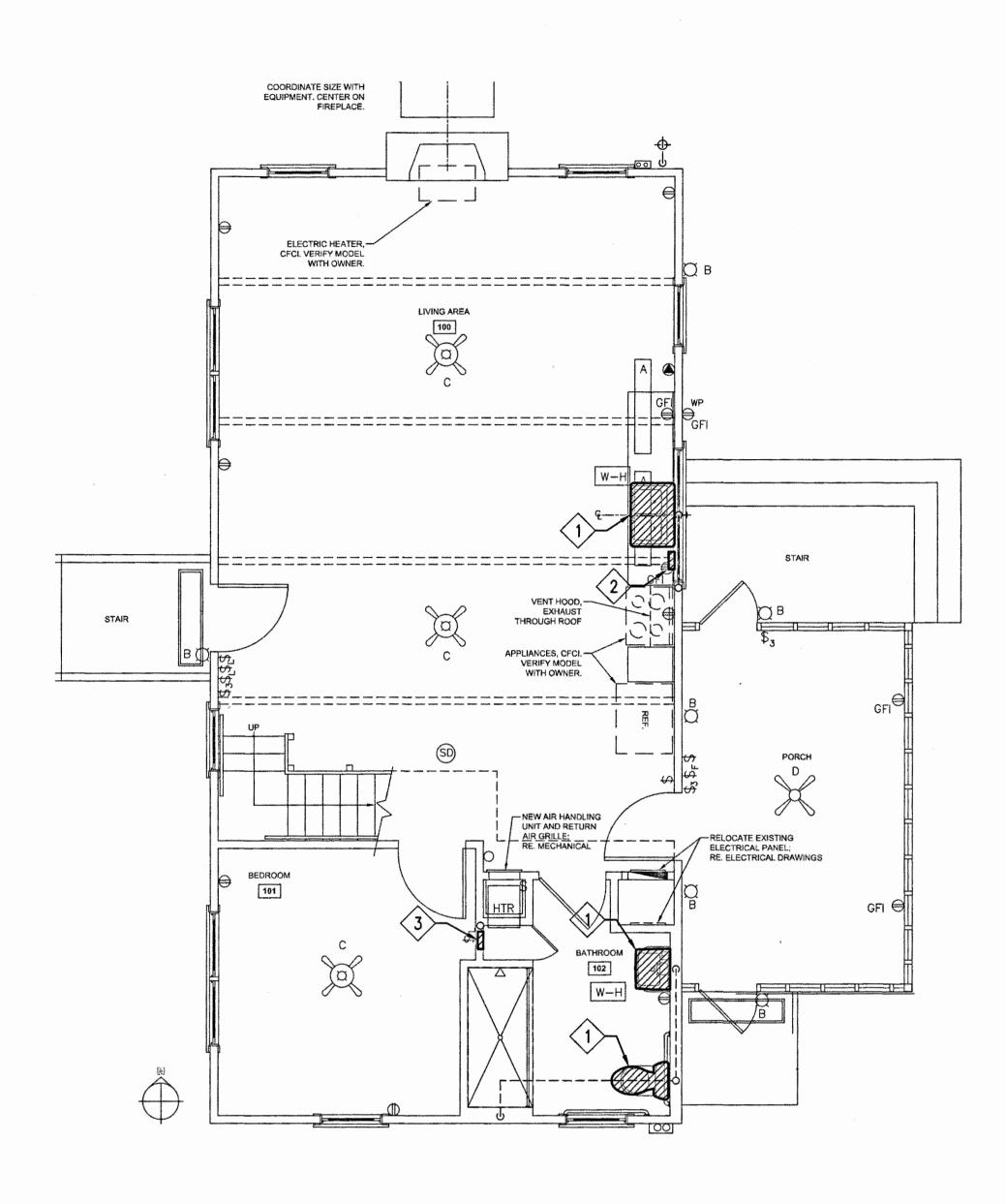
- 1. VISIT THE SITE AND FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID. VERIFY PIPE SIZES AND LOCATIONS OF ALL EXISTING PLUMBING CONNECTIONS. INCLUDING THE FLOW LINE ELEVATION OF EXISTING WASTE PIPING. SUBMIT ELEVATION FINDINGS TO ARCHITECT PRIOR TO START OF CONSTRUCTION. DRAWINGS INDICATE CERTAIN INFORMATION PERTAINING TO EXISTING ABOVE FLOOR AND UNDERFLOOR PLUMBING PIPING WHICH HAS BEEN TAKEN FROM AVAILABLE DRAWINGS. SUCH INFORMATION IS NOT GUARANTEED AS TO ACCURACY OF LOCATION OR COMPLETE INFORMATION. THE PURPOSE OF THE NEW WORK IS TO PERFORM THE CHANGES SHOWN AND TO LEAVE IN PLACE AND IN SERVICE EXISTING PIPING SERVING EXISTING EQUIPMENT SHOWN TO BE LEFT IN PLACE AND IN SERVICE PERFORM WHATEVER WORK IS NECESSARY TO SATISFY THE PURPOSE OF THE NEW WORK AND LEAVE EXISTING SERVICES AND STRUCTURES IN SATISFACTORY AND SERVICEABLE CONDITION.
- 2. REMOVE AND REPLACE EXISTING CONSTRUCTION AS REQUIRED TO ACCOMMODATE NEW WORK. REPLACE ALL REMOVED CONSTRUCTION TO MATCH EXISTING. MAINTAIN STRUCTURAL AND AESTHETIC INTEGRITY OF EXISTING.
- 3. CORE DRILL THROUGH EXISTING CONSTRUCTION AS REQUIRED TO ACCOMMODATE NEW WORK. FIELD VERIFY EXACT LOCATION OF CORE DRILLING. DO NOT DRILL THROUGH ANY STRUCTURAL MEMBER, MAINTAIN STRUCTURAL INTEGRITY OF BUILDING.
- 4. PERFORM WORK IN ACCORDANCE WITH APPLICABLE STATUES, ORDINANCES, CODES, AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION. OBTAIN AND PAY FOR ALL
- 5. ROUTE ALL PIPING CONCEALED, HIDDEN FROM VIEW AND AS HIGH AS POSSIBLE ABOVE CEILING
- 6. SUPPORT INSULATION AT HANGERS AND SUPPORTS WITH A SHIELD OF GALVANIZED METAL EXTENDING NOT LESS THAN 4-INCHS ON EITHER SIDE OF THE SUPPORT BEARING AREA COVERING AT LEASE HALF OF THE PIPE CIRCUMFERENCE.
- 7. INSULATE ALL WATER SUPPLY (HOT AND COLD) PIPING WITH 1-INCH THICK FIBERGLASS PIPE INSULATION. FIBERGLASS PIPE INSULATION SHALL HAVE AN ALL SERVICE JACKET (ASJ) WITH SELF—SEALING LAPS (OWENS CORNING SSL—11 OR EQUAL). ALL PIPING INSULATION USED ON THE PROJECT SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AN A SMOKE DEVELOPED RATING NOT EXCEEDING 50 AS DETERMINED BY TEST PROCEDURES ASTM E 84 NFPA 225 AND U.L. 723. THESE RATINGS MUST BE AS TESTED ON THE COMPOSITE OF INSULATION JACKET OR FACING AND ADHESIVE. COMPONENTS SUCH AS ADHESIVES MASTIC AND CEMENTS SHALL MEET THE SAME INDIVIDUAL RATINGS AS THE MINIMUM REQUIREMENTS.
- 8. SUPPORT INSULATION AT HANGERS AND SUPPORTS WITH A SHIELD OF GALVANIZED METAL EXTENDING NOT LESS THAN 4-INCHS ON EITHER SIDE OF THE SUPPORT BEARING AREA COVERING AT LEASE HALF OF THE PIPE CIRCUMFERENCE.

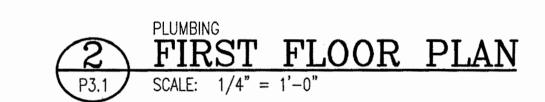
LEGEND

SYMBOL	DESCRIPTION
	EXISTING PLUMBING LINE TO REMAIN IN SERVICE
	EXISTING PLUMBING LINE TO BE REMOVED
$\cap \Box$	EXISTING PLUMBING FIXTURE TO BE REMOVED (TYPICAL)



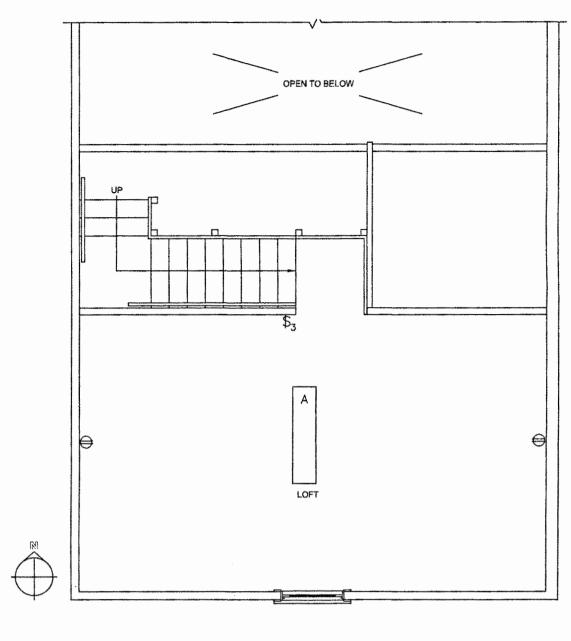


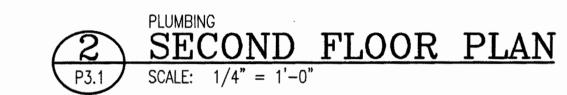




KEYED NOTES

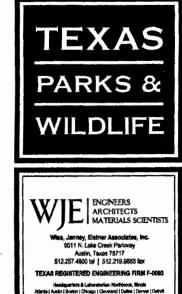
- PROVIDE AND INSTALL NEW FIXTURE. CONNECT TO EXISTING FIXTURE WATER SUPPLY LINES AND WASTE/VENT LINES.
- PROVIDE AND INSTALL INSTANTANEOUS WATER HEATER. ROUTE 1/2" CW LINE TO WATER HEATER AND 1/2" HW LINE FROM WATER HEATER TO SINK. WATER HEATER SHALL BE STIEBEL ELTRON NO. DHC 8-2. ELECTRICAL REQUIREMENTS: 240V/1PH/60HZ, 7.2 KW.
- PROVIDE AND INSTALL INSTANTANEOUS WATER HEATER. ROUTE 3/4" CW LINE TO WATER HEATER AND 1/2" HW LINE FROM WATER HEATER TO LAVATORY AND SHOWER. WATER HEATER SHALL BE STIEBEL ELTRON NO. DHC 10–2. ELECTRICAL REQUIREMENTS: 240V/1PH/60HZ, 9.6 KW.





GENERAL NOTES

- 1. VISIT THE SITE AND FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID. VERIFY PIPE SIZES AND LOCATIONS OF ALL EXISTING PLUMBING CONNECTIONS. INCLUDING THE FLOW LINE ELEVATION OF EXISTING WASTE PIPING. SUBMIT ELEVATION FINDINGS TO ARCHITECT PRIOR TO START OF CONSTRUCTION. DRAWINGS INDICATE CERTAIN INFORMATION PERTAINING TO EXISTING ABOVE FLOOR AND UNDERFLOOR PLUMBING PIPING WHICH HAS BEEN TAKEN FROM AVAILABLE DRAWINGS. SUCH INFORMATION IS NOT GUARANTEED AS TO ACCURACY OF LOCATION OR COMPLETE INFORMATION. THE PURPOSE OF THE NEW WORK IS TO PERFORM THE CHANGES SHOWN AND TO LEAVE IN PLACE AND IN SERVICE EXISTING PIPING SERVING EXISTING EQUIPMENT SHOWN TO BE LEFT IN PLACE AND IN SERVICE PERFORM WHATEVER WORK IS NECESSARY TO SATISFY THE PURPOSE OF THE NEW WORK AND LEAVE EXISTING SERVICES AND STRUCTURES IN SATISFACTORY AND SERVICEABLE CONDITION.
- REMOVE AND REPLACE EXISTING CONSTRUCTION AS REQUIRED TO ACCOMMODATE NEW WORK. REPLACE ALL REMOVED CONSTRUCTION TO MATCH EXISTING. MAINTAIN STRUCTURAL AND AESTHETIC INTEGRITY OF EXISTING.
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- 4. PERFORM WORK IN ACCORDANCE WITH APPLICABLE STATUES, ORDINANCES, CODES, AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION. OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS.
- 5. ROUTE ALL PIPING CONCEALED, HIDDEN FROM VIEW AND AS HIGH AS POSSIBLE ABOVE CEILING
- 6. PIPE PENETRATIONS THROUGH NEW AND EXISTING FIRE RATED CONSTRUCTION SHALL BE FIRE STOPPED USING 3M, HILTI, RECTORSEAL OR DOW CORNING U.L. PENETRATIONS. APPLY/INSTALL U.L. ASSEMBLIES IN STRICT CONFORMANCE TO THE MANUFACTURER'S RECOMMENDATIONS. FIRE RATING OF PIPE PENETRATION SHALL MEET OR EXCEED THE RATING OF THE PENETRATED ITEM. SUBMIT EVIDENCE/CERTIFICATION OF CONFORMANCE.
- SUPPORT INSULATION AT HANGERS AND SUPPORTS WITH A SHIELD OF GALVANIZED METAL EXTENDING NOT LESS THAN 4—INCHS ON EITHER SIDE OF THE SUPPORT BEARING AREA COVERING AT LEASE HALF OF THE PIPE CIRCUMFERENCE.
- 8. INSULATE ALL WATER SUPPLY (HOT AND COLD) PIPING WITH 1-INCH THICK FIBERGLASS PIPE INSULATION. FIBERGLASS PIPE INSULATION SHALL HAVE AN ALL SERVICE JACKET (ASJ) WITH SELF-SEALING LAPS (OWENS CORNING SSL-11 OR EQUAL). ALL PIPING INSULATION USED ON THE PROJECT SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AN A SMOKE DEVELOPED RATING NOT EXCEEDING 50 AS DETERMINED BY TEST PROCEDURES ASTM E 84 NFPA 225 AND U.L. 723. THESE RATINGS MUST BE AS TESTED ON THE COMPOSITE OF INSULATION JACKET OR FACING AND ADHESIVE. COMPONENTS SUCH AS ADHESIVES MASTIC AND CEMENTS SHALL MEET THE SAME INDIVIDUAL RATINGS AS THE MINIMUM REQUIREMENTS.
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MATERIALS SCIENTISTS

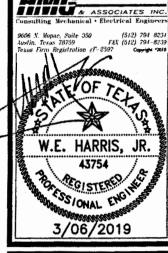
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TEXAS REGISTERED ENGINEERING FIRM F-0093
Handquerian & Laboratorias: Northbrook, Stole
Addards Jacks | Scient | Oktops | Cerebral Debre | Debre | Debre |
Krischal | Hossin | Laboratorias: Northbrook, Stole
Addards Jacks | Scient | Oktops | Cerebral | Debre | Debre |
Fordal | Hossin | Laboratorias: Northbrook, Stole
Addards | Laboratorias | Scientific | Northbrook, Stole
Addards | Laboratorias | Scientific | Northbrook, Stole
Addards | Scientific | Scientific | Northbrook, Stole

& ASSOCIATES INC.

Stattling Mechanical * Electrical Engineers

Stattling Mechanical * Electrical Engineers



VILLAGE CREEK STATE PA FACILITY DAMAGE REPAIRS

DATE: 03/06/2019 DESIGNED BY: HMG DRAWN BY: HMG REVIEWED BY: BH

REVISED:

REVISED:

SHEET TITLE

PLUMBING PLAN

SHEET NUMBER

30 OF 30