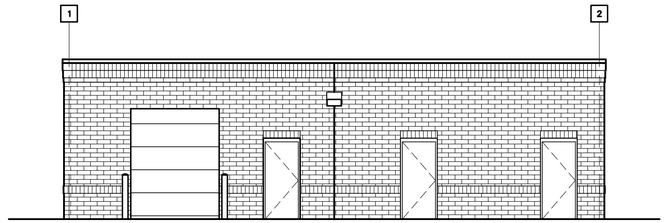
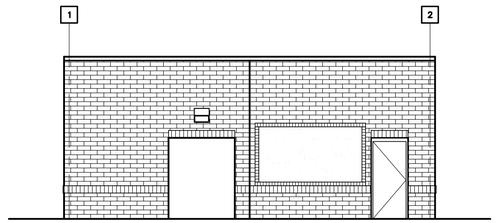
1611 BROADWAY

BUILDING 1 AND BUILDING 2
1611 BROADWAY
SAN ANTONIO, TEXAS 78215





PROJECT TEAM

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INDEX OF DRAWINGS (ISSUE DATE MAY NOT MATCH DRAWING DATE OR SIGNATURE SEAL DATE)

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CIVIL (NOT UNDER ARCHITECTS CONTRACT) SITE PERMIT # COM-PRJ-APP26-39800407

LANDSCAPE (NOT UNDER ARCHITECTS CONTRACT) SITE PERMIT # COM-PRJ-APP26-39800407

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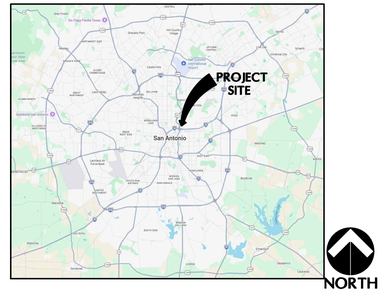
STRUCTURAL

		DRAWING DATE:	REVISION NO. 1 DATE:	REVISION NO. 2 DATE:	REVISION NO. 3 DATE:	REVISION NO. 4 DATE:	REVISION NO. 5 DATE:	REVISION NO. 6 DATE:	REVISION NO. 7 DATE:
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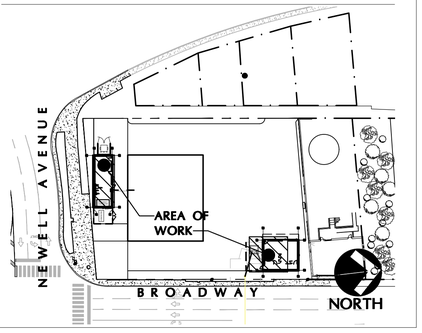
MECHANICAL, ELECTRICAL & PLUMBING (NOT UNDER ARCHITECTS CONTRACT)

MEP 1	MEP - SYMBOLS & ABBREVIATIONS	03/24/26							
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P5	PLUMBING - DETAILS	03/24/26							

VICINITY MAP



KEY MAP



SEAL

CLIENT

COMPANY
NAME: ITHACA
PH: 210.675.6444
EMAIL: PAUL@GRAYSTREET.COM

VILLA PARK A PART OF KP+J ARCHITECTS ENGINEERS
300 W. BITTERS RD, SUITE 204
SAN ANTONIO, TX 78216
(210) 384-8900

CONSULTANT

CONSULTANT

1611 BROADWAY

1611 BROADWAY
SAN ANTONIO, TX 78215

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REV	REV DESCRIPTION	DATE
-	ISSUED FOR PERMIT	03/25/26

PROGRESS REVIEW
NOT FOR REGULATORY APPROVAL, PERMITTING, OR CONSTRUCTION

DESIGN PROFESSIONAL SEAL

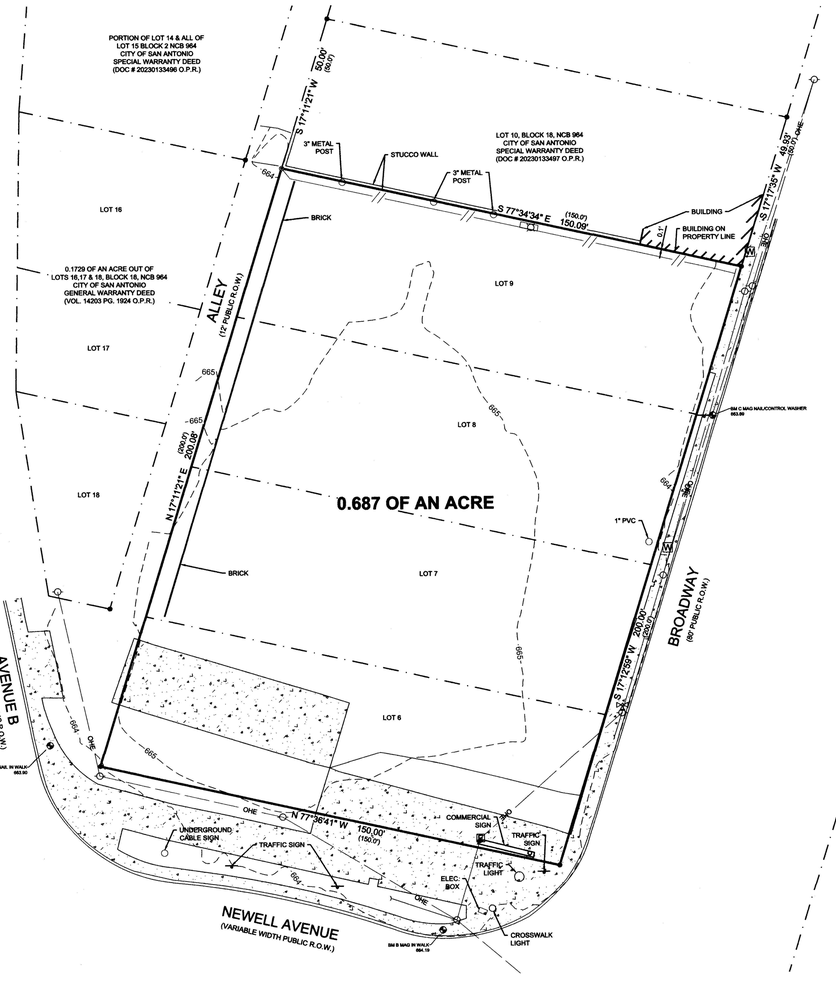
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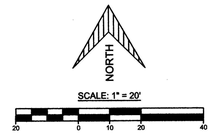
Drawn / Designed By: TH
Reviewed By: LGF
Project Number: KPJ-TX-25-0003

SHEET NAME:
COVER SHEET

SHEET NUMBER:
G-100







LEGEND

- CONCRETE CURB
- WATER VALVE
- FIRE HYDRANT
- TRAFFIC SIGN
- LIGHT POLE
- GUY ANCHOR
- POWER POLE
- CLEAN OUT
- SANITARY SEWER MANHOLE
- DRAINAGE MANHOLE
- CHAIN-LINK FENCE
- WOOD FENCE
- WROUGHT IRON FENCE
- WATER METER
- GAS METER
- OVERHEAD UTILITY LINE
- 1/2" IRON ROD FOUND (UNLESS NOTED)
- 1/2" IRON ROD SET WITH CAP MARKED "MBC ENGINEERS" (UNLESS NOTED)

SURVEYOR NOTES:
1) BASED ON A MAP TO MAP TRANSFER (BY VISUAL INSPECTION OR SCALING ONLY) THE SUBJECT PROPERTY HEREON IS SHOWN TO BE LOCATED IN FLOOD ZONE "X" (NO SCREEN) ON COMMUNITY PANEL NUMBER 48029C0403 H DATED 6/19/2020, OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP. FOR MORE INFORMATION PLEASE CONSULT FLOOD MAP(S).

2) THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE COMMITMENT, AND MAY NOT SHOW ALL EASEMENTS OR OTHER MATTERS THAT AFFECT THIS PROPERTY.

3) ONLY VISIBLE UTILITY FEATURES SHOWN HEREON. CALL 811 FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.

4) BEARINGS ARE BASED ON TEXAS STATE PLANE COORDINATE SYSTEM GRID SOUTH CENTRAL ZONE ESTABLISHED BY LEICA SMARTNET GPS NETWORK.

5) ELEVATIONS REFERENCED TO NAVD 88 DATUM AS ESTABLISHED BY LEICA SMARTNET GPS NETWORK.

STATE OF TEXAS
REGISTERED
JOEL CHRISTIAN JOHNSON
5578
PROFESSIONAL
LAND SURVEYOR

I HEREBY STATE THAT THE HEREON DESCRIBED PROPERTY WAS SURVEYED UNDER MY DIRECTION AND THAT THIS SURVEY IS A TRUE AND ACCURATE REPRESENTATION OF THAT PROPERTY AND THAT THIS SURVEY CONFORMS TO THE STANDARDS OF PRACTICE AS SET FORTH BY THE TEXAS BOARD OF PROFESSIONAL LAND SURVEYORS.

JOEL CHRISTIAN JOHNSON R.P.L.S. NO. 5578
JJOHNSON@MBCENGINEERS.COM

MACINA • BOSE • COPELAND & ASSOC., INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
1035 Central Parkway North, San Antonio, Texas 78232
(210) 545-1122 Fax (210) 545-9302 www.mbcengineers.com
TEXAS FIRM REGISTRATION #: ENGINEERING: F-784 & SURVEYING 10011700
mbc ENGINEERS EST. 1975

BOUNDARY, TOPOGRAPHIC AND IMPROVEMENT SURVEY OF

A 0.687 ACRE TRACT OF LAND, BEING ALL OF LOTS 6, 7, 8, AND 9, OF BLOCK 18, NEW CITY BLOCK 964, THE CITY OF SAN ANTONIO, BEXAR COUNTY, TEXAS, AND BEING ALL OF THE PROPERTY DESCRIBED IN A SPECIAL WARRANTY DEED WITH VENDOR'S LIEN RECORDED IN VOLUME 16829 PAGE 2383, OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS.

REVISIONS:			
DATE	No.	DESCRIPTION	BY

DRAWN	LGM
CHECKED	JCJ
DATE	10/30/2025
JOB NO.	34019-1370
SHT.	1 OF 1

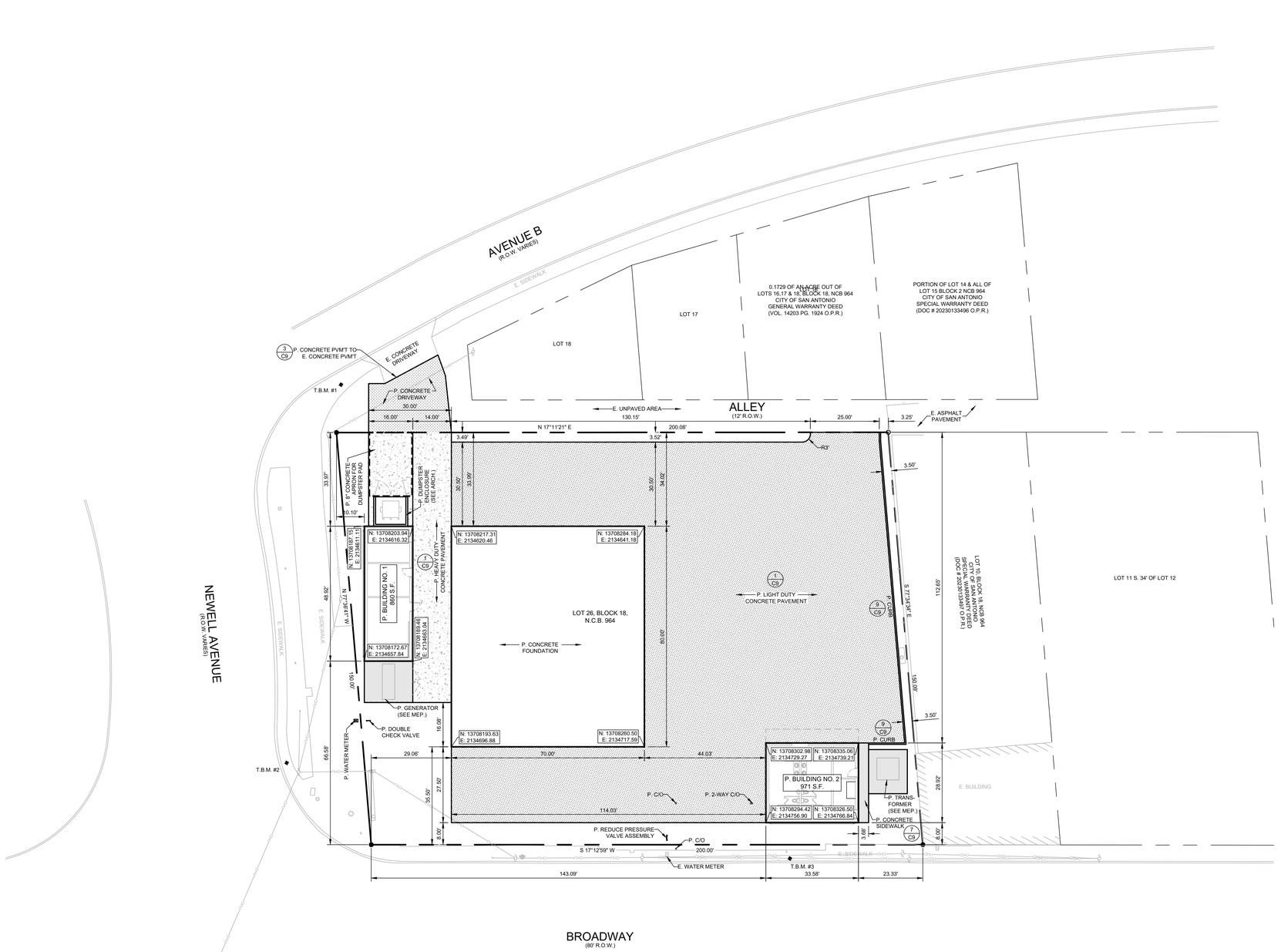
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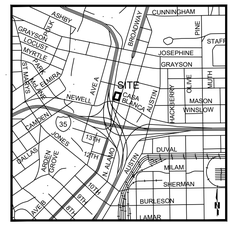
VILLAGOMEZ ENGINEERING COMPANY
24165 IH-10W, SUITE 217-708
SAN ANTONIO TEXAS 78257
PHONE: 210-724-0816
FAX: 210-853-0232
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 13698

BUILDING ADDITION
1611 BROADWAY
SAN ANTONIO, TEXAS 78215
EXISTING CONDITIONS PLAN

JOB NO.:	25-069
DATE:	03/06/26
DESIGNER:	J.V.
DRAWN BY:	V.R.
SHEET NO.:	C1

Date: Dec 01, 2025, 10:06am User ID: JCharvez Layout: Layout1
File: P:\35\34019-1611 Broadway St, Pittsburg Addn # 1\ALTA 34019.dwg Layout name: Layout1





LOCATION MAP
NOT TO SCALE

GENERAL NOTES:

1. ALL PHASES OF WORK UNDER THIS CONTRACT SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE ITEMS OF THE STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION SPECIFICATIONS AND LOCAL STANDARD SPECIFICATIONS FOR CONSTRUCTION. FINAL DECISIONS OR JUDGEMENTS ON MATTERS NOT SPECIFICALLY COVERED BY THE ABOVE DOCUMENTS SHALL BE MADE BY THE ENGINEER.
2. CONTRACTOR SHALL COMPLY WITH ALL LOCAL BUILDING CODES AND REGULATIONS, AS WELL AS OTHER SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THIS PROJECT.
3. CONTRACTOR SHALL SECURE ALL PERMITS REQUIRED FOR CONSTRUCTION AND SHALL NOTIFY ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION.
4. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT. EXCEPTIONS FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
5. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, NATURAL GAS PURVEYOR MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
6. BIDDERS ARE HEREBY NOTIFIED TO MAKE A THOROUGH REVIEW OF THE JOB SITE AND SOIL BORING INFORMATION PROVIDED BY OWNER. NO ADDITIONAL PAYMENT SHALL BE MADE FOR ROCK, SAND, GRAVEL, OR OTHER UNSTABLE CONDITIONS ENCOUNTERED IN ANY WORK IMPLIED BY THESE DRAWINGS.
7. CONTRACTOR SHALL NOTIFY LINE LOCATOR FOR EACH RESPECTIVE UTILITY IN THE PROJECT AREA 48 HOURS PRIOR TO STARTING EXCAVATION.
8. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION.
9. FOR LOCATION OF UNDERGROUND ELECTRIC, GAS, TELEPHONE AND WATER FACILITIES, CALL THE LOCAL UTILITY LOCATOR 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
10. ALL WASTE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND IT SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE SITE TO PROPERTY WHERE THE CONTRACTOR HAS THE CONSENT OF THE OWN-ERS. NO WASTE MATERIALS SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER THE FLOW LIMITS OF EXISTING NATURAL DRAINAGE.
11. CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS. STARTING ANY WORK CONSTITUTES THE APPROVAL OF THE EXISTING CONDITIONS SHOWN.
12. EXISTING ABOVE GROUND UTILITIES HAVE BEEN PLOTTED BY DIRECT FIELD INVESTIGATION (ON SURVEY PERFORMED BY OTHERS). UNDERGROUND UTILITIES HAVE BEEN COMPILED FROM VARIOUS SOURCES AND REQUIRE VERIFICATION BY THE CONTRACTOR TO ESTABLISH THEIR EXACT LOCATION AND DEPTH PRIOR TO SETTING ANY FINISH CONCRETE GRADE. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING ABOVE GROUND OR UNDERGROUND UTILITIES, INCLUDING THOSE NOT SHOWN ON DRAWINGS. DEAD UTILITY LINES SHALL BE SUITABLY CAPPED.
13. ANY EXISTING SITE IMPROVEMENT OR UTILITY REMOVED, DAMAGED OR UNDERCUT BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE OWNER AND APPROVED BY THE RESPECTIVE UTILITY AT THE CONTRACTOR'S EXPENSE.
14. WHEN SEWER LINES ARE INSTALLED IN THE VICINITY OF WATER MAINS, SUCH INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE DEPARTMENT OF HEALTH "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEM." (LATEST REVISION)
15. (A) HEAD-IN PARKING PLACES SHALL BE 9' X 18' WITH 4" WIDE WHITE LINE (B) PARALLEL PARKING PLACES SHALL BE 10' X 22' STRIPED WITH WHITE PAINT. UNLESS OTHERWISE SPECIFIED.
16. ALL DIMENSIONS ARE TO BE MEASURED FROM FACE OF CURB. (UNLESS OTHERWISE SPECIFIED)
17. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND GENERALLY BE LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE SIGNS SHALL BE COORDINATED WITH SEQUENCE OF CONSTRUCTION AND DETOUR PLAN. DURING THE PROGRESS OF THE WORK THE CONTRACTOR SHALL PROVIDE ACCESS FOR LOCAL TRAFFIC.
18. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND DIMENSIONS OF BUILDING DIMENSIONS AND INGRESS/EGRESS LOCATIONS.
19. CONTRACTOR IS RESPONSIBLE FOR PROTECTION AND REPLACEMENT, IF NECESSARY, OF ALL DISTURBED PROPERTY CORNERS.
20. CONTRACTOR SHALL COORDINATE CONSTRUCTION MATERIALS TESTING WITH THE SELECTED TESTING COMPANY. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE ALL TESTS ARE COMPLETED AS SPECIFIED IN THE AGREEMENT BETWEEN THE OWNER AND TESTING COMPANY.

LEGEND

OHU	EXISTING OVERHEAD ELECTRIC
UGE	EXISTING UNDERGROUND ELECTRIC
G G	EXISTING GAS LINE
SD	EXISTING STORM DRAIN LINE
SS	EXISTING SANITARY SEWER LINE
W	EXISTING WATER LINE
W	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
SS	EXISTING MANHOLE
	EXISTING POWER POLE
O C/O	EXISTING CLEAN OUT
(600.00)	EXISTING ELEVATION
23.22	PROPOSED ELEVATION
E.	EXISTING
P.	PROPOSED
℄	FLOW LINE
	P. CONCRETE FLATWORK
	P. HEAVY-DUTY CONCRETE PAVEMENT
	P. LIGHT-DUTY CONCRETE PAVEMENT
	P. CONCRETE PAVEMENT IN R.O.W.

0 20 40
SCALE: 1" = 20'

DIMENSIONAL CONTROL PLAN

REVISIONS:

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SAN ANTONIO TEXAS 78257
PHONE: 210-724-0816
FAX: 210-853-0232

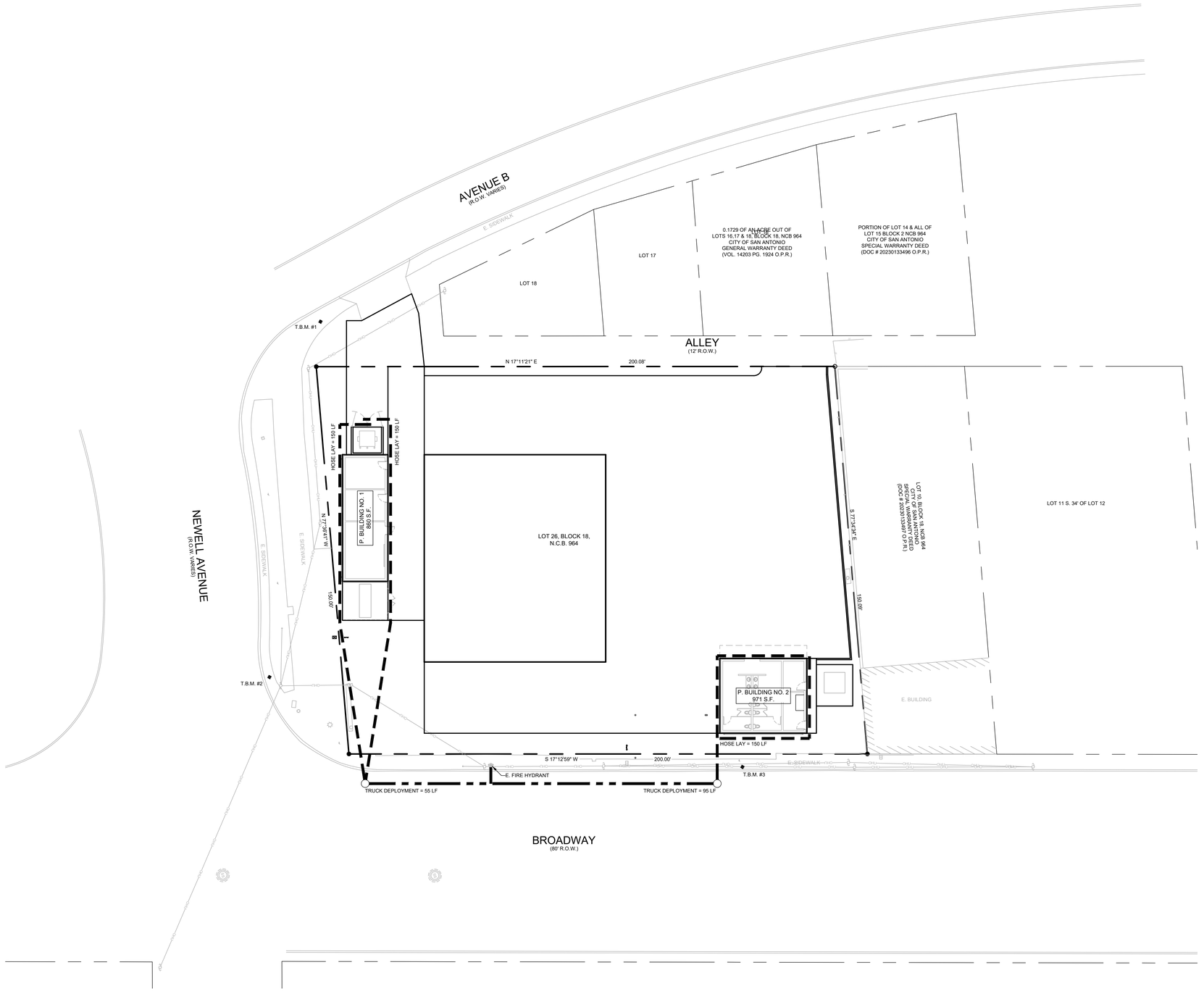
VILLAGOMEZ ENGINEERING COMPANY

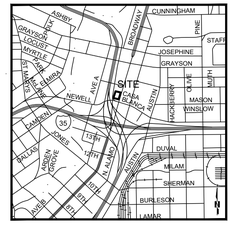
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 13698

BUILDING ADDITION
1611 BROADWAY
SAN ANTONIO, TEXAS 78215
DIMENSIONAL CONTROL PLAN

STATE OF TEXAS
JOSE L. VILLAGOMEZ
105199
LICENSED PROFESSIONAL ENGINEER
03-06-2026

JOB NO.: 25-069
DATE: 03/06/26
DESIGNER: J.V.
DRAWN BY: V.R.
SHEET NO.: C2





LOCATION MAP

NOT TO SCALE



SIGN DETAILS:

1. SIGNS SHALL BE STANDARD SIZE 18"x24" AND HAVE RED LETTERS AND BORDER ON A WHITE BACKGROUND.
2. SIGNS SHALL BE MOUNTED WITH THE BOTTOM EDGE OF THE SIGN AT LEAST SEVEN (7) FEET ABOVE GRADE AND AT LEAST TWO (2) FEET FROM CURB EDGE.
3. SIGNS SHALL BE PLACED AS FOLLOWS:
   a. LESS THAN FORTY (40) FEET: ONE (1) SIGN WITH A DOUBLE ARROW.
   b. FROM FORTY (40) TO NINETY (90) FEET: TWO (2) SIGNS WITH RIGHT AND LEFT ARROWS.
   c. FOR ONE HUNDRED (100) FEET OR MORE: THREE (3) SIGNS WITH RIGHT /LEFT ANO DOUBLE ARROWS IN THE MIDDLE.

FIRE LANE SIGNAGE

NOT TO SCALE

NOTES:

1. FOR ALL DESIGNATED FIRE LANES, "FIRE LANE - NO PARKING AT ANY TIME" SIGNS ARE TO BE POSTED AT THE EXPENSE OF THE OWNER. SUCH SIGN SHALL BE STANDARD SIZE AND COLOR, OF STANDARD LETTERING AND MOUNTING, CONFORMING TO SPECIFICATIONS ESTABLISHED BY THE DIRECTOR OF PUBLIC WORKS. SIGNS SHOULD HAVE RED LETTERS AND BORDER ON A WHITE BACKGROUND. FOR A DESIGNATED FIRE LANE LESS THAN FORTY (40) FEET, ONE (1) SIGN WITH A DOUBLE ARROW SHALL BE INSTALLED. FOR A DESIGNATED FIRE LANE FROM FORTY (40) FEET TO NINETY (90) FEET, TWO (2) SIGNS WITH RIGHT AND LEFT ARROWS SHALL BE INSTALLED. FOR A DESIGNATED FIRE LANE OF ONE HUNDRED (100) FEET OR MORE, THREE (3) SIGNS WITH RIGHT/LEFT AND DOUBLE ARROWS SHALL BE INSTALLED.

2. IN ADDITION TO THE SIGNS, ALL REQUIRED FIRE LANES SHALL BE PROVIDED AND MAINTAINED WITH FIRE LANE STRIPING THAT CONSIST OF A FOUR INCH (4") WIDE RED BACK- GROUND STRIPE WITH FOUR INCH (4") HIGH WHITE LETTERS STATING "FIRE LANE NO PARKING" TO BE PAINTED UPON THE RED STRIPE EVERY FORTY FEET (40') ALONG THE ENTIRE LENGTH OF THE FIRE LANE SHOWING THE EXACT BOUNDARY OF THE FIRE LANE. FIRE LANE MARKINGS SHALL BE UPON THE VERTICAL SURFACE OF THE CURB, UNLESS OTHERWISE APPROVED BY THE CHIEF OR AUTHORIZED REPRESENTATIVE.

3. ALL SIGNS AND DESIGNATED FIRE LANES SHALL BE MAINTAINED AND KEPT IN A STATE OF GOOD REPAIR AT ALL TIMES BY THE OWNER OR PERSON IN CONTROL OF THE PREMISES.

FIRE LANE STRIPING

NOT TO SCALE

LEGEND

	TRUCK DEPLOYMENT
	HOSE LAY
CATV	EXISTING C.A.T.V. LINE
OHU	EXISTING OVERHEAD ELECTRIC
UGE	EXISTING UNDERGROUND ELECTRIC
G G	EXISTING GAS LINE
SD	EXISTING STORM DRAIN LINE
SS	EXISTING SANITARY SEWER LINE
W	EXISTING WATER LINE
W	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
SS	EXISTING MANHOLE
	EXISTING POWER POLE
	EXISTING CLEAN OUT
E.	EXISTING
P.	PROPOSED
℄	FLOW LINE

0 20 40

SCALE: 1" = 20'

FIRE PROTECTION PLAN

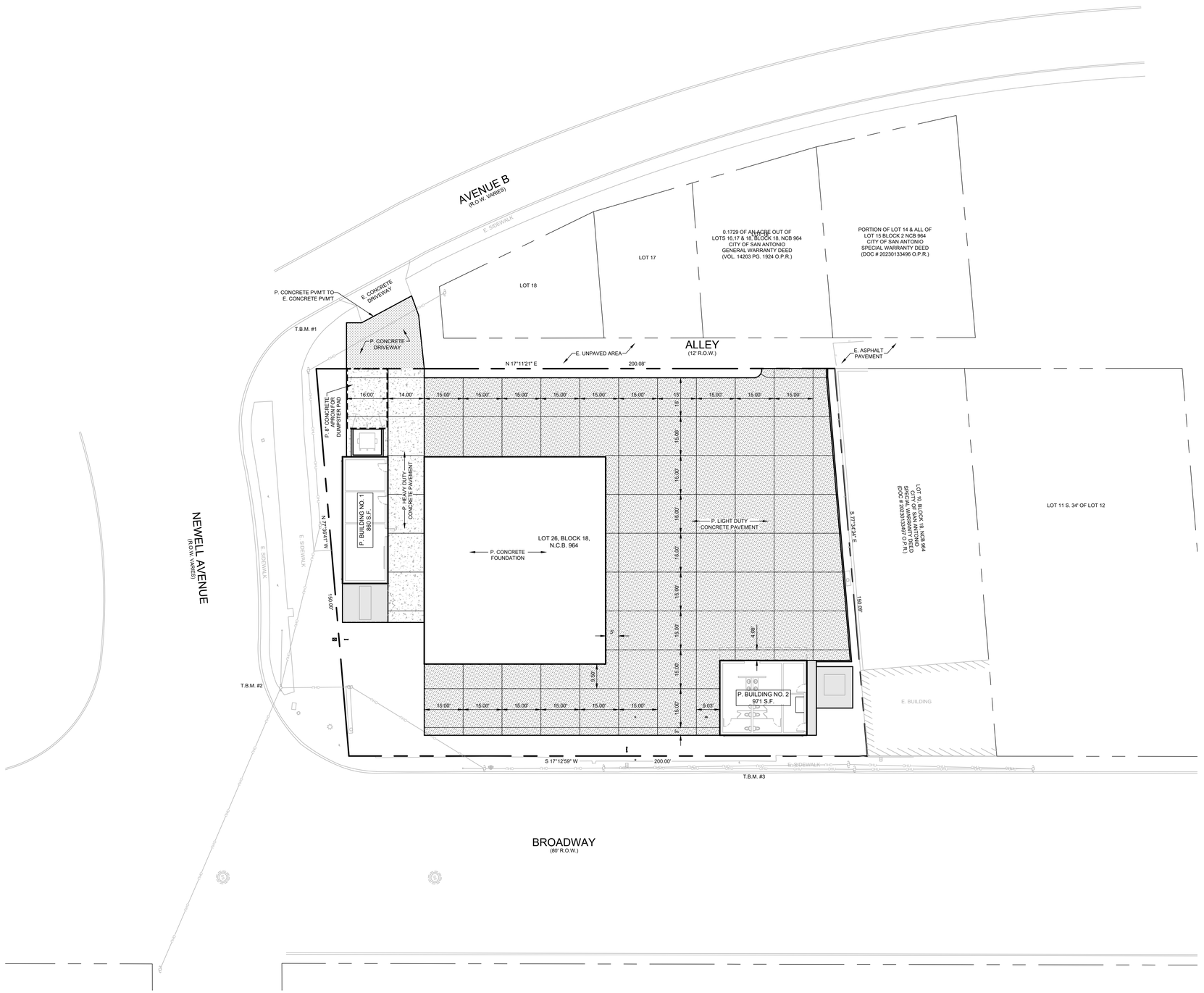
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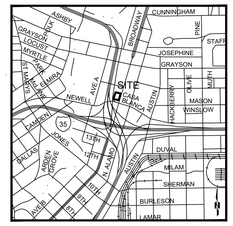
VILLAGOMEZ ENGINEERING COMPANY
24165 IH-10W, SUITE 217-708
SAN ANTONIO TEXAS 78257
PHONE: 210-724-0816
FAX: 210-853-0232
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 13688

BUILDING ADDITION
1611 BROADWAY
SAN ANTONIO, TEXAS 78215
FIRE PROTECTION PLAN

STATE OF TEXAS
JOSE L. VILLAGOMEZ
105199
LICENSED
PROFESSIONAL ENGINEER
03-06-26

JOB NO.: 25-069
DATE: 03/06/26
DESIGNER: J.V.
DRAWN BY: V.R.
SHEET NO.: C3





LOCATION MAP
NOT TO SCALE

REVISIONS:

VILLAGOMEZ ENGINEERING COMPANY
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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 13698

BUILDING ADDITION
1611 BROADWAY
SAN ANTONIO, TEXAS 78215
PAVEMENT SITE PLAN

STATE OF TEXAS
JOSE L. VILLAGOMEZ
105199
LICENSED PROFESSIONAL ENGINEER
03-06-26

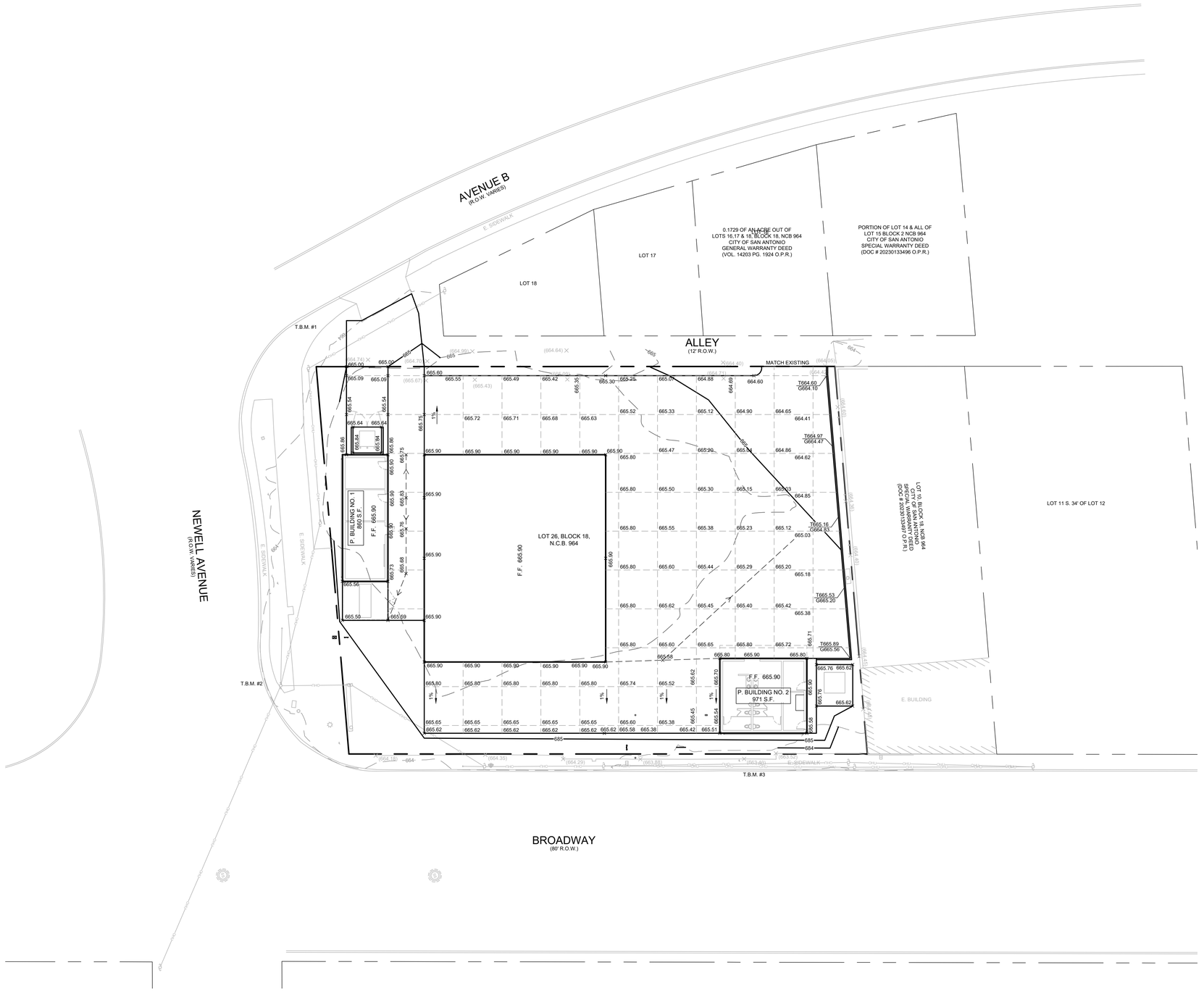
JOB NO.: 25-069
DATE: 03/06/26
DESIGNER: J.V.
DRAWN BY: V.R.
SHEET NO.: C4

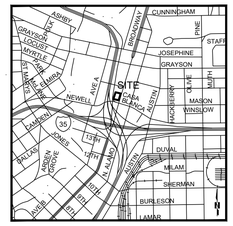
0 20 40
SCALE: 1" = 20'

PAVEMENT SITE PLAN

LEGEND

- OHU — EXISTING OVERHEAD ELECTRIC
- UGE — EXISTING UNDERGROUND ELECTRIC
- G — G — EXISTING GAS LINE
- SD — EXISTING STORM DRAIN LINE
- SS — EXISTING SANITARY SEWER LINE
- W — EXISTING WATER LINE
- W — EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- SS — EXISTING MANHOLE
- EXISTING POWER POLE
- C/O — EXISTING CLEAN OUT
- (600.00) — EXISTING ELEVATION
- 23.22 — PROPOSED ELEVATION
- E. — EXISTING
- P. — PROPOSED
- FLOW LINE
- P. CONCRETE FLATWORK
- P. HEAVY-DUTY CONCRETE PAVEMENT
- P. LIGHT-DUTY CONCRETE PAVEMENT
- P. CONCRETE PAVEMENT IN R.O.W.





LOCATION MAP
NOT TO SCALE

GRADING NOTES:

1. MAXIMUM GRADE AT SIDEWALK RAMPS IS 8.33% WITH A CROSS SLOPE OF 2.0% OR LESS AND SHALL COMPLY WITH ADA.
2. ACCESSIBLE PATH SHALL HAVE A RUNNING SLOPE OF NO GREATER THAN 5.0% WITH A CROSS SLOPE OF 2.0% OR LESS.
3. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT WHERE NOT SPECIFICALLY COVERED IN THE CONSTRUCTION DOCUMENTS SHALL CONFORM TO ALL APPLICABLE CODES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO THE CITY OF SAN ANTONIO AND BEXAR COUNTY.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL CONDITION ANY DAMAGE DONE TO EXISTING IMPROVEMENTS OR UTILITIES.
5. EARTHWORK FOR THE BUILDING FOUNDATION, CONCRETE SLABS AND CONCRETE AND ASPHALT PAVEMENT SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
6. ADJUST PAVEMENT, CURB ELEVATIONS AND/OR SIDEWALK ELEVATIONS AS NECESSARY TO ENSURE A CONTINUOUS GRADE WITH EXISTING ELEVATIONS.
7. EXISTING AND PROPOSED GRADE CONTOUR INTERVALS SHOWN AT ONE FOOT (1').
8. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE FOUR (4) INCHES OF TOPSOIL.

UTILITY LOCATE NOTES:

THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-545-6005. CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.

DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181 GAS COMPANIES MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA. THE CONTRACTOR SHALL NOTIFY THE GAS COMPANY LOCATOR AT 1-800-545-6005, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO DEVELOP THE CONTRACTOR'S PLANS TO IMPLEMENT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S PLANS SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY SYSTEMS THAT COMPLY WITH AS A MINIMUM O.S.H.A. STANDARDS FOR TRENCH EXCAVATIONS SPECIFICALLY. CONTRACTOR AND OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH O.S.H.A. STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

BENCHMARK 1: MAG NAIL IN SIDEWALK
SW CORNER OF SITE OFF OF AVENUE B
N: 13708194.25
E: 2134559.58
ELEV.: 663.90

BENCHMARK 2: MAG NAIL IN SIDEWALK
SE CORNER OF SITE OFF OF NEWELL AVE.
N: 13708134.86
E: 2134684.77
ELEV.: 664.19

BENCHMARK 3: MAG NAIL IN SIDEWALK
NE CORNER OF SITE OFF OF BROADWAY
N: 13708298.88
E: 2134771.89
ELEV.: 663.69

0 20 40
SCALE: 1" = 20'

GRADING PLAN

LEGEND

CATV	EXISTING C.A.T.V. LINE
OHU	EXISTING OVERHEAD ELECTRIC
UGE	EXISTING UNDERGROUND ELECTRIC
G G	EXISTING GAS LINE
SD	EXISTING STORM DRAIN LINE
SS	EXISTING SANITARY SEWER LINE
W	EXISTING WATER LINE
600	EXISTING CONTOUR
603	PROPOSED CONTOUR
W	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
SS	EXISTING MANHOLE
	EXISTING POWER POLE
C/O	EXISTING CLEAN OUT
(600.00)	EXISTING ELEVATION
23.22	PROPOSED ELEVATION
T 36.75	TOP OF CURB ELEVATION
G 36.25	GUTTER ELEVATION
E.	EXISTING
P.	PROPOSED
'fl.	FLOW LINE

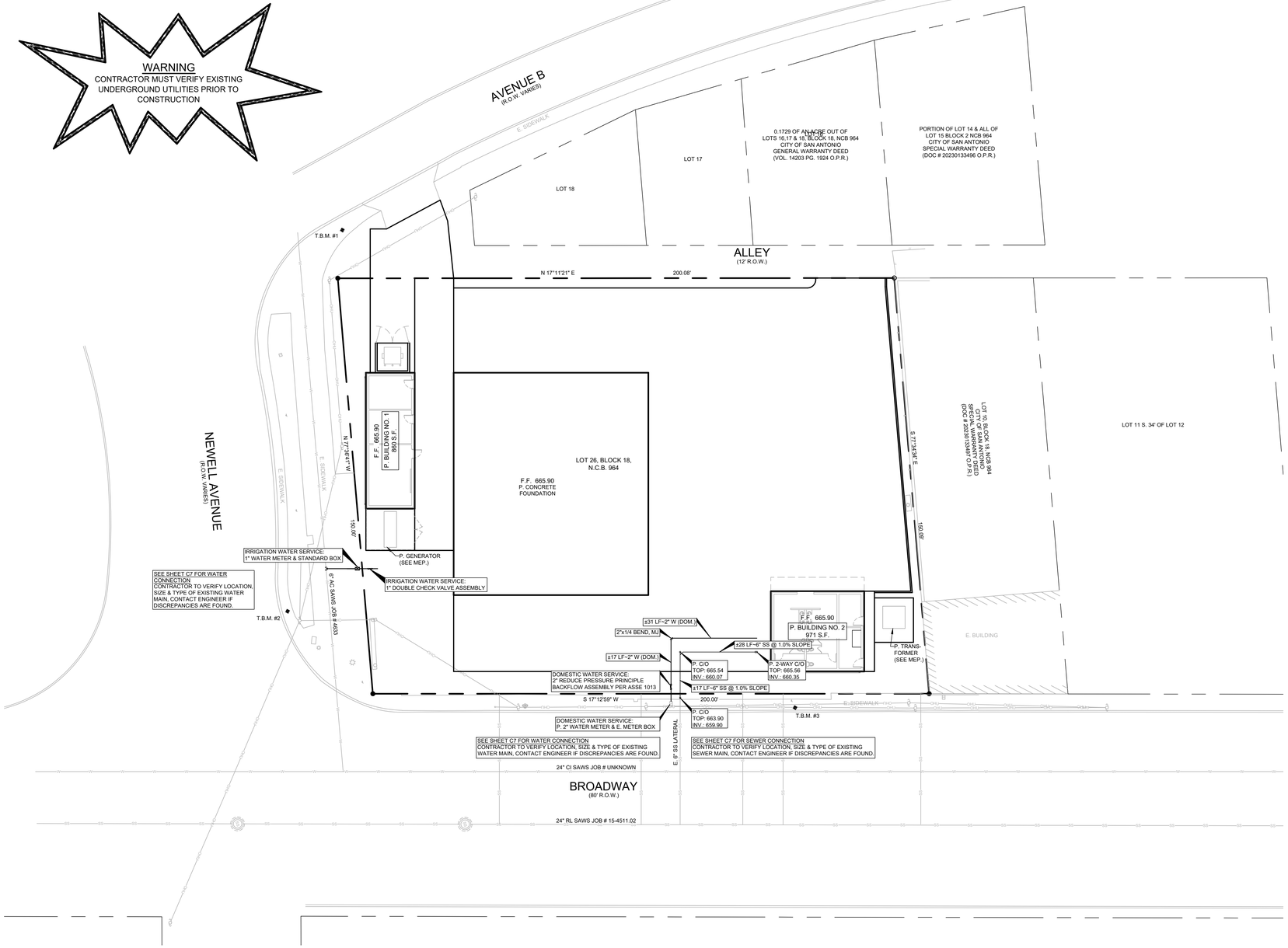
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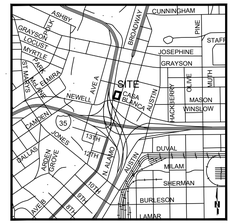
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SAN ANTONIO, TEXAS 78215
GRADING PLAN

STATE OF TEXAS
JOSE L. VILLAGOMEZ
105199
LICENSED
PROFESSIONAL ENGINEER
12-04-25

JOB NO.: 25-069
DATE: 03/06/26
DESIGNER: J.V.
DRAWN BY: V.R.
SHEET NO.: C5





LOCATION MAP
NOT TO SCALE

GENERAL NOTES:

1. ALL PHASES OF WORK UNDER THIS CONTRACT SHALL BE WITH STRICT ADHERENCE TO "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" PUBLISHED BY THE CITY OF SAN ANTONIO, TEXAS, DEPARTMENT OF PUBLIC WORKS. FINAL DECISIONS OR JUDGMENTS ON MATTERS NOT SPECIFICALLY COVERED BY THE ABOVE DOCUMENTS SHALL BE MADE BY THE ENGINEER.
2. CONTRACTOR SHALL COMPLY WITH THE APPROPRIATE BUILDING CODE AND REGULATIONS, AS WELL AS OTHER SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THIS PROJECT.
3. CONTRACTOR SHALL SECURE ALL PERMITS REQUIRED FOR CONSTRUCTION AND SHALL NOTIFY ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION.
4. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNERS AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
5. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, NATURAL GAS PURVEYOR MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
6. EXISTING ABOVE GROUND UTILITIES HAVE BEEN PLOTTED BY DIRECT FIELD INVESTIGATION. UNDERGROUND UTILITIES HAVE BEEN COMPILED FROM VARIOUS SOURCES AND REQUIRE VERIFICATION BY THE CONTRACTOR TO ESTABLISH THEIR EXACT LOCATION AND DEPTH. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING ABOVE GROUND OR UNDERGROUND UTILITIES, INCLUDING THOSE NOT SHOWN ON DRAWINGS. DEAD UTILITY LINES SHALL BE SUITABLY CAPPED.
7. ANY EXISTING SITE IMPROVEMENT OR UTILITY REMOVED, DAMAGED OR UNDERCUT BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AND APPROVED BY THE RESPECTIVE UTILITY AT THE CONTRACTOR'S EXPENSE.
8. ALL WASTE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND IT SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE RIGHT-OF-WAY AND TO PRIVATE PROPERTY WHERE THE CONTRACTOR HAS THE CONSENT OF THE OWNERS. NO WASTE MATERIAL SHALL BE PLACED IN EXISTING NATURAL DRAINAGE COURSES.
9. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND GENERALLY BE LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE SIGNS SHALL BE COORDINATED WITH SEQUENCE OF CONSTRUCTION AND DETOUR PLAN. DURING THE PROGRESS OF THE WORK THE CONTRACTOR SHALL PROVIDE ACCESS FOR LOCAL TRAFFIC.
10. CONTRACTOR SHALL NOTIFY LINE LOCATOR FOR EACH RESPECTIVE UTILITY IN THE PROJECT AREA 48 HOURS PRIOR TO STARTING EXCAVATION.
11. FOR LOCATION OF UNDERGROUND ELECTRIC FACILITIES, CALL C.P.S. LOCATOR 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION.
12. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION.
13. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE, CONTAINS ASBESTOS-CONTAINING MATERIAL (ACM) AND IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS ARE APPLICABLE WHEN HANDLING, REMOVING AND DISPOSING OF THIS PIPE. SEE SAWS SPECIAL SPECIFICATION ITEM NO 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".
14. IF NECESSARY, REPLACE ONE LENGTH OF ASBESTOS CEMENT PIPE TO MEET EPA REQUIREMENTS.
15. ALL PIPE SHALL BE RESTRAINED BASED UPON CONDITIONS ENCOUNTERED DURING INSTALLATION SEE S.A.W.S. SPECIFICATIONS BOOK FOR RESTRAINED LENGTHS.

TRENCH EXCAVATION SAFETY PROTECTION:

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEM'S PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

UTILITY LOCATE NOTES:

THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-545-6005. CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.

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LEGEND

OHU	EXISTING OVERHEAD ELECTRIC
UGE	EXISTING UNDERGROUND ELECTRIC
G G	EXISTING GAS LINE
SD	EXISTING STORM DRAIN LINE
SS	EXISTING SANITARY SEWER LINE
W	EXISTING WATER LINE
W	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
SS	EXISTING MANHOLE
	EXISTING POWER POLE
O C/O	EXISTING CLEAN OUT
(600.00)	EXISTING ELEVATION
23.22	PROPOSED ELEVATION
E.	EXISTING
P.	PROPOSED
	FLOW LINE

0 20 40
SCALE: 1" = 20'

UTILITY SITE PLAN

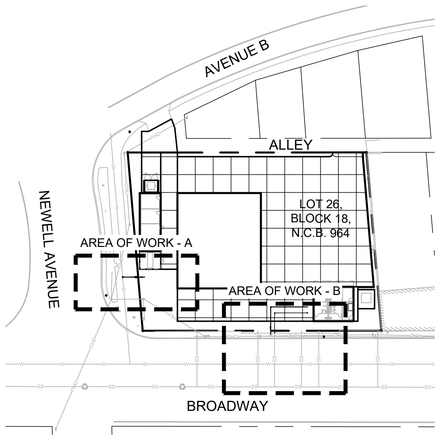
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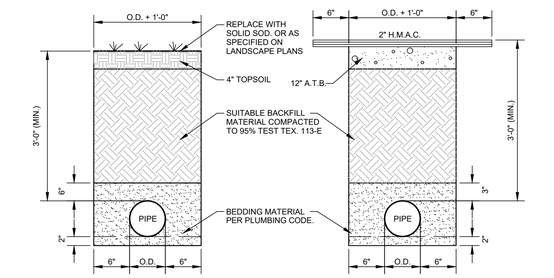
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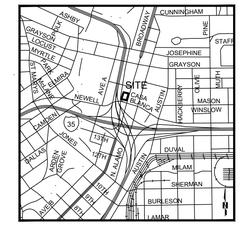
JOB NO.: 25-069
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DESIGNER: J.V.
DRAWN BY: V.R.
SHEET NO.: C6



OVERALL SITE PLAN
SCALE: 1" = 60'



PIPE TRENCH
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

SAWS CONSTRUCTION NOTES
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT

GENERAL SECTION

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:
   A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) 'DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290.
   B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE".
   C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION".
   D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".
   E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP) FROM THE CONSULTANT AND HAS BEEN NOTIFIED BY SAWS CONSTRUCTION INSPECTION DIVISION TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS. WORK COMPLETED BY THE CONTRACTOR WITHOUT AN APPROVED COUNTER PERMIT AND/OR A GCP WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTORS AND/OR THE DEVELOPER.
3. THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS. UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLANS.
4. THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.
5. LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.
6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
   - SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES
   - COSA DRAINAGE (210) 207-0724 OR (210) 207-6026
   - COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8480
   - COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951
   - TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION IF DAMAGES ARE MADE AS A RESULT OF THE PROJECT'S CONSTRUCTION.
8. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) AND/OR BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.
9. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
11. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

    WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

    ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.
1. COMPACTION NOTE (ITEM 804): THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE SAWS INSPECTOR AND/OR THE TEST ADMINISTRATOR, PER EACH 12-INCH LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.
2. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.

SEWER SECTION

1. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:
   A. IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT (210) 233-2014. PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.
   B. ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
   C. CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS.
   D. CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE) AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.
   E. CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.
   F. MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND TELEVISING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.

   SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA, TCEQ AND/OR ANY OTHER FEDERAL, STATE OR LOCAL AGENCIES.

   NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.
2. IF BYPASS PUMPING IS REQUIRED, THE CONTRACTOR SHALL PERFORM SUCH WORK IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION, ITEM NO. 864, "BYPASS PUMPING".
3. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973 AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
4. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241, TAC 217.53 AND TCEQ 290.44(E)(4)(B). CONTRACTOR SHALL CENTER A 20' JOINT OF 160 PSI PRESSURE RATED PVC AT THE PROPOSED WATER CROSSING.
5. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS. (NSPI)
6. SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER: ALL SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER, RECYCLED WATER, PETROLEUM PRODUCTS, OR CHEMICALS MUST BE REPORTED IMMEDIATELY TO THE SAWS INSPECTOR ASSIGNED TO THE COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP). THIS REQUIREMENT APPLIES TO EVERY SPILL, OVERFLOW, OR DISCHARGE REGARDLESS OF SIZE.
7. MANHOLE AND ALL PIPE TESTING (INCLUDING THE TV INSPECTION) MUST BE PERFORMED AND PASSED PRIOR TO FINAL FIELD ACCEPTANCE BY SAWS CONSTRUCTION INSPECTION DIVISION, AS PER THE SAWS SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.
8. ALL PVC PIPE OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH WITH MINIMUM PIPE STIFFNESS OF 115 PSI.

WATER SECTION

1. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
   - FOR WATER MAINS 12" OR HIGHER: SAWS EMERGENCY OPERATIONS CENTER (210) 233-2014
2. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOSCONTAINING MATERIAL (ACM), MAY BE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".
3. VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP/PLUG. (NSPI).
4. SUITABLE ANCHORAGE/THRUST BLOCKING OR JOINT RESTRAINT SHALL BE PROVIDED AT ALL OF THE FOLLOWING MAIN LOCATIONS: DEAD ENDS, PLUGS, CAPS, TEES, CROSSES, VALVES, AND BENDS, IN ACCORDANCE WITH THE STANDARD DRAWINGS DD-839 SERIES AND ITEM NO. 839, IN THE SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION.
5. ALL VALVES SHALL READ "OPEN RIGHT".
6. PRVS REQUIRED: CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF _____ FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW _____ FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED TYPE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF "PRV IS/ARE REQUIRED FOR SUCH LOT(S), ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED. "NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).
7. PIPE DISINFECTION WITH DRY HTH FOR PROJECTS LESS THAN 800 LINEAR FEET. (ITEM NO. 847.3): MAINS SHALL BE DISINFECTED WITH DRY HTH WHERE SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE INSPECTOR, AND SHALL NOT EXCEED A TOTAL LENGTH OF 800 FEET. THIS METHOD OF DISINFECTION WILL ALSO BE FOLLOWED FOR MAIN REPAIRS. THE CONTRACTOR SHALL UTILIZE ALL APPROPRIATE SAFETY MEASURE TO PROTECT HIS PERSONNEL DURING DISINFECTION OPERATIONS.
8. BACKFLOW PREVENTION DEVICES:
   - ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS ARE REQUIRED TO HAVE BACKFLOW PREVENTION DEVICES.
   - ALL COMMERCIAL BACKFLOW PREVENTION DEVICES MUST BE APPROVED BY SAWS PRIOR TO INSTALLATION.
9. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL THE WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED, AND SAWS HAS RELEASED THE MAIN FOR TIE-IN AND USE.
10. DIVISION VALVES: DIVISION VALVES SHOWN ON PLANS OR NOT SHOWN ON PLANS BUT FOUND IN THE FIELD SHALL ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF AND ONLY WITH PRIOR WRITTEN APPROVAL OF THE SAWS DIRECTOR OF PRODUCTION AND OPERATIONS AND PROPER COORDINATION WITH ALL SAWS DEPARTMENTS. CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE INSPECTOR A MINIMUM OF TWO WEEKS IN ADVANCE TO START THE COORDINATION PROCESS AND WILL BE INFORMED BY THE INSPECTOR WHEN THE DIVISION VALVE WILL BE OPERATED BY THE SAWS DISTRIBUTION AND COLLECTION STAFF. THE DIVISION VALVE CAN ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF MEMBER NOT THE INSPECTOR OR THE CONTRACTOR. OPERATION OF A DIVISION VALVE WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE SAWS DISTRIBUTION AND COLLECTION STAFF WILL CONSTITUTE A MATERIAL BREACH OF ANY WRITTEN SAWS CONTRACT OR PERMIT IN ADDITION TO SUBJECTING THE CONTRACTOR TO LIABILITY FOR ANY AND ALL FINES, FEES, OR OTHER DAMAGES, DIRECT OR CONSEQUENTIAL, THAT MAY ARISE FROM OR BE CAUSED BY THE OPERATION OF THE VALVE WITHOUT PRIOR WRITTEN PERMISSION. PLEASE BE INFORMED THAT THE APPROVAL OF THE OPERATION OR OPENING OR CLOSING OF A DIVISION VALVE CAN TAKE SEVERAL WEEKS FOR APPROVAL. DIVISION VALVES WILL ALSO HAVE A VALVE LID LABELED DIVISION VALVE AND A LOCKING MECHANISM INSTALLED WITH A KEY. THE LOCK AND KEY MECHANISM WILL BE PAID FOR BY THE CONTRACTOR BUT WILL BE INSTALLED BY SAWS DISTRIBUTION AND COLLECTION STAFF.

GENERAL NOTES:

1. ALL PHASES OF WORK UNDER THIS CONTRACT SHALL BE WITH STRICT ADHERENCE TO "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" PUBLISHED BY THE CITY OF SAN ANTONIO, TEXAS, DEPARTMENT OF PUBLIC WORKS. FINAL DECISIONS OR JUDGMENTS ON MATTERS NOT SPECIFICALLY COVERED BY THE ABOVE DOCUMENTS SHALL BE MADE BY THE ENGINEER.
2. CONTRACTOR SHALL COMPLY WITH THE APPROPRIATE BUILDING CODE AND REGULATIONS, AS WELL AS OTHER SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THIS PROJECT.
3. CONTRACTOR SHALL SECURE ALL PERMITS REQUIRED FOR CONSTRUCTION AND SHALL NOTIFY ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION.
4. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNERS AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
5. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, NATURAL GAS PURVEYOR MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
6. EXISTING ABOVE GROUND UTILITIES HAVE BEEN PLOTTED BY DIRECT FIELD INVESTIGATION. UNDERGROUND UTILITIES HAVE BEEN COMPILED FROM VARIOUS SOURCES AND REQUIRE VERIFICATION BY THE CONTRACTOR TO ESTABLISH THEIR EXACT LOCATION AND DEPTH. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING ABOVE GROUND OR UNDERGROUND UTILITIES, INCLUDING THOSE NOT SHOWN ON DRAWINGS. DEAD UTILITY LINES SHALL BE SUITABLY CAPPED.
7. ANY EXISTING SITE IMPROVEMENT OR UTILITY REMOVED, DAMAGED OR UNDERCUT BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AND APPROVED BY THE RESPECTIVE UTILITY AT THE CONTRACTOR'S EXPENSE.
8. ALL WASTE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND IT SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE RIGHT-OF-WAY AND TO PRIVATE PROPERTY WHERE THE CONTRACTOR HAS THE CONSENT OF THE OWNERS. NO WASTE MATERIAL SHALL BE PLACED IN EXISTING NATURAL DRAINAGE COURSES.
9. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND GENERALLY BE LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE SIGNS SHALL BE COORDINATED WITH SEQUENCE OF CONSTRUCTION AND DETOUR PLAN. DURING THE PROGRESS OF THE WORK THE CONTRACTOR SHALL PROVIDE ACCESS FOR LOCAL TRAFFIC.
10. CONTRACTOR SHALL NOTIFY LINE LOCATOR FOR EACH RESPECTIVE UTILITY IN THE PROJECT AREA 48 HOURS PRIOR TO STARTING EXCAVATION.
11. FOR LOCATION OF UNDERGROUND ELECTRIC FACILITIES, CALL C.P.S. LOCATOR 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION.
12. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION.
13. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE, CONTAINS ASBESTOS-CONTAINING MATERIAL (ACM) AND IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS ARE APPLICABLE WHEN HANDLING, REMOVING AND DISPOSING OF THIS PIPE. SEE SAWS SPECIAL SPECIFICATION ITEM NO 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".
14. IF NECESSARY, REPLACE ONE LENGTH OF ASBESTOS CEMENT PIPE TO MEET EPA REQUIREMENTS.
15. ALL PIPE SHALL BE RESTRAINED BASED UPON CONDITIONS ENCOUNTERED DURING INSTALLATION SEE S.A.W.S. SPECIFICATIONS BOOK FOR RESTRAINED LENGTHS.

TRENCH EXCAVATION SAFETY PROTECTION:

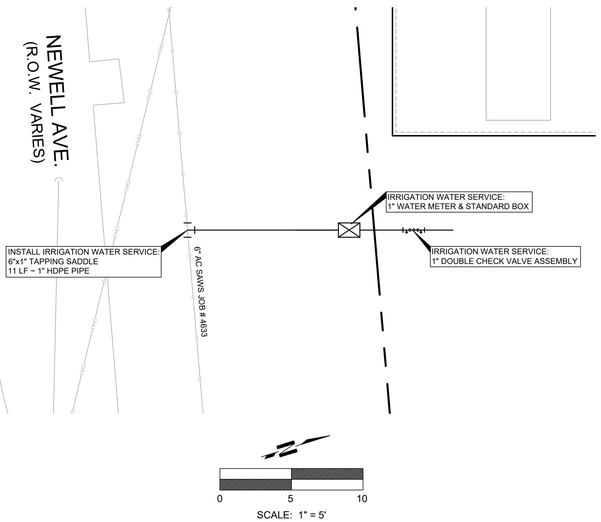
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEM'S PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

UTILITY LOCATE NOTES:

THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-545-6005. CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.

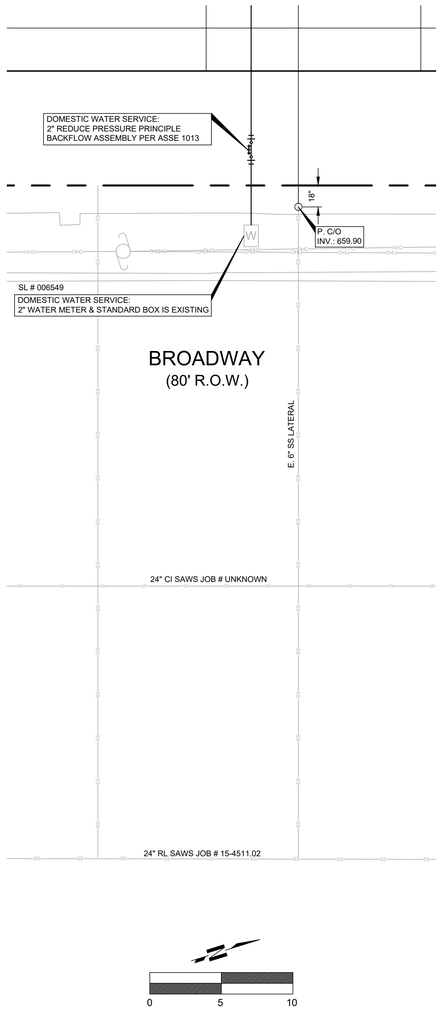
DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181 GAS COMPANIES MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA. THE CONTRACTOR SHALL NOTIFY THE GAS COMPANY LOCATOR AT 1-800-545-6005, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO DEVELOP THE CONTRACTOR'S PLANS TO IMPLEMENT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S PLANS SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY SYSTEMS THAT COMPLY WITH AS A MINIMUM O.S.H.A. STANDARDS FOR TRENCH EXCAVATIONS SPECIFICALLY. CONTRACTOR AND OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH O.S.H.A. STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



WATER CONNECTION PLAN





SEWER & WATER CONNECTION PLAN

LEGEND

CATV	EXISTING C.A.T.V. LINE
OHU	EXISTING OVERHEAD ELECTRIC
UGE	EXISTING UNDERGROUND ELECTRIC
G	EXISTING GAS LINE
SD	EXISTING STORM DRAIN LINE
SS	EXISTING SANITARY SEWER LINE
W	EXISTING WATER LINE
600	EXISTING CONTOUR
603	PROPOSED CONTOUR
W	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
SS	EXISTING MANHOLE
	EXISTING POWER POLE
C/O	EXISTING CLEAN OUT
(600.00)	EXISTING ELEVATION
23.22	PROPOSED ELEVATION
T 36.75	TOP OF CURB ELEVATION
G 36.25	GUTTER ELEVATION
E.	EXISTING
P.	PROPOSED
↯	FLOW LINE

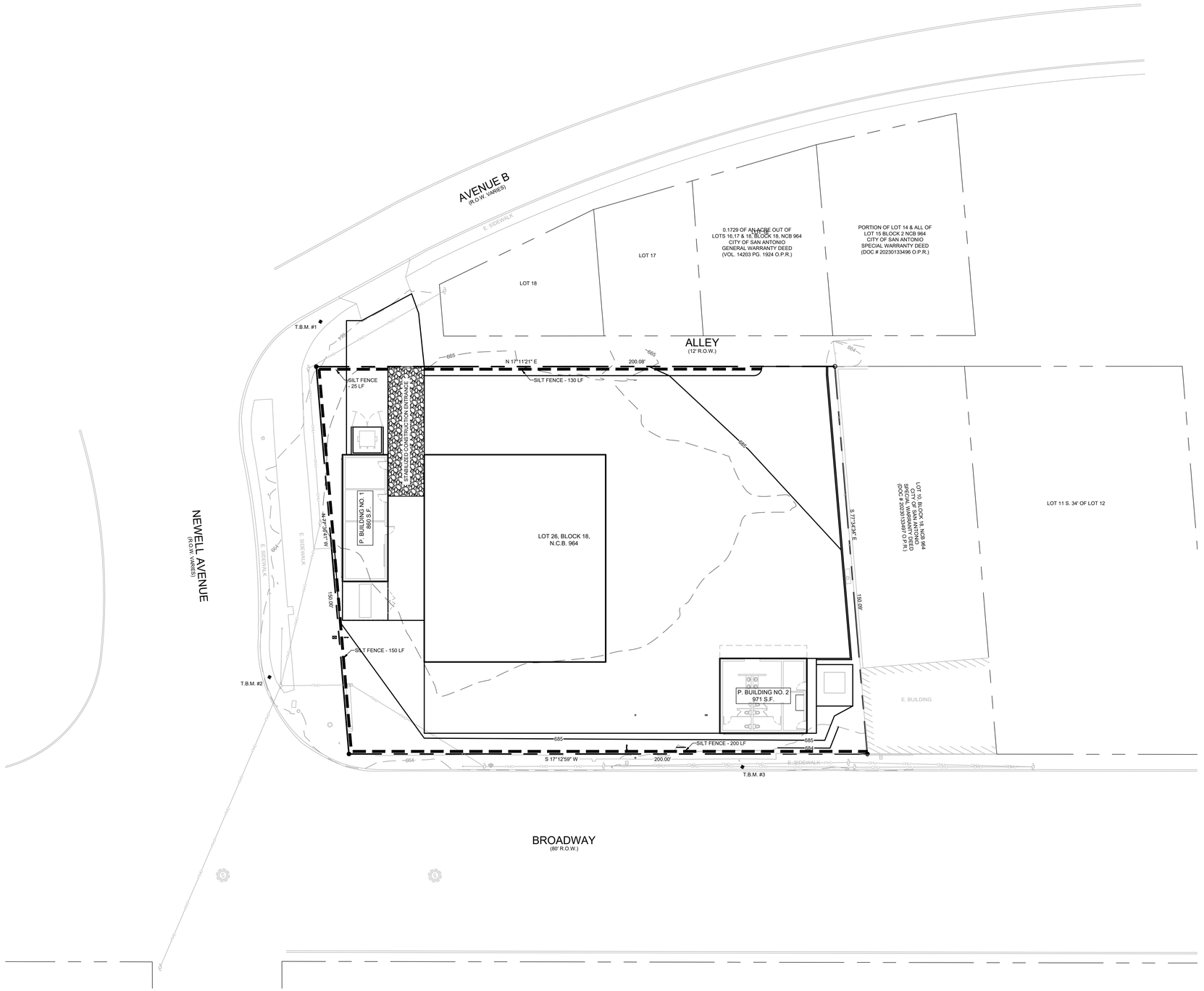
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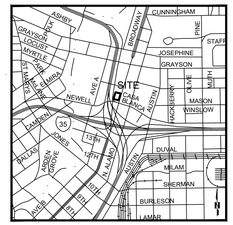
VILLAGOMEZ ENGINEERING COMPANY
TEXAS BOARD OF PROFESSIONAL ENGINEERS: FIRM REGISTRATION # 13698
24165 IH-10W, SUITE 217-708
SAN ANTONIO TEXAS 78257
PHONE: 210-724-0816
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BUILDING ADDITION
1611 BROADWAY
SAN ANTONIO, TEXAS 78215
SAWS CONNECTION PLAN

STATE OF TEXAS
JOSE L. VILLAGOMEZ
105199
LICENSED
PROFESSIONAL ENGINEER
03-06-26

JOB NO.: 25-069
DATE: 03/06/26
DESIGNER: J.V.
DRAWN BY: V.R.
SHEET NO.: C7





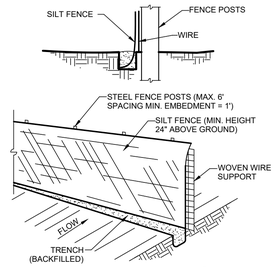
LOCATION MAP

NOT TO SCALE

SEQUENCE OF CONSTRUCTION:

1. PLACE SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE AS SHOWN.
2. PERFORM DEMOLITION, CLEARING, GRUBBING, AND EARTHWORK FOR THE SITE.
3. PERFORM INITIAL SITE GRADING AND BUILDING SUBGRADE PAD PREPARATION PER PLANS.
4. CONSTRUCTION OF PROPOSED BUILDING, WALKWAYS, DRIVEWAYS, AND PAVEMENT.
5. REMOVE TEMPORARY BMP'S AFTER PAVING IS IN PLACE AND/OR AFTER ESTABLISHING VEGETATION.

NOTE: IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE TEMPORARY BMP'S ARE IN PLACE AND FUNCTIONING AT ALL TIMES. NOTIFY ENGINEER IF CITY OF SAN ANTONIO OR SAWS INSPECTION OFFICIALS REQUEST REVISIONS OR MODIFICATIONS TO THE PLAN.

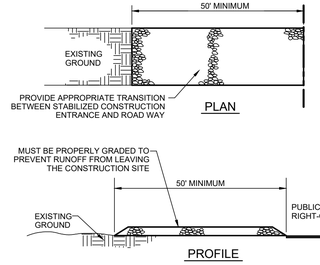


STANDARD SILT FENCE

NOT TO SCALE

GENERAL NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF THE FLOW.
3. THE TRENCH SHOULD BE A MINIMUM OF 6 INCHES DEEP AND A MINIMUM OF 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE TO BE LAID IN THE THE GROUND AND BACKFILLED.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POSTS.
5. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN IT HAS SERVED ITS USEFULNESS, SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. SEDIMENT TRAPPED BY THIS PRACTICE SHALL BE DISPOSED OF IN AN APPROVED SITE IN A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES AND DISPOSED OF IN AN APPROVED SPOIL SITE OR AS IN NO. 7 ABOVE.

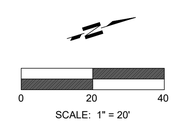


STABILIZED CONSTRUCTION ENTRANCE AND EXIT (SCE)

NOT TO SCALE

GENERAL NOTES:

1. STONE SIZE -- 4 TO 8 INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
2. LENGTH -- AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
3. THICKNESS -- NOT LESS THAN 8 INCHES.
4. WIDTH -- NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WASHING -- WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS.
6. MAINTENANCE -- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.



EROSION CONTROL PLAN

LEGEND

	SILT FENCE
CATV	EXISTING C.A.T.V. LINE
OHU	EXISTING OVERHEAD ELECTRIC
UGE	EXISTING UNDERGROUND ELECTRIC
G G	EXISTING GAS LINE
SD	EXISTING STORM DRAIN LINE
SS	EXISTING SANITARY SEWER LINE
W	EXISTING WATER LINE
600	EXISTING CONTOUR
603	PROPOSED CONTOUR
W	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
SS	EXISTING MANHOLE
	EXISTING POWER POLE
C/O	EXISTING CLEAN OUT
(600.00)	EXISTING ELEVATION
23.22	PROPOSED ELEVATION
T 36.75	TOP OF CURB ELEVATION
G 36.25	GUTTER ELEVATION
E.	EXISTING
P.	PROPOSED
↯	FLOW LINE

REVISIONS:

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SAN ANTONIO TEXAS 78257
PHONE: 210-724-0816
FAX: 210-853-0232
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 13688

BUILDING ADDITION
1611 BROADWAY
SAN ANTONIO, TEXAS 78215
EROSION CONTROL PLAN

STATE OF TEXAS
JOSE L. VILLAGOMEZ
105199
LICENSED
PROFESSIONAL ENGINEER

03-06-26

JOB NO.: 25-069

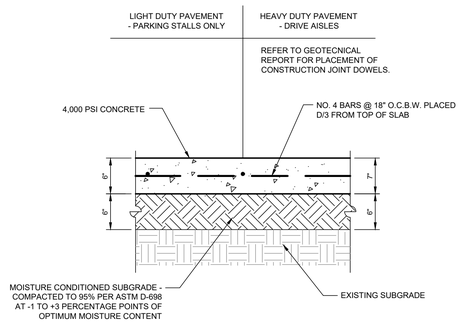
DATE: 03/06/26

DESIGNER: J.V.

DRAWN BY: V.R.

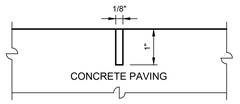
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NOTE: PAVEMENT SECTION PROVIDED WITHOUT GEOTHECNICAL REPORT. SECTION MAY BE REVISED UPON COMPLETION OF REPORT.



1 C9 CONCRETE PAVEMENT

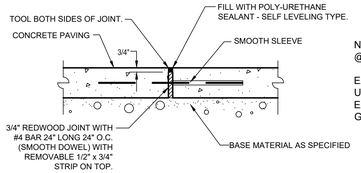
NOT TO SCALE



NOTES: SAW JOINTS SHOWN @ 15' SPACING. EXPANSION JOINTS ONLY USED AT INTERFACE WITH EXISTING CONCRETE GUTTER AT DRIVEWAY.

SAW CUT JOINTS BETWEEN 18 AND 30 HOURS AFTER CONCRETE POUR.

SAWCUT JOINT



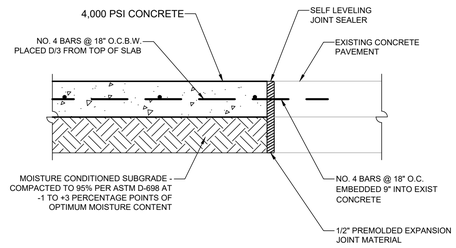
NOTES: SAW JOINTS SHOWN @ 15' SPACING.

EXPANSION JOINTS ONLY USED AT INTERFACE WITH EXISTING CONCRETE GUTTER AT DRIVEWAY.

EXPANSION JOINT

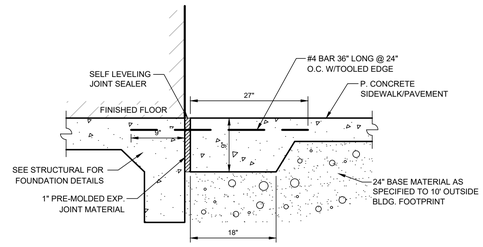
2 C9 JOINT DETAILS

NOT TO SCALE



3 C9 NEW CONCRETE PVM'T TO EXISTING CONCRETE PVM'T

NOT TO SCALE



4 C9 EXPANSION JOINT AT BUILDING

NOT TO SCALE

NOTE: SAW/TOOL JOINTS 5'-0" O.C.
EXPANSION JOINTS 20'-0" O.C.

5 C9 SIDEWALK AT PAVEMENT

NOT TO SCALE

NOTE: SAW/TOOL JOINTS 5'-0" O.C.
EXPANSION JOINTS 20'-0" O.C.

6 C9 SIDEWALK AT PAVEMENT

NOT TO SCALE

NOTE: SAW/TOOL JOINTS 5'-0" O.C.
EXPANSION JOINTS 20'-0" O.C.

7 C9 CONCRETE SIDEWALK

NOT TO SCALE

PARALLEL CURB RAMP

DIRECTIONAL CURB RAMP

PERPENDICULAR CURB RAMP

8 C9 CURB RAMP DETAILS

NOT TO SCALE

NOTE: SAW JOINTS 10' ON CENTER AND EXP. JOINTS AT 40' ON CENTER. WHERE CURB ABUTS SIDEWALK JOINTS SHALL MATCH.

9 C9 RAISED CURB

NOT TO SCALE

NOTES:

1. WHERE CURB ABUTS SIDEWALKS AND OR CONCRETE PAVEMENT, JOINTS SHALL MATCH. UNLESS OTHERWISE SHOWN ON PLANS.
2. 6" FLEX BASE, COMPACTED TO 95% PER ASTM D1557, IF SOILS REPORT HAS A PVR GREATER THAN 3 INCHES.
3. SUBGRADE COMPACTED TO 90% PER ASTM D698.

10 C9 FLUSH CURB

NOT TO SCALE

NOTE: JOINTS THROUGH CURBING SHALL MAINTAIN DEPTHS FOR EACH JOINT TYPE AS SHOWN ON THIS DETAIL SHEET. ADEQUATE DEPTH SHALL BE MAINTAINED TO ACCOMODATE SEALANT (MIN. 3/4").

11 C9 CONTINUOUS JOINT AT CURB

NOT TO SCALE

PROFILE VIEW

SIDE VIEW

12 C9 CURB TERMINAL

NOT TO SCALE

REVISIONS:

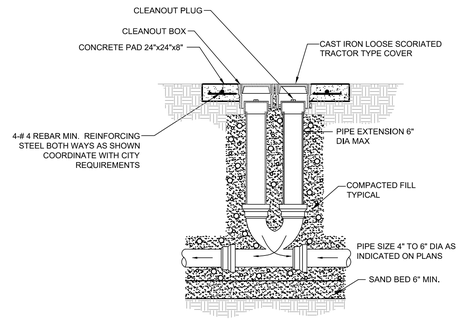
VILLAGOMEZ ENGINEERING COMPANY
24165 IH-10W, SUITE 217-708
SAN ANTONIO TEXAS 78257
PHONE: 210-724-0816
FAX: 210-853-0232
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 13688

BUILDING ADDITION
1611 BROADWAY
SAN ANTONIO, TEXAS 78215
CIVIL DETAILS

STATE OF TEXAS
JOSE L. VILLAGOMEZ
105199
LICENSED PROFESSIONAL ENGINEER
03-06-2026

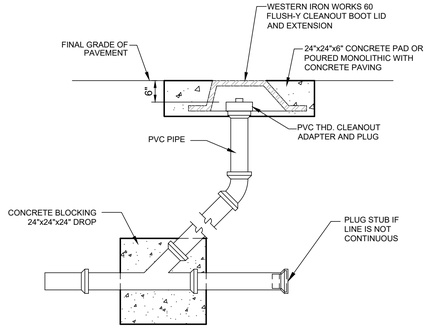
JOB NO.: 25-069
DATE: 03/06/26
DESIGNER: J.V.
DRAWN BY: V.R.
SHEET NO.: C9

NOTE:
1. CLEANOUT BOX SHALL BE INDEPENDENT OF PIPE TO ALLOW FOR SETTLING OF PIPE



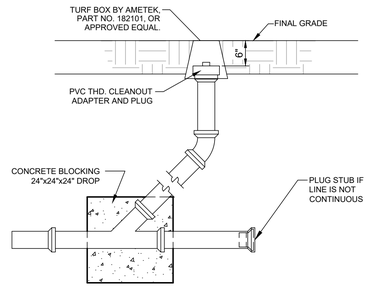
1 C10 TWO WAY CLEANOUT

NOT TO SCALE



CLEANOUT IN HARDSCAPE AREA

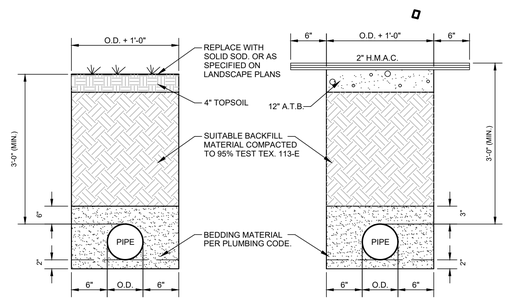
NOTE: CLEANOUT BOX SHALL BE INDEPENDENT OF PIPE AND THEREFORE IS FREE TO MOVE WITH THE SETTLEMENT OF THE GRADE.



CLEANOUT IN NATURAL GROUND

2 C10 ONE WAY CLEANOUT

NOT TO SCALE



IN NATURAL GROUND

IN PAVEMENT

3 C10 PIPE TRENCH

NOT TO SCALE

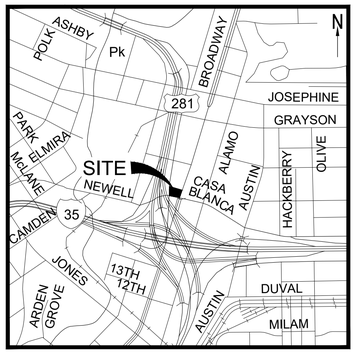
REVISIONS:

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SAN ANTONIO TEXAS 78257
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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 13698

BUILDING ADDITION
1611 BROADWAY
SAN ANTONIO, TEXAS 78215
CIVIL DETAILS

STATE OF TEXAS
JOSE L. VILLAGOMEZ
105199
LICENSED
PROFESSIONAL ENGINEER

JOB NO.: 25-069
DATE: 03/06/26
DESIGNER: J.V.
DRAWN BY: V.R.
SHEET NO.: C10



LOCATION MAP

SCALE: NTS

!!! CALL BEFORE YOU DIG !!!

CONTRACTOR TO LOCATE EXISTING UTILITIES PRIOR TO WORK. ANY CONFLICT WITH EXISTING UTILITIES SHALL BE REMEDIED BETWEEN SAID CONFLICTING UTILITY AND CONTRACTOR.

TEXAS ONE CALL PARTICIPANTS REQUESTS 48 HOURS NOTICE BEFORE YOU DIG, DRILL, OR BLAST - STOP AND CALL

TEXAS ONE CALL SYSTEM
(800) 245-4545 OR
www.onecall@texas.com

NOTE TO COSA REVIEWER

THERE ARE NO EXISTING TREES ON SITE

CITY OF SAN ANTONIO LANDSCAPE ORDINANCE REQUIREMENTS

TREE CANOPY SHADING

- 29,911 SF x 15% CRAG
  = 4,487 SF SHADING REQUIRED
  05 TREE(S) PROVIDED @ 275 x 90%
  = 1,238 SF (4%) SHADING PROVIDED

TREE CANOPY MITIGATION
CANOPY DEFICIT = 3,250 SF
3,250 SF / 787.5 SF = 4.1 (5)
5 X 1.5" = 7.5" X $200 = $1,500.00

25 LANDSCAPE POINTS REQUIRED

(ST) STREET TREES = 25 POINTS

TREES SHALL BE LOCATED NO MORE THAN 17 FEET FROM THE STREET RIGHT-OF-WAY LINE.

- BROADWAY
  200 LF x 75%
  = 150 / 30 (OHE)
  = (5) TREE(S) REQUIRED
- NEWELL AVENUE
  150 LF x 75%
  = 112.5 / 30 (OHE)
  = 3.75 = (4) TREE(S) REQUIRED

TOTAL POINTS PER PLAN = 25 POINTS

IRRIGATION

- IRRIGATION SYSTEM PROVIDED REF. IRRIGATION DRAWING(S).

PLANT SCHEDULE

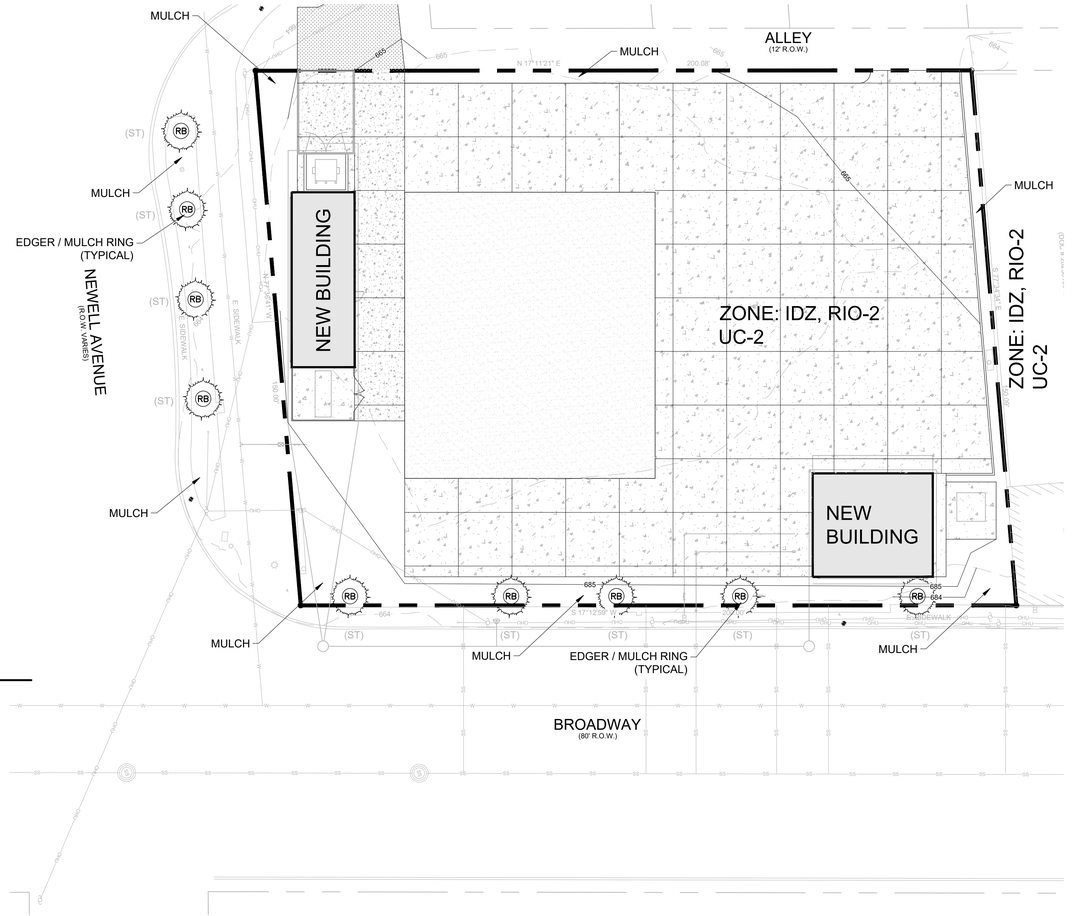
SYMBOL	CODE	QTY	COMMON / BOTANICAL NAME	CONT	CAL	SIZE
TREES						
RB	RB	9	TEXAS REDBUD / CERCIS TEXANA MULTI-TRUNK	CONT.	1.5"CAL	5'-7'H, 3'-4'S

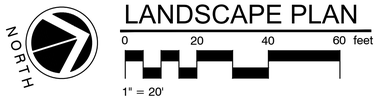
LANDSCAPE MATERIAL SCHEDULE

SYMBOL	CODE	DESCRIPTION	SIZE/ CONDITION
	EDG	EDGING ALUMINUM EDGER	3/16" x 4" STAKED; PAINTED GREEN REFERENCE SHEET L1 / DETAIL 03
	MUL	EDGER MULCH RING, COMPOSTED MULCH	2.5' RADIUS AROUND ALL TREES
	MULCH	HARDWOOD MULCH DOUBLE SHREDDED	4" DEPTH

TREE DESIGNATIONS

(ST) = STREET TREE & CANOPY TREE

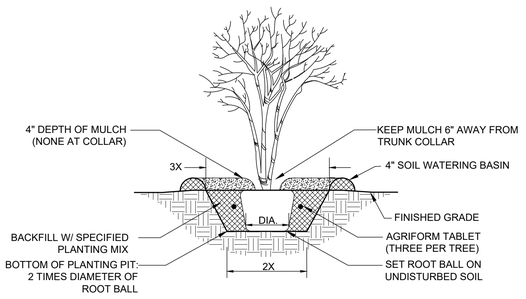




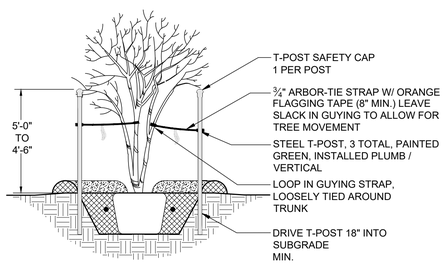
LANDSCAPE PLAN

0 20 40 60 feet

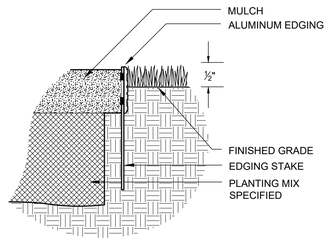
1" = 20'



01 MULTI-TRUNK TREE PLANTING
N.T.S.



02 MULTI-TRUNK TREE STAKING
N.T.S.



03 ALUMINUM EDGING
N.T.S.

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SEAL

CLIENT

VILLA PARK
A PART OF
KP+J ARCHITECTS ENGINEERS
300 W. BITTERS RD, SUITE 204
SAN ANTONIO, TX 78216
(210) 384-8900

CONSULTANT

COOPER LOCHTE
LANDSCAPE ARCHITECTURE LLC
P.O. BOX 49964, SAN ANTONIO, TEXAS 78261 (TEL: 2102081437)
CLLA PROJECT #26-015

CONSULTANT

BUILDING 1

1611 BROADWAY
SAN ANTONIO, TX 78215

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REV	REV DESCRIPTION	DATE
XX	XX	XX

REGISTERED LANDSCAPE ARCHITECT
JASON S. LOCHTE
2518
STATE OF TEXAS

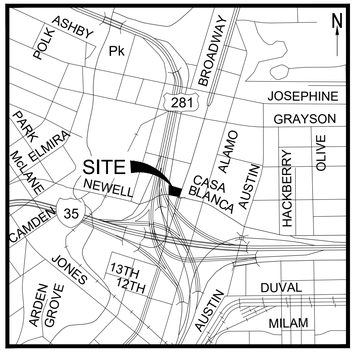
3/9/2026

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Drawn / Designed By: BF
Reviewed By: BF
Project Number: KPJ-TX-25-0082

SHEET NAME:
LANDSCAPE PLAN

SHEET NUMBER:
L1



LOCATION MAP

SCALE: NTS

TO WHOM IT MAY CONCERN:

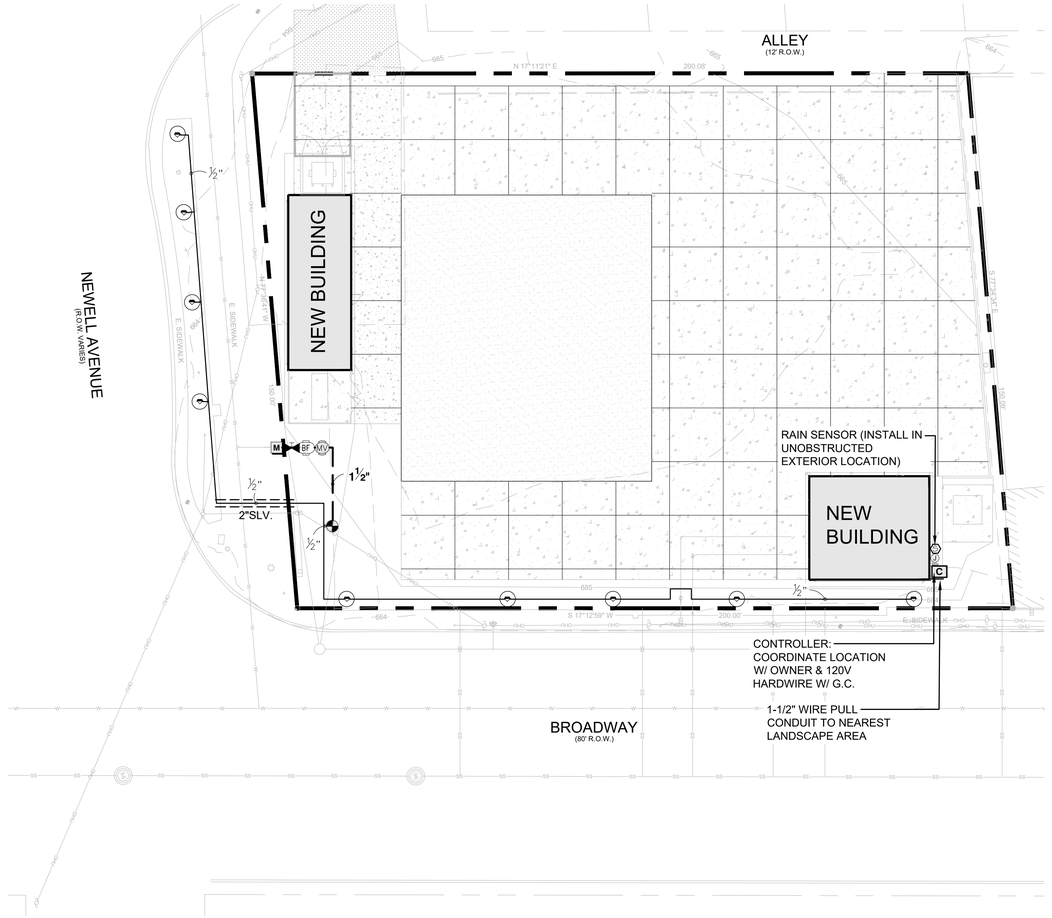
I, JASON S. LOCHTE, A LICENSED IRRIGATOR IN THE STATE OF TEXAS DO CERTIFY THAT THE IRRIGATION PLAN SUBMITTED CONFORMS TO THE IRRIGATION DESIGN REQUIREMENTS AND EQUIPMENT STANDARDS OF CHAPTER 344 §§ 344.60, 344.61, & 344.62 OF THE TEXAS ADMINISTRATIVE CODE.

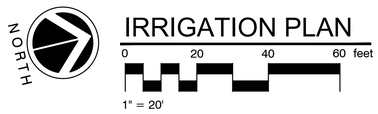
IF FURTHER INFORMATION IS NEEDED, PLEASE FEEL FREE TO CONTACT ME AT (210) 821-6570.

SINCERELY,

JASON S. LOCHTE
TEXAS LICENSED IRRIGATOR NO. 11893

!!! CALL BEFORE YOU DIG !!!
CONTRACTOR TO LOCATE EXISTING UTILITIES PRIOR TO WORK. ANY CONFLICT WITH EXISTING UTILITIES SHALL BE REMEDIED BETWEEN SAID CONFLICTING UTILITY AND CONTRACTOR.
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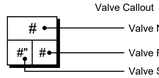


IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI
1401 1402 1404 1408	RAIN BIRD 1806-SAM-PRS-1400 FLOOD 1401 FLOOD BUBBLER 6.0" POPUP WITH CHECK VALVE AND PRESSURE REGULATOR	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	RAIN BIRD PEB PLASTIC INDUSTRIAL VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. SIZE AS SHOWN.
	SHUT OFF VALVE SCH. 80 PVC BALL VALVE MANUFACTURED BY SPEARS.
MV	MASTER VALVE 1" RAIN BIRD PEB PLASTIC REMOTE CONTROL VALVE. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. SIZE AS NOTED.
BF	FEBCO 850U 1" DOUBLE CHECK BACKFLOW PREVENTION WITH UNION END BALL VALVE.
C	RAIN BIRD ESPME MODULAR OUTDOOR CONTROLLER.
	RAIN BIRD WR2-RFC WIRELESS RAIN AND FREEZE SENSOR COMBO, INCLUDES 1 RECEIVER AND 1 RAIN/FREEZE SENSOR TRANSMITTER.
M	WATER METER 1" IRRIGATION METER ONLY. REFER TO CIVIL.
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21 LATERALS 3/4" & LARGER LABELED W/ ALL OTHER BEING 1/2" CLASS 315 PVC.
	IRRIGATION MAINLINE: PVC SCHEDULE 40
	PIPE SLEEVE: PVC SCHEDULE 40

Valve Callout



CRITICAL ANALYSIS

Generated:	2026-03-09 16:01
P.O.C. NUMBER: 01	
Water Source Information:	IRRIGATION METER ONLY. REFER TO CIVIL.
FLOW AVAILABLE	
Water Meter Size:	1"
Flow Available	18.2 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	65 PSI
Elevation Change:	5.00 ft
Service Line Size:	1"
Length of Service Line:	20 ft
Pressure Available:	61 PSI
DESIGN ANALYSIS	
Maximum Station Flow:	4.5 GPM
Flow Available at POC:	18.2 GPM
Residual Flow Available:	13.7 GPM
Design Pressure:	30 PSI
Friction Loss:	1.15 PSI
Fittings Loss:	0.11 PSI
Elevation Loss:	0 PSI
Loss through Valve:	1.65 PSI
Pressure Req. at Critical Station:	32.9 PSI
Loss for Fittings:	0.0 PSI
Loss for Main Line:	0.03 PSI
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	5 PSI
Loss for Master Valve:	1.65 PSI
Loss for Water Meter:	0.2 PSI
Critical Station Pressure at POC:	39.8 PSI
Pressure Available:	61 PSI
Residual Pressure Available:	21.2 PSI

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC	PRECIP
Unknown	RAIN BIRD PEB	1"	BUBBLER	4.5	32.9	39.8	1.7 in/h

WATERING SCHEDULE

NUMBER	MODEL	TYPE	PRECIP	IN./WEEK	MIN./WEEK	GAL./WEEK	GAL./DAY
Unknown	RAIN BIRD PEB	BUBBLER	1.7 in/h	1	36	162	81
		TOTALS:			36	162	81

PIPE SIZING REQUIREMENTS: (Based on Class 200 PVC laterals except 1/2" laterals to be Class 315 PVC)				
0.1 gpm	to	4.0 gpm	1/2"	(Class 315)
4.1 gpm	to	8.0 gpm	3/4"	
8.1 gpm	to	13.0 gpm	1"	
13.1 gpm	to	23.0 gpm	1-1/4"	
23.1 gpm	to	32.0 gpm	1-1/2"	
32.1 gpm	to	53.0 gpm	2"	
53.1 gpm	to	74.0 gpm	2- 1/2"	

NOTE: SIZE LATERAL PIPE SUCH THAT NO TWO SPRAY HEADS WITHIN THE SAME ZONE MAY VARY BY MORE THAN 10% IN PSI. RULE-OF-THUMB PIPE SIZING IS NOT ACCEPTABLE NOR PERMITTED IN RUNS LONGER THAN 100'.

SAWS WATERING HOURS

DROUGHT STAGE	WATERING DAYS	WATERING TIMES
YEAR ROUND	ANY DAY **DRIP IRRIGATION:** ANY DAY	MIDNIGHT - 10 A.M. 9 P.M. - MIDNIGHT
STAGE 1	ONCE A WEEK ON YOUR DAY **DRIP IRRIGATION:** MONDAY, WEDNESDAY, FRIDAY	MIDNIGHT - 10 A.M. 9 P.M. - MIDNIGHT
STAGE 2	ONCE A WEEK ON YOUR DAY **DRIP IRRIGATION:** MONDAY & FRIDAY	5 A.M. - 10 A.M. 9 P.M. - MIDNIGHT
STAGE 3	ONCE A WEEK ON YOUR DAY **DRIP IRRIGATION:** MONDAY & FRIDAY	5 A.M. - 10 A.M. 9 P.M. - MIDNIGHT
STAGE 4	ONCE EVERY OTHER WEEK **DRIP IRRIGATION:** FRIDAY	5 A.M. - 10 A.M. 9 P.M. - MIDNIGHT

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CONSULTANT

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LANDSCAPE ARCHITECTURE LLC
P.O. BOX 49964, SAN ANTONIO, TEXAS 78261 | TEL: (830)980-6470
CLLA PROJECT #26-015

CONSULTANT

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REV	REV DESCRIPTION	DATE
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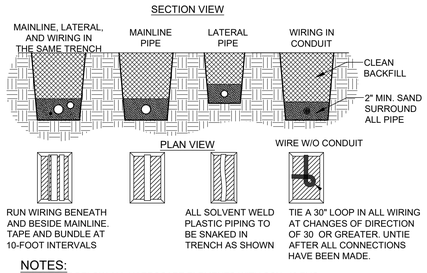
Drawn / Designed By: BF
Reviewed By: BF
Project Number: KPJ-TX-25-0082

SHEET NAME:
IRRIGATION PLAN

SHEET NUMBER:
L2

IRRIGATION NOTES

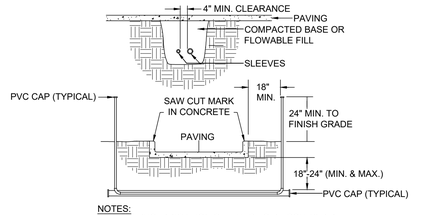
1. POINT OF CONNECTION - CONNECT DOWNSTREAM FROM AN IRRIGATION ONLY WATER METER. REFERENCE CIVIL DRAWINGS FOR LOCATION.
2. STATIC PRESSURE - CONFIRM STATIC WATER PRESSURE OF 65 PSI AT LEAST SEVEN DAYS BEFORE BEGINNING WORK. IF STATIC PRESSURE IS LESS THAN STATED ABOVE, NOTIFY LANDSCAPE ARCHITECT IN WRITING AT LEAST SEVEN DAYS PRIOR TO COMMENCING WITH WORK. IF STATIC PRESSURE EXCEEDS 80 PSI, INSTALL A PRESSURE REDUCING DEVICE UPSTREAM FROM BACKFLOW DEVICE AT NO ADDITIONAL COST TO THE OWNER.
3. SYSTEM LAYOUT - COORDINATE IRRIGATION LAYOUT WITH PLANTING PLAN AND SITE CONDITIONS TO PROVIDE COMPLETE COVERAGE WITH NO OVERSPRAY. THE IRRIGATION CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO ENSURE PROPER COVERAGE AT NO ADDITIONAL COST TO THE OWNER. PRIOR TO SUBMISSION OF THE BID CONTRACTOR SHALL SATISFY HIMSELF AS TO THE CONDITIONS THEREOF.
4. CONTRACTOR QUALIFICATIONS - INSTALLATION OF THE IRRIGATION SYSTEM SHALL BE UNDER THE ONSITE SUPERVISION OF A SUPERINTENDENT CURRENTLY LICENSED AS A LANDSCAPE IRRIGATOR IN THE STATE OF TEXAS.
5. GUARANTEE - GUARANTEE THE UNDERGROUND SPRINKLER SYSTEM AGAINST DEFECTS IN THE MATERIALS AND WORKMANSHIP FOR ONE YEAR AFTER FINAL ACCEPTANCE.
6. EXISTING UTILITIES - CONTRACTOR IS TO CONTACT APPROPRIATE AUTHORITIES FOR LOCATING ALL UTILITIES PRIOR TO CONSTRUCTION.
7. CODES AND PERMITS - CONTRACTOR TO COMPLY WITH REQUIREMENTS OF THE INTERNATIONAL PLUMBING CODE AND ALL OTHER APPLICABLE CODES AS THEY SHALL PREVAIL OVER ANY DISCREPANCIES HEREIN. IRRIGATION CONTRACTOR SHALL SECURE ALL REQUIRED PERMITS, WATERING VARIANCES, AND PAY ALL ASSOCIATED FEES & PENALTIES UNLESS OTHERWISE DIRECTED. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH MUNICIPAL DROUGHT/WATERING RESTRICTIONS.
8. TRENCHING - PROTECT EXISTING PLANT MATERIAL. ROUTE EXCAVATION TRENCHES TO AVOID DAMAGE TO EXISTING TREES. COORDINATE CONFIGURATION OF PLANTING BEDS WITH LANDSCAPE CONTRACTOR TO ENSURE PROPER LOCATION OF TURF AND SHRUB IRRIGATION HEADS. STAKE ALL SPRINKLER HEAD LOCATIONS AND TRENCH TO A MINIMUM WIDTH OF 4" AND PROVIDE 16" OF COVER FOR MAIN SUPPLY LINE AND 10" OF COVER OVER ALL LATERALS AND WIRING.
9. PIPING - ALL PIPING IS TO BE SIZED FOR A MAXIMUM WATER VELOCITY OF 5 FEET PER SECOND. SIZE LATERAL PIPE SUCH THAT NO TWO SPRAY HEADS WITHIN THE SAME ZONE MAY VARY BY MORE THAN 10% IN PSI. RULE-OF-THUMB PIPE SIZING IS NOT ACCEPTABLE NOR PERMITTED IN RUNS LONGER THAN 100'. LAY PIPE ON A 2" SAND CUSHION SUBBASE, UNIFORMLY SLOPED WITHOUT HUMPS AND DEPRESSIONS. KEEP PIPE INTERIOR CLEAN AT ALL TIMES.
10. BACKFLOW PREVENTER - INSTALL BACKFLOW PREVENTER AS PER CITY CODES AND STANDARDS. INSTALL 17" X 30" PLASTIC ACCESS BOX FLUSH WITH GRADE AND BACKFILL WITH 3" OF GRAVEL IN BOTTOM OF BOX. PROVIDE WYE STRAINER AND SHUT-OFF VALVE UPSTREAM OF BACKFLOW DEVICE.
11. VALVES - CLEAN AND TEST PRIOR TO INSTALLATION. INSTALL PLUMB AND STRAIGHT. INSTALL SAME SIZE BALL VALVE PRECEDING EACH VALVE. SET PLASTIC VALVE BOX FLUSH WITH GRADE ON MASONRY BRICKS WITH 3" GRAVEL SUMP AND STABILIZE WITH COMPACTED SOIL. USE 11" X 16" PLASTIC ACCESS VALVE BOXES FOR ELECTRIC VALVES AND QUICK COUPLING VALVES UNLESS OTHERWISE NOTED.
12. BACKFILL - USE BACKFILL FREE FROM ROCKS AND OTHER UNSUITABLE MATERIALS WHICH COULD DAMAGE PIPE OR CREATE SETTLING PROBLEMS. APPLY BACKFILL MATERIAL IN 6" LAYERS AND TAMP EACH LAYER TO PREVENT SETTLING. USE TOPSOIL (NOT SUBSOIL) WITHIN THE TOP 6" OF BACKFILL. ACHIEVE FINISH GRADE AND REPAIR ALL DAMAGED EXISTING TURF AND PLANTINGS. REMOVE EXCESS EXCAVATION AND BACKFILL MATERIAL FROM THE SITE IMMEDIATELY. PROVIDE A 2" SAND CUSHION BELOW AND ABOVE ALL PIPE.
13. SPRINKLER HEADS - FLUSH LATERAL LINES WITH FULL HEAD OF WATER AND INSTALL HEADS. LOCATE SPRINKLER HEADS TO MAINTAIN A DISTANCE OF 6" FROM WALLS AND 4" FROM OTHER BOUNDARIES. HEADS TO BE INSTALLED WITH IPS FLEX PIPE OR SCH. 80 SWING JOINTS. USE IN-HEAD CHECK VALVES TO ELIMINATE LOW HEAD DRAINAGE. AT LOCATIONS OF EXCESSIVE LOW HEAD DRAINAGE, INSTALL HUNTER HCV CHECK VALVES BETWEEN HEAD AND SWING-JOINT. NO OVERSPRAY WILL BE ALLOWED ONTO IMPERVIOUS SURFACES SUCH AS DRIVES, WALKS, BUILDINGS, ROADS, ETC.
14. WIRING - 14 AWG RATED FOR DIRECT BURIAL. LAY WIRING BESIDE PIPE IN TRENCHES. PROVIDE A MINIMUM COVERING OF 12" FOR WIRING LAID IN SEPARATE TRENCHES. WIRE SPLICES SHALL BE ENCASED IN A WATERPROOF COMPOUND OR GEL. BUNDLE AND TAPE MULTIPLE WIRES AT A MAXIMUM OF 10 FOOT INTERVALS. PROVIDE A 30" EXPANSION LOOP AT EACH ELECTRIC REMOTE CONTROL VALVE AND AT EVERY 100' INTERVAL. ALL FIELD SPLICES SHALL BE LOCATED IN A 10" ROUND VALVE BOX TO ALLOW FOR INSPECTION.
15. AUTOMATIC CONTROLLER - PROVIDE 120 VOLT ELECTRICAL CURRENT TO THE CONTROLLER IN CONDUIT IN ACCORDANCE WITH LOCAL, STATE, AND NATIONAL CODES.
16. CLEAN-UP - KEEP THE PREMISES AND PUBLIC STREETS FREE FROM ACCUMULATION OF WASTE MATERIAL. AT THE COMPLETION OF THE WORK REMOVE ALL WASTE, EXCESS MATERIAL, RUBBISH AND EQUIPMENT. LEAVE THE SITE CLEAN.
17. FINAL ACCEPTANCE - PERFORM OPERATIONAL TEST WITH THE OWNER PRESENT AFTER SYSTEM IS COMPLETE AND IRRIGATION HEADS ADJUSTED TO FINAL POSITION. DEMONSTRATE TO OWNER THAT ENTIRE SYSTEM MEETS COVERAGE REQUIREMENTS AND FUNCTIONS PROPERLY. PROVIDE THE OWNER WITH COMPLETE WRITTEN INSTRUCTIONS FOR PROPER OPERATION AND MAINTENANCE OF THE SPRINKLER SYSTEM.
18. UNSLEEVED PIPES AND VALVES MAY BE SHOWN UNDER PAVEMENT FOR GRAPHIC CLARITY ONLY. INSTALL THESE PIPES IN ADJACENT LANDSCAPE AREAS.
19. AS BUILTS - PROVIDE OWNER WITH A COMPLETE SET OF AS-BUILTS DRAWINGS AT FINAL ACCEPTANCE.
20. SENSORS - INSTALL FREEZE AND RAIN SHUT-OFF SENSORS IN ELEVATED AND EXPOSED EXTERIOR LOCATIONS CLEAR OF TREES AND OTHER OBSTRUCTIONS.
21. IRRIGATION COVERAGE STATEMENT -100% IRRIGATION COVERAGE HAS NOT BEEN PROVIDED FOR. REFERENCE IRRIGATION PLAN FOR AREAS OF COVERAGE.
22. IRRIGATION EQUIPMENT - IRRIGATION COMPONENTS SHALL BE AS SPECIFIED OR APPROVED EQUAL MANUFACTURED BY HUNTER, RAIN BIRD, TORO, IRRITROL, OR WEATHERMATIC.



NOTES:
(1) SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SCH. 40 PVC.
(2) FOR PIPE AND WIRE BURIAL DEPTHS SEE SPECIFICATIONS.
(3) INSTALL 2" SAND BEDDING IN TRENCHES PRIOR TO PIPE INSTALLATION.
(4) PROVIDE 2" SAND ENVELOPE AROUND ALL PIPE; 2" SAND COVER MIN.
(5) STACKING OF PIPE IS NOT ALLOWED. ALL PIPE TO HAVE 2" OF SEPARATION.
(6) NO MATERIAL LARGER THAN 1" TO BE USED AS TRENCH BACKFILL.
(7) COMPACT TRENCH BACKFILL TO 80%-85% PROCTOR. 95% UNDER HARDSCAPE.

TRENCH DETAIL

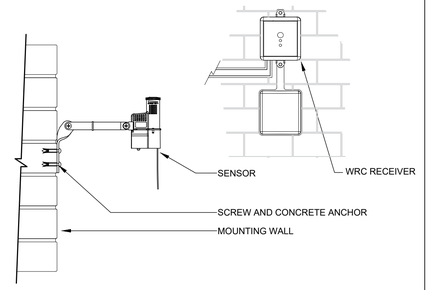
N.T.S.



NOTES:
(1) ALL PVC IRRIGATION SLEEVES TO BE SCH 40 PIPE.
(2) ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
(3) WHERE THERE IS MORE THAN ONE SLEEVE, EXTEND THE SMALLER SLEEVE TO 24" MIN. ABOVE FINISH GRADE.
(4) MECHANICALLY TAMP TO 95% PROCTOR.

SLEEVING

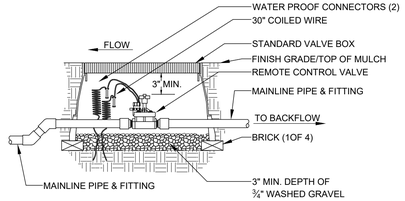
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NOTE:
MOUNT SENSOR IN LOCATION WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED RAINFALL, BUT NOT IN PATH OF SPRINKLER SPRAY, NO MORE THAN 1000' FROM RECEIVER UNIT . MOUNT RECEIVER UNIT NO FURTHER THAN 6" FROM CONTROLLER.

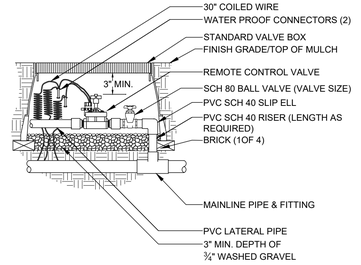
WIRELESS RAIN/FREEZE SENSOR

N.T.S.



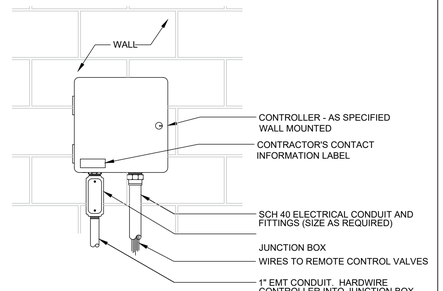
MASTER VALVE

N.T.S.



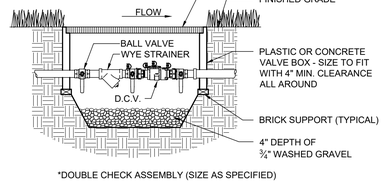
CONTROL VALVE

N.T.S.



CONTROLLER

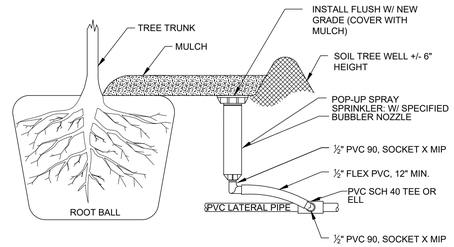
N.T.S.



*DOUBLE CHECK ASSEMBLY (SIZE AS SPECIFIED)

BACKFLOW PREVENTER

N.T.S.



TREE BUBBLER

N.T.S.

SEAL

CLIENT

VILLA PARK A PART OF KP+J ARCHITECTS ENGINEERS
300 W. BITTERS RD, SUITE 204
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CONSULTANT

COOPER LOCHTE LANDSCAPE ARCHITECTURE LLC
CLLA PROJECT #26-015

CONSULTANT

BUILDING 1

1611 BROADWAY
SAN ANTONIO, TX 78215

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REV	REV DESCRIPTION	DATE
XX	XX	XX

STATE OF TEXAS
JASON SCOTT LOCHTE
11893
REGISTERED LANDSCAPE ARCHITECT

3/9/2026

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Drawn / Designed By: BF
Reviewed By: BF
Project Number: KPJ-TX-25-0082

SHEET NAME:
IRRIGATION DETAILS AND NOTES

SHEET NUMBER:
L3

CODE ANALYSIS

ZONING	IDZ: The subject parcel is in compliance with current zoning as defined in Chapter 35 of the City Codes as adopted by the City of San Antonio.	
APPLICABLE CODES	Building Code:	2024 I.B.C.
	Mechanical Code:	2024 I.M.C.
	Plumbing Code:	2024 I.P.C.
	Electrical Code:	2023 N.E.C.
	Energy Code:	2021 I.E.C.C.
	Fire Code:	2024 I.F.C.
	Accessibility:	2012 TEXAS ACCESSIBILITY STANDARDS
PARKING	NA	

BUILDING 1

REGULATION	SECTION	DESCRIPTION(S)		COMMENTS	
CONSTRUCTION TYPE	602.2	TYPE IIB			
OCCUPANCY CLASSIFICATION	CHAPTER 3	NOT TO BE OCCUPIED			
BUILDING HEIGHT	TABLE 504.3	ALLOWABLE NA		ACTUAL 14'-5 5/8"	
NUMBER OF STORIES ABOVE GRADE	TABLE 504.4	ALLOWABLE NA		ACTUAL 1 STORY	
AREA	TABLE 506.2	ALLOWABLE NA		ACTUAL 860 SF	
SEPARATION OF OCCUPANCIES (HRS)	TABLE 508.4	NA			
FIRE PROTECTION					
SPRINKLER SYSTEM	903	NOT REQUIRED	NOT PROVIDED	IF PROVIDED G.C. TO INSTALL PER DEFFERED SUBMITTAL	
STANDPIPES	905.3.1	NOT REQUIRED	NOT PROVIDED		
FIRE ALARM/DETECTION	907.2.2	NOT REQUIRED		IF REQUIRED INSTALLED BY FUTURE TENANT	
FIRE RESISTANCE RATING REQUIREMENTS FOR BLG. ELEMENTS	TABLE 601	STRUCTURAL FRAME	Ø HRS	NON-BEARING WALLS-EXTERIOR/INT.	Ø HRS
		BEARING WALLS	Ø HRS	ROOF CONSTRUCTION	Ø HRS
FIRE RESISTANCE RATING FOR EXT. WALLS *SEPARATION DISTANCE	TABLE 705.5	NORTHEAST	> 30 FT = Ø HRS	SOUTHWEST	> 30 FT = Ø HRS
		SOUTHEAST	> 30 FT = Ø HRS	NORTHWEST	> 30 FT = Ø HRS
MEANS OF EGRESS					
MINIMUM # OF EXITS	1006.3.3	3 PROVIDED		2 REQUIRED W/OCC LOAD <500	
EXIT ACCESS TRAVEL DISTANCE	TABLE 1017.2			NA	
DEAD-END CORRIDOR	1020.5	NA		NA	
MEANS OF EGRESS ILLUMINATION	SECTION 1025	EXIT LIGHTS		EMERGENCY POWER PROVIDE BATTERY BACK-UP	

BUILDING 2

REGULATION	SECTION	DESCRIPTION(S)		COMMENTS	
CONSTRUCTION TYPE	602.2	TYPE IIB			
OCCUPANCY CLASSIFICATION	CHAPTER 3	NOT TO BE OCCUPIED			
BUILDING HEIGHT	TABLE 504.3	ALLOWABLE NA		ACTUAL 14'-5 5/8"	
NUMBER OF STORIES ABOVE GRADE	TABLE 504.4	ALLOWABLE NA		ACTUAL 1 STORY	
AREA	TABLE 506.2	ALLOWABLE NA		ACTUAL 971 SF	
SEPARATION OF OCCUPANCIES (HRS)	TABLE 508.4	NA			
FIRE PROTECTION					
SPRINKLER SYSTEM	903	NOT REQUIRED	NOT PROVIDED	IF PROVIDED G.C. TO INSTALL PER DEFFERED SUBMITTAL	
STANDPIPES	905.3.1	NOT REQUIRED	NOT PROVIDED		
FIRE ALARM/DETECTION	907.2.2	NOT REQUIRED		IF REQUIRED INSTALLED BY FUTURE TENANT	
FIRE RESISTANCE RATING REQUIREMENTS FOR BLG. ELEMENTS	TABLE 601	STRUCTURAL FRAME	Ø HRS	NON-BEARING WALLS-EXTERIOR/INT.	Ø HRS
		BEARING WALLS	Ø HRS	ROOF CONSTRUCTION	Ø HRS
FIRE RESISTANCE RATING FOR EXT. WALLS *SEPARATION DISTANCE	TABLE 705.5	NORTHEAST	> 30 FT = Ø HRS	SOUTHWEST	> 30 FT = Ø HRS
		SOUTHEAST	> 30 FT = Ø HRS	NORTHWEST	> 30 FT = Ø HRS
MEANS OF EGRESS					
MINIMUM # OF EXITS	1006.3.3	3 PROVIDED		2 REQUIRED W/OCC LOAD <500	
EXIT ACCESS TRAVEL DISTANCE	TABLE 1017.2			NA	
DEAD-END CORRIDOR	1020.5	NA		NA	
MEANS OF EGRESS ILLUMINATION	SECTION 1025	EXIT LIGHTS		EMERGENCY POWER PROVIDE BATTERY BACK-UP	

GENERAL NOTES & REQUIREMENTS

1. CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR SHALL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY, AND HOLD OWNER AND ARCHITECT HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
2. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODE, ORDINANCES, AND REGULATIONS OF ALL GOVERNING BODIES.
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE CODES, ORDINANCES AND STANDARD SPECIFICATIONS OF ALL AGENCIES THAT HAVE THE RESPONSIBILITY OF REVIEWING PLANS AND SPECIFICATIONS FOR CONSTRUCTION OF ALL ITEMS PER THESE PLANS AND SPECIFICATIONS IN THIS LOCALITY.
4. THE CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS AS REQUIRED FOR CONSTRUCTION OF THIS PROJECT.
5. WHEN ANY EXISTING UTILITY REQUIRES ADJUSTMENT OR RELOCATION, THE CONTRACTOR SHALL NOTIFY THE PROPER UTILITY AND COORDINATE HIS WORK ACCORDINGLY. THERE SHALL BE NO CLAIM MADE BY THE CONTRACTOR AND ANY COSTS CAUSED BY DELAYS IN CONSTRUCTION DUE TO THE ADJUSTMENT OR RELOCATION OF UTILITIES.
6. THE OWNER SHALL NOT BE HELD LIABLE FOR ANY CLAIMS RESULTING FROM ACCIDENTS OR DAMAGES CAUSED BY THE CONTRACTOR'S FAILURE TO COMPLY WITH TRAFFIC AND PUBLIC SAFETY REGULATIONS DURING THE CONSTRUCTION PERIOD.
7. THE CONTRACTOR SHALL CONFINE HIS ACTIVITIES TO THE PROJECT SITE UNDER DEVELOPMENT OR THE EXISTING RIGHT-OF-WAYS, CONSTRUCTION AND PERMANENT EASEMENTS, AND SHALL NOT TRESPASS UPON OTHER PRIVATE PROPERTY WITHOUT THE CONSENT OF THE OWNER OF THE OTHER PROPERTY.
8. THE CONTRACTOR SHALL DISPOSE OF ALL SURPLUS EXCAVATION PROPERLY AND PROVIDE ALL SUITABLE FILL MATERIAL AS APPROVED BY THEIR SOILS ENGINEER, AND THE COST SHALL BE INCLUDED IN THE PRICE BID FOR THE RELATED ITEMS.
9. EROSION AND SEDIMENT CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH LOCAL AND/OR STATE REQUIREMENTS. PROTECTIVE MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT ADJACENT PROPERTY AT ALL TIMES DURING CONSTRUCTION. PROTECTIVE MEASURES SHALL BE TAKEN BY THE CONTRACTOR SO AS NOT TO CAUSE ANY MUD, SILT, OR DEBRIS ONTO PUBLIC OR ADJACENT PROPERTY. ANY MUD OR DEBRIS ON PUBLIC PROPERTY SHALL BE REMOVED IMMEDIATELY.
10. ALL WORK SHALL BE GUARANTEED BY THE CONTRACTOR TO BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS AND IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THAT THE CONTRACTOR SHALL REPLACE OR REPAIR ANY WORK OR MATERIAL FOUND TO BE DEFECTIVE.
11. CONTRACTOR SHALL VERIFY THAT THE PLANS THAT HE IS USING ARE THE VERY LATEST PLANS AND SPECIFICATIONS AND FURTHER SHALL VERIFY THAT THESE PLANS HAVE BEEN APPROVED BY ALL APPLICABLE PERMIT-ISSUING AGENCIES.
12. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING CLARIFICATION OF CONFLICTS BETWEEN THESE PLANS AND SPECIFICATIONS, EITHER AMONG THEMSELVES OR WITH THE REQUIREMENTS OF ANY AND ALL REVIEWING AND PERMIT-ISSUING AGENCIES, HE SHALL SEEK CLARIFICATION IN WRITING FROM THE ARCHITECT BEFORE BID OR COMMENCEMENT OF CONSTRUCTION. FAILURE TO DO SO SHALL BE AT SOLE EXPENSE TO THE CONTRACTOR.
13. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES AND/OR STRUCTURES AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNER OF UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK. THE CONTRACTOR SHALL NOTIFY THE PROPER UTILITY IMMEDIATELY UPON BREAK OR DAMAGE TO ANY UTILITY LINE OR APPURTENANCE, OR THE INTERRUPTION OF THEIR SERVICE. HE SHALL NOTIFY THE PROPER UTILITY INVOLVED, IF EXISTING UTILITY CONSTRUCTION CONFLICTS WITH REQUIREMENTS, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED.
14. INSTALL ALL MANUFACTURED ITEMS, MATERIALS, AND EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, EXCEPT THAT THE SPECIFICATIONS, WHERE MORE STRINGENT, SHALL GOVERN.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TAPS, EXTENSIONS, WATER, AND ELECTRICITY FOR ALL PROJECT FUNCTIONS, OFFICE, STORAGE, ETC.
16. THE GENERAL CONTRACTOR SHALL PROVIDE ONE COPY OF AS-BUILT DRAWINGS TO THE OWNER AT THE COMPLETION OF THE PROJECT. AS-BUILT DRAWINGS SHALL BE KEPT ON THE JOB AT ALL TIMES AND UPDATED THROUGHOUT THE CONSTRUCTION PHASE.
17. ALL PENETRATIONS THRU EXTERIOR WALLS SHALL BE SEALED AIR/WATER TIGHT AND CAULKED WITH SEALANT REQUIRED FOR THE AIR BARRIER ON EACH SIDE.

ARCHITECTURAL ENERGY SUMMARY SHEET

Description	Section of IECC	Comment				Required	Proposed
Provide the intended R-Value of roofs, walls and slabs	C402.1.3 Prescriptive Path Only	Insulation entirely above roof deck Mass				R-25ci R-5.7 ci	R-25ci R-6.9ci
Provide the Assembly method U- Factors, C-Factors and/or F-Factors	C402.1.2 Prescriptive Path Only	Refer to Air Barrier Details					
Provide the Roof solar reflectance and thermal emittance (3-year), or Solar Reflectance Index (3-year) for low slope roofs	C402.4 Prescriptive Path Only	3-year aged solar reflectance index 3-year aged thermal emittance				55 Ø.75	55 Ø.75
Provide the Percent of windows in each wall area	C402.5 Prescriptive Path Only	North: Ø %	East: Ø %	South: Ø %	West: Ø %		
Provide the skylight area as a percentage of the roof area	C402.5 Prescriptive Path Only	Not Applicable					
Where skylights are required by C402.4.2 for certain spaces, provide daylight zone as a percentage of that floor area/space.	C402.5.2 Prescriptive Path Only	Not Applicable					
Provide maximum U-factor and SHGC for specified fenestration and for skylights	C402.5.3 Prescriptive Path Only	Not Applicable					
Indicate whether Air Leakage requirements will be met by Materials, Assemblies or by Testing during construction	C402.6.1 Always Required	Refer to Air Barrier Details					
Provide location of skylights and location and dimensions of daylight zones on floor plans	C105.2	Not Applicable					

MEP ENERGY SUMMARY SHEET

Provide a narrative of the lighting controls (occupant sensor function, time switch controls, light reduction controls, manual controls, daylight- responsive controls in daylight zones).	C405.2 Always Required	Refer to Electrical
Provide the total interior lighting power calculated under Equation 4-9 C405.3.2.	C405.3 Always Required	Refer to ComCheck
Provide the interior lighting power calculated under C405.3.2 - Building Area Method C405.3.2.1 or the Space by Space Method C405.3.2.2	C-405.3 Always Required	Refer to ComCheck
Provide the comparison of the two above calculated interior power - C405.3.2.1 vs C405.3.2.2	C405.3.2.1 and C405.3.2.2 Always Required	Refer to ComCheck
Provide summary of the total exterior lighting power	C405.5.1 Tables C405.5.2 (1) and (2) Always Required	Refer to ComCheck
Provide details of an Additional Energy Package chosen	C406 Only under the Prescriptive Path	Item #2 Using LED Lighting

AIR BARRIER DETAILS

C402.6.2.3.1 Materials: Materials with an air permeability not greater than Ø.004 CFM/FT2 (Ø.02 L/S • M2) under a pressure differential of Ø.3 inch water gauge (75 pa) when tested in accordance with ASTM E 2178 shall comply with this section. materials in Items 1 through 16 shall be deemed to comply with this section, provided joints are sealed and materials are installed as air barriers in accordance with the manufacturers instructions.

	YES	NO
1. Plywood with a thickness of not less than 3/8 inch (10 mm).	●	
2. Oriented strand board having a thickness of not less than 3/8 plywood with a thickness of not less than 3/8 inch (10 mm).		●
3. Extruded polystyrene insulation board having a thickness of not less than 1/2 inch (12.7 mm).	●	
4. Foil-back polyisocyanurate insulation board having a thickness of not less than 1/2 inch (12.7 mm).		●
5. Closed-cell spray foam a minimum density of 1.5 pcf (2.4 kg/m3) having a thickness of not less than 1 1/2 inches (38 mm).		●
6. Open-cell spray foam with a density between Ø.4 and 1.5 pcf (Ø.6 and 2.4 kg/m3) and having a thickness of not less than 4.5 inches (113 mm).		●
7. Exterior or interior gypsum board having a thickness of not less than 1/2 inch (12.7 mm).	●	
8. Cement board having a thickness of not less than 1/2 inch (12.7 mm).		●
9. Built-up roofing membrane.		●
10. Modified bituminous roof membrane.		●
11. Fully adhered single-ply roof membrane.		●
12. A portland cement/sand parge, or gypsum plaster having a thickness of not less than 5/8 inch (15.9 mm).		●
13. Cast-in-place and precast concrete.	●	
14. Fully grouted concrete block masonry.	●	
15. Sheet steel or aluminum.		●
16. Solid or hollow masonry constructed of clay or shale masonry units.		●

C402.6.2.3.2 Assemblies: Assemblies of materials and components with an average air leakage not greater than Ø.04 cfm/ft2 (Ø.2 L/S and M2) under a pressure differential of Ø.3 inch of water gauge (w.g.X75 pa) when tested in accordance with ASTM E 2357, ASTM E 1677 or ASTM E 283 shall comply with this section. Assemblies listed in Items 1 through 3 shall be deemed to comply, provided joints are sealed and the requirements of Section C402.6.1.2 are met.

	YES	NO
1. Concrete masonry walls coated with either one application of block filler or two applications of a paint or sealer coating.	●	
2. Masonry walls constructed of clay or shale masonry units with a nominal width of 4 inches (102 mm) or more.		●
3. A portland cement/sand parge, stucco or plaster not less than 1/2 inch (12.7 mm) in thickness.		●

REQUIRED SPECIAL INSPECTIONS

SECTION	SPECIAL INSPECTIONS	APPLICABLE	NOT APPLICABLE	QUALIFICATIONS OF INSPECTOR & FREQUENCY OF INSPECTIONS
1705.1.1	SPECIAL CASES		●	
1705.2	STEEL CONSTRUCTION		●	
1705.3	CONCRETE CONSTRUCTION	●		REGISTERED PROFESSIONAL ENGINEER/TBD
1705.4	MASONRY CONSTRUCTION	●		REGISTERED PROFESSIONAL ENGINEER/TBD
1705.5	WOOD CONSTRUCTION		●	
1705.6	SOILS	●		REGISTERED PROFESSIONAL ENGINEER/TBD
1705.7	DRIVEN DEEP FOUNDATIONS		●	
1705.8	CAST-IN-PLACE DEEP FOUNDATIONS		●	
1705.9	HELICAL PILE FOUNDATIONS		●	
1705.10	FABRICATED ITEMS			
1705.11	SPECIAL INSPECTION FOR WIND RESISTANCE		●	
1705.12	SPECIAL INSPECTION FOR SEISMIC RESISTANCE		●	
1705.13	TESTING & QUALIFICATION OF SEISMIC RESISTANCE		●	
1705.14	SPRAYED FIRE-RESISTANT MATERIALS		●	
1705.15	MASTIC AND INTUMESCENT FIRE-RESISTANT COATING		●	
1705.16	EXTERIOR INSULATION AND FINISH SHYSTEMS (EIFS)		●	
1705.17	FIRE-RESISTANCE PENETRATION AND JOINT		●	
1705.18	TESTING FOR SMOKE CONTROL (SEE IB 185)		●	
1706	DESIGN STRENGTHS OF MATERIALS		●	
1707	ALTERNATIVE TEST PROCEDURES		●	
1708	IN-SITU LOAD TEST		●	
1709	PRECONSTRUCTION LOAD TESTS		●	

NOTE: ALL SPECIAL INSPECTORS ARE REQUIRED TO SUBMIT A WRITTEN "REPORT OF REQUIRED SPECIAL INSPECTIONS" TO THE ARCHITECT AFTER COMPLETION OF THE REQUIRED SPECIAL INSPECTION. REFER TO SPECIFICATIONS FOR CITY OF SAN ANTONIO REPORT TEMPLATES.

SEAL

CLIENT

COMPANY
NAME: ITHACA
PH: 210.675.6444
EMAIL: PAUL@GRAYSTREET.COM

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REV	REV DESCRIPTION	DATE
-	ISSUED FOR PERMIT	03/25/26

REGISTERED ARCHITECT PAUL GRAY HULA 23833 STATE OF TEXAS
03/25/26

DESIGN PROFESSIONAL SEAL

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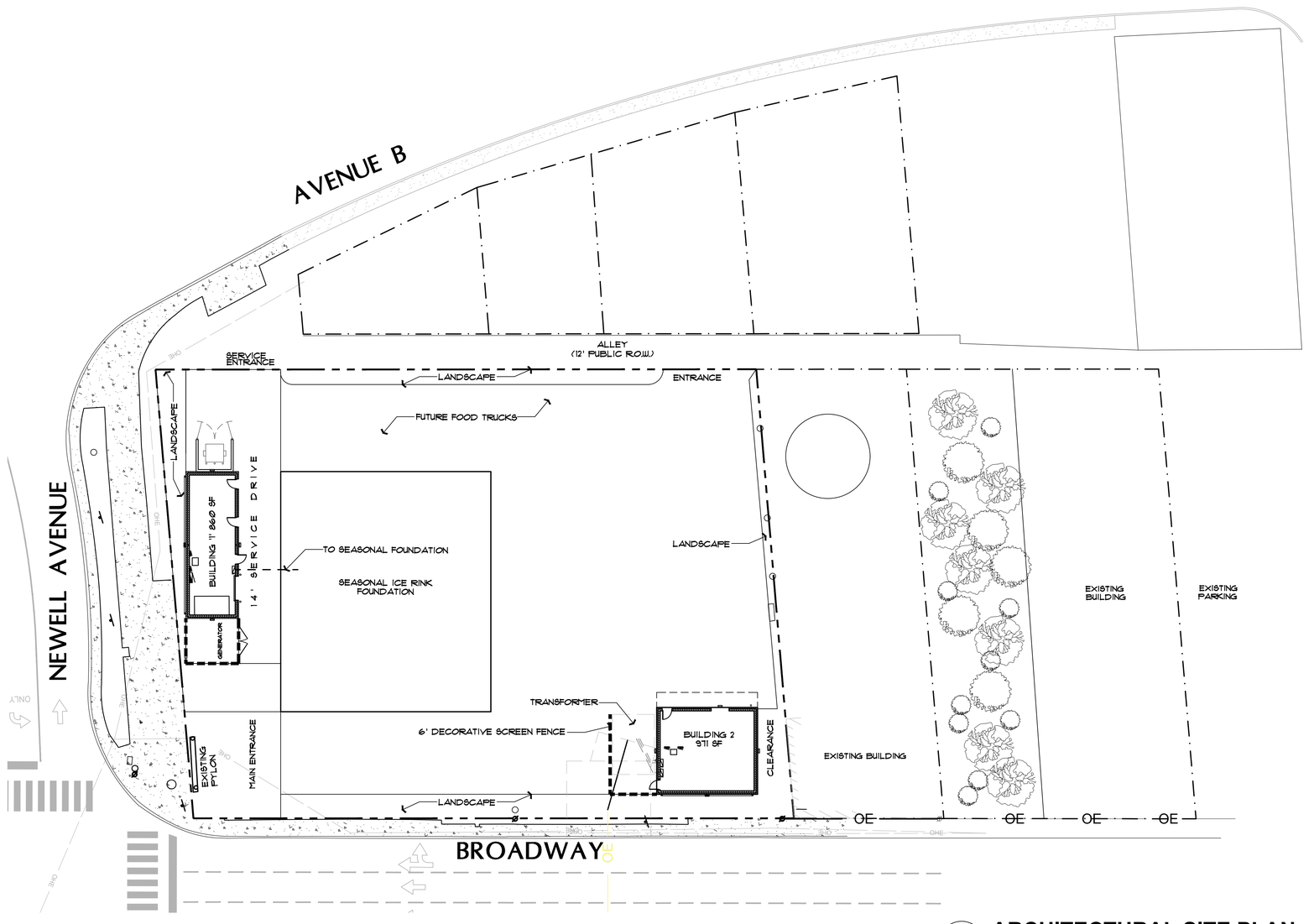
Drawn / Designed By: TH
Reviewed By: LGF
Project Number: KPJ-TX-25-0003

SHEET NAME:

CODE ANALYSIS

SHEET NUMBER:

G-101



1 **ARCHITECTURAL SITE PLAN**
SCALE: 1"=20'-0"

N

SEAL

CLIENT

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REV	REV DESCRIPTION	DATE
-	ISSUED FOR PERMIT	03/25/26

REGISTERED ARCHITECT
PAUL G. FRANKLIN
STATE OF TEXAS
23833
OF
03/25/26

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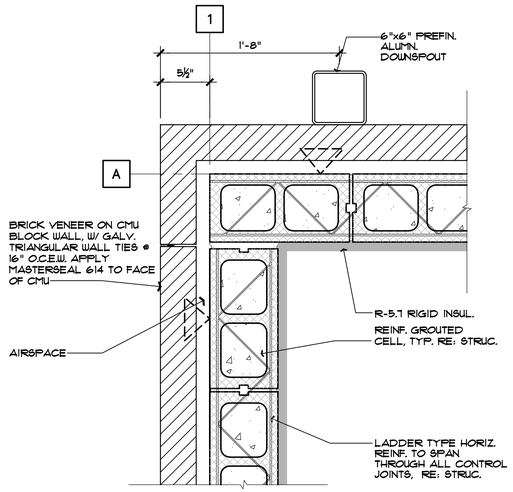
Drawn / Designed By:	TH
Reviewed By:	LGF
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

ARCHITECTURAL SITE PLAN

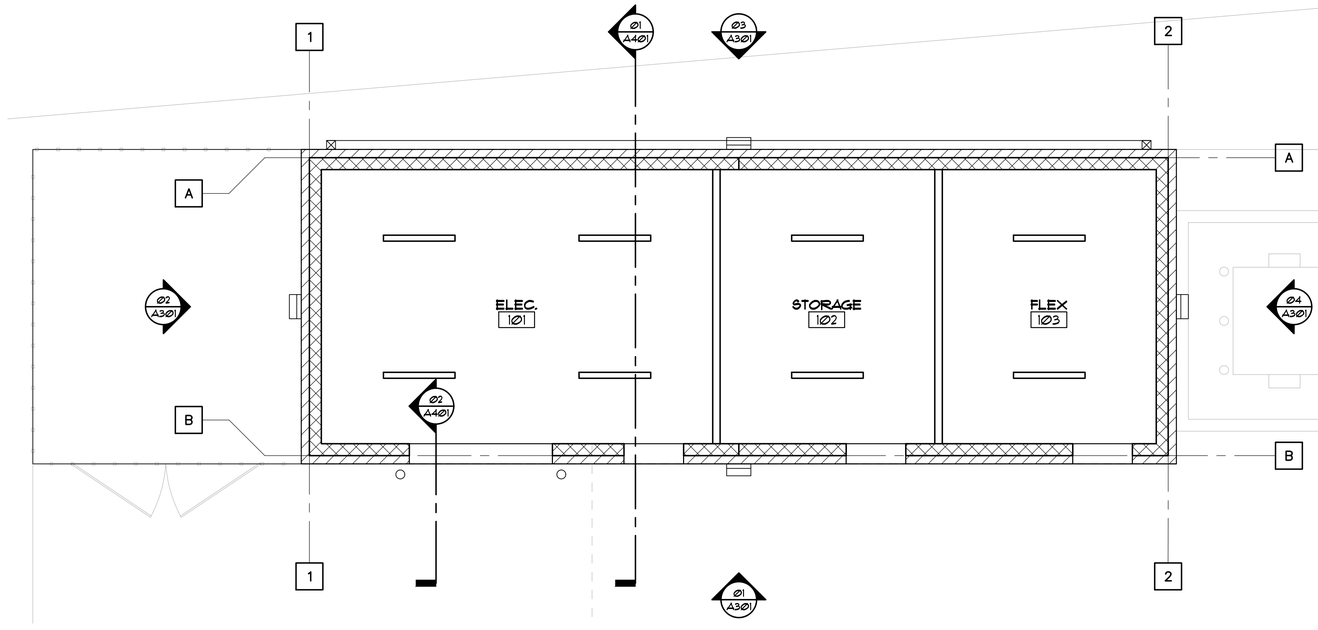
SHEET NUMBER:

A-101



3 PLAN DETAIL @ CMU WALL

SCALE: 1-1/2"=1'-0"

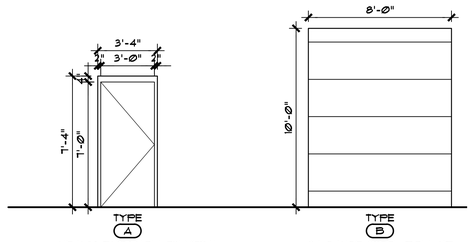


2 REFLECTED CEILING PLAN

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

N

DOOR TYPES



HEAVY-DUTY HOLLOW METAL DOOR W/ HOLLOW METAL FRAME
PROVIDE:
-3 HINGES W/ NON-REMOVABLE PINS
-1 SURFACE CLOSURE
-1 LEVEL HANDLE LOCK SET
-1-4" ALUMINUM THRESHOLD
-1 DOOR SWEEP
-1 WEATHER-STRIPPING BY BUILDING ERECTOR/ CONTRACTOR
-PROVIDE 60 MINUTE RATED DOOR AND FRAME AT 1HR RATED WALL ASSEMBLY

24 GAUGE STEEL ROLL UP OVERHEAD DOOR (COLOR TO BE DETERMINED)

ELECTRICAL LEGEND:

LED LIGHT STRIP

GENERAL NOTES:

1. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS AT THE JOB SITE BEFORE COMMENCING ANY PHASE OF THE WORK. ADJUSTMENTS FOR FIT AND COORDINATION SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER. NOTIFY ARCHITECT OF ANY CONFLICTS, DISCREPANCIES OR OMISSIONS PRIOR TO COMMENCEMENT OF THE CONTRACT WORK.
2. ALL INTERIOR DIMENSIONS ARE FROM FINISHED FACE OF WALL, UNLESS OTHERWISE NOTED. ALL EXTERIOR DIMENSIONS ARE FROM FACE OF STRUCTURAL LINE UNLESS OTHERWISE NOTED.
3. PROVIDE NECESSARY BLOCKING IN WALLS WHERE FIXTURES, SIGNAGE, SHELVING, COUNTERS, AND OTHER MISCELLANEOUS ITEMS THAT REQUIRE A RIGID AND SECURE ATTACHMENT TO SAID WALL.
4. CONTRACTOR TO SUPPLY ALL FIRE EXTINGUISHERS AND EMERGENCY SIGNAGE TO SATISFY LOCAL BUILDING CODES. PARTNER WITH FIRE MARSHALL.

WALL CONSTRUCTION LEGEND:

	BRICK VENEER ON CMU BLOCK WALL, W/ GALV. TRIANGULAR WALL TIES @ 16" O.C.E.W. APPLY MASTERSEAL 614 TO FACE OF CMU, WITH R-5.7 RIGID INSUL.
	3-5/8" MTL. STUD WITH 5/8" GYP. BD. BOTH SIDES, TAPE, FLOAT, PAINT, TYP.

1 FLOOR PLAN

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

N

SEAL

CLIENT

COMPANY
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PH: 210.675.6444
EMAIL: PAUL@GRAYSTREET.COM

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-	ISSUED FOR PERMIT	03/25/26

REGISTERED ARCHITECT TIMOTHY L. HOLT 20813 STATE OF TEXAS
03/25/26

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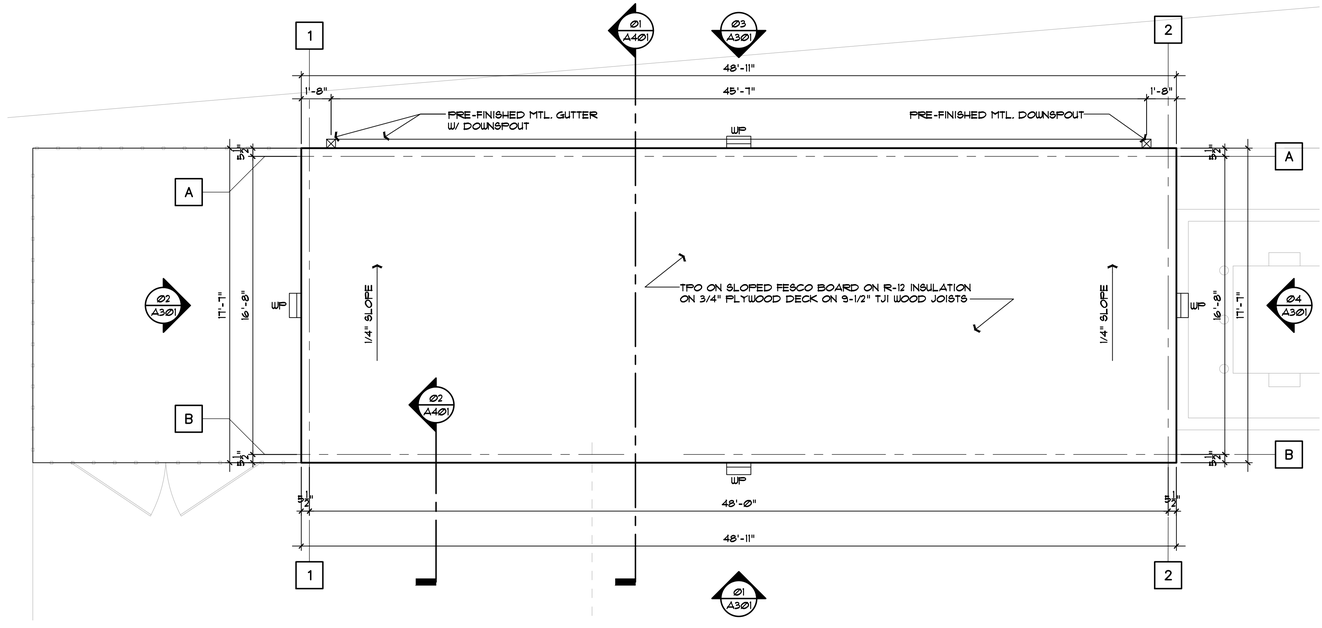
Drawn / Designed By:	TH
Reviewed By:	LGF
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

FLOOR AND REFLECTED CEILING PLANS- BUILDING 1

SHEET NUMBER:

A-201



1 ROOF PLAN

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

N

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CLIENT

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REGISTERED ARCHITECT
PAUL G. FERRIS
20833
STATE OF TEXAS
03/25/26

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Drawn / Designed By: TH
Reviewed By: LGF
Project Number: KPJ-TX-25-0003

SHEET NAME:

ROOF PLAN- BUILDING 1

SHEET NUMBER:

A-202

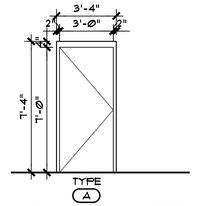
ELECTRICAL LEGEND:

	LED LIGHT STRIP
	DOWNLIGHT
	VANITY FIXTURE

GENERAL NOTES:

1. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS AT THE JOB SITE BEFORE COMMENCING ANY PHASE OF THE WORK. ADJUSTMENTS FOR FIT AND COORDINATION SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER. NOTIFY ARCHITECT OF ANY CONFLICTS, DISCREPANCIES OR OMISSIONS PRIOR TO COMMENCEMENT OF THE CONTRACT WORK.
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3. PROVIDE NECESSARY BLOCKING IN WALLS WHERE FIXTURES, SIGNAGE, SHELVING, COUNTERS, AND OTHER MISCELLANEOUS ITEMS THAT REQUIRE A RIGID AND SECURE ATTACHMENT TO SAID WALL.
4. CONTRACTOR TO SUPPLY ALL FIRE EXTINGUISHERS AND EMERGENCY SIGNAGE TO SATISFY LOCAL BUILDING CODES. PARTNER WITH FIRE MARSHALL.

DOOR TYPES



TYPE A

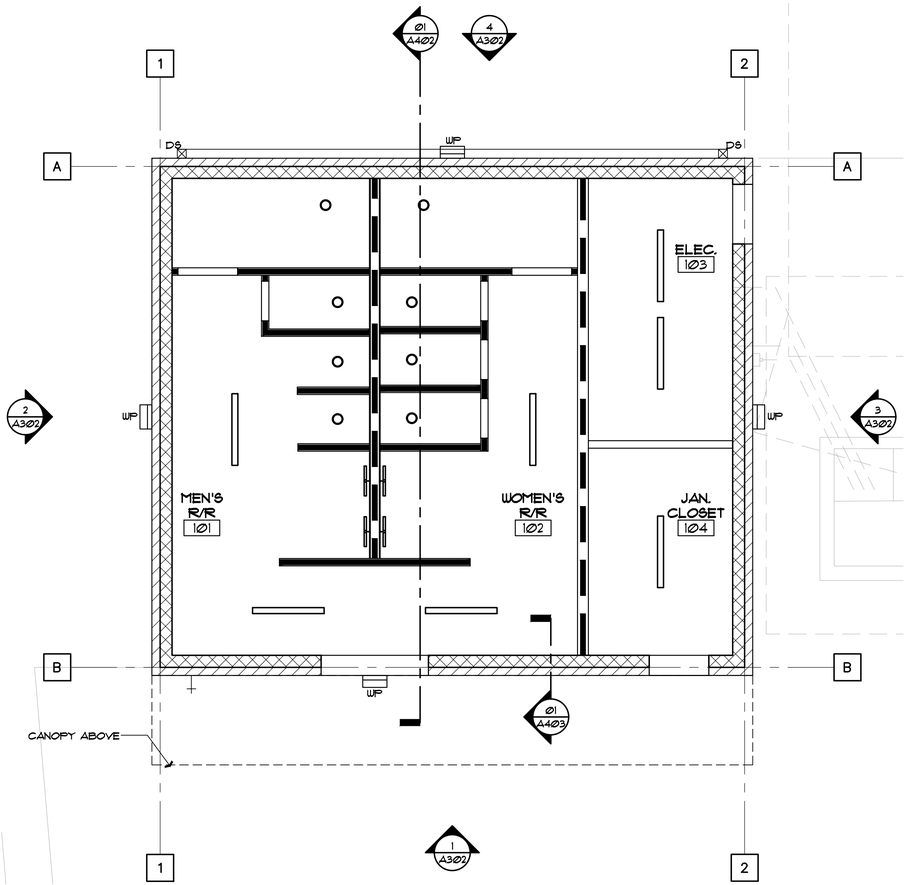
HEAVY-DUTY HOLLOW METAL DOOR W/ HOLLOW METAL FRAME

PROVIDE:
- -3 HINGES W/ NON-REMOVABLE PINS
- -1 SURFACE CLOSURE
- -1 LEVEL HANDLE LOCK SET
- -1-4" ALUMINUM THRESHOLD
- -1 DOOR SWEEP
- -1 WEATHER-STRIPPING BY BUILDING ERECTOR/ CONTRACTOR
- -PROVIDE 60 MINUTE RATED DOOR AND FRAME AT 1HR RATED WALL ASSEMBLY

WALL CONSTRUCTION LEGEND:

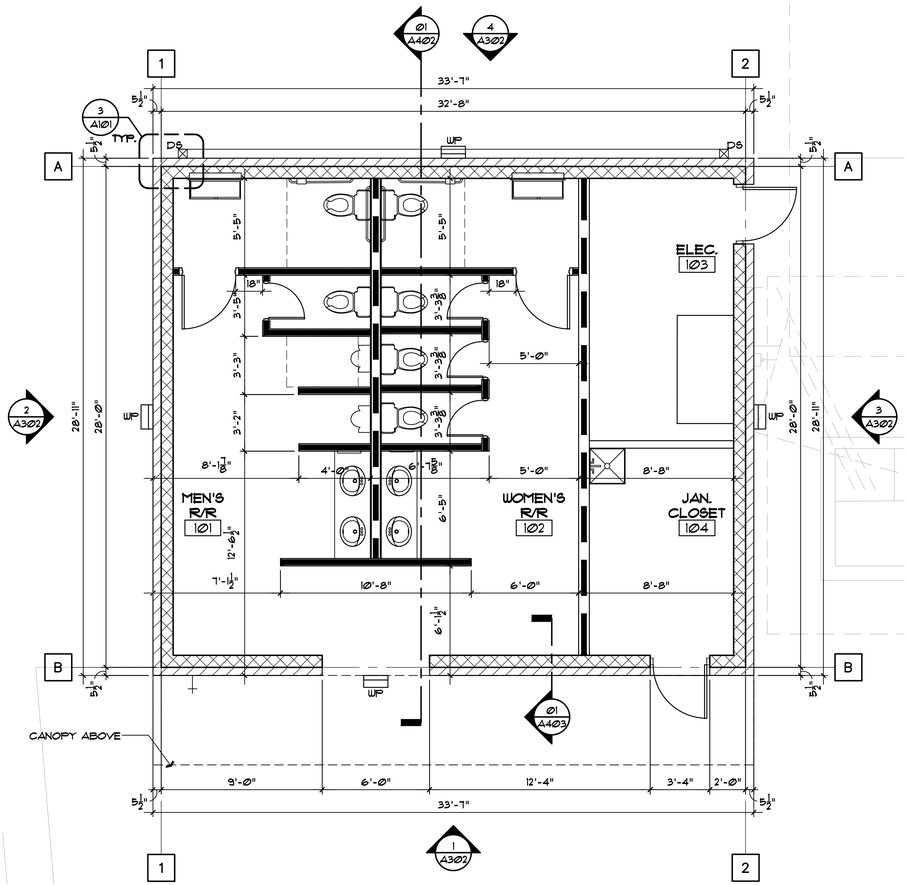
	BRICK VENEER ON CMU BLOCK WALL, W/ GALV. TRIANGULAR WALL TIES @ 16" O.C.E.W. APPLY MASTERSEAL 614 TO FACE OF CMU, WITH R-5.7 RIGID INSUL.
	3-5/8" MTL. STUD WITH 5/8" HARDI BD. BOTH SIDES WITH TILE ON 6" CONC. CURB BASE, PAINT, TYP.
	6" MTL. STUD WITH 5/8" HARDI BD. BOTH SIDES WITH TILE ON 6" CONC. CURB BASE, PAINT, TYP.
	3-5/8" MTL. STUD WITH 5/8" GYP. BD. BOTH SIDES ON TILE, PAINT, TYP.

NOTE: FULL HEIGHT TILE @ RESTROOM ON ALL WALLS EXCEPT CMU



2 REFLECTED CEILING PLAN

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



1 FLOOR PLAN

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

SEAL

CLIENT

COMPANY
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EMAIL: PAUL@GRAYSTREET.COM

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REGISTERED ARCHITECT PAUL GRAY 20833 STATE OF TEXAS

03/25/26

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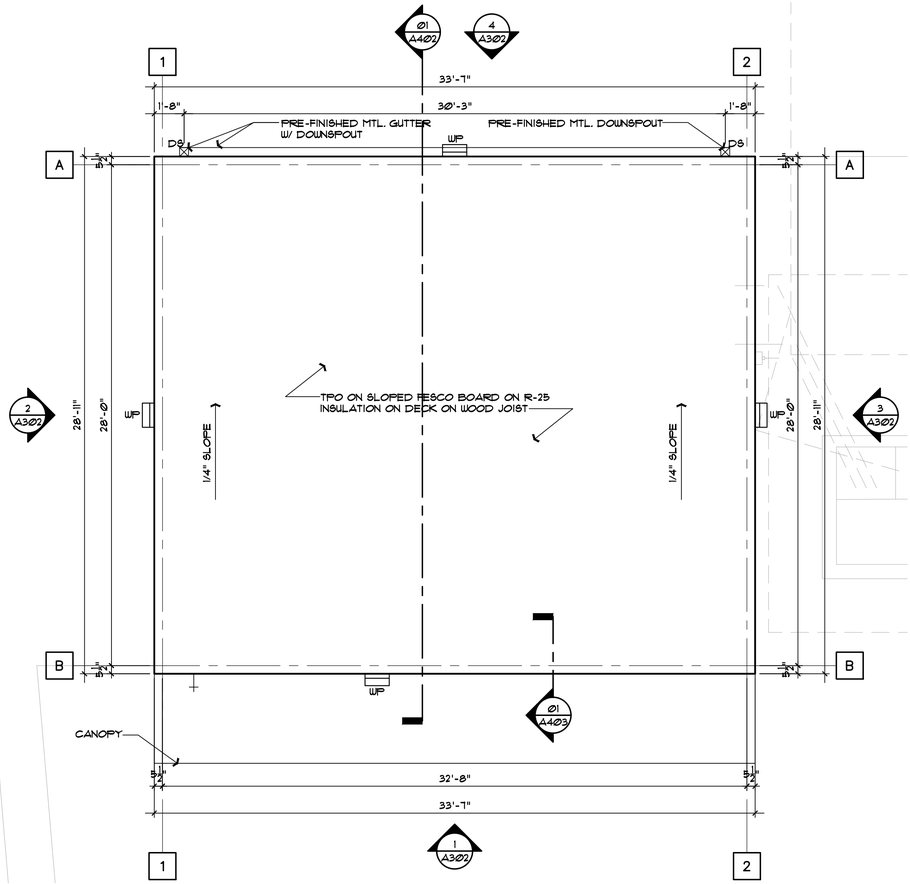
Drawn / Designed By: TH
Reviewed By: LGF
Project Number: **KPJ-TX-25-0003**

SHEET NAME:

FLOOR AND REFLECTED CEILING PLANS- BUILDING 2

SHEET NUMBER:

A-203



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

SEAL

CLIENT

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EMAIL: PAUL@GRAYSTREET.COM

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REGISTERED ARCHITECT
PAUL GRAY HULL
103931
STATE OF TEXAS
03/25/26

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Drawn / Designed By:	TH
Reviewed By:	LGF
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

ROOF PLAN- BUILDING 2

SHEET NUMBER:

A-204

FINISH SCHEDULE

BCK-1	MODULAR SOLID PRESSED D'HANIS BRICK 4" BED DEPTH X 2-1/4" X 8" FACE
DS-1	PREFIN. METAL DOWNSPOUTS
MC-1	PREFIN. METAL COPING

EXTERIOR "ARCHITECTURAL FINISH" STRUCTURAL STEEL PAINT SPEC

PREPARATION AND APPLICATION

A. CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF PAINTS INCLUDING DIRT, OIL, GREASE, DUST, MILL SCALE, RUST, AND INCOMPATIBLE PAINTS AND ENCAPSULANTS.
B. REMOVE INCOMPATIBLE PRIMERS AND REPRIME SUBSTRATE WITH COMPATIBLE PRIMERS AS REQUIRED TO PRODUCE PAINT SYSTEMS INDICATED.
C. APPLY PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS.
D. PROTECT WORK OF OTHER TRADES AGAINST DAMAGE FROM PAINT APPLICATION. CORRECT DAMAGE TO WORK OF OTHER TRADES BY CLEANING, REPAIRING, REPLACING, AND REFINISHING, AS APPROVED BY ARCHITECT AND LEAVE IN AN UNDAMAGED CONDITION.
E. AT COMPLETION OF CONSTRUCTION ACTIVITIES OF OTHER TRADES, TOUCH UP AND RESTORE DAMAGED OR DEFACED PAINTED SURFACES.

PAINT OPTIONS

PPG PAINT SYSTEM

FULL PRIME COAT: PPG DEVGUARD UNIVERSAL PRIMER 4160

INTERMEDIATE COAT: PPG PITTHANE ULTRA GLOSS URETHANE 95-812

FINISH COAT: PPG PITTHANE ULTRA GLOSS URETHANE CLEAR, 95-812 SERIES

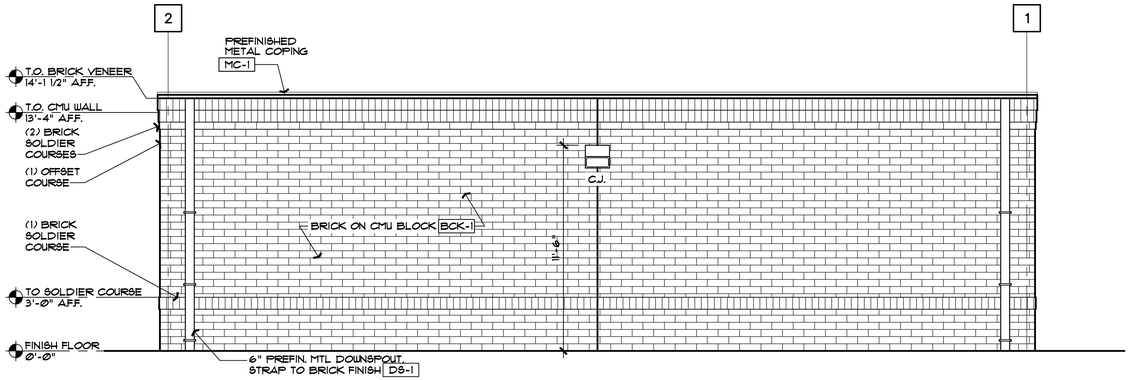
SHERWIN WILLIAMS PAINT SYSTEM

FULL PRIME COAT: B50 KEM KROMIC PRIMER

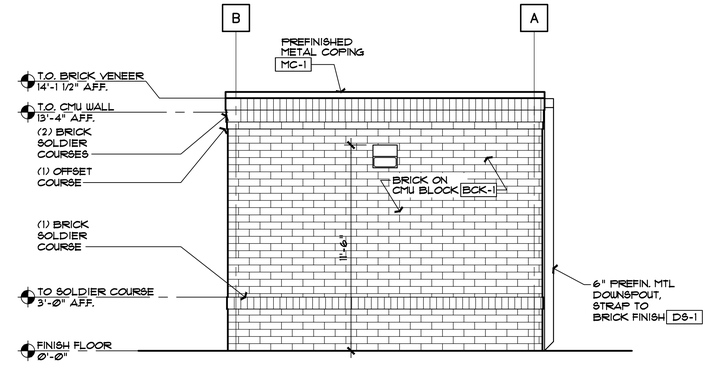
INTERMEDIATE COAT: F63 POLANE HIGH SOLIDS URETHANE

FINISH COAT: F63 POLANE HIGH SOLIDS URETHANE

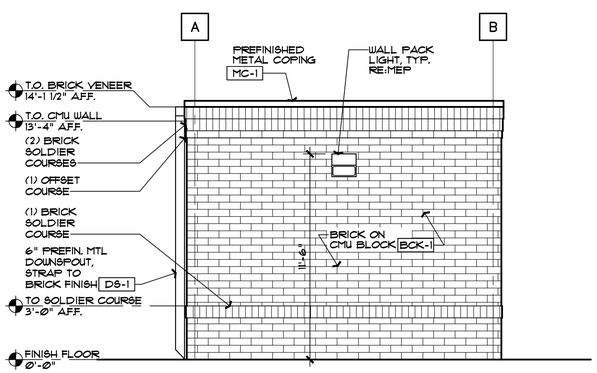
EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE CONSTRUCTED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL AND SHALL COMPLY WITH SECTION 10, AISC 303-05



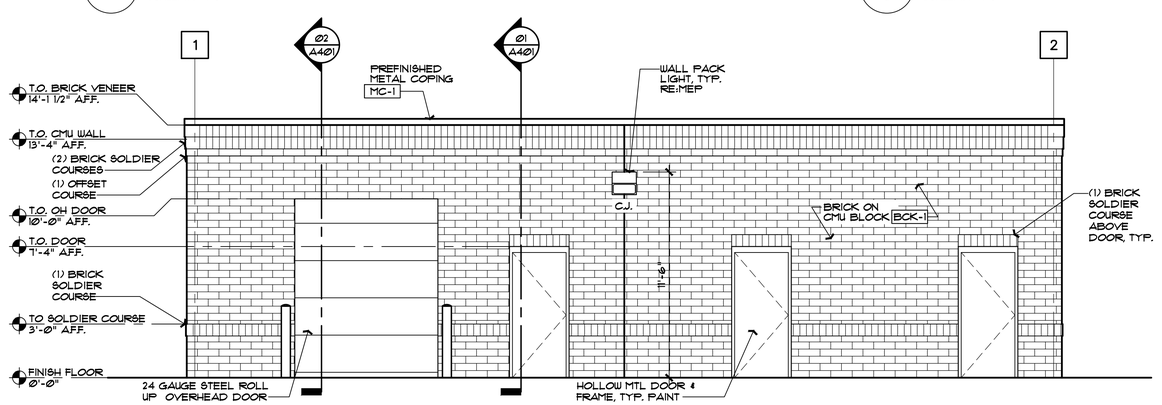
4 **SOUTH ELEVATION**
SCALE: 1/4"=1'-0"



3 **WEST ELEVATION**
SCALE: 1/4"=1'-0"



2 **EAST ELEVATION**
SCALE: 1/4"=1'-0"



1 **NORTH ELEVATION**
SCALE: 1/4"=1'-0"

SEAL

CLIENT

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EMAIL: PAUL@GRAYSTREET.COM

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REGISTERED ARCHITECT PAUL GRAY 30833 STATE OF TEXAS
03/25/26

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Drawn / Designed By: TH
Reviewed By: LGF
Project Number: KPJ-TX-25-0003

SHEET NAME:

BUILDING ELEVATIONS- BUILDING 1

SHEET NUMBER:

A-301

FINISH SCHEDULE

BCK-1	MODULAR SOLID PRESSED D'HANIS BRICK 4" BED DEPTH X 2-1/4" X 8" FACE
DS-1	PREFIN. METAL DOWNSPOUTS
MC-1	PREFIN. METAL COPING

EXTERIOR "ARCHITECTURAL FINISH" STRUCTURAL STEEL PAINT SPEC

PREPARATION AND APPLICATION

A. CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF PAINTS INCLUDING DIRT, OIL, GREASE, DUST, MILL SCALE, RUST, AND INCOMPATIBLE PAINTS AND ENCAPSULANTS.
B. REMOVE INCOMPATIBLE PRIMERS AND REPRIME SUBSTRATE WITH COMPATIBLE PRIMERS AS REQUIRED TO PRODUCE PAINT SYSTEMS INDICATED.
C. APPLY PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS.
D. PROTECT WORK OF OTHER TRADES AGAINST DAMAGE FROM PAINT APPLICATION. CORRECT DAMAGE TO WORK OF OTHER TRADES BY CLEANING, REPAIRING, REPLACING, AND REFINISHING, AS APPROVED BY ARCHITECT AND LEAVE IN AN UNDAMAGED CONDITION.
E. AT COMPLETION OF CONSTRUCTION ACTIVITIES OF OTHER TRADES, TOUCH UP AND RESTORE DAMAGED OR DEFACED PAINTED SURFACES.

PAINT OPTIONS

PPG PAINT SYSTEM

FULL PRIME COAT: PPG DEVGUARD UNIVERSAL PRIMER 4160

INTERMEDIATE COAT: PPG PITTHANE ULTRA GLOSS URETHANE 95-812

FINISH COAT: PPG PITTHANE ULTRA GLOSS URETHANE CLEAR, 95-812 SERIES

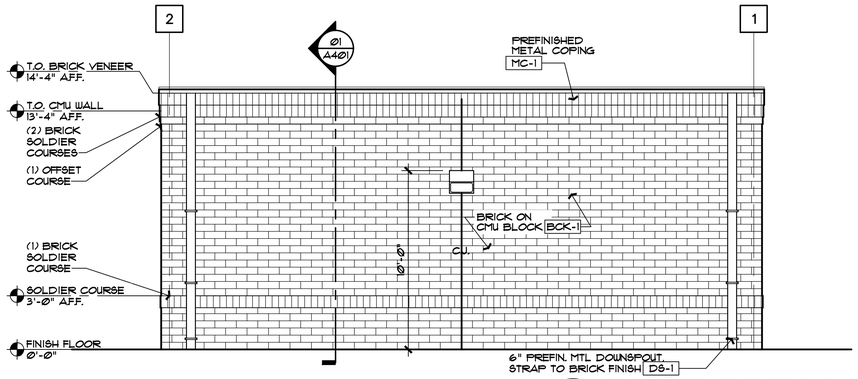
SHERWIN WILLIAMS PAINT SYSTEM

FULL PRIME COAT: B50 KEM KROMIC PRIMER

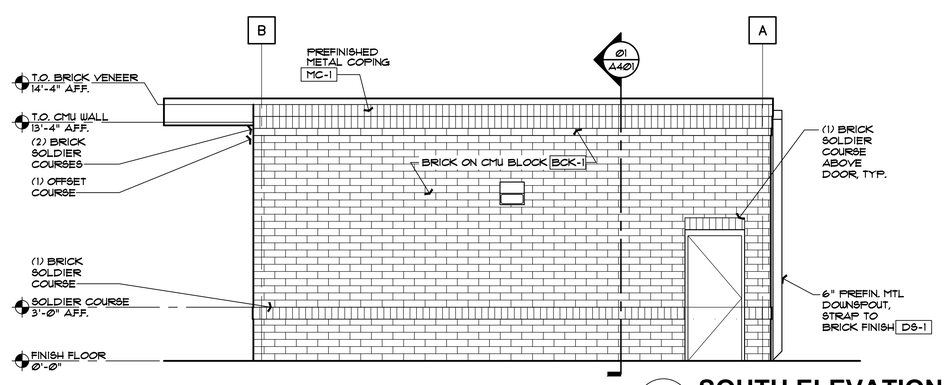
INTERMEDIATE COAT: F63 POLANE HIGH SOLIDS URETHANE

FINISH COAT: F63 POLANE HIGH SOLIDS URETHANE CLEAR

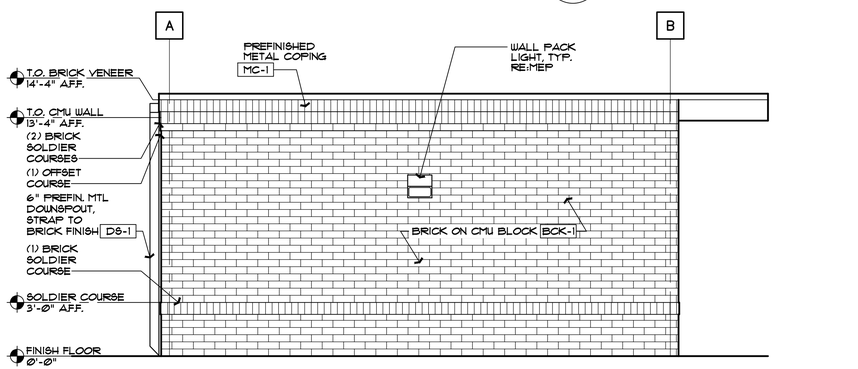
EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE CONSTRUCTED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL AND SHALL COMPLY WITH SECTION 10, AISC 303-05



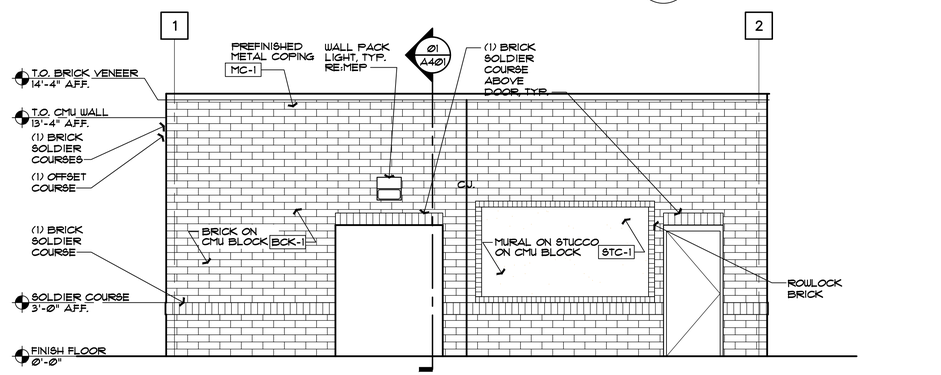
4 **EAST ELEVATION**
SCALE: 1/4"=1'-0"



3 **SOUTH ELEVATION**
SCALE: 1/4"=1'-0"



2 **NORTH ELEVATION**
SCALE: 1/4"=1'-0"



1 **WEST ELEVATION**
SCALE: 1/4"=1'-0"

SEAL

CLIENT

COMPANY
NAME: ITHACA
PH: 210.675.6444
EMAIL: PAUL@GRAYSTREET.COM

VILLA PARK A PART OF KP+J ARCHITECTS ENGINEERS
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REV	REV DESCRIPTION	DATE
-	ISSUED FOR PERMIT	03/25/26

REGISTERED ARCHITECT THULA ANN HOLLOWAY 30833 STATE OF TEXAS
03/25/26

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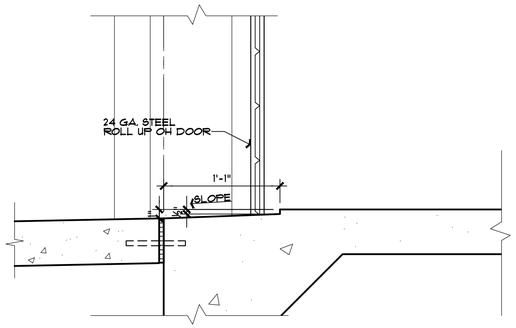
Drawn / Designed By: TH
Reviewed By: LGF
Project Number: KPJ-TX-25-0003

SHEET NAME:

BUILDING ELEVATIONS- BUILDING 2

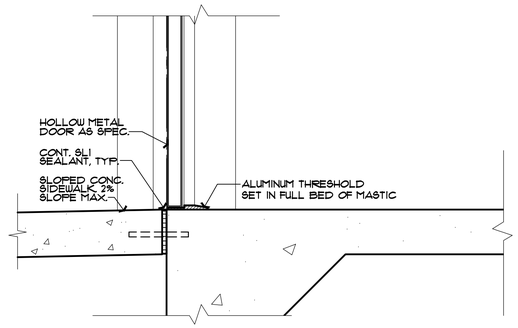
SHEET NUMBER:

A-302



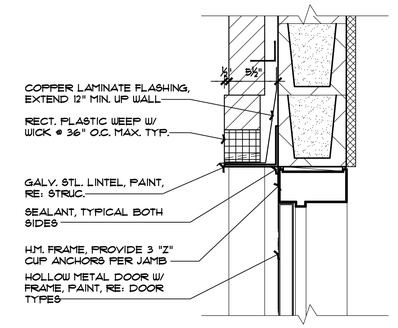
5 B.O. O.H. DOOR DETAIL

SCALE: 1-1/2"=1'-0"



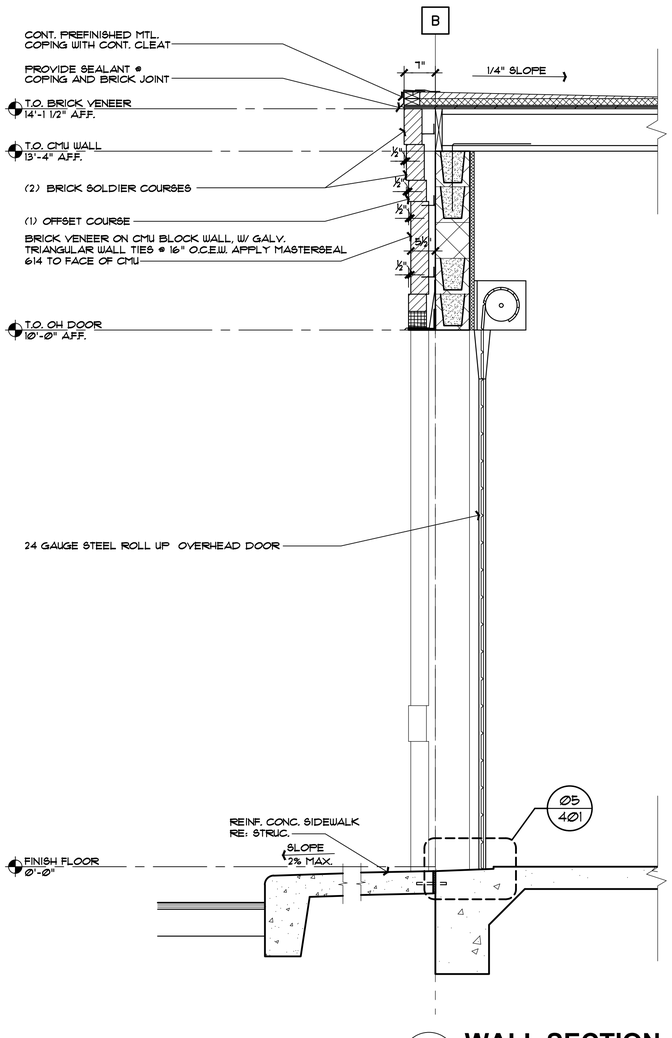
4 H.M. DOOR THRESHOLD

SCALE: 1-1/2"=1'-0"



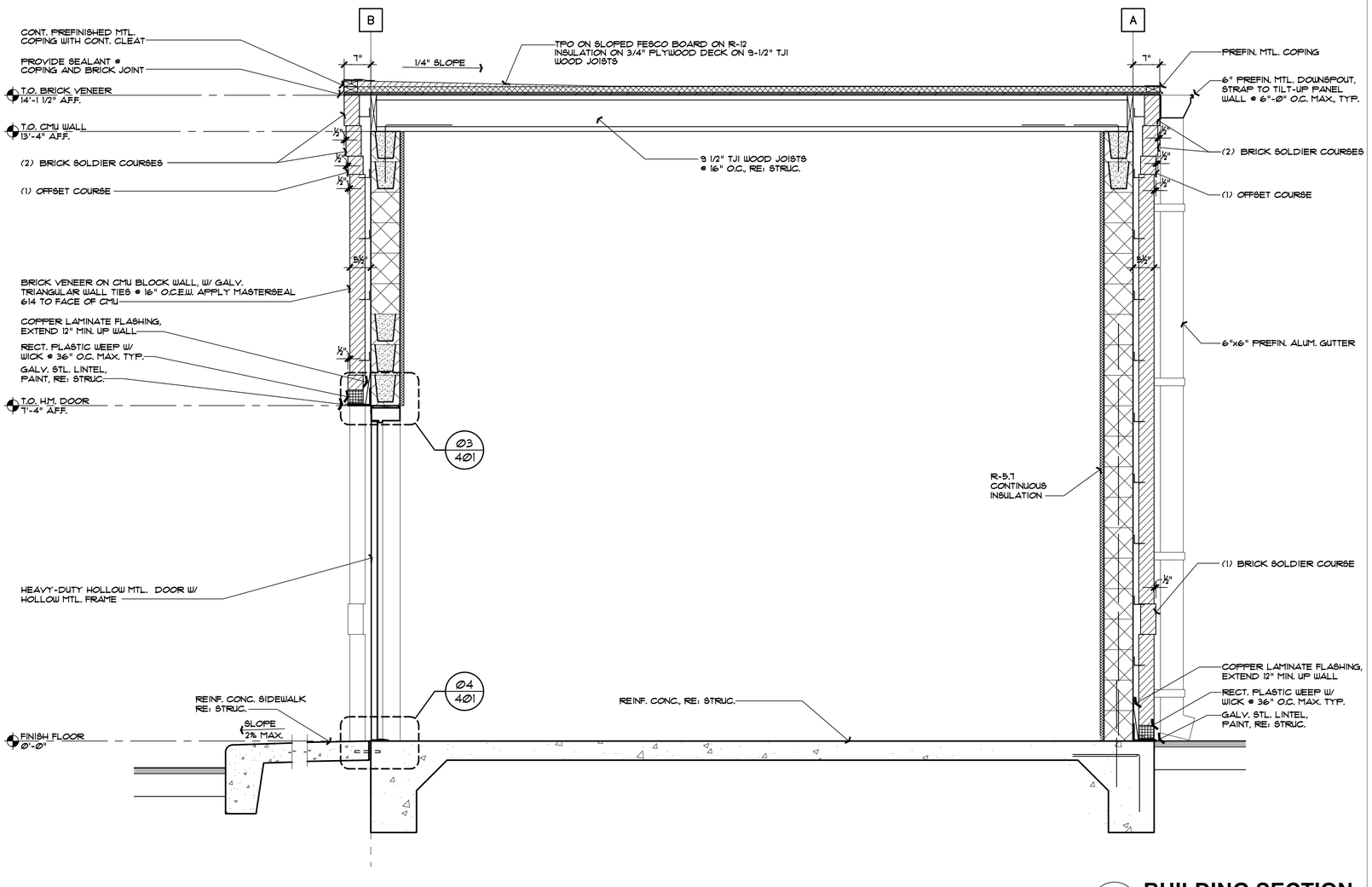
3 H.M. DOOR HEAD/JAMB

SCALE: 1-1/2"=1'-0"



2 WALL SECTION

SCALE: 3/4"=1'-0"



1 BUILDING SECTION

SCALE: 3/4"=1'-0"

SEAL

CLIENT

COMPANY
NAME: ITHACA
PH: 210.675.6444
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REV	REV DESCRIPTION	DATE
-	ISSUED FOR PERMIT	03/25/26

REGISTERED ARCHITECT
PAUL GRAY JOHNSON
23833
STATE OF TEXAS
03/25/26

DESIGN PROFESSIONAL SEAL

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Drawn / Designed By:	TH
Reviewed By:	LGF
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

BUILDING SECTIONS- BUILDING 1

SHEET NUMBER:

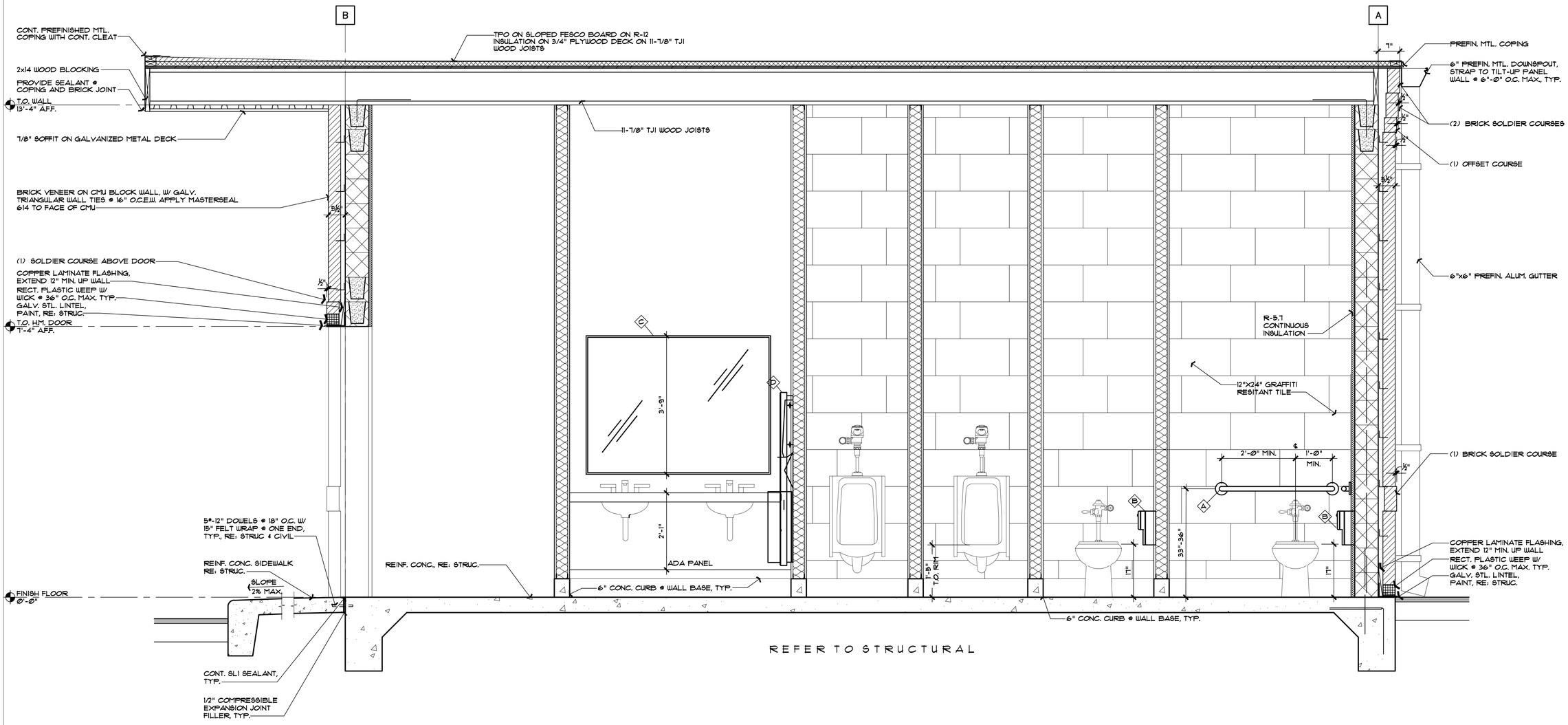
A-401

KEY NOTES: FOR MOUNTING HEIGHTS

- (A) GRAB BARS-BOBRICK 150CMBLK SERIES CONCEALED BY LENGTHS INDICATED
- (B) TOILET PAPER DISPENSER- STAINLESS STEEL BOBRICK
- (C) MIRROR-BOBRICK- STAINLESS STEEL
- (D) RECESSED PAPER TOWEL DISPENSER AND WASTE RECEPTACLE, STAINLESS STEEL, 6.3-GALLON WASTE

NOTE:

1) SHEAR STRESS INDUCED ON A GRAB BAR OR SEAT BY THE APPLICATION OF 250 LBF (112N) SHALL BE LESS THAN THE ALLOWABLE SHEAR STRESS FOR THE GRAB BAR OR SEAT.
2) GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS
3) PROVIDE BLOCKING AS REQUIRED FOR FIXTURES.
4) WRAP ALL EXPOSED PIPE.
5) PROVIDE DOUBLE BASIN SINK IN BREAK ROOM, WITH DRAINS CHEATED TO REAR OF SINK.
6) PROVIDE (1) EACH, IN-WALL WATER CONNECTION FOR REFRIGERATOR.



REFER TO STRUCTURAL

1 BUILDING SECTION

SCALE: 3/4"=1'-0"

SEAL

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REV	REV DESCRIPTION	DATE
-	ISSUED FOR PERMIT	03/25/26

REGISTERED ARCHITECT THOMAS J. HOLLAND 23833 STATE OF TEXAS
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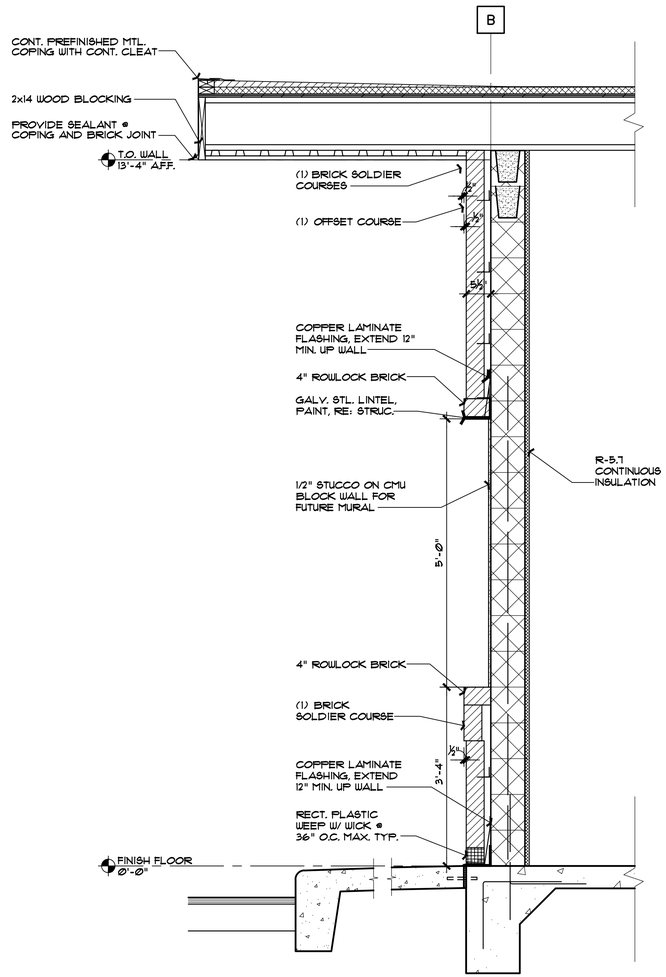
Drawn / Designed By:	TH
Reviewed By:	LGF
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

BUILDING SECTION- BUILDING 2

SHEET NUMBER:

A-402



1 **BUILDING SECTION**

SCALE: 3/4"=1'-0"

SEAL

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REV	REV DESCRIPTION	DATE
-	ISSUED FOR PERMIT	03/25/26

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03/25/26

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Drawn / Designed By:	TH
Reviewed By:	LGF
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

WALL SECTION- BUILDING 2

SHEET NUMBER:

A-403

GENERAL STRUCTURAL NOTES

1.0 ALL CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE 2024. REFERENCE TO OTHER STANDARD SPECIFICATIONS OR CODES SHALL MEAN THE LATEST STANDARD OR CODE ADOPTED AND PUBLISHED.

1.1 THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS BEFORE STARTING WORK OR FABRICATION. NOTIFY THE ENGINEER OF RECORD OF ANY DISCREPANCIES. ALL WORK COMPLETED THAT DOES NOT CONFORM TO THE STRUCTURAL DRAWINGS SHALL BE CONSIDERED AT RISK.

1.2 THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, AND TEMPORARY SUPPORTS. THE STRUCTURAL ELEMENTS ARE NOT STABLE UNTIL THE STRUCTURE IS COMPLETE.

1.3 ALL WORK SHALL CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL LAWS.

1.4 THE CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO DIGGING, BORING OR EXCAVATING SOILS OR DRILLING, BORING OR CUTTING CONCRETE.

1.5 DIMENSIONS ON STRUCTURAL DRAWINGS ARE TO BE CHECKED AGAINST ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AS WELL AS AGAINST FIELD CONDITIONS BY CONTRACTORS.

1.6 UNLESS NOTED OTHERWISE, DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS ARE INTENDED TO BE TYPICAL FOR SIMILAR CONDITIONS.

1.7 THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATION AND PLACEMENT OF INSERTS, HANGERS, SLEEVES, DUCTWORK, PADS, AND ANCHOR RODS THAT ARE REQUIRED BY MECHANICAL EQUIPMENT.

1.8 IF DISCREPANCIES APPEAR ON THE CONTRACT DOCUMENTS, OR BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS, THE CONTRACTOR SHALL REQUEST AN INTERPRETATION FROM THE ARCHITECT BEFORE BIDDING. IF THE CONTRACTOR FAILS TO MAKE SUCH REQUEST, IT IS PRESUMED THAT BOTH PROVISIONS WERE INCLUDED IN THE BID AND THE ARCHITECT SHALL DETERMINE WHICH OF THE CONFLICTING REQUIREMENTS SHALL GOVERN. THE CONTRACTOR SHALL PERFORM THE WORK AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH THE ARCHITECTS DETERMINATION.

1.9 REVIEW OF SHOP DRAWINGS AND OTHER SUBMITTALS BY THE STRUCTURAL ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO REVIEW AND CHECK SHOP DRAWINGS BEFORE SUBMITTAL TO THE STRUCTURAL ENGINEER. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS AND DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS.

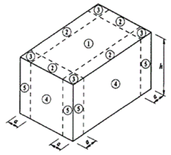
1.10 PLAN AND SPECIFICATIONS SHALL BE PROVIDED FOR REVIEW AND APPROVAL FOR PRE-ENGINEERED ROOF AND BUILDING SYSTEMS, WHICH ARE SEALED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED PRIOR TO THE ERECTION OF THE STRUCTURES, AS DEFERRED SUBMITTAL.

STRUCTURAL DESIGN CRITERIA

LOCATION	SAN ANTONIO, TX
RISK CATEGORY	II
DEAD LOAD:	
ROOF DEAD LOAD INCLUDING ROOFING/INSULATION	10 PSF
SLAB ON GRADE	75 PSF
LIVE LOAD:	
SLAB ON GRADE	100 PSF
ROOF LIVE LOAD	20 PSF
SNOW LOAD:	
GROUND SNOW LOAD (P_g)	8 PSF
IMPORTANCE FACTOR (I_s)	1.0
WIND DESIGN:	
ULTIMATE WIND SPEED, 3 SECOND GUST (V)	107 VMPH
IMPORTANCE FACTOR (I_w)	1.0
EXPOSURE	B

COMPONENT & CLADDING DESIGN WIND PRESSURE

	ZONE	TRIBUTARY AREA (FT^2)		
		A=10	A=50	A=100
WALLS	4	+16/-20	+17/-18	+16/-17
	5	+18/-25	+17/-21	+16/-19
ROOF	1	+16/-32	+16/-27	+16/-25
	2	+16/-42	+16/-36	+16/-33
	3	+16/-58	+16/-45	+16/-40



ALL PRESSURES ARE PROVIDED IN PSF a = 3'-0"
"+" INDICATES POSITIVE PRESSURE (TOWARD THE SURFACE) &
"-" INDICATES NEGATIVE PRESSURE (AWAY FROM THE SURFACE)

SEISMIC DESIGN:

IMPORTANCE FACTOR (I_e)	1.0
SITE CLASS	D
SEISMIC DESIGN CATEGORY	A
S_s	0.056
S_1	0.024
S_{ds}	0.05
S_{d1}	0.034
SEISMIC FORCE RESISTING SYSTEM	ORDINARY REINFORCED MASONRY SHEAR WALLS.
R	2.0
SEISMIC RESPONSE COEFFICIENT (C_s)	0.025
ANALYSIS PROCEDURE:	EQUIVALENT LATERAL FORCE PROCEDURE

FOUNDATION DESIGN:
FOR SEASON RINK:
ALLOWABLE SOIL BEARING PRESSURE = 2,500 PSF
A GEOTECHNICAL EXPLORATION OF SUBSURFACE CONDITIONS, CONTAINING TEST BORINGS, LABORATORY TEST, ENGINEERING ANALYSIS AND FOUNDATION RECOMMENDATIONS, PERFORMED BY PROFESSIONAL SERVICE INDUSTRIES, INC. ON FEBRUARY 24, 2026, PSI Project No. 0312-3782
FOR BUILDING:
ALLOWABLE SOIL BEARING PRESSURE = 1,500 PSF (CONTRACTOR TO VERIFY IN FIELD)
THE FOUNDATION DESIGN IS BASED ON PRESUMPTIVE ALLOWABLE BEARING PRESSURE AS PER BUILDING CODE AS LISTED IN 1.0. TABLE 1806.2

DEFLECTION CRITERIA:

LIVE LOAD DEFLECTION	L/360
TOTAL LOAD DEFLECTION	L/240
STEEL BEAM SUPPORTING MASONRY	L/600

FOUNDATION & SLAB ON GRADE

2.0 A GEOTECHNICAL ENGINEER LICENSED IN THE PROJECT STATE SHALL INSPECT THE CONDITION AND ASSURE THE ADEQUACY OF ALL SUB GRADES, FILLS AND BACK FILLS BEFORE PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, AND WALLS. KP&J ARCHITECTS AND ENGINEERS, LLC SHALL BE NOTIFIED IMMEDIATELY OF ANY NON-CONFORMING WORK.

2.1 WHEN FOOTING STEPS ARE REQUIRED, THEY SHALL BE NO STEEPER THAN ONE VERTICAL TO TWO HORIZONTAL.

2.2 PROVIDE 15 MIL THICK POLYOLEFIN VAPOR BARRIER. TYPE RECOMMENDED TO BE IN CONTACT WITH THE SOIL OR FILL UNDER A CONCRETE SLAB, LISTED IN ASTM 1745 CLASS A WITH A PERMEANCE LESS THAN 0.01 BEFORE AND AFTER MANDATORY CONDITIONING TEST PER ASTM E1745 SECTION 7 (7.1.1-7.1.5) AS DETERMINED BY ASTM E96 OR F1249. POLYETHYLENE IS NOT ACCEPTABLE. INSTALL VAPOR BARRIER SOLIDLY WITHIN AND BELOW SLAB SURFACE WITH JOINTS LAPPED AT LEAST 6 INCHES AND TAPED CONTINUOUSLY WITH RECOMMENDED PRESSURE-SENSITIVE TAPE. EXTEND VAPOR BARRIER DOWN THE SIDES OF THE BEAM TRENCHES AND TERMINATE SO THAT IT DOES NOT EXTEND ACROSS THE TRENCH BOTTOM. CONTRACTOR AND ARCHITECT (NOT STRUCTURAL ENGINEER) SHALL VERIFY WITH MANUFACTURER'S REPRESENTATIVE THAT VAPOR BARRIER SELECTED IS INSTALLED IN ACCORDANCE WITH ASTM E1643-18A. ACCEPTABLE MANUFACTURERS INCLUDE STEGO, REEF INDUSTRIES, AND FORTIFIBER ONLY WITH NO ALTERNATIVE SUBMITTALS PERMITTED.

2.3 BACKFILL SHALL NOT BE PLACED AGAINST RETAINING WALLS UNTIL THE WALLS HAVE ACHIEVED THEIR DESIGN STRENGTH AND THEIR LATERAL SUPPORT ELEMENTS ARE INSTALLED.

2.4 CONTROL JOINTS SHALL BE SAWCUT AFTER CONCRETE SURFACE HAS HARDENED ENOUGH SO THAT IT WILL NOT BE EASILY MARRED OR RAVELED. THE IDEAL TIME TO SAWCUT TYPICALLY OCCURS WITHIN 4 TO 12 HOURS AFTER CONCRETE FINISHING HAS BEEN COMPLETED. SAWCUT TIMING DEPENDS ON NUMEROUS FACTORS SUCH AS WEATHER CONDITION AND IS BEST DETERMINED ONSITE. TRIAL SAWCUTS MAYBE PERFORMED TO DETERMINE IF CONCRETE IS READY. SAWCUTTING TOO EARLY CAUSES RAVELING, OR THE DISLODGING OF AGGREGATE, WHICH RESULTS IN JOINT SPALLS. SAWCUTTING TOO LATE RESULTS IN UNCONTROLLED CRACKING. BEGIN SAWCUTTING AS SOON AS RAVELING STOPS DURING TRIAL CUTS.

2.5 ALL SOIL SUPPORTED FOOTINGS SHALL BE FOUNDED UPON UNDISTURBED, NATURAL SOIL SUBGRADE OR ON THOROUGHLY TESTED AND APPROVED FILL BY GEOTECHNICAL ENGINEER. THE FOOTING ELEVATIONS AND SOIL BEARING CAPACITIES AS SHOWN ON THE DRAWINGS ARE ESTIMATED. FINAL, EXACT ELEVATIONS AND SOIL BEARING CAPACITIES SHALL BE FIELD DETERMINED AND VERIFIED BY THE OWNER'S SOIL TESTING LABORATORY AND REVIEWED BY THE ARCHITECT/ENGINEER DURING CONSTRUCTION.

2.6 THE SOIL SUBGRADE FOR ALL FOOTINGS AND SLABS SHALL BE INSPECTED AND APPROVED BY THE OWNER'S TESTING LABORATORY IMMEDIATELY PRIOR TO PLACING CONCRETE.

2.7 ALL FOOTING AND SLAB SUBGRADES, INCLUDING PIT SLABS, SHALL BE COMPACTED TO 95 PERCENT OF STANDARD PROCTOR (ASTM D698) MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT, AS REQUIRED.

2.8 ALL ORGANIC AND/OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED FROM SUBGRADE AND BACK FILL AREAS AND BACKFILLED WITH SELECT FILL, COMPACTED TO 98 PERCENT OF STANDARD PROCTOR (ASTM D698) MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.

2.9 DO NOT UNDERMINE EXISTING CONSTRUCTION.

2.10 PLACE BACKFILL SIMULTANEOUSLY ON BOTH SIDES OF FOUNDATION WALLS.

2.11 NO MUD SLABS, FOOTINGS, OR SLABS SHALL BE PLACED ONTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST, OR ICE.

2.12 THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADE BEFORE AND AFTER PLACING OF CONCRETE UNTIL SUCH SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE. SUCH PROTECTION IS ADDITIONAL SCOPE.

2.13 THE CONCRETE FOR EACH ISOLATED FOOTING SHALL BE PLACED IN ONE (1) CONTINUOUS PLACEMENT.

2.14 ALL PERIMETER WALL AND COLUMN FOOTINGS SHALL BEAR A MINIMUM OF 1'-0" BELOW GRADE (U.N.O.)

2.15 TEST PITS ARE REQUIRED FOR SOIL CLASSIFICATION AND TO LOCATE GROUND-WATER TABLE, AND VALUES USED AS THE BASIS FOR DESIGN DO NOT EXCEED THE PRESUMPTIVE VALUES IN TABLE 1806.2 (1) OF BUILDING CODE AS LISTED IN 1.0.

2.16 WHERE QUESTIONABLE SOIL CONDITIONS ARE ENCOUNTERED, THE BUILDING OFFICIAL SHALL REQUIRE THAT THE NECESSARY INVESTIGATIONS BE MADE BY A GEOTECHNICAL ENGINEER IN ACCORDANCE WITH THE BUILDING CODE. A REPORT SHALL BE PROVIDED TO THE BUILDING OFFICIAL AS DESCRIBED IN BUILDING CODE AS LISTED IN 1.0.

2.17 EARTHWORK BELOW THE BUILDING SHALL CONSIST OF CONSTRUCTION OF A BUILDING PAD OF SELECT COMPACTED FILL MATERIAL THAT WILL CLASSIFY THE SOIL AS NOT CONSIDERED EXPANSIVE (IBC 1808.6.3 AND 1808.6.4) ACCORDING TO THE GEOTECHNICAL ENGINEER'S REPORT. FINISH FLOOR ELEVATION SHALL BE CONFIRMED WITH CIVIL ENGINEERING FINAL PLANS BEFORE BIDDING AND CONSTRUCTION. REFER TO THE GEOTECHNICAL REPORT FOR EARTHWORK REQUIREMENTS.

REINFORCED CONCRETE

3.0 ALL WORK SHALL CONFORM TO ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS". DESIGN IS BASED ON ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.

3.1 UNLESS NOTED OTHERWISE, ALL CONCRETE SHALL HAVE THE FOLLOWING MINIMUM 28 DAY COMPRESSIVE STRENGTHS:

FOUNDATIONS & WALLS EXPOSED TO FREEZE THAW CYCLE	4500 PSI (NORMAL WEIGHT)
FOUNDATIONS & WALLS NOT EXPOSED TO FREEZE THAW CYCLE	4000 PSI (NORMAL WEIGHT)
SLAB-ON-GRADE	4000 PSI (NORMAL WEIGHT)
ELEVATED SLABS	4000 PSI (LIGHTWEIGHT- 115 LB/CF MAXIMUM DENSITY)

3.2 THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND BE PROVIDED TO KP&J ARCHITECTS & ENGINEERS, LLC OR OWNER UPON REQUEST. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY OF OBTAINING THE REQUIRED DESIGN STRENGTH.

3.3 USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.

3.4 UNLESS NOTED OTHERWISE, SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN BY THE TESTING AGENCY NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 100 CUBIC YARDS OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5000 SQUARE FEET OF SURFACE AREA FOR SLABS AND FOUNDATIONS. SAMPLE CONCRETE IN ACCORDANCE WITH ASTM C172. PERFORM THE FOLLOWING TESTS IN ACCORDANCE WITH THE INDICATED STANDARD.

SLUMP:	ASTM C143
AIR CONTENT:	ASTM C173
COMPRESSIVE STRENGTH:	ASTM C39 (ONE CYLINDER AT 7 DAYS, 2 CYLINDERS AT 28 DAYS, AND ONE SPECIMEN HELD IN RESERVE)

3.5 REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 UNLESS NOTED OTHERWISE.

3.6 WELDED WIRE FABRIC (MESH) SHALL CONFORM TO ASTM A185 AND SHALL BE PROVIDED IN FLAT SHEETS (ROLLS ARE NOT PERMITTED). LAP TWO SQUARES AT SPLICES.

3.7 TIE ALL REINFORCING STEEL AND EMBEDMENTS SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN THE POSITION OF REINFORCEMENT WITHIN SPECIFIED TOLERANCES DURING ALL CONSTRUCTION ACTIVITIES. "STICKING" DOWELS OR REBAR INTO WET CONCRETE IS NOT PERMITTED.

3.8 PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE. SPLICE ONLY AS SHOWN OR APPROVED; STAGGER SPLICES WHERE POSSIBLE. USE CLASS "B" TENSION SPLICE UNLESS NOTED OTHERWISE. DOWELS SHALL MATCH THE SIZE AND SPACING OF THE SPECIFIED REINFORCEMENT AND SHALL BE LAPPED WITH CLASS "B" TENSION SPLICES. UNLESS NOTED OTHERWISE, LAP LENGTHS EXPRESSED AS NUMBER OF BAR DIAMETERS SHALL BE AS FOLLOWS:

BAR SIZE	NORMAL WEIGHT CONCRETE, f'c (PSI)				
	CLASS	3000	4000	5000	6000
#6 OR SMALLER	A	44 DIA.	38 DIA.	34 DIA.	31 DIA.
	B	57 DIA.	50 DIA.	45 DIA.	41 DIA.
#7 OR GREATER	A	55 DIA.	48 DIA.	43 DIA.	39 DIA.
	B	72 DIA.	62 DIA.	56 DIA.	51 DIA.

3.9 REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER UNLESS NOTED OTHERWISE.

CONCRETE CAST AGAINST EARTH (NOT FORMED)	3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:	2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER:	
SLABS & WALLS	1 1/2"
BEAM STIRRUPS & COLUMN TIES	1 1/2"

3.10 DO NOT PLACE PIPES OR DUCTS EXCEEDING ONE-THIRD THE SLAB OR WALL THICKNESS WITHIN THE SLAB OR WALL UNLESS SPECIFICALLY SHOWN AND DETAILED STRUCTURAL DRAWINGS.

3.11 DO NOT WELD OR TACK WELD REINFORCING STEEL UNLESS APPROVED OR DIRECTED BY THE STRUCTURAL ENGINEER.

3.12 REINFORCING STEEL PLACEMENT SHALL BE INSPECTED IN ACCORDANCE WITH ACI 318, SECTION 1.3 BY A QUALIFIED OWNER'S REPRESENTATIVE.

3.13 NO SLAB SHALL HAVE COLD JOINTS IN A HORIZONTAL PLANE.

3.14 THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATION AND PLACEMENT OF INSERTS, EMBEDDED PLATES, MASONRY ANCHORS, REGLETS, SLEEVES, DUCTWORK, PADS, AND ANCHOR RODS. THE INSERTS, EMBEDDED PLATES, ETC. SHALL NOT INTERFERE WITH CONCRETE REINFORCEMENT LOCATION.

3.15 NO OPENING SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.

3.16 EXPOSED EXTERNAL CONCRETE CORNERS SHALL BE CHAMFERED 3/4 INCHES, UNLESS SHOWN OR NOTED OTHERWISE.

3.17 ARRANGEMENT AND DETAILS FOR REINFORCEMENT, INCLUDING BAR SUPPORTS AND SPACERS, SHALL BE IN ACCORDANCE WITH THE "A.C.I. DETAILING MANUAL (ACI SP-66)".

STRUCTURAL STEEL

4.0 ALL STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION INC. "STEEL CONSTRUCTION MANUAL".

4.1 UNLESS NOTED OTHERWISE, STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:

STEEL SHAPE (AISC)	TYPE OF STEEL (ASTM)
ANGLES & PLATES	A36
S, M, C, MC	A36 OR A572 GRADE 50
HP	A572 GRADE 50
W	A992
PIPE	A53 GRADE B
HSS	A500 GRADE B OR C
TIE ROD	A36 OR A307A

4.2 STRUCTURAL STEEL WORK SHALL CONFORM TO THE AISC "ALLOWABLE STRESS DESIGN" SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS," AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES."

4.3 THE FABRICATOR/ERECTOR SHALL SUBMIT TO THE ARCHITECT FOR REVIEW, ENGINEERED AND CHECKED DRAWINGS SHOWING SHOP FABRICATION DETAILS, FIELD ASSEMBLY DETAILS, AND ERECTION DIAGRAMS FOR ALL STRUCTURAL STEEL.

4.4 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES WITH RELATION TO TEMPERATURE DIFFERENTIALS, ESPECIALLY WITH RESPECT TO STRUCTURAL STEEL FRAMING INTO CONCRETE WALLS, BEAMS, OR COLUMNS.

4.5 THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ARCHITECT.

4.6 ALL STRUCTURAL STEEL EXPOSED TO VIEW IN THE FINISHED BUILDING SHALL CONFORM TO THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, "SECTION 10, "ARCHITECTURAL EXPOSED STRUCTURAL STEEL".

4.7 ALL EXTERIOR STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AND ASTM A385. FIELD WELDS SHALL BE GROUND SMOOTH AND TOUCH UP IN ACCORDANCE WITH ASTM A780.

WOOD NOTES

5.0 UNLESS NOTED OTHERWISE, ALL WOOD CONSTRUCTION SHALL CONFORM TO CONVENTIONAL LIGHT-FRAME CONSTRUCTION PER THE BUILDING CODE AS LISTED IN 1.0.

5.1 UNLESS NOTED OTHERWISE, ALL SOLID SAWN LUMBER SHALL BE KILN DRIED GRADE NO. 2 DOUGLAS FIR-LARCH (OR BETTER). WOOD MOISTURE CONTENT MUST BE <19% WITH THE FOLLOWING MINIMUM PROPERTIES:

E	=	1,600,000 PSI
F_b	=	900 PSI
F_v	=	180 PSI
F_t (PARALLEL)	=	1,350 PSI
F_t (PERP.)	=	625 PSI
F_c	=	575 PSI

5.2 UNLESS NOTED OTHERWISE, ENGINEERED LUMBER MEMBERS SHALL BE MANUFACTURED UNDER A PROCESS BY THE NATIONAL RESEARCH BOARD. EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, THE NATIONAL RESEARCH BOARD NUMBER, AND THE QUALITY CONTROL AGENCY. ALL LUMBER SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPROPRIATE REPORT AND GLUED USING A WATERPROOFING ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER WITH THE FOLLOWING MINIMUM PROPERTIES:

LAMINATED VENEER LUMBER (LVL)

E	=	2,000,000 PSI
F_b	=	2,600 PSI
F_v	=	285 PSI
F_t (PARALLEL)	=	2,510 PSI
F_t (PERP.)	=	750 PSI
F_c	=	1,555 PSI

PARALLAM (PSL) LUMBER-COLUMN

E	=	2,000,000 PSI
F_b	=	2,900 PSI
F_v	=	290 PSI
F_t (PARALLEL)	=	2,900 PSI
F_t (PERP.)	=	625 PSI
F_c	=	2,025 PSI

5.3 PRESSURE TREATED LUMBER SHALL CONFORM TO THE AWPA AND SHALL BEAR THE QUALITY MARK OF AN ACCREDITED ALSC INSPECTION AGENCY. MINIMUM TREATING STANDARDS (RETENTION LBS./CU. FT) SHALL BE AS FOLLOWS:

APPLICATION	ACQ/ACZA	CA-B
ABOVE GROUND	0.25	0.10
GROUND/CONCRETE CONTACT	0.40	0.21
FRESH WATER IMMERSION	0.40	0.21
IN GROUND (STRUCTURAL)	0.60	0.31
SILL PLATES	0.25	0.10

5.4 WOOD SHALL BE UNWRAPPED & FREE OF SPLITS & CHECKS.

5.5 ALL DIMENSION LUMBER EXPOSED TO WEATHER MUST BE WEATHER TREATED PER AMERICAN WOOD PRESERVERS ASSOCIATION. PARALLEL STRAND LUMBER (PSL), SHALL BE WEATHER TREATED. TREATMENT MUST BE CURRENTLY ACCEPTED, ENVIRONMENTALLY FRIENDLY TREATMENT. CCA TREATMENT IS NOT PERMITTED. ALL METAL FASTENERS EXPOSED TO WEATHER, INCLUDING BUT NOT LIMITED TO STRAPS, HANGERS, BOLTS, SCREWS, NAILS AND OTHER SPECIAL FASTENING HARDWARE TO BE CORROSIVE RESISTANT. PROCESS MUST BE HOT DIP GALVANIZED ZINC COATING WITH MINIMUM 1.85 OZ OF ZINC COATING PER SQUARE FOOT.

5.6 UNLESS NOTED OTHERWISE, ALL POSTS SHALL BE MINIMUM 4X4, ALL POSTS SUPPORTING HEADERS AT MAXIMUM OPENING 4'-0" SHALL BE MINIMUM SIZE 2-2X4, AND ALL HEADERS SHALL BE MINIMUM SIZE 2-2X10.

5.7 ALL COLUMNS ARE TO BE CONTINUOUS TO THE FOUNDATION OR TO THE SUPPORTING BEAM. TRANSFER MEMBER IS PERMITTED IF SPECIFICALLY ENGINEERED FOR THIS PURPOSE.

5.8 UNLESS NOTED OTHERWISE, SIMPSON COLUMN CAPS AC OR SIMILAR USP SHALL BE USED AT ALL CONNECTIONS OF LVL BEAMS TO PSL COLUMNS.

5.9 DUE TO CORROSION REQUIREMENTS, ALL FASTENERS USED IN OR IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED STEEL OR STAINLESS STEEL. OTHER TYPES OF PROTECTIVE FASTENER COATINGS MAY BE USED UPON ENGINEERING REVIEW AND APPROVAL.

5.10 UNLESS NOTED OTHERWISE, ALL LOAD-BEARING WALL STUDS SHALL BE 2x6 SOLID SAWN LUMBER WITH A MAXIMUM SPACING OF 16" O.C.

5.11 USE THREE STUDS (MINIMUM) IN EACH CORNER WITH TOP PLATES OVERLAPPING AT CORNERS AND BEARING WALLS. SILL PLATES OR ANY OTHER WOOD IN CONTACT WITH CONCRETE, SOIL OR MASONRY SHALL BE PRESSURE TREATED.

5.12 BUILT-UP STUD COLUMNS MUST BE SECURELY NAILED TOGETHER TO ACT AS A COMPOSITE MEMBER.

5.13 UNLESS NOTED OTHERWISE, ALL LOAD BEARING WALLS SHALL BE SHEATHED WITH MIN. 7/16" APA RATED SHEATHING, EXPOSURE I, OSB OR PLYWOOD. WALL SHEATHING SHALL BE FASTENED WITH 8d COMMON NAILS WITH A MAXIMUM SPACING OF 6" O.C. AT EDGES AND 12" O.C. WITHIN THE FIELD. A DOUBLE ROW OF 8d COMMON NAILS WITH A MAXIMUM SPACING OF 6" O.C. SHALL BE USED AT TOP AND BOTTOM PANEL EDGES FOR UPLIFT RESISTANCE. ALL EDGES OF SHEATHING SHALL BE BLOCKED SOLID. CONTINUOUS SHEATHING SHALL BE PROVIDED FROM TOP PLATE TO SILL PLATE. USE APPROVED SHEATHING PANEL TENSION SPLICE AS REQUIRED.

5.14 UNLESS NOTED OTHERWISE, ROOF SHEATHING SHALL BE APA RATED SHEATHING, EXPOSURE I. FOR ROOF SUPPORTS AT 24" O.C. USE 15/32" OSB OR PLYWOOD. FOR ROOF SUPPORTS @ 16" O.C. USE 7/16" OSB OR PLYWOOD. SHEATHING SHALL BE INSTALLED WITH THE LONG EDGES ACROSS A MINIMUM OF THREE SUPPORTING MEMBERS. SUPPORT AND STAGGER EDGES OF SHEATHING PARALLEL TO SUPPORTING MEMBERS. ROOF SHEATHING SHALL BE FASTENED WITH 8d COMMON NAILS WITH A MAXIMUM SPACING OF 6" O.C. AT EDGES AND 12" O.C. WITHIN THE FIELD. PANEL CLIPS SHALL BE INSTALLED IN ACCORDANCE WITH APA RECOMMENDATIONS.

5.15 UNLESS NOTED OTHERWISE, FLOOR SHEATHING SHALL BE APA RATED STURD-I-FLOOR, EXPOSURE I, TONGUE AND GROOVE PLYWOOD. FOR SUPPORTS AT 16" O.C. USE 19/32" THICK PANELS. FASTEN FLOOR SHEATHING WITH 10d RING-OR SCREW-SHANK NAILS WITH A MAXIMUM SPACING OF 6" O.C. AT EDGES AND 12" O.C. WITHIN THE FIELD. PANELS SHALL BE APA GLUED TO FLOOR SUPPORTS AND AT TONGUE AND GROOVE JOINTS WITH ADHESIVE CONFORMING TO PERFORMANCE SPECIFICATION APA AFG-01. AN 1/8" GAP SHALL BE LEFT BETWEEN ADJACENT PANELS AND THE END JOINTS SHALL BE SUPPORTED AND STAGGERED. SHEATHING SHALL BE INSTALLED WITH THE LONG EDGE ACROSS A MINIMUM OF THREE SUPPORTING MEMBERS. PROVIDE CONTINUOUS BLOCKING AT EDGES AND AROUND OPENINGS.

5.16 UNLESS NOTED OTHERWISE, DOOR AND WINDOW HEADERS SHALL FULLY BEAR ON JACK STUDS. KING STUDS SHALL EXTEND THE FULL HEIGHT OF WALL ON EACH SIDE OF OPENING.

5.17 BEARING & EXTERIOR WALL STUDS SHALL BE CAPPED WITH DOUBLE TOP PLATES INSTALLED TO PROVIDE OVERLAPPING AT CORNERS AND INTERSECTIONS WITH OTHER PARTITIONS. END JOINTS IN DOUBLE TOP PLATES SHALL BE OFFSET AT LEAST 48" & SHALL BE NAILED WITH NOT LESS THAN (16) 16d FACE NAILS ON EACH SIDE OF JOINT. TOP PLATES SHALL BE A NOMINAL 2" DEPTH AND HAVE A WIDTH AT LEAST EQUAL TO THE WIDTH OF THE STUDS.

5.18 SOLID 2x BLOCKING AND BANDBOARD SHALL BE PROVIDED AT SUPPORTS AND CANTILEVER ENDS OF ALL WOOD JOISTS.

5.19 ALL MANUFACTURED HARDWARE SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE MANUFACTURER'S SPECIFICATIONS.

5.20 GYPSUM WALLBOARD SHALL BE SECURED WITH A MAXIMUM FASTENER SPACING OF 6" O.C. AT EDGES AND 12" O.C. AT FIELD.

DRAWING LIST

S-101: GENERAL NOTES
S-102: GENERAL NOTES
S-103: SPECIAL INSPECTION NOTES
S-201: BUILDING FOUNDATION PLANS
S-202: SEASON RINK FOUNDATION
S-203: BUILDING ROOF PLAN
S-301: FOUNDATION DETAIL
S-401: DETAILS
S-402: DETAILS

ABBREVIATIONS

&	=	AND
@	=	AT
A.	=	ALTERNATE
APPROX.	=	APPROXIMATE
BLDG.	=	BUILDING
BM.	=	BEAM
BRG.	=	BEARING
BSMT.	=	BASEMENT
BTWN.	=	BETWEEN
BI	=	BOTTOM OF
BOT.	=	BOTTOM
BLKG.	=	BLOCKING
BLK.	=	BLOCK
CFMF	=	COLD FORMED METAL FRAMING
CFS	=	COLD-FORMED STEEL
CJ.	=	CONTROL OR CONSTRUCTION JOINT
℄	=	CENTER LINE
CLG.	=	CEILING
CMU	=	CONC. MASONRY UNIT
COL.	=	COLUMN
CONC.	=	CONCRETE
CONT.	=	CONTINUOUS
CONST.	=	CONSTRUCTION
DTL.	=	DETAIL
DIA.	=	DIAMETER
DIM.	=	DIMENSION
DN.	=	DOWN
DR.	=	DOOR
DWG.	=	DRAWING
DBL.	=	DOUBLE
EA.	=	EACH
E.F.	=	EACH FACE
EL.	=	ELEVATION
EQ.	=	EQUAL
EQP.	=	EQUIPMENT
E.W.	=	EACH WAY
EX.	=	EXISTING
EXT.	=	EXTERIOR
EXP.	=	EXPANSION
F.D.	=	FLOOR DRAIN
F.F.	=	FINISH FLOOR
FL.	=	FLOOR
FDN.	=	FOUNDATION
F.O.	=	FACE OF
F.S.	=	FAR SIDE
FT.	=	FOOT
FTG.	=	FOOTING
GA.	=	GAUGE
GALV.	=	GALVANIZED
GYP.BD.	=	GYPSUM BOARD
HDR.	=

WOOD FASTENING SCHEDULE U.N.O.

CONNECTION	FASTENING	LOCATION
JOIST TO SILL OR GIRDER	3 - 8D COMMON (2 1/2" × 0.131") 3 - 3" × 0.131" NAILS	TOE NAIL
BRIDGING TO JOIST	2 - 8D COMMON (2 1/2" × 0.131") 2 - 3" × 0.131" NAILS	TOE NAIL EACH END
1"x 6" SUBFLOOR OR LESS TO EACH JOIST	2 - 8D COMMON (2 1/2" × 0.131")	FACE NAIL
WIDER THAN 1"x 6" SUBFLOOR TO EACH JOIST	3 - 8D COMMON (2 1/2" × 0.131")	FACE NAIL
2" SUBFLOOR TO JOIST OR GIRDER	2 - 16D COMMON (3 1/2" × 0.162")	BLIND AND FACE NAIL
SOLE PLATE TO JOIST OR BLOCKING	16D (3 1/2" × 0.135") AT 16" O.C. 3" × 0.131" NAILS AT 8" O.C.	TYPICAL FACE NAIL
SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL PANEL	3 - 16D (3 1/2" × 0.135") @ 16" O.C. 4 - 3" × 0.131" NAILS AT 16" O.C.	BRACED WALL PANELS
TOP PLATE TO STUD	2 - 16D COMMON (3 1/2" × 0.162") 3 - 3" × 0.131" NAILS	END NAIL
STUD TO SOLE PLATE	4 - 8D COMMON (2 1/2" × 0.131") 4 - 3" × 0.131" NAILS	TOE NAIL
	2 - 16D COMMON (3 1/2" × 0.162") 3 - 3" × 0.131" NAILS	END NAIL
DOUBLE STUDS	16D (3 1/2" × 0.135") AT 24" O.C. 3" × 0.131" NAIL AT 8" O.C.	FACE NAIL
DOUBLE TOP PLATES	3 - 8D COMMON (2 1/2" × 0.131") 3 - 3" × 0.131" NAILS	TYPICAL FACE NAIL
BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	3 - 8D COMMON (2 1/2" × 0.131") 3 - 3" × 0.131" NAILS	TOE NAIL
RIM JOIST TO TOP PLATE	8D (2 1/2" × 0.131") AT 6" O.C. 3" × 0.131" NAIL AT 6" O.C.	TOE NAIL
TOP PLATES, LAPS AND INTERSECTIONS	2 - 16D COMMON (3 1/2" × 0.162") 3 - 3" × 0.131" NAILS	FACE NAIL
CONTINUOUS HEADER, TWO PIECES	16D COMMON (3 1/2" × 0.162")	16" O.C. ALONG EDGE
CEILING JOISTS TO PLATE	3 - 8D COMMON (2 1/2" × 0.131") 5 - 3" × 0.131" NAILS	TOE NAIL
CONTINUOUS HEADER TO STUD	4 - 8D COMMON (2 1/2" × 0.131") 3 - 16D COMMON (3 1/2" × 0.162")MINIMUM,	TOE NAIL
CEILING JOISTS, LAPS OVER PARTITIONS	4 - 3" × 0.131" NAILS 3 - 16D COMMON (3 1/2" × 0.162") MINIMUM,	FACE NAIL
CEILING JOISTS TO PARALLEL RAFTERS	4 - 3" × 0.131" NAILS	FACE NAIL
RAFTER TO PLATE	3 - 8D COMMON (2 1/2" × 0.131") 3 - 3" × 0.131" NAILS	TOE NAIL
1" DIAGONAL BRACE TO EACH STUD AND PLATE	2 - 8D COMMON (2 1/2" × 0.131") 2 - 3" × 0.131" NAILS	FACE NAIL
1" × 8" SHEATHING TO EACH BEARING	3 - 8D COMMON (2 1/2" × 0.131")	FACE NAIL
WIDER THAN 1" × 8" SHEATHING TO EACH BEARING	3 - 8D COMMON (2 1/2" × 0.131")	FACE NAIL
2" PLANKS	16D COMMON (3 1/2" × 0.162")	AT EACH BEARING
COLLAR TIE TO RAFTER	3 - 10D COMMON (3" × 0.148") 4 - 3" × 0.131" NAILS	FACE NAIL
JACK RAFTER TO HIP	3 - 10D COMMON (3" × 0.148") 4 - 3" × 0.131" NAILS	TOE NAIL
	2 -16D COMMON (3 1/2" × 0.162") 3 - 3" × 0.131" NAILS	FACE NAIL
ROOF RAFTER TO 2-BY RIDGE BEAM	2 -16D COMMON (3 1/2" × 0.162") 3 - 3" × 0.131" NAILS	TOE NAIL
	2 -16D COMMON (3 1/2" × 0.162") 3 - 3" × 0.131" NAILS	FACE NAIL
JOIST TO BAND JOIST	3 - 16D COMMON (3 1/2" × 0.162") 4 - 3" × 0.131" NAILS	FACE NAIL
LEDGER STRIP	3 - 16D COMMON (3 1/2" × 0.162") 4 - 3" × 0.131" NAILS	FACE NAIL AT EACH END

MASONRY

6.0 DESIGN AND CONSTRUCTION OF MASONRY SHALL BE IN ACCORDANCE WITH THE ACI/ASCE/TMS "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI 530/ASCE 5/TMS 402) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1/ASCE 6/TMS 602).

6.1 QUALITY ASSURANCE AND INSPECTION OF MASONRY CONSTRUCTION ARE REQUIRED AS DEFINED BY THE "SPECIFICATION FOR MASONRY STRUCTURES" AND/OR THE BUILDING CODE.

6.2 U.N.O. MATERIALS FOR MASONRY CONSTRUCTION SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:

SPECIFIED COMPRESSIVE STRENGTH OF MASONRY:	F'm = 1900 PSI
MORTAR MIN. COMPRESSIVE STRENGTH = 2800 PSI	ASTM C270, TYPE 'S'
GROUT MIN. COMPRESSIVE STRENGTH = 2500 PSI	ASTM C476
REINFORCING BARS	ASTM A615, GRADE 60 (U.N.O) ASTM A706, GRADE 60 (WELDABLE-SEE PLANS)
HORIZONTAL JOINT REINF.	ASTM A951 WIRE FOR JOINT REINF.: ASTM A1064
ANCHORS, TIES AND ACCESSORIES	PLATE AND BENT BEAR ANCHORS: ASTM A36 SHEET METAL ANCHORS & TIES: ASTM A1008 WIRE MESH TIES: ASTM A1064 WIRE TIES AND ANCHORS: ASTM A1064
CORROSION PROTECTION	WIRE JOINT REINF., TIES AND ANCHORS: INTERIOR WALLS- ASTM A641 (0.1 OZ./SF) EXTERIOR WALLS- ASTM A153 (1.50 OZ./SF) SHEET METAL ANCHORS & TIES: ASTM A653, CLASS G60

6.3 VERTICAL CELLS TO BE FILLED WITH GROUT SHALL BE ALIGNED TO PROVIDE A CONTINUOUS, UNOBSTRUCTED OPENING OF THE DIMENSIONS SHOWN ON THE PLANS. CELLS WHICH WILL CONTAIN VERTICAL REINFORCEMENT SHALL HAVE A MINIMUM TWO (2) INCH CLEAR OPENING.

6.4 PROVIDE CONTINUOUS, 9 GAGE, LADDER TYPE, GALVANIZED HORIZONTAL JOINT REINFORCEMENT AT 16" O.C. VERTICALLY, AND IN THE FIRST COURSE ABOVE AND BELOW OPENINGS FOR A DISTANCE OF NOT LESS THAN 2'-0" BEYOND OPENINGS. PROVIDE ADJUSTABLE JOINT REINFORCEMENT AT MULTIWYTHE WALLS.

6.5 THE MINIMUM CLEAR DISTANCE BETWEEN PARALLEL REINFORCING BARS, EXCEPT IN COLUMNS SHALL BE EQUAL TO THE NOMINAL DIAMETER OF THE BAR.

6.6 AT SPLICES OF REINFORCEMENT BARS PROVIDE A LAP SPLICE. LENGTH OF SPLICE SHALL BE PER THE "REINFORCING BAR LAP SPLICE SCHEDULE FOR MASONRY CONSTRUCTION" TABLE SHOWN BELOW:

REINFORCING BAR LAP SPLICE SCHEDULE FOR MASONRY CONSTRUCTION

BAR SIZE	Fy=60KSI
#3	1'-9"
#4	2'-3"
#5	2'-9"
#6	4'-9"
#7	7'-6"

6.7 ALL REINFORCING BARS SHALL BE COMPLETELY EMBEDDED IN MORTAR OR GROUT AND SHALL HAVE A COVERAGE OF MASONRY NOT LESS THAN:

BARS LARGER THAN #5.....2"
#5 BARS AND SMALLER.....1-1/2"

6.8 PROVIDE GALVANIZED MASONRY ANCHORS ON BEAMS, GIRTS, AND COLUMNS IN CONTACT WITH MASONRY.

6.9 UNLESS OTHERWISE NOTED, PROVIDE (2) #5 BARS, FULL HEIGHT, AT EACH SIDE OF OPENINGS.

6.10 PROVIDE ADEQUATE TEMPORARY BRACING AS REQUIRED DURING CONSTRUCTION TO WITHSTAND LATERAL LOADS AND THE PRESSURES OF FLUID GROUT.

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REV	REV DESCRIPTION	DATE
-	ISSUED FOR PERMIT	03/23/2026

STATE OF TEXAS
KETAN PATEL
129379
LICENSED
PROFESSIONAL ENGINEER

EXP: 12/31/2026
DATE: 03/23/2026

DESIGN PROFESSIONAL SEAL

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Drawn / Designed by:	GV/RU
Reviewed by:	RU
Approved by:	KP
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

GENERAL NOTES

SHEET NUMBER:

S-102

GENERAL

1. ALL SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 17 OF THE BUILDING CODE AS LISTED IN 1.0. INCLUDING ADOPTED AMENDMENTS. SPECIAL INSPECTIONS ARE IN ADDITION TO INSPECTIONS REQUIRED BY SECTION 110 OF THE BUILDING CODE AS LISTED IN 1.0.

2. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS.

3. THE SPECIAL INSPECTOR AND GEOTECHNICAL ENGINEER SHALL FURNISH INSPECTION REPORTS FOR EACH INSPECTION TO THE BUILDING OFFICIAL, STRUCTURAL ENGINEER, ARCHITECT, CONTRACTOR, AND OWNER. THE SPECIAL INSPECTION AGENCY SHALL SUBMIT A FINAL REPORT STATING THAT THE WORK REQUIRING SPECIAL INSPECTION WAS INSPECTED AND IS IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THAT ALL DISCREPANCIES NOTED IN THE INSPECTION REPORTS HAVE BEEN CORRECTED.

4. INSPECTION TYPES
   - CONTINUOUS : THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.
   - PERIODIC : THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.
   - OBSERVE : OBSERVE THESE FUNCTIONS ON A RANDOM, DAILY BASIS. OPERATIONS NEED NOT BE DELAYED PENDING OBSERVATIONS.
   - PERFORM : INSPECTIONS SHALL BE PERFORMED PRIOR TO THE FINAL ACCEPTANCE OF THE ITEM.

MATERIALS

1. NEW MATERIALS: NEW BUILDING MATERIALS, EQUIPMENT, APPLIANCES, SYSTEMS OR METHODS OF CONSTRUCTION NOT PROVIDED FOR IN THIS CODE, AND ANY MATERIAL QUESTIONED SUITABILITY PROPOSED FOR USE IN THE CONSTRUCTION OF A BUILDING OR STRUCTURE, SHALL BE SUBJECTED TO THE TESTS PRESCRIBED IN THIS CHAPTER AND IN THE APPROVED RULES TO DETERMINE CHARACTER, QUALITY AND LIMITATIONS OF USE.

2. USED MATERIALS: THE USE OF SECOND HAND MATERIALS THAT MEET THE MINIMUM REQUIREMENTS OF THE BUILDING CODE AS LISTED IN 1.0. FOR NEW MATERIALS SHALL BE PERMITTED.

APPROVALS

1. APPROVED AGENCY: AN APPROVED AGENCY SHALL PROVIDE ALL INFORMATION AS NECESSARY FOR THE BUILDING OFFICIAL TO DETERMINE THAT THE AGENCY MEETS THE APPLICABLE REQUIREMENTS SPECIFIED IN SECTIONS 1703.1.1 THROUGH 1703.1.3 OF THE BUILDING CODE AS LISTED IN 1.0.

   A. INDEPENDENCE: AN APPROVED AGENCY SHALL BE OBJECTIVE, COMPETENT AND INDEPENDENT FROM THE CONTRACTOR RESPONSIBLE FOR THE WORK BEING INSPECTED. THE AGENCY SHALL DISCLOSE TO THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE POSSIBLE CONFLICTS OF INTEREST SO THAT OBJECTIVITY CAN BE CONFIRMED.

   B. EQUIPMENT: AN APPROVED AGENCY SHALL HAVE ADEQUATE EQUIPMENT TO PERFORM REQUIRED TESTS. THE EQUIPMENT SHALL BE PERIODICALLY CALIBRATED.

   C. PERSONNEL: AN APPROVED AGENCY SHALL EMPLOY EXPERIENCED PERSONNEL EDUCATED IN CONDUCTING, SUPERVISING, AND EVALUATING TESTS, AND SPECIFICAL INSPECTIONS.

2. WRITTEN APPROVAL: ANY MATERIAL, APPLIANCE, EQUIPMENT, SYSTEM OR METHOD OF CONSTRUCTION MEETING THE REQUIREMENTS OF THIS CODE SHALL BE APPROVED IN WRITING AFTER SATISFACTORY COMPLETION OF THE REQUIRED TESTS AND SUBMISSION OF REQUIRED TEST REPORTS.

3. RECORD OF APPROVAL: FOR ANY MATERIAL, APPLIANCE, EQUIPMENT, SYSTEM OR METHOD OF CONSTRUCTION THAT HAS BEEN APPROVED, A RECORD OF SUCH APPROVAL, INCLUDING THE CONDITIONS AND LIMITATIONS OF THE APPROVAL, SHALL BE KEPT ON FILE IN THE BUILDING OFFICIAL'S OFFICE AND SHALL BE AVAILBLE FOR PUBLIC REVIEW AT APPROPRIATE TIMES.

4. PERFORMANCE: SPECIFIC INFORMATION CONSISTING OF TEST REPORTS CONDUCTED BY AN APPROVED AGENCY IN ACCORDANCE WITH THE APPROPRIATE REFERENCED STANDARDS, OR OTHER SUCH INFORMATION AS NECESSARY, SHALL BE PROVIDED FOR THE BUILDING OFFICIAL TO DETERMINE THAT THE PRODUCT, MATERIAL OR ASSEMBLY MEETS THE APPLICABLE CODE REQUIREMENTS.

   A. RESEARCH AND INVESTIGATION: SUFFICIENT TECHNICAL DATA SHALL BE SUBMITTED TO THE BUILDING OFFICIAL TO SUBSTANTIATE THE PROPOSED USE OF ANY PRODUCT, MATERIAL OR ASSEMBLY. IF IT IS DETERMINED THAT THE EVIDENCE SUBMITTED IS SATISFACTORY PROOF OF PERFORMANCE FOR THE USE INTENDED,THE BUILDING OFFICIAL SHALL APPROVE THE USE OF THE PRODUCT, MATERIAL OR ASSEMBLY SUBJECT TO THE REQUIREMENTS OF THIS CODE. THE COST REPORTS AND INVESTIGATIONS REQUIRED UNDER THESE PROVISIONS SHALL BE PAID BY THE OWNER OR THE OWNER'S AUTHORIZED AGENT.

   B. RESEARCH REPORTS: SUPPORTING DATA, WHERE NECESSARY TO ASSIST IN THE APPROVAL OF PRODUCTS, MATERIALS OR ASSEMBLIES NOT SPECIFICALLY PROVIDED FOR IN THIS CODE, SHALL CONSIST OF VALID RESEARCH REPORTS FROM APPROVED SOURCES.

5. LABELING: PRODUCTS, MATERIALS OR ASSEMBLIES REQUIRED TO BE LABELED IN ACCORDANCE WITH THE PROCEDURES SET FORTH IN SECTIONS 1703.5.1 THROUGH 1703.5.4 OF THE BUILDING CODE AS LISTED IN 1.0.

   A. TESTING: AN APPROVED AGENCY SHALL TEST A REPRESENTATIVE SAMPLE OF THE PRODUCT, MATERIAL OR ASSEMBLY BEING LABELED TO THE RELEVANT STANDARD OR STANDARDS. THE APPROVED AGENCY SHALL MAINTAIN A RECORD OF THE TESTS PERFORMED. THE RECORD SHALL PROVIDE SUFFICIENT DETAIL TO VERIFY COMPLIANCE WITH THE TEST STANDARD.

   B. INSPECTION AND IDENTIFICATION: THE APPROVED AGENCY SHALL PERIODICALLY PERFORM AN INSPECTION, WHICH SHALL BE IN-PLANT IF NECESSARY, OF THE PRODUCT OR MATERIAL THAT IS TO BE LABELED. THE INSPECTION SHALL VERIFY THAT THE LABELED PRODUCT, MATERIAL OR ASSEMBLY IS REPRESENTATIVE OF THE PRODUCT, MATERIAL OR ASSEMBLY TESTED.

   C. LABEL INFORMATION: THE LABEL SHALL CONTAIN THE MANUFACTURER'S IDENTIFICATION, MODEL NUMBER, SERIAL NUMBER OR DEFINITIVE INFORMATION DESCRIBING THE PERFORMANCE CHARACTERISTICS OF THE PRODUCT, MATERIAL OR ASSEMBLY AND THE APPROVED AGENCY'S IDENTIFICATION.

   D. METHOD OF LABELING: INFORMATION REQUIRED TO BE PERMANENTLY IDENTIFIED ON THE PRODUCT, MATERIAL OR ASSEMBLY SHALL BE ACID ETCHED, SAND BLASTED, CERAMIC FIRED, LASER ETCHED, EMBOSSED OR OF A TYPE THAT, ONCE APPLIED, CANNOT BE REMOVED WITHOUT BEING DESTROYED.

6. EVALUATION AND FOLLOW-UP INSPECTION SERVICES: WHERE STRUCTURAL COMPONENTS OR OTHER ITEMS REGULATED BY THIS CODE ARE NOT VISIBLE FOR INSPECTION AFTER COMPLETION OF A PREFABRICATED ASSEMBLY, THE OWNER OR THE OWNER'S AUTHORIZED AGENT SHALL SUBMIT A REPORT OF EACH PREFABRICATED ASSEMBLY. THE REPORT SHALL INDICATE THE COMPLETE DETAILS OF THE ASSEMBLY, INCLUDING A DESCRIPTION OF THE ASSEMBLY AND ITS COMPONENTS, THE BASIS UPON WHICH THE ASSEMBLY IS BEING EVALUATED, TEST RESULTS AND SIMILAR INFORMATION AND OTHER DATA AS NECESSARY FOR THE BUILDING OFFICIAL TO DETERMINE CONFORMANCE TO THIS CODE. SUCH A REPORT SHALL BE APPROVED BY THE BUILDING OFFICIAL.

   A. FOLLOW-UP INSPECTION: THE OWNER OR THE OWNER'S AUTHORIZED AGENT SHALL PROVIDE FOR SPECIAL INSPECTIONS OF FABRICATED ITEMS IN ACCORDANCE WITH SECTION 1704.2.5 OF THE BUILDING CODE AS LISTED IN 1.0.

   B. TEST AND INSPECTION RECORDS: COPIES OF NECESSARY TEST AND SPECIAL INSPECTION RECORDS SHALL BE FILED WITH THE BUILDING OFFICIAL.

SPECIAL INSPECTIONS AND TESTS, CONTRACTOR RESPONSIBILITY AND STRUCTURAL OBSERVATION

1. GENERAL: SPECIAL INSPECTIONS AND TESTS, STATEMENTS OF SPECIAL INSPECTIONS, RESPONSIBILITIES OF CONTRACTORS, SUBMITTALS TO THE BUILDING OFFICIAL AND STRUCTURAL OBSERVATIONS SHALL MEET THE APPLICABLE REQUIREMENTS OF THIS SECTION.

2. SPECIAL INSPECTIONS AND TESTS: WHERE APPLICATION IS MADE TO THE BUILDING OFFICIAL FOR CONSTRUCTION AS SPECIFIED IN SECTION 105 OF THE BUILDING CODE AS LISTED IN 1.0, THE OWNER OR THE OWNER'S AUTHORIZED AGENT, OTHER THAN THE CONTRACTOR, SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PROVIDE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION ON THE TYPES OF WORK SPECIFIED IN SECTION 1705 OF THE BUILDING CODE AS LISTED IN 1.0 AND IDENTIFY THE APPROVED AGENCIES TO THE BUILDING OFFICIAL. THESE SPECIAL INSPECTIONS AND TESTS ARE IN ADDITION TO THE INSPECTIONS BY THE BUILDING OFFICIAL THAT ARE IDENTIFIED IN SECTION 110 OF THE BUILDING CODE AS LISTED IN 1.0.

   EXCEPTIONS:

   - SPECIAL INSPECTIONS AND TESTS ARE NOT REQUIRED FOR CONSTRUCTION OF A MINOR NATURE OR AS WARRANTED BY CONDITIONS IN THE JURISDICTION AS APPROVED BY THE BUILDING OFFICIAL.
   - UNLESS OTHERWISE REQUIRED BY THE BUILDING OFFICIAL, SPECIAL INSPECTIONS AND TESTS ARE NOT REQUIRED FOR GROUP U OCCUPANCIES THAT ARE ACCESSORY TO RESIDENTIAL OCCUPANCY INCLUDING, BUT NOT LIMITED TO, THOSE LISTED IN SECTION 312.1 OF THE BUILDING CODE AS LISTED IN 1.0.
   - SPECIAL INSPECTIONS AND TESTS ARE NOT REQUIRED FOR PORTIONS OF STRUCTURES DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION PROVISIONS OF SECTION 2211.1.2 OF THE BUILDING CODE AS LISTED IN 1.0 OR THE CONVENTIONAL LIGHT-FRAME CONSTRUCTION PROVISIONS OF SECTION 2308 OF THE BUILDING CODE AS LISTED IN 1.0.
   - THE CONTRACTOR IS PERMITTED TO EMPLOY THE APPROVED AGENCIES WHERE THE CONTRACTOR IS ALSO THE OWNER.

   A. SPECIAL INSPECTOR QUALIFICATIONS: PRIOR TO THE START OF THE CONSTRUCTION, THE APPROVED AGENCIES SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING THE COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING OF THE SPECIAL INSPECTORS WHO WILL PERFORM THE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION. EXPERIENCE OR TRAINING SHALL BE CONSIDERED TO BE RELEVANT WHERE THE DOCUMENTED EXPERIENCE OR TRAINING IS RELATED IN COMPLEXITY TO THE SAME TYPE OF SPECIAL INSPECTION OR TESTING ACTIVITIES FOR PROJECTS OF SIMILAR COMPLEXITY AND MATERIAL QUALITIES. THESE QUALIFICATIONS ARE IN ADDITION TO QUALIFICATIONS SPECIFIED IN OTHER SECTIONS OF THIS CODE. THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS SPECIAL INSPECTORS FOR THE WORK DESIGNED BY THEM, PROVIDED THEY QUALIFY AS SPECIAL INSPECTORS.

   B. ACCESS FOR SPECIAL INSPECTION: THE CONSTRUCTION OR WORK FOR WHICH SPECIAL INSPECTION OR TESTING IS REQUIRED SHALL REMAIN ACCESSIBLE AND EXPOSED FOR SPECIAL INSPECTION OR TESTING PURPOSES UNTIL COMPLETION OF THE REQUIRED SPECIAL INSPECTIONS OR TESTS.

   C. STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 107.1 OF THE BUILDING CODE AS LISTED IN 1.0 AS A CONDITION FOR PERMIT ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1704.3 OF THE BUILDING CODE AS LISTED IN 1.0.

   D. REPORT REQUIREMENT: APPROVED AGENCIES SHALL KEEP RECORDS OF SPECIAL INSPECTIONS AND TESTS. THE APPROVED AGENCY SHALL SUBMIT REPORTS OF SPECIAL INSPECTIONS AND TESTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED OR TESTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND TESTS, AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS OR TESTS, SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON PRIOR TO THE START OF WORK BY THE OWNER OR THE OWNER'S AUTHORIZED AGENT TO THE BUILDING OFFICIAL.

   E. SPECIAL INSPECTION OF FABRICATED ITEMS: WHERE FABRICATION OF STRUCTURAL, LOAD-BEARING OR LATERAL LOAD-RESISTING MEMBERS OR ASSEMBLIES IS BEING CONDUCTED ON THE PREMISES OF A FABRICATOR'S SHOP, SPECIAL INSPECTIONS OF THE FABRICATED ITEMS SHALL BE PERFORMED DURING FABRICATION, EXCEPT WHERE THE FABRICATOR HAS BEEN APPROVED TO PERFORM WORK WITHOUT SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1704.2.5.1 OF THE BUILDING CODE AS LISTED IN 1.0.

   F. FABRICATOR APPROVAL: SPECIAL INSPECTIONS DURING FABRICATION ARE NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. APPROVAL SHALL BE BASED ON REVIEW OF THE FABRICATOR'S WRITTEN FABRICATION PROCEDURES AND QUALITY CONTROL MANUALS THAT PROVIDE A BASIS FOR CONTROL OF MATERIALS AND WORKMANSHIP, WITH PERIODIC AUDITING OF FABRICATION AND QUALITY CONTROL PRACTICES BY AN APPROVED AGENCY OR THE BUILDING OFFICIAL. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE OWNER OR THE OWNER'S AUTHORIZED AGENT FOR SUBMITTAL TO THE BUILDING OFFICIAL AS SPECIFIED IN SECTION 1704.5 OF THE BUILDING CODE AS LISTED IN 1.0 STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.

3. STATEMENT OF SPECIAL INSPECTIONS: WHERE SPECIAL INSPECTIONS OR TESTS ARE REQUIRED BY SECTION 1705 OF THE BUILDING CODE AS LISTED IN 1.0, THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE SHALL PREPARE A STATEMENT OF SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1704.3.1 OF THE BUILDING CODE AS LISTED IN 1.0 FOR SUBMITTAL BY THE APPLICANT IN ACCORDANCE WITH SECTION 1704.2.3 OF THE BUILDING CODE AS LISTED IN 1.0.

   EXCEPTIONS: THE STATEMENT OF SPECIAL INSPECTIONS IS PERMITTED TO BE PREPARED BY A QUALIFIED PERSON APPROVED BY THE BUILDING OFFICIAL FOR CONSTRUCTION NOT DESIGNED BY A REGISTERED DESIGN PROFESSIONAL.

   A. CONTENT OF STATEMENT OF SPECIAL INSPECTIONS: THE STATEMENT OF SPECIAL INSPECTIONS SHALL IDENTIFY THE FOLLOWING:
      - THE MATERIALS, SYSTEMS, COMPONENTS AND WORK REQUIRED TO HAVE SPECIAL INSPECTIONS OR TESTS BY THE BUILDING OFFICIAL OR BY THE REGISTERED
      - DESIGN PROFESSIONAL RESPONSIBLE FOR EACH PORTION OF THE WORK.
      - THE TYPE AND EXTENT OF EACH SPECIAL INSPECTION.
      - ADDITIONAL REQUIREMENTS FOR SPECIAL INSPECTIONS OR TESTS FOR SEISMIC OR WIND RESISTANCE AS SPECIFIED IN SECTIONS 1705.11, 1705.12 AND 1705.13 OF THE BUILDING CODE AS LISTED IN 1.0.
      - FOR EACH TYPE OF SPECIAL INSPECTION, IDENTIFICATION AS TO WHETHER IT WILL BE CONTINUOUS SPECIAL INSPECTION, PERIODIC SPECIAL INSPECTION OR PERFORMED IN ACCORDANCE WITH THE NOTATION USED IN THE REFERENCED STANDARD WHERE THE INSPECTIONS ARE DEFINED

   B. SEISMIC REQUIREMENTS IN THE STATEMENT OF SPECIAL INSPECTIONS: WHERE SECTION 1705.12 OR 1705.13 OF THE BUILDING CODE AS LISTED IN 1.0 SPECIFIES SPECIAL INSPECTIONS OR TESTS FOR SEISMIC RESISTANCE, THE STATEMENT OF SPECIAL INSPECTIONS SHALL IDENTIFY THE DESIGNATED SEISMIC SYSTEMS AND SEISMIC FORCE-RESISTING SYSTEMS THAT ARE SUBJECT TO THE SPECIAL INSPECTIONS OR TESTS.

   C. WIND REQUIREMENTS IN THE STATEMENT OF SPECIAL INSPECTIONS: WHERE SECTION 1705.11 OF THE BUILDING CODE AS LISTED IN 1.0 SPECIFIES SPECIAL INSPECTION FOR WIND RESISTANCE, THE STATEMENT OF SPECIAL INSPECTIONS SHALL IDENTIFY THE MAIN WINDFORCE-RESISTING SYSTEMS AND WIND-RESISTING COMPONENTS THAT ARE SUBJECT TO SPECIAL INSPECTIONS.

1. CONTRACTOR RESPONSIBILITY: EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND- OR SEISMIC FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM OR A WIND- OR SEISMIC FORCE-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER OR THE OWNER'S AUTHORIZED AGENT PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.

2. SUBMITTALS TO THE BUILDING OFFICIAL: IN ADDITION TO THE SUBMITTAL OF REPORTS OF SPECIAL INSPECTIONS AND TESTS IN ACCORDANCE WITH SECTION 1704.2.4 OF THE BUILDING CODE AS LISTED IN 1.0, REPORTS AND CERTIFICATES SHALL BE SUBMITTED BY THE OWNER OR THE OWNER'S AUTHORIZED AGENT TO THE BUILDING OFFICIAL FOR EACH OF THE FOLLOWING IN ACCORDANCE WITH SECTION 1704.5 OF THE BUILDING CODE AS LISTED IN 1.0.

3. STRUCTURAL OBSERVATIONS: WHERE REQUIRED BY THE PROVISIONS OF SECTION 1704.6.1, 1704.6.2 OR 1704.6.3 OF THE BUILDING CODE AS LISTED IN 1.0, THE OWNER OR THE OWNER'S AUTHORIZED AGENT SHALL EMPLOY A REGISTERED DESIGN PROFESSIONAL TO PERFORM STRUCTURAL OBSERVATIONS. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS IN SECTION 110 OF THE BUILDING CODE AS LISTED IN 1.0 OR THE SPECIAL INSPECTIONS IN SECTION 1705 OR OTHER SECTIONS OF THIS CODE. PRIOR TO THE COMMENCEMENT OF OBSERVATIONS, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT IDENTIFYING THE FREQUENCY AND EXTENT OF STRUCTURAL OBSERVATIONS. AT THE CONCLUSION OF THE WORK INCLUDED IN THE PERMIT, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES THAT, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.

   A. STRUCTURAL OBSERVATIONS FOR STRUCTURES: STRUCTURAL OBSERVATIONS SHALL BE PROVIDED FOR THOSE STRUCTURES WHERE ONE OR MORE OF THE FOLLOWING CONDITIONS EXIST:
      - THE STRUCTURE IS CLASSIFIED AS RISK CATEGORY IV.
      - THE STRUCTURE IS A HIGH-RISE BUILDING.
      - SUCH OBSERVATION IS REQUIRED BY THE REGISTERED DESIGN PROFESSIONAL RESPONSIBLE FOR THE STRUCTURAL DESIGN.
      - SUCH OBSERVATION IS SPECIFICALLY REQUIRED BY THE BUILDING OFFICIAL.

   B. STRUCTURAL OBSERVATIONS FOR SEISMIC RESISTANCE: STRUCTURAL OBSERVATIONS SHALL BE PROVIDED FOR THOSE STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY D, E OR F WHERE ONE OR MORE OF THE FOLLOWING CONDITIONS EXIST:
      - THE STRUCTURE IS CLASSIFIED AS RISK CATEGORY III OR IV.
      - THE STRUCTURE IS ASSIGNED TO SEISMIC DESIGN CATEGORY E, IS CLASSIFIED AS RISK CATEGORY I OR II, AND IS GREATER THAN TWO STORIES ABOVE THE GRADE PLANE.

   C. STRUCTURAL OBSERVATIONS FOR WIND RESISTANCE: STRUCTURAL OBSERVATIONS SHALL BE PROVIDED FOR THOSE STRUCTURES SITED WHERE V IS 130 MPH (58 MSEC) OR GREATER AND THE STRUCTURE IS CLASSIFIED AS RISK CATEGORY III OR IV.

1. CONCRETE CONSTRUCTION: SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THIS SECTION AND TABLE 1705.3 OF THE BUILDING CODE AS LISTED IN 1.0.

   EXCEPTIONS: SPECIAL INSPECTIONS AND TESTS SHALL NOT BE REQUIRED FOR:
   - ISOLATED SPREAD CONCRETE FOOTINGS OF BUILDINGS THREE STORIES OR LESS ABOVE GRADE PLANE THAT ARE FULLY SUPPORTED ON EARTH OR ROCK.
   - CONTINUOUS CONCRETE FOOTINGS SUPPORTING WALLS OF BUILDINGS THREE STORIES OR LESS ABOVE GRADE PLANE THAT ARE FULLY SUPPORTED ON EARTH OR ROCK WHERE:
     - THE FOOTINGS SUPPORT WALLS OF LIGHT-FRAME CONSTRUCTION.
     - THE FOOTINGS ARE DESIGNED IN ACCORDANCE WITH TABLE 1809.7 OF THE BUILDING CODE AS LISTED IN 1.0.
     - THE STRUCTURAL DESIGN OF THE FOOTING IS BASED ON A SPECIFIED COMPRESSIVE STRENGTH, f'c, NOT MORE THAN 2,500 POUNDS PER SQUARE INCH (PSI) (17.2 MPA), REGARDLESS OF THE COMPRESSIVE STRENGTH SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS OR USED IN THE FOOTING CONSTRUCTION.
     - NONSTRUCTURAL CONCRETE SLABS SUPPORTED DIRECTLY ON THE GROUND, INCLUDING PRESTRESSED SLABS ON GRADE, WHERE THE EFFECTIVE PRESTRESS IN THE CONCRETE IS LESS THAN 150 PSI (1.03 MPA).
     - CONCRETE FOUNDATION WALLS CONSTRUCTED IN ACCORDANCE WITH TABLE 1807.1.6.2 OF THE BUILDING CODE AS LISTED IN 1.0.
     - CONCRETE PATIOS, DRIVEWAYS AND SIDEWALKS, ON GRADE.

   A. WELDING OF REINFORCING BARS: SPECIAL INSPECTIONS OF WELDING AND QUALIFICATIONS OF SPECIAL INSPECTORS FOR REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF AWS D1.4 FOR SPECIAL INSPECTION AND OF AWS D1.4 FOR SPECIAL INSPECTOR QUALIFICATION.

   B. MATERIAL TESTS: IN THE ABSENCE OF SUFFICIENT DATA OR DOCUMENTATION PROVIDING EVIDENCE OF CONFORMANCE TO QUALITY STANDARDS FOR MATERIALS IN CHAPTERS 19 AND 20 OF ACI 318, THE BUILDING OFFICIAL SHALL REQUIRE TESTING OF MATERIALS IN ACCORDANCE WITH THE APPROPRIATE STANDARDS AND CRITERIA FOR THE MATERIAL IN CHAPTERS 19 AND 20 OF ACI 318.

2. SOILS: SPECIAL INSPECTIONS AND TESTS OF EXISTING SITE SOIL CONDITIONS, FILL PLACEMENT AND LOAD-BEARING REQUIREMENTS SHALL BE PERFORMED IN ACCORDANCE WITH THIS SECTION AND TABLE 1705.6 OF THE BUILDING CODE AS LISTED IN 1.0. THE APPROVED GEOTECHNICAL REPORT AND THE CONSTRUCTION DOCUMENTS PREPARED BY THE REGISTERED DESIGN PROFESSIONALS SHALL BE USED TO DETERMINE COMPLIANCE. DURING FILL PLACEMENT, THE SPECIAL INSPECTOR SHALL VERIFY THAT PROPER MATERIALS AND PROCEDURES ARE USED IN ACCORDANCE WITH THE PROVISIONS OF THE APPROVED GEOTECHNICAL REPORT.

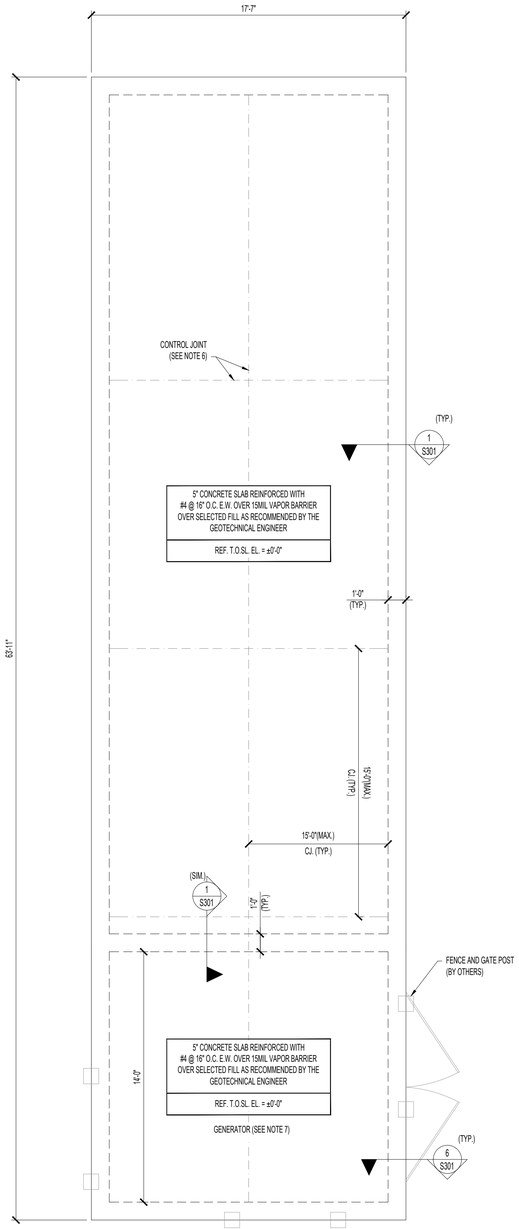
   EXCEPTIONS: WHERE SECTION 1803 OF THE BUILDING CODE AS LISTED IN 1.0 DOES NOT REQUIRE REPORTING OF MATERIALS AND PROCEDURES FOR FILL PLACEMENT, THE SPECIAL INSPECTOR SHALL VERIFY THAT THE IN-PLACE DRY DENSITY OF THE COMPACTED FILL IS NOT LESS THAN 90 PERCENT OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT DETERMINED IN ACCORDANCE WITH ASTM D1557.

1705.4 Masonry Construction

MATERIAL / ACTIVITY	SERVICE	EXTENT
MINIMUM VERIFICATION REQUIREMENTS		
(A) Level 1, 2 and 3 Quality Assurance:		
1. Prior to construction, verification of compliance of submittals	Submittal Review	Prior to Construction
(B) Level 2 & 3 Quality Assurance:		
1. Prior to construction verification of fm and f'_{AAC} except where specifically required by the code	Testing by unit strength method or prism test method	Prior to Construction
2. During construction, verification of Slump Flow and Visual Stability Index (VSI) when self-consolidating grout is delivered to project site.	Testing by unit strength method or prism test method	Periodic
(C) Level 3 Quality Assurance:		
1. During construction, verification of fm and f'_{AAC} for every 5,000 SF.	Testing by unit strength method or prism test method	Periodic
2. During construction, verification of proportions of materials as delivered to the project site for premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout.	Field inspection	Periodic
MINIMUM SPECIAL INSPECTION REQUIREMENTS		
(D) Levels 2 and 3 Quality Assurance:		
1. As masonry construction begins, verify that the following		
a. Proportions of the site-prepared mortar	Field inspection	Periodic
b. Grade and size of prestressing tendons and anchorages	Field Inspection	Periodic
c. Grade, type, and size of reinforcement, anchor bolts, and prestressing tendons and anchorages	Field Inspection	Periodic
d. Prestressing technique	Field Inspection	Periodic
e. Properties of thin-bed mortar for AAC masonry	Field Inspection	Level 2 - Continuous[b] Level 2 - Periodic[c]
(b) Required for the first 5,000 square feet (c) Required after the first 5,000 square feet		Level 3 - Continuous
f. Sample panel construction	Field Inspection	Level 2 - Periodic Level 3 - Continuous
2. Prior to grouting, verify that the following are in		
a. Grout space	Field Inspection	Level 2 - Periodic Level 3 - Continuous
b. Placement of prestressing tendons and anchorages	Field Inspection	Periodic
c. Placement of reinforcement, connectors, and anchor bolts	Field Inspection	Level 2 - Periodic Level 3 - Continuous
d. Proportions of site-prepared grout and prestressing grout for bonded tendons	Field Inspection	Periodic
3. Verify compliance of the following during construction:		
a. Materials and procedures with the approved submittals	Field Inspection	Periodic
b. Placement of masonry units and mortar joint construction	Field Inspection	Periodic
c. Size and location of structural members	Field Inspection	Periodic Level 2 - Periodic
d. Type, size, location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction	Field Inspection	Level 3 - Continuous
e. Welding of reinforcement	Field Inspection	Continuous
f. Preparation, construction, and protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F)	Field Inspection	Periodic
g. Application and measurement of prestressing force	Field testing	Continuous
h. Placement of grout and prestressing grout for bonded tendons is in compliance	Field Inspection	Continuous
i. Placement of AAC masonry units and construction of thin-bed mortar joints	Field Inspection	Level 2 - Continuous[b] Level 2 - Periodic[c]
(b) Required for the first 5,000 square feet (c) Required after the first 5,000 square feet		Level 3 - Continuous
4. Observe preparation of grout specimens, mortar specimens, and/or prisms	Field Inspection	Level 2 - Periodic Level 3 - Continuous

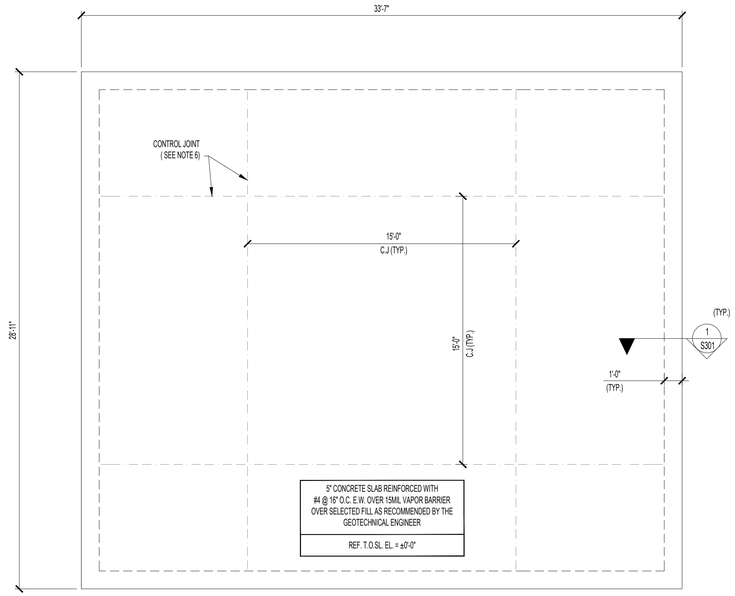
1705.3 Concrete Construction

MATERIAL / ACTIVITY	SERVICE	EXTENT	REFERENCE STANDARD	IBC REFERENCE
1. Inspection and placement verification of reinforcing steel and prestressing tendons.	Shop (3) and field inspection	Periodic	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	-
2. Reinforcing bar welding:				
a. Verification of weldability of bars other than ASTM A706.		Periodic	AWS D1.4 ACI 318: 26.6.4	-
b. Inspection of single-pass fillet welds 5/16 or less in size.		Periodic		
c. Inspection of all other welds.		Continuous		
3. Inspection of anchors cast in concrete.	Shop (3) and field inspection	Periodic	ACI 318: 17.8.2	-
4. Inspection of anchors post-installed in hardened concrete members per research reports, or, if no specific requirements are provided, requirements shall be provided by the registered design professional and approved by the building official, including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, anchor embedment and tightening torque	Field inspection	Periodic or as required by the research report issued by an approved source	ACI 318: 17.8.2.4 ACI 318: 17.8.2	-
a. Adhesive anchors installed in horizontal or upward-inclined orientation that resist sustained tension loads.		Continuous		
b. Mechanical and adhesive anchors note defined in 4a.		Periodic		
5. Verify use of approved design mix	Shop (3) and field inspection	Periodic	ACI 318: Ch. 19, 26.4.3, 26.4.4



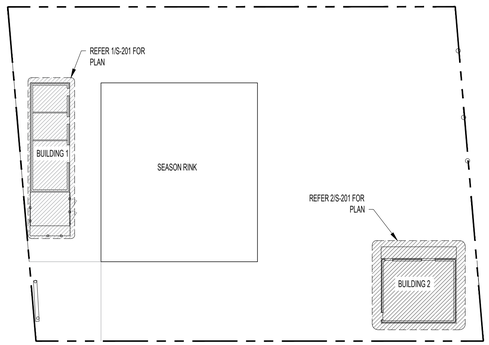
1 BUILDING 1 FOUNDATION PLAN (T/SLAB EL. = SEE PLAN)

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



2 BUILDING 2 FOUNDATION PLAN (T/SLAB EL. = SEE PLAN)

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



3 KEY PLAN

SCALE: N.T.S.

NOTES:

1. SEE S-101 & S-102 FOR GENERAL NOTES.
2. SEE S-103 FOR SPECIAL INSPECTION NOTES.
3. SEE S-301 FOR FOUNDATION DETAILS.
4. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
5. THE SUBGRADE SHALL BE PROOFROLLED AND SOFT SOILS SHALL BE REMOVED AND REPLACED AS REQUIRED UNDER THE SUPERVISION OF A QUALIFIED GEOTECHNICAL ENGINEER.
6. CONTROL JOINTS ARE SHOWN IN SLAB ON GRADE TO MINIMIZE COSMETIC SHRINKAGE CRACKS. SPACING OF CONTROL JOINT IN SLAB IS 15'-0" (MAX.) O.C. (SEE GENERAL NOTES).
7. EQUIPMENT SHOWN ON THE DRAWING ARE APPROXIMATE LOCATION SHALL COORDINATE WITH MEP CONTRACTOR.

OFFICIAL SEAL

CLIENT

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REV	REV DESCRIPTION	DATE
-	ISSUED FOR PERMIT	03/23/2026

STATE OF TEXAS
KETAN PATEL
129379
LICENSED
PROFESSIONAL ENGINEER

EXP: 12/31/2026
DATE: 03/23/2026

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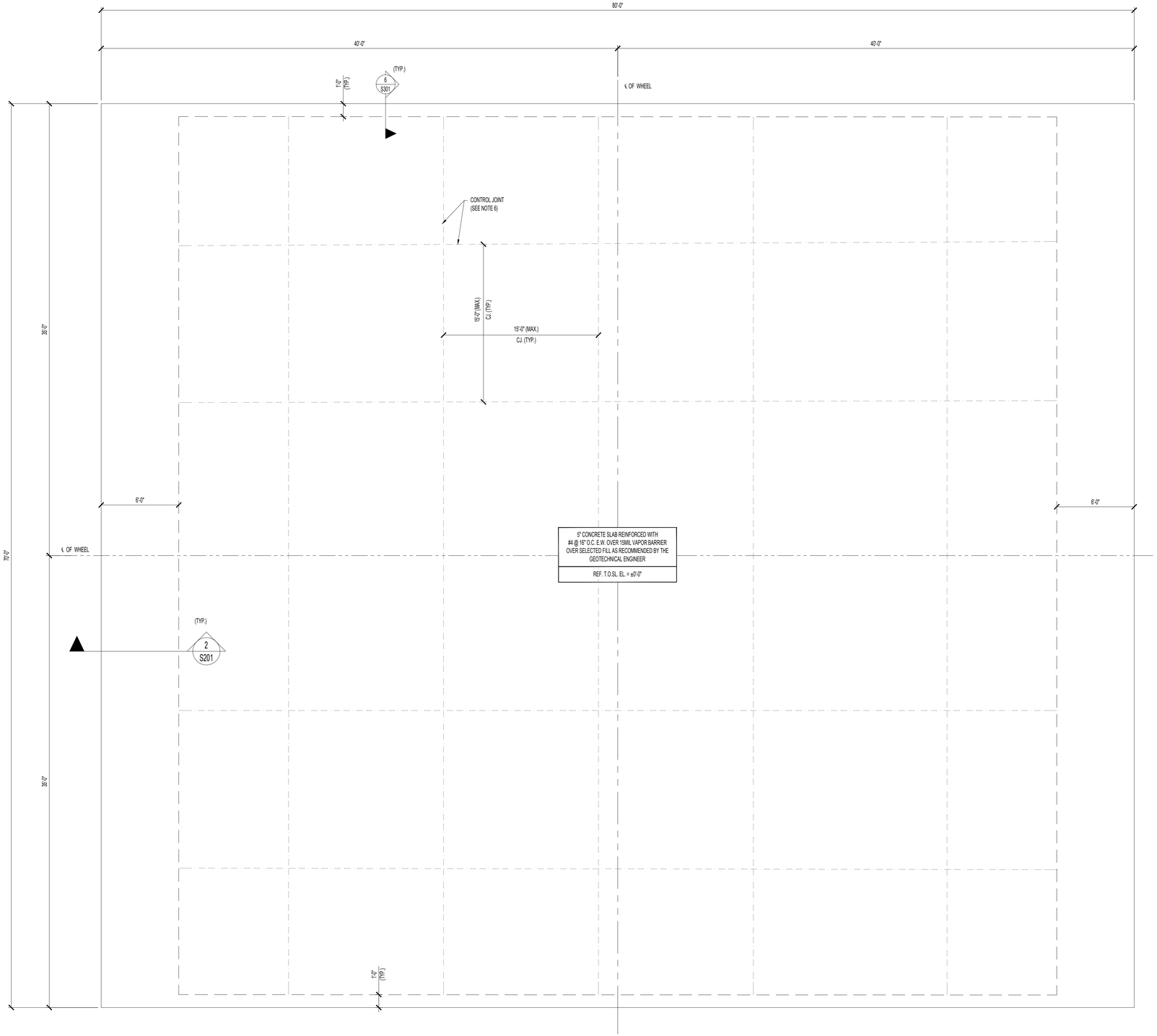
Drawn / Designed by:	GV/RU
Reviewed by:	RU
Approved by:	KP
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

BUILDING FOUNDATION PLAN

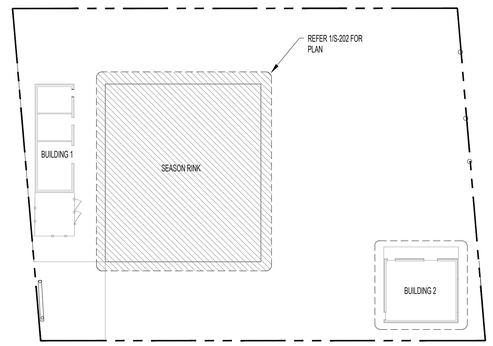
SHEET NUMBER:

S-201



1 SEASON RINK FOUNDATION PLAN (T/SLAB EL. = SEE PLAN)

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



2 KEY PLAN

SCALE: N.T.S.

NOTES:

1. SEE S-101 & S-102 FOR GENERAL NOTES SEE S-103 FOR SPECIAL INSPECTION NOTES.
2. SEE S-103 FOR SPECIAL INSPECTION NOTES.
3. SEE S-301 FOR FOUNDATION DETAILS.
4. THE CONTRACTOR SHALL VERIFY AT SITE ALL DATA, DIMENSIONS, GRADES, ELEVATIONS ETC. OF THE EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR RECTIFYING ALL COORDINATION OR OTHER ISSUES CREATED BY HIS FAILURE TO DO THIS FIELD VERIFICATION.
5. THE SUBGRADE SHALL BE PROOFROLLED AND SOFT SOILS SHALL BE REMOVED AND REPLACED AS REQUIRED UNDER THE SUPERVISION OF A QUALIFIED GEOTECHINICAL ENGINEER.
6. CONTROL JOINTS ARE SHOWN IN SLAB ON GRADE TO MINIMIZE COSMETIC SHRINKAGE CRACKS. SPACING OF CONTROL JOINT IN SLAB IS 15'-0" (MAX.) O.C. (SEE GENERAL NOTES).

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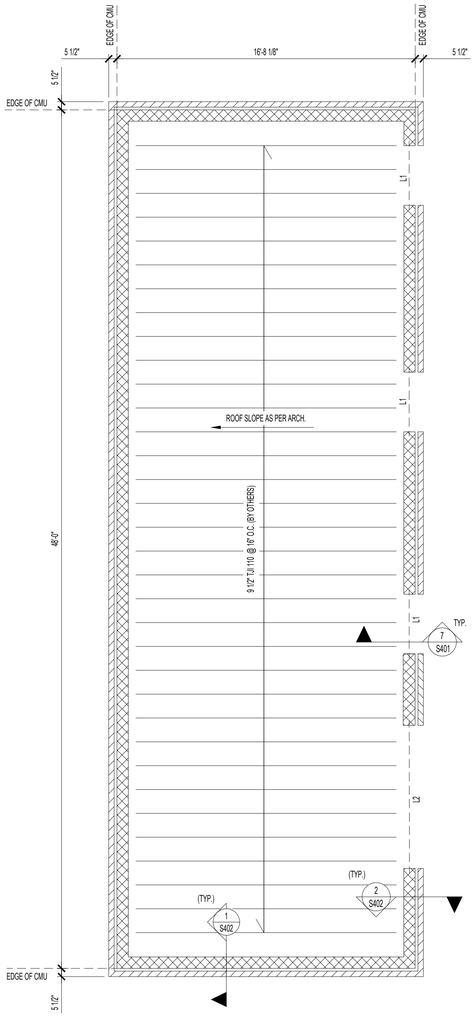
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Reviewed by:	RU
Approved by:	KP
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

SEASON RINK FOUNDATION

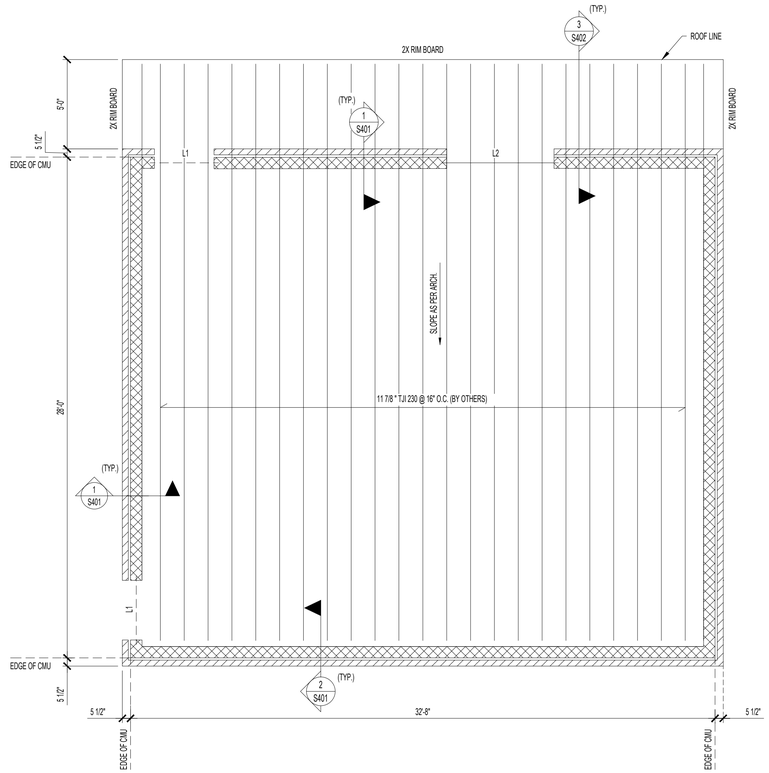
SHEET NUMBER:

S-202



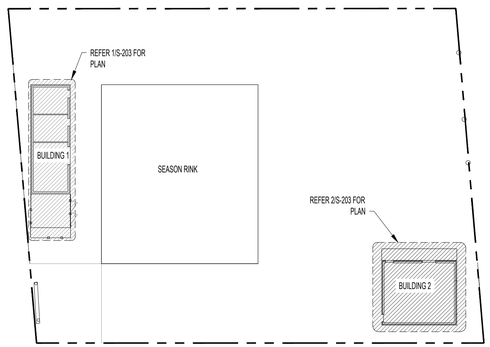
1 ROOF FRAMING PLAN (JOIST BRG. EL. = +13' - 5 1/2" (U.N.O.))

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



2 ROOF FRAMING PLAN (JOIST BEARING (EL. = +13' - 5 1/2" (U.N.O.))

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



3 KEY PLAN

SCALE: N.T.S.

LEGENDS:

- BRICK VENEER COVERING (SEE ARCH.)
- MSW-1, INDICATES 8" MASONRY BEARING/SHEAR WALL (SEE S-401 FOR DETAILS)
- INDICATES LINTEL (SEE ARCH. FOR ELEVATION) (SEE 1/S-401 FOR DETAILS)

NOTES:

1. SEE S-101 & S-102 FOR GENERAL NOTES.
2. SEE S-103 FOR SPECIAL INSPECTION NOTES.
3. SEE S-301 FOR FOUNDATION DETAILS.
4. SEE S-401 FOR WOOD AND MASONRY DETAILS.
5. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
6. THE SUBGRADE SHALL BE PROOFROLLED AND SOFT SOILS SHALL BE REMOVED AND REPLACED AS REQUIRED UNDER THE SUPERVISION OF A QUALIFIED GEOTECHNICAL ENGINEER.
7. CONTROL JOINTS ARE SHOWN IN SLAB ON GRADE TO MINIMIZE COSMETIC SHRINKAGE CRACKS. SPACING OF CONTROL JOINT IN SLAB IS 12'-0" O.C. (SEE GENERAL NOTES).
8. OPENINGS SHOWN ON THE DRAWING ARE APPROXIMATE LOCATION. SEE ARCHITECTURAL DRAWINGS FOR WALL LOCATIONS AND DOOR OPENINGS.
9. SEE ARCHITECTURAL DRAWINGS FOR REQUIRED SLOPE FOR THE ROOF.
10. LX INDICATES LINTEL (SEE ARCH. FOR ELEVATION) (SEE 1/S-401 FOR DETAILS)

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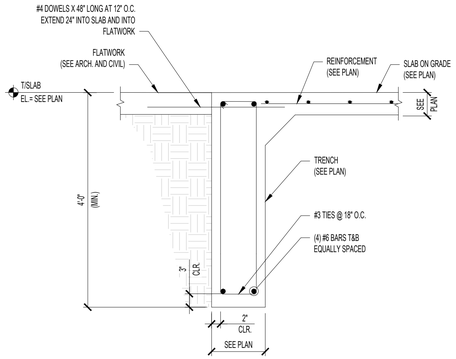
Drawn / Designed by:	GV/RU
Reviewed by:	RU
Approved by:	KP
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

BUILDING ROOF PLAN

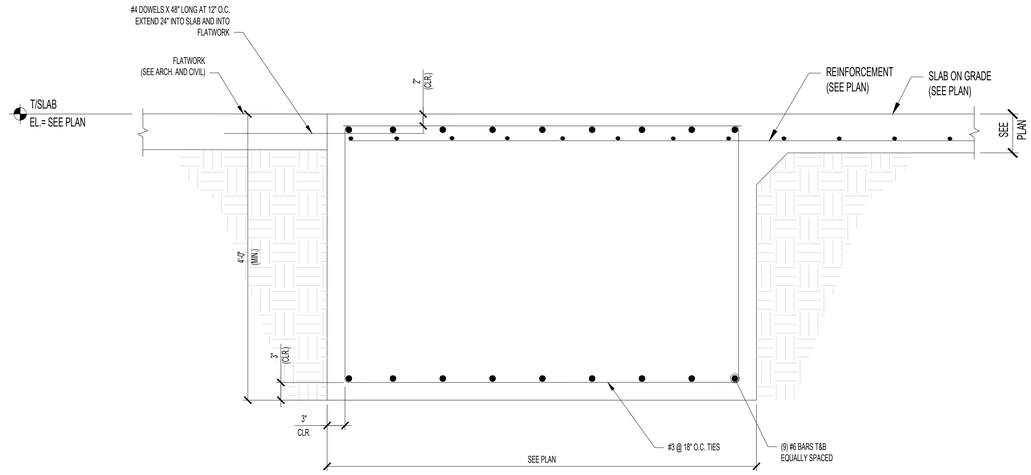
SHEET NUMBER:

S-203



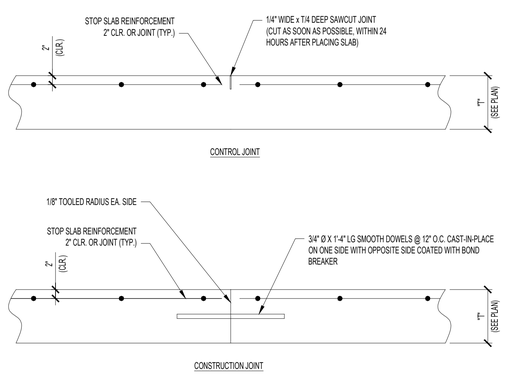
6 TYPICAL FOUNDATION SLAB DETAIL

SCALE: 3/4" = 1'-0"



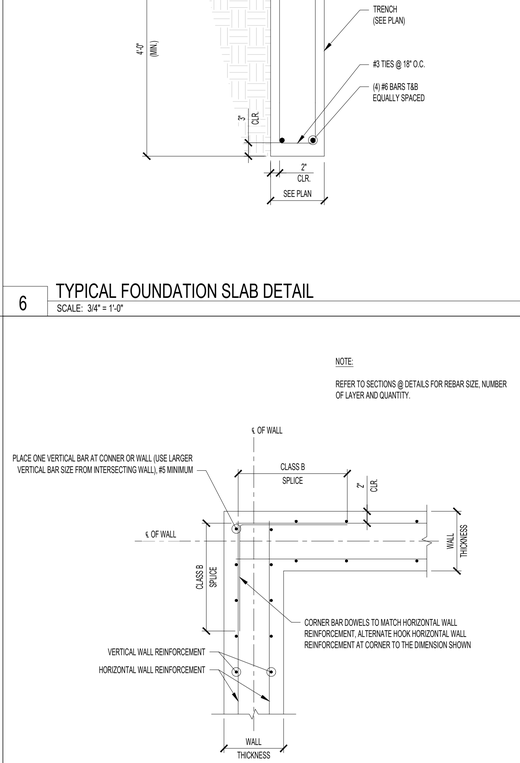
5 TYPICAL FOUNDATION SLAB DETAIL

SCALE: 1" = 1'-0"



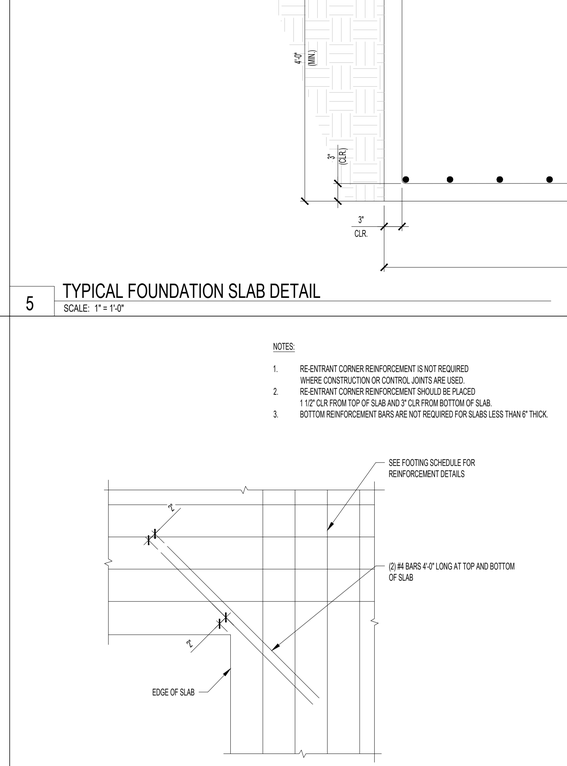
4 TYPICAL SLAB ON GRADE DETAIL

SCALE: N.T.S.



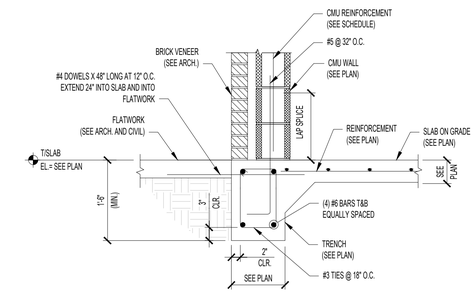
3 REINFORCEMENT SPLICE DETAIL AT CORNER WALL

SCALE: N.T.S.



2 TYPICAL SLAB RE-ENTRANT CORNER REINFORCEMENT

SCALE: N.T.S.



1 TYPICAL FOUNDATION DETAIL

SCALE: 3/4" = 1'-0"

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Project Number:	**KPJ-TX-25-0003**

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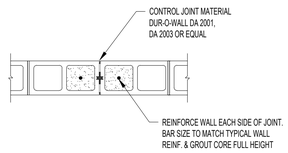
FOUNDATION DETAILS

SHEET NUMBER:

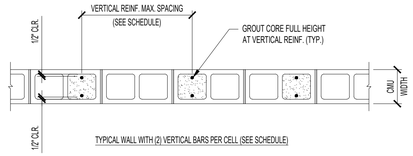
S-301

MASONRY CONTROL JOINT NOTES:

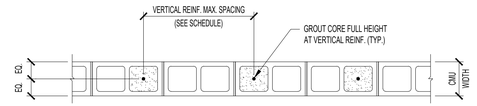
1. UNLESS NOTED OTHERWISE, THE MAXIMUM SPACING OF CONTROL JOINTS = 25'-0".
2. DISCONTINUE HORIZONTAL JOINT REINF. AT CONTROL JOINTS.
3. FOR BOND BEAM, STOP REINF. 2" CLEAR FROM CONTROL JOINT. ADD 1'0 DOWEL 3'-0" LONG. BREAK BOND WITH MASTIC OR GREASE FOR 18" ON ONE SIDE OF JOINT.
4. CONTROL JOINTS NOT REQUIRED FOR WALLS LESS THAN 25'-0" IN LENGTH.



TYPICAL CONTROL JOINT DETAIL



TYPICAL WALL WITH (2) VERTICAL BARS PER CELL (SEE SCHEDULE)

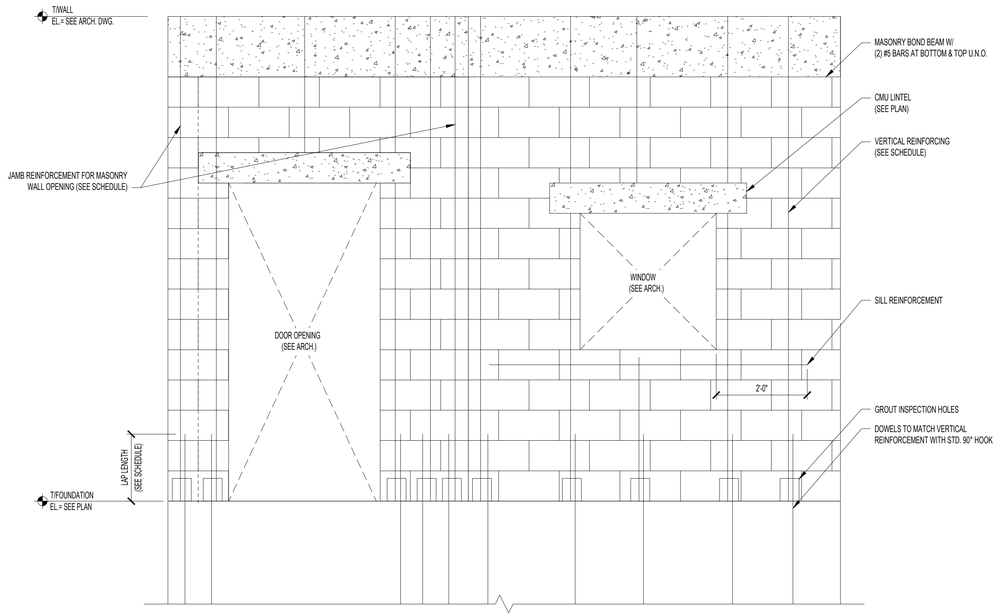


TYPICAL WALL WITH (1) VERTICAL BAR PER CELL (SEE SCHEDULE)

MASONRY WALL REINFORCING SCHEDULE					
MASONRY WALL TYPE	NOMINAL CMU WIDTH	VERTICAL REINFORCEMENT		HORIZONTAL REINFORCEMENT	
		REINFORCEMENT	MAX. SPACING	REINFORCEMENT	MAX. SPACING
MSW-1	8"	(1) - #5	32" O.C.	(2) W2.1	16" O.C.

6 MASONRY WALL SCHEDULE AND TYPICAL DETAILS

SCALE: N.T.S.

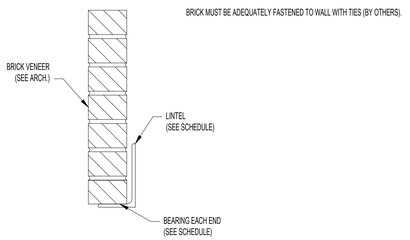


5 TYPICAL MASONRY WALL REINFORCEMENT ELEVATION (SINGLE STOREY)

SCALE: N.T.S.

NOTE:

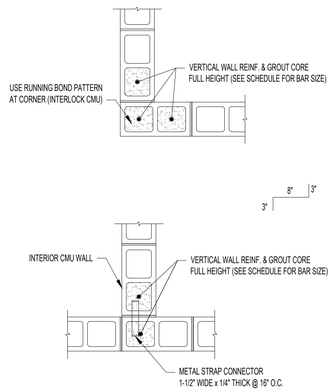
BRICK MUST BE ADEQUATELY FASTENED TO WALL WITH TIES (BY OTHERS).



LINTEL CHART FOR 4" BRICK WYTHE (NON-BEARING)				
STEEL ANGLE SECTION	NORMINAL DEPTH	MASONRY OPENING (FEET) FROM UP TO & INCLUDING	BEARING EACH END	L/600
3 1/2" X 3 1/2" X 5/16"		0 TO 5'-0"	4"	0.10"
5" X 3 1/2" X 5/16" (LLV)		5'-1" TO 7'-0"	6"	0.14"
6" X 3 1/2" X 5/16" (LLV)		7'-1" TO 8'-0"	6"	0.18"
6" X 4" X 5/16" (LLV)		8'-1" TO 10'-0"	6"	0.20"

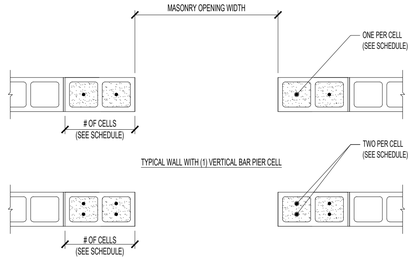
4 TYPICAL BRICK VENEER LINTEL SUPPORTED BY BRICK VENEER

SCALE: N.T.S.



3 TYPICAL CMU WALL INTERSECTION & CORNER

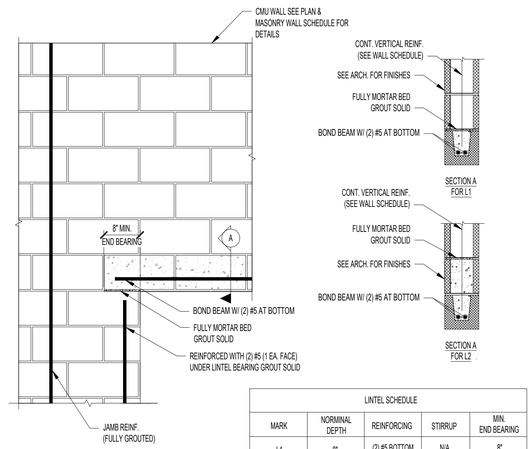
SCALE: N.T.S.



MASONRY WALL JAMB REINFORCING SCHEDULE			
MASONRY WALL TYPE	MASONRY OPENING WIDTH	VERTICAL REINFORCEMENT	
		REINFORCEMENT	# OF CELLS
MSW-1	UP TO 3'-4"	(1) - #5	2 CELLS

2 MASONRY WALL JAMB REINFORCEMENT SCHEDULE & DETAILS

SCALE: N.T.S.



LINTEL SCHEDULE				
MARK	NORMINAL DEPTH	REINFORCING	STIRRUP	MIN. END BEARING
L1	8"	(2) #5 BOTTOM	N/A	8"
L2	16"	(2) #5 BOTTOM	N/A	8"

1 TYPICAL LINTEL DETAIL

SCALE: 3/4" = 1'-0"

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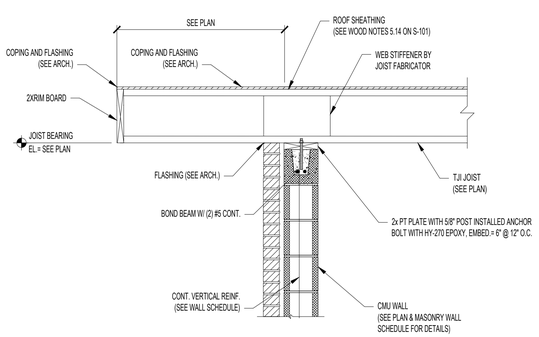
Drawn / Designed by:	GV/RU
Reviewed by:	RU
Approved by:	KP
Project Number:	**KPJ-TX-25-0003**

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WOOD DETAILS

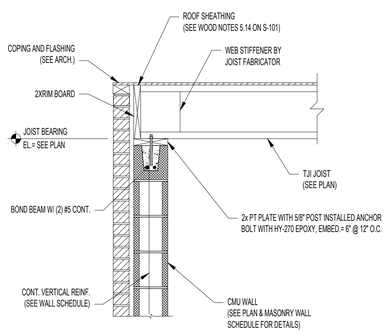
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S-401



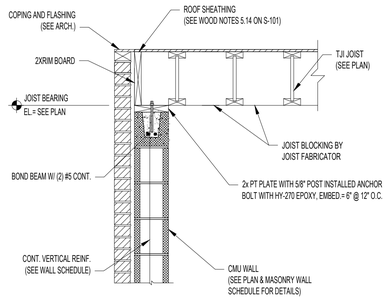
3 TYPICAL WOOD JOIST PERPENDICULAR TO CMU WALL

SCALE: 3/4" = 1'-0"



2 TYPICAL WOOD JOIST PERPENDICULAR TO CMU WALL

SCALE: 3/4" = 1'-0"



1 TYPICAL WOOD JOIST PARALLEL TO CMU WALL

SCALE: 3/4" = 1'-0"

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Approved by:	KP
Project Number:	**KPJ-TX-25-0003**

SHEET NAME:

DETAILS

SHEET NUMBER:

S-402

MEP GENERAL CONDITIONS

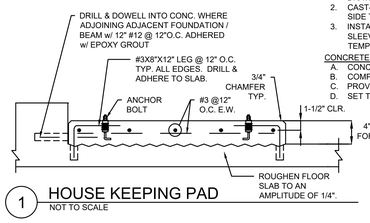
1. IT IS THE INTENT OF THE CONTRACT DOCUMENTS TO PROVIDE AN INSTALLATION COMPLETE IN EVERY RESPECT. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL INCLUDE ALL LABOR, MATERIALS, AND SUPERVISION ESSENTIAL TO PROVIDE COMPLETE FUNCTIONING SYSTEMS AS DESCRIBED IN THE CONTRACT DOCUMENTS. IN THE EVENT THAT ADDITIONAL DETAILS OR SPECIAL CONSTRUCTION IS REQUIRED FOR WORK INDICATED, 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 AT NO EXPENSE TO THE OWNER.
2. DEVIATIONS TO THE INTENDED DESIGN OR THE SCOPE OF THE WORK MUST BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING WORK. FAILURE TO DO SO MAY RESULT IN THE WORK TO BE REMOVED AT NO COST TO THE OWNER.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL CODES, STANDARDS, AND AMENDMENTS AND/OR OTHER AUTHORITIES THAT MAY HAVE JURISDICTION PERTAINING TO THE WORK. IN ADDITION, ALL WORK SHALL CONFORM TO THE STANDARDS AND PRACTICES OF THE OWNER.
4. ALL EQUIPMENT INSTALLED ON THIS PROJECT SHALL BE NEW AND UNUSED UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL REMOVE ALL SHIPPING LABELS, DIRT, PAINT SPOTS, GREASE, AND STAINS FROM ALL EQUIPMENT. DEBRIS SHALL BE REMOVED AS IT ACCUMULATES. UPON COMPLETION OF HIS WORK, THE CONTRACTOR SHALL CLEAN ALL EQUIPMENT. NO LOOSE PARTS OR SCRAPS OF EQUIPMENT SHALL BE LEFT ON THE PREMISES.
5. ALL MATERIALS SALVAGED FOR THE OWNER SHALL BE STORED BY CONTRACTOR UNTIL END OF PROJECT THEN RETURNED TO THE OWNER.
6. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE AS DEFINED BY THE CONTRACT. THE CONTRACTOR SHALL REPAIR OR REPLACE, AT HIS/HER OWN EXPENSE WHEN ORDERED TO DO SO, ALL WORK THAT MAY DEVELOP DEFECTS IN MATERIAL OR WORKMANSHIP WITHIN SAID PERIOD OF TIME. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS FOR SERVICE INTENDED, AS INTERPRETED BY THE ENGINEER. THE INSTALLATION OF ALL EQUIPMENT SHALL BE MADE BY EXPERIENCED CRAFTSMAN IN A NEAT, WORKMANLIKE MANNER. ALL MATERIALS, TOOLS, COSTS, AND SERVICES NECESSARY TO COMPLETELY INSTALL ALL WORK SHALL BE PROVIDED BY THE CONTRACTOR.
7. ALL SAFETY EXPOSURES OR VIOLATIONS SHALL BE RECTIFIED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PROTECTION OF PERSONS AND PROPERTY, PROVIDING SAFE WORKING CONDITIONS THROUGHOUT THE WORK PROGRESS, PROVIDING TEMPORARY COVERINGS FOR OPENINGS THROUGH WALLS OR FLOORS, AND PROVIDING TEMPORARY BARRIERS, PARTITIONS AND/OR DUST BARRIERS WHERE REQUIRED TO MAINTAIN OSHA AND THE OWNER'S SAFETY STANDARDS AND TO PREVENT DAMAGE TO PROPERTY. ALL AREAS ADJACENT TO THE CONSTRUCTION AREA OR AFFECTED BY THE CONSTRUCTION MUST BE PROTECTED FROM DAMAGE, CLEANED, AND RESTORED TO THE ORIGINAL CONDITION AT NO ADDITIONAL EXPENSE TO THE OWNER. THE CONTRACTOR SHALL PROVIDE PROTECTIVE CLOTHING AND EYEWEAR FOR ALL PERSONNEL WHO ARE REQUIRED TO HANDLE HAZARDOUS CHEMICAL PRODUCTS OR WORK IN HAZARDOUS LOCATIONS.
8. DO NOT DISTURB ASBESTOS CONTAINING MATERIALS (ACM). IF ACM ARE ENCOUNTERED OR SUSPECTED DURING THE COURSE OF WORK, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE OWNER AND ACCOMMODATE FURTHER NECESSARY ABATEMENT BY THE OWNER. ASBESTOS ABATEMENT SHALL OCCUR PRIOR TO CONTRACTOR COMMENCING OR CONTINUING DEMOLITION OR CONSTRUCTION OPERATIONS.
9. CONTRACTOR SHALL DIRECT ALL QUESTIONS TO THE OWNER. THE CONTRACTOR SHALL VERIFY ALL WORKING CONDITIONS SUCH AS STARTING TIME, NOISE AND VIBRATION LIMITATIONS, CONFINED SPACE, ETC. THROUGH THE OWNER AND APPROVAL SHALL BE RECEIVED TO START WORK.
10. THE CONTRACTOR SHALL VISIT THE JOBSITE AND VERIFY THE SCOPE OF WORK REQUIRED INCLUDING ALL EXISTING CONDITIONS, LOCATIONS, DIMENSIONS, AND QUANTITIES AS SHOWN AND NOTED ON THE DRAWINGS AND THE EXTENT AND EFFECT OF EXISTING SYSTEMS. NOTIFY THE OWNER IF ANY OF THE WORK CANNOT BE SAFELY ACCESSED.
11. THE CONTRACTOR SHALL ENSURE FULL COORDINATION WITH OTHER TRADES AND CONTRACTORS TO ACCOMPLISH THE WORK AS SHOWN AND NOTED IN THESE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL COMPARE THE DRAWINGS OF OTHER TRADES AND REPORT ANY DISCREPANCIES TO THE OWNER.
12. NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY OF THE DRAWING. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND SHALL PERFORM FIELD MEASUREMENTS PRIOR TO FABRICATION AND/OR PURCHASE OF ANY MATERIAL. CONTACT THE OWNER SHOULD EXISTING CONDITIONS BE DIFFERENT FROM THE DESIGN DRAWINGS. CONFLICTS ARISING DUE TO LACK OF COORDINATION SHALL BE THE RESPONSIBILITY AND AT THE EXPENSE OF THE CONTRACTOR.
13. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, LICENSES, CLEARANCES AND CERTIFICATES FROM THE OWNER AND LOCAL AUTHORITIES HAVING JURISDICTION AS REQUIRED PRIOR TO THE COMMENCEMENT OF THE WORK.
14. THE CONTRACTOR SHALL TRAIN HIS/HER EMPLOYEES AND SUBCONTRACTORS AS REQUIRED BY THE OWNER, IN THE RECOGNITION AND AVOIDANCE OF UNSAFE CONDITIONS, AND IN THE REGULATIONS AND HAZARDS WHICH APPLY TO THE AREA IN WHICH THE WORK WILL TAKE PLACE.
15. ANY REQUIRED CHANGES TO THE DRAWINGS RESULTING FROM THE ACCEPTANCE OF ALTERNATIVES AND/OR SUBSTITUTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL.
16. SUBMITTALS
    - A. ALL SUBMITTALS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO SUBMITTING TO THE ENGINEER. ALL SUBMITTALS NOT REVIEWED BY THE CONTRACTOR WILL BE RETURNED WITHOUT REVIEW. AFTER REVIEW HAS BEEN COMPLETED, SUBMIT A COPY OF EACH SUBMITTAL TO THE OWNER WITH THE APPROVAL SEAL OF THE ENGINEER AND THE CONTRACTOR. SUBMITTALS SHALL BE APPROVED PRIOR TO STARTING ANY WORK.
    - B. SUBMIT MATERIAL SAFETY DATA SHEETS AND MANUFACTURER'S CURRENT RECOMMENDED METHOD OF INSTALLATION TO THE OWNER FOR ALL MATERIALS USED TO PERFORM THE WORK INDICATED BY THESE DOCUMENTS. ALL CHEMICALS OR CHEMICAL COMPOUNDS PROPOSED FOR USE ON THE PROPERTY INCLUDING, BUT NOT LIMITED TO PAINT THINNERS, SOLVENTS, ADHESIVES, SEALANTS, CLEANING COMPOUNDS, EPOXIES, ETC. MUST BE APPROVED BY THE OWNER.
    - C. PROVIDE PRODUCT DATA SUBMITTALS ON ALL MAJOR EQUIPMENT, COMPONENTS, AND MATERIALS SPECIFIED IN THESE PLANS FOR ENGINEER'S AND OWNER'S REVIEW AND ACCEPTANCE PRIOR TO INSTALLATION. SUBMIT CATALOG DATA SHOWING MANUFACTURER'S NAME AND CONTACT INFORMATION, ALL STANDARD FEATURES, AMPERAGE, VOLTAGE, A/C RATINGS, DIMENSIONS, WEIGHTS, LISTINGS & PRODUCT LABELS, MATERIAL TYPES, FINISHES AND CLEARLY INDICATING WHICH OPTIONAL FEATURES WILL BE PROVIDED. EACH SUBMITTAL SHALL INCLUDE A COPY OF THE RELEVANT EQUIPMENT OR MATERIALS SCHEDULE ON THE PLANS AND SPECIFICATION SECTION WITH EACH LINE ITEM MARKED COMPLIES OR DOES NOT COMPLY WITH THE REQUIREMENTS.
        - C1. WHERE MULTIPLE SIZES ARE LISTED, INDICATE SIZES TO BE USED.
        - C2. WHERE MULTIPLE PRODUCTS ARE SHOWN ON THE SAME PAGE, INDICATE WHICH PRODUCTS TO BE USED.
        - C3. INCLUDE ALL RELEVANT ELECTRICAL DIAGRAMS INCLUDING SCHEMATIC AND INTERCONNECTION DIAGRAMS FOR POWER, SIGNAL, AND CONTROL WIRING.
    - D. PROVIDE SHOP DRAWINGS SHOWING ALL DUCTWORK, PIPING AND CONDUIT 2" AND ABOVE, AND ALL MAJOR EQUIPMENT AND HOUSEKEEPING PADS. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR OR MATERIAL SUPPLIER, IN LIEU OF THE PREPARATION OF SHOP DRAWINGS IS FORBIDDEN. SHOP DRAWINGS RECEIVED BEARING THE ENGINEER'S TITLE AND SEAL SHALL BE PROMPTLY REJECTED.
    - E. ALL SUBMITTALS SHALL BE PROVIDED IN PDF FORMAT.
17. SHOULD ANY ERRORS, OMISSIONS, CONFLICTS, OR AMBIGUITIES EXIST IN THE DRAWINGS, THE CONTRACTOR SHALL BRING THESE TO THE ATTENTION OF THE OWNER IMMEDIATELY FOR ADJUSTMENT IN WRITING BEFORE SIGNING THE CONTRACT OR PROCEEDING WITH THE WORK. OTHERWISE, HE/SHE SHALL AT HIS/HER OWN EXPENSE, SUPPLY THE PROPER MATERIALS AND LABOR TO MAKE GOOD ANY DAMAGE OR DEFECT CAUSED BY SUCH UNINTENTIONAL ERROR.
18. CONTRACTOR SHALL CHECK ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS FOR ACCURACY , AND CONFIRM THAT THE WORK IS BUILDABLE AS SHOWN AND MEETS ALL APPLICABLE CODES BEFORE PROCEEDING WITH CONSTRUCTION. IF THERE ARE ANY QUESTIONS REGARDING THESE OR OTHER COORDINATION ISSUES, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE OWNER BEFORE PROCEEDING WITH THE WORK IN QUESTION OR RELATED WORK.
19. THE CONTRACTOR SHALL NOT FABRICATE OR INSTALL ITEMS AS SHOWN ON THE DRAWINGS IF THERE ARE DISCREPANCIES OR CONFLICTS BETWEEN THE EXISTING CONDITIONS AND THE INFORMATION SHOWN ON THE DRAWINGS UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED. PRIOR TO FABRICATION OR INSTALLATION, THE CONTRACTOR SHALL IMMEDIATELY CALL SUCH DISCREPANCIES OR CONFLICTS TO THE ATTENTION OF THE OWNER AND THE ENGINEER.
20. ALL WORK NOTED "NIC" OR "NOT IN CONTRACT" IS TO BE ACCOMPLISHED BY ANOTHER CONTRACTOR AND IS NOT TO BE PART OF THE CONSTRUCTION AGREEMENT.
21. IN CASES OF A DIFFERENCE BETWEEN THE MINIMUM REQUIREMENTS OF THE VARIOUS LAWS, CODES, AUTHORITIES, AND THE DOCUMENTS; THE WORK SHALL MEET THE GREATER OR MORE STRINGENT REQUIREMENTS.
22. THE SEQUENCE OF CONSTRUCTION AND ANY SERVICE OUTAGES SHALL BE SCHEDULED AND COORDINATED WITH THE OWNER.
23. WORK AREAS SHALL BE KEPT CONTINUOUSLY, AT ALL TIMES, FREE OF DEBRIS AND NON-HAZARDOUS MATERIAL TO THE SATISFACTION OF THE OWNER. ALL EXISTING PIPING AND CONDUITS SHALL HAVE TEMPORARY PROTECTION DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE STORAGE OF MATERIALS, PARKING OF VEHICLES, AND RESTRICTIONS OF WORK WITH THE OWNER. AFTER PROJECT COMPLETION, THE SITE SHALL BE CLEANED UP AND RESTORED TO ITS ORIGINAL CONDITION OR BETTER PRIOR TO THE START OF THE PROJECT TO THE SATISFACTION OF THE OWNER.
24. THE DRAWINGS ARE DIAGRAMMATIC ONLY AND DO NOT GIVE FULLY DIMENSIONED LOCATIONS OF VARIOUS ELEMENTS OF WORK OR INDICATE ALL OFFSETS THAT MAY BE REQUIRED. DETERMINE EXACT LOCATIONS FROM FIELD MEASUREMENTS. MAKING ADJUSTMENTS TO FIELD CONDITIONS IS CONSIDERED A PART OF THE WORK REQUIRED.
25. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
26. CONTRACT CLOSEOUT: INCLUDE THE FOLLOWING:
    - A. RECORD DRAWINGS
        - A.1. THE CONTRACTOR SHALL MAINTAIN TWO SETS OF CONSTRUCTION DRAWINGS ON SITE AT ALL TIMES SO THAT ALL CHANGES BETWEEN THE DRAWINGS AND THE ACTUAL CONSTRUCTION CAN BE NOTED ON THE DRAWINGS. THIS INCLUDES ALL DEVIATIONS FROM THE ORIGINAL CONTRACT. THE CONTRACTOR SHALL INDICATE ALL CHANGES FROM THE ORIGINAL PLANS MADE DURING THE INSTALLATION OF THE WORK IN RED INK ON TWO SETS OF PRINTS. AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL SIGN AND DATE THE DRAWINGS CERTIFYING THAT THEY ARE AN ACCURATE REFLECTION OF THE ACTUAL CONSTRUCTION.
        - A.2. DELIVER RECORD DRAWINGS REFLECTING THE FINAL AS-BUILT CONDITION TO THE OWNER IN AUTOCAD OR REVIT FORMAT AFTER PROJECT COMPLETION. NOTE THAT THE FINAL INVOICE FOR THE CONTRACT WILL NOT BE PAID BY THE OWNER UNTIL RECORD DRAWINGS ARE RECEIVED. RECORD DRAWINGS WILL BE PROVIDED TO THE OWNER BY THE ENGINEER BASED ON CONTRACTOR'S RED-LINE AS-BUILT MARKUPS. NOTE THAT THE FINAL INVOICE FOR THE CONTRACT WILL NOT BE PAID BY THE OWNER UNTIL AS-BUILT MARKUPS ARE RECEIVED.
    - B. OPERATIONS AND MAINTENANCE DATA: SUBMIT O&M DATA IN PDF FORMAT WITH COVER PAGE AND INDEX. INCLUDE THE FOLLOWING FOR EACH PIECE OF EQUIPMENT: MAINTENANCE INSTRUCTIONS, PARTS LIST, OPERATING INSTRUCTIONS, WARRANTY DOCUMENTS AND FINAL APPROVED SUBMITTAL.
    - C. TEST & BALANCE REPORTS IN PDF FORMAT.

MEP GENERAL CONDITIONS (CONT.)

27. ALL STRUCTURAL ENGINEERING AS IT PERTAINS TO ATTACHING MEP ELEMENTS INCLUDING BUT NOT LIMITED TO EQUIPMENT, PIPE, DUCTWORK AND CONDUIT TO THE BUILDING STRUCTURE AND ROOF SHALL BE PROVIDED BY THE CONTRACTOR'S STRUCTURAL ENGINEER UNLESS NOTED OTHERWISE. DESIGN SHALL INCLUDE SUPPORTS AND WIND-LOADING RESTRAINTS FOR ALL MEP ELEMENTS INSTALLED ON THE ROOF. DESIGN SHALL ALSO INCLUDE DESIGN OF SEISMIC RESTRAINTS FOR ALL HANGERS AND SUPPORTS OF MEP ELEMENTS. CONTRACTOR SHALL SUBMIT DESIGN REACTION FORCES TO THE PROJECT STRUCTURAL ENGINEER FOR REVIEW.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING WORK AS REQUIRED TO INSTALL THE SYSTEMS AS SHOWN ON THE DRAWINGS. ANY CUTTING THRU STRUCTURAL MEMBERS OR FLOORS SHALL FIRST BE APPROVED BY THE OWNER AND STRUCTURAL ENGINEER. ALL PATCHING AT WALLS SHALL BE THE SAME MATERIAL AS THE WALL AND TOUCHED UP WITH PAINT. ALL NEW WALL AND FLOOR PENETRATIONS SHALL BE MADE AT 90 DEGREE ANGLES. THERE SHALL BE NO DRILLING INTO THE FLOOR FROM ABOVE OR BELOW WITHOUT FIRST CONTACTING THE OWNER, AND STRUCTURAL ENGINEER.
29. PRIOR TO ANY CUTTING OR TRENCHING, VERIFY WITH OWNER, UTILITY COMPANIES, AND LANDLORD THAT ALL AVAILABLE INFORMATION IS KNOWN REGARDING UNDERGROUND OBSTRUCTIONS. TAKE CAUTION WHEN TRENCHING NOT TO DISTURB ANY EXISTING UTILITIES. NOTIFY OWNERS REPRESENTATIVE IMMEDIATELY UPON UNCOVERING UNKNOWN UTILITIES FOR FURTHER DIRECTION. REFER TO CIVIL-SITE DRAWINGS FOR BURIED PIPE TRENCHING AND BACKFILL SPECIFICATIONS AND DETAILS.
30. CONTRACTOR TO PROVIDE START-UP AND COMMISSIONING SUPPORT SERVICES FOR ALL NEW SYSTEMS AND EQUIPMENT, AS WELL AS TRAINING SERVICES FOR THE OWNER'S MAINTENANCE PERSONNEL IN THE USE OF THESE SYSTEMS AND EQUIPMENT. CONTRACTOR SHALL ALSO ASSIST TEST & BALANCE CONTRACTOR AND THE COMMISSIONING AGENT AS REQUIRED.
31. CONTRACTOR TO COORDINATE FINAL INSPECTION OF THE WORK WITH THE OWNER AND ENGINEER, AND DEMONSTRATE PROPER FUNCTIONALITY OF ALL NEW SYSTEMS.
32. CONTRACTOR TO COORDINATE ALL SYSTEM OUTAGES WITH THE OWNER; PROVIDE MINIMUM TWO WEEKS NOTICE.

GENERAL MEP NOTES

1. ALL NEW OPENINGS THROUGH FLOORS, ROOF, STRUCTURAL WALLS, AND STRUCTURAL MEMBERS (WHERE APPROVED BY THE OWNER) AND INSTALLATION OF ROOF-MOUNTED EQUIPMENT SHALL BE COORDINATED WITH THE ARCHITECT AND DESIGNED BY THE STRUCTURAL ENGINEER. PENETRATIONS THROUGH SHEAR WALLS ARE PROHIBITED.
2. DUCT, PIPE AND CONDUIT ROOF PENETRATIONS:
    - 2.A. ALL DUCT, PIPE, AND CONDUIT ROOF PENETRATIONS SHALL BE THROUGH AN INSULATED, FACTORY-MANUFACTUREDFULLY-WELDED GALVANIZED STEEL ROOF CURBS. CURBS MUST EXTEND 14" ABOVE THE FINISHED SURFACE OF THE ROOF AND SHALL BE SLOPED TO MATCH ROOF. SHALL MATCH ROOF MANUFACTURER'S REQUIREMENTS, AND SHALL BE INSTALLED TO MAINTAIN ROOF WARRANTY. ATTACH CURB TO ROOF PER STRUCTURAL ENGINEER'S DESIGN. IF DESIGN IS NOT INCLUDED IN PROJECT STRUCTURAL ENGINEER'S SCOPE, THE DESIGN SHALL BE PERFORMED BY THE CONTRACTOR'S LICENSED STRUCTURAL ENGINEER.
    - 2.B. ENTIRE ASSEMBLY SHALL BE DESIGNED TO WITHSTAND ALL IBC AND ASCE-7 WINDLOADING REQUIREMENTS FOR BUILDINGS LESS THAN 60' HIGH. THIS SPECIFICALLY APPLIES TO THE ATTACHMENT TO THE ROOF AND THE REQUIRED RESTRAINTS NECESSARY TO COMPLY WITH IBC AND ASCE-7, AS WELL AS ASSOCIATED DUCTWORK, PIPING, AND EQUIPMENT PLATFORMS ABOVE THE ROOF.
    - 2.C. CONTRACTOR SHALL PROVIDE STAINLESS STEEL FLASHING TO SEAL BETWEEN THE DUCT / PIPE AND THE ROOF CURB.
    - 2.D. FLUES AND VENT STACKS SHALL MAINTAIN CLEARANCE FROM COMBUSTIBLE CONSTRUCTION AND INSULATED ASSEMBLIES IN ACCORDANCE WITH THE VENT MANUFACTURER'S INSTRUCTIONS. TOP WITH BIRD PROOF FLUE CAP.
    - 2.E. THE WEIGHT OF ALL DUCTS PENETRATING THE ROOF SHALL BE SUPPORTED FROM BELOW-ROOF STRUCTURE, NOT AT THE ROOF CURB.
    - 2.F. COORDINATE LOCATIONS OF EXISTING AND NEW ROOF PENETRATIONS TO MINIMIZE NUMBER OF OPENINGS. ELECTRICAL AND REFRIGERANT LINES ARE TO USE THE SAME PENETRATIONS WHERE POSSIBLE.
    - 2.G. COORDINATE ALL ROOF WORK WITH OWNERS ROOFING CONTRACTOR TO MAINTAIN THE WARRANTY.
3. PIPE AND CONDUITS PENETRATING FIRE-RATED FLOORS AND WALLS:
    - 3.A. A UL-RATED FIRESTOP SYSTEM SHALL BE INSTALLED AT ALL PIPE PENETRATIONS THROUGH SMOKE AND/OR FIRE-RATED FLOORS AND WALLS. FIRESTOP SYSTEM SHALL BE SUITABLE FOR THE FLOOR AND WALL TYPE. MATERIALS OF CONSTRUCTION, AND PIPE MATERIALS; RATINGS SHALL MATCH FIRE BARRIER RATINGS. ONLY PRODUCTS BY A SINGLE MANUFACTURER SHALL BE USED ON THE PROJECT; APPROVED MANUFACTURERS ARE STI, 3M AND HILTI. INSTALLERS SHALL BE CERTIFIED BY THE FIRESTOP SYSTEM MANUFACTURER. CONTRACTOR TO PROVIDE INVENTORY OF ALL PENETRATIONS.
    - 3.B. PIPE WEIGHT SHALL BE SUPPORTED AT THE FLOOR OR FROM HANGERS TO EITHER SIDE OF THE WALL OR FLOOR; PIPE WEIGHT SHALL NOT BE SUPPORTED BY THE WALL.
    - 3.C. INSULATION AND VAPOR BARRIER SHALL BE CONTINUOUS THROUGH THE PENETRATION.
    - 3.D. FLOOR PENETRATIONS SHALL BE SEALED WATER TIGHT AT THE TOP OF THE FLOOR.
4. PIPE AND CONDUITS PENETRATING NON-FIRE RATED FLOORS AND WALLS INCLUDING SLAB ON GRADE:
    - 4.A. WEIGHT SHALL BE SUPPORTED AT THE FLOOR OR FROM HANGERS ABOVE OR BELOW THE FLOOR. PIPE WEIGHT SHALL NOT BE SUPPORTED BY THE WALL.
    - 4.B. INSULATION AND VAPOR BARRIER SHALL BE CONTINUOUS THROUGH THE FLOOR.
    - 4.C. FLOOR PENETRATION SHALL BE SLEEVED WITH MINIMUM 16 GA. GALVANIZED STEEL EXTENDING 2" ABOVE THE SLAB AND SEALED WATER TIGHT.
    - 4.D. WHERE FLOOR OR WALL PENETRATIONS ARE EXPOSED IN OCCUPIED SPACES, ESCUTCHEON PLATES SHALL BE INSTALLED TO COVER THE OPENING.
    - 4.E. PENETRATIONS THROUGH EXTERIOR WALLS TO BE SEALED WATERTIGHT.
5. NO ASBESTOS CONTAINING MATERIALS SHALL BE USED IN ANY OF THE NEW CONSTRUCTION.
6. ALL INSULATING MATERIALS AND ALL MATERIALS USED IN PLENUMS SHALL BE PLENUM RATED AND SHALL CONFORM TO ASTM E 84, HAVING A MAXIMUM FLAME SPREAD OF <25 AND A MAXIMUM SMOKE DEVELOPED RATING OF <50.
7. EQUIPMENT SCHEDULED ON THE DRAWINGS IS BASED UPON EQUIPMENT OF MANUFACTURER NOTED. EQUIPMENT FROM ANOTHER MANUFACTURER MAY BE USED PROVIDED THAT THE CONTRACTOR SUBMIT PROOF THAT THE EQUIPMENT TO BE USED IS EQUAL TO OR BETTER THAN THAT SCHEDULED ON THE DRAWINGS AND IS APPROVED BY THE OWNER AND ENGINEER. PRICE SPECIFIED ITEM AS WELL AS PROPOSED SUBSTITUTION.
8. INVERTER READY MOTORS SHALL BE PROVIDED WITH AEGIS SHAFT GROUNDING RING, COOLBLUE INDUCTIVE ABSORBERS, OR CERAMIC BEARINGS AND CLASS F 105° C RISE INSULATION. REFERENCE NEMA MG1 PART 31.
9. PROVIDE TEFC MOTORS FOR ALL WET LOCATIONS AND ALL OUTDOOR LOCATIONS.
10. LOCATION OF NEW EQUIPMENT IS APPROXIMATE WHERE SHOWN. IF THERE IS A CONFLICT WITH AN EQUIPMENT LOCATION SHOWN ON THE PLANS, DO NOT PROCEED UNTIL THE ENGINEER APPROVES A NEW LOCATION.
11. INSTALL ALL NEW EQUIPMENT WITH MANUFACTURER-RECOMMENDED CLEARANCES ON ALL SIDES FOR SERVICE AND MAINTENANCE AS WELL AS REMOVAL OF INDIVIDUAL COMPONENTS WITHOUT REMOVING THE ENTIRE UNIT. PROVIDE NEC-REQUIRED CLEARANCE IN FRONT OF LINE VOLTAGE CONTROL PANELS; MINIMUM 3'.
12. DUCTWORK, PIPING, CONDUIT, CABLING, ETC. SHOWN ON EACH PLAN IS RUN ABOVE THE CEILING ON THE FLOOR WHERE IT IS SHOWN UNLESS OTHERWISE NOTED.
13. DUCTWORK, PIPING, CONDUIT, CABLING, ETC. SHOWN ON DRAWINGS SHALL BE COORDINATED WITH AIR DISTRIBUTION DEVICES, SPECIAL CEILING, FLOOR, AND STRUCTURE CONSTRUCTION, ETC. PROVIDE ADDITIONAL RISES AND DROPS TO THOSE INDICATED ON THE DRAWINGS AS REQUIRED TO COORDINATE WITH ARCHITECTURAL, STRUCTURAL OR MEP ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS. ALL UTILITIES SHALL BE ROUTED IN AN ORDERLY MANNER, GROUPED TOGETHER WHEREVER POSSIBLE, AND LOCATED SO AS TO CONSERVE BUILDING SPACE.
14. COORDINATION OF ALL TRADES IN CEILING SPACES TO ALLOW AN 8-INCH CLEAR PLANE FOR LOCATION OF LIGHTS IS OF UTMOST IMPORTANCE TO MAXIMIZE FUTURE FLEXIBILITY. REALIZING THAT THIS IS NOT POSSIBLE IN ALL CASES, DUE TO CEILING ELEVATION AND STRUCTURAL LIMITATIONS, MAXIMUM EFFORT SHALL BE GIVEN TO MAINTAINING THE 8-INCH LIGHTING PLANE UNLESS NOTED OTHERWISE.
15. MAINTAIN MINIMUM VERTICAL CLEARANCE OF 7'-6" FROM THE FLOOR TO THE BOTTOM OF DUCTWORK , PIPING, AND ASSOCIATED HANGERS AND SUPPORTS UNLESS NOTED OTHERWISE ON THE PLANS.
16. POWDER ACTUATED FASTENERS ARE NOT ALLOWED.
17. PROVIDE AND INSTALL MINIMUM 2 ½" LONG X ½" WIDE ENGRAVED PHENOLIC PLASTIC EQUIPMENT TAGS, BLACK LETTERS ON WHITE BACKGROUND, FOR ALL EQUIPMENT TO MATCH TAGS INDICATED ON PLANS. IF EXISTING TAGS ARE PRESENT EITHER FROM THE MANUFACTURER OR EXISTING CONDITIONS, COVER OR PAINT OVER THE OLD TAG AS REQUIRED TO ELIMINATE CONFLICTING TAG NAMES. LABEL THERMOSTATS TO MATCH UNIT DESIGNATION. INDICATE ELECTRICAL PANEL AND CIRCUIT BREAKER NUMBER IDENTIFICATION ON NAMEPLATE IN SMALLER LETTERS IN PARENTHESES.
18. U.N.O, PROVIDE CONCRETE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED MEP EQUIPMENT. INCLUDING EQUIPMENT MOUNTED ON VIBRATION ISOLATORS, BASE RAILS AND CONCRETE INERTIA BASES. CONTRACTOR TO COORDINATE LOCATIONS AND SIZES. REFER TO DETAIL ON THIS SHEET.
19. THE CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL, AND OTHER DRAWINGS RELATED TO THIS PROJECT FOR ADDITIONAL WORK TO BE PROVIDED.



1 HOUSE KEEPING PAD
NOT TO SCALE

GENERAL NOTES:
1. CONTRACTOR SHALL COORDINATE FINAL MECHANICAL PAD SIZE, LOCATION AND EMBEDDED ITEMS WITH MEP DRAWINGS AND FINAL EQUIPMENT SHOP DRAWINGS.
2. CAST-IN-PLACE BASES SHALL BE 4" LARGER ON EACH SIDE THAN SUPPORTED EQUIPMENT.
3. INSTALL ANCHOR BOLTS WITH WILSON ANCHOR BOLT SLEEVES IN ACCORDANCE WITH EQUIPMENT BASE TEMPLATE AND MANUFACTURER'S INSTRUCTIONS.

CONCRETE NOTES:
A. CONCRETE SHALL BE 3000 PSI AT 28 DAYS.
B. COMPLY WITH ACI 301, ACI 318, AND ASTM C94.
C. PROVIDE BROOM FINISH CONCRETE SURFACE.
D. SET TOP OF PAD LEVEL.

GENERAL M & P PIPING NOTES

1. PIPING IS NOT PERMITTED ABOVE ELECTRICAL AND TELECOMMUNICATIONS ROOMS.
2. INSTALL ISOLATION VALVES AT ALL PIPING BRANCH TAPS (WATER, AIR, STEAM, ETC.). INCLUDE A UNION AT ALL THREADED VALVES TO ALLOW REMOVAL OR ADJUSTMENT.
3. FLUSH AND CLEAN ALL NEWLY INSTALLED CHILLED WATER, CONDENSER WATER, HEATING WATER, AND STEAM PIPING AND STRAINERS PRIOR TO PUTTING SYSTEMS INTO SERVICE. CONTRACTOR TO SUBMIT FLUSHING PLAN, INCLUDING PLAN DRAWINGS, PROPOSED EQUIPMENT AND CHEMICALS. VERIFY MINIMUM 10 FPS FLUSHING VELOCITIES WILL BE ACHIEVED IN ALL PIPE SIZES ND LINES. DO NOT FLUSH THROUGH EQUIPMENT. PROVIDE BYPASSES AND CONNECTIONS AS REQUIRED.
4. INSTALL VALVES IN TOP HALF OF HORIZONTAL PIPING WITH VALVE STEMS INCLINED AT A MINIMUM OF 30 DEGREES OR ONE FLANGE BOLT HOLE ABOVE HORIZONTAL TO MINIMIZE DEBRIS COLLECTING AROUND THE VALVE STEM.
5. WHEN JOINING DISSIMILAR METALS USE DIELECTRIC NIPPLES OR DIELECTRIC COUPLINGS FOR PIPING 2" AND SMALLER. USE DIELECTRIC FLANGE KITS FOR LARGER PIPING. DIELECTRIC UNIONS ARE NOT ALLOWED. FOR PIPING SYSTEMS CONVEYING FLAMMABLE MATERIALS WHICH ARE REQUIRED BY CODE TO BE GROUNDED, INSTALL JUMPERS ACROSS DIELECTRIC FITTINGS AND FLANGES TO ENSURE A CONTINUOUS ELECTRICAL PATH.
6. PROVIDE PIPE HANGERS OR SUPPORTS PER THE BUILDING CODE AND ANSI/MSS SP-58 FOR ROD SIZES AND SPACING, AND IN ACCORDANCE WITH THE VIBRATION ISOLATION SCHEDULE..
    - A. PROVIDE COATED OR COPPER PLATED HANGERS AND SUPPORTS FOR COPPER PIPING.
    - B. PLACE HANGER WITHIN TWELVE INCHES OF EACH HORIZONTAL ELBOW.
    - C. SUPPORTS, HANGERS, AND ASSOCIATED ATTACHMENTS TO STRUCTURAL SHALL BE DESIGNED BY THE CONTRACTOR'S STRUCTURAL ENGINEER. SUBMIT SHOP DRAWINGS AND CALCULATIONS STAMPED BY PROFESSIONAL ENGINEER FOR ALL INDIVIDUAL HANGER LOADS OVER 500 LBS. CALCULATIONS SHALL INCLUDE A 20% SAFETY FACTOR.
    - D. ALL HANGER RODS SHALL HAVE A DOUBLE NUT ABOVE AND BELOW THE CLEVIS HANGER OR TRAPEZE STRUCTURAL MEMBER.
    - E. ANCHORS TO BE INSTALLED IN EXISTING CONCRETE SHALL BE AN UNDERCUT STYLE, SUITABLE FOR BOTH CRACKED AND NON-CRACKED CONCRETE. ANCHORS SHALL BE TYPE 304 STAINLESS STEEL IN UNCONDITIONED SPACES AND GALV

MECHANICAL ONE-LINE DIAGRAM

- SIDEWALL REGISTER TAP
- BRANCH DUCT TAP (w/ SMACNA 45° FITTING) — VD
- SPIN-IN DUCT TAP — VD
- CONICAL DUCT TAP
- AIR INTAKE
- PROCESS EXHAUST
- CHILLED WATER — CC
- HEATING COIL — HC
- FAN
- PRIMARY FILTER (30%) — AF
- SECONDARY FILTER (85%) — FF
- FINAL FILTER — FF
- PRE-FILTER (30%) — AF
- AIR OUTLET w/ HEPA FILTER (99.99%) — HEPA
- AIR OUTLET w/ ULPA FILTER (99.999%) — ULPA
- HUMIDIFIER

MECHANICAL ONE-LINE DIAGRAM

- DIRECTION OF FLOW
- DUCT SIZE, FIRST FIGURE IS SIDE SHOWN (DIMENSIONS ARE CLEAR INSIDE, U.N.O.) — 24/12
- CONCENTRIC DUCT REDUCER
- ECCENTRIC DUCT REDUCER
- SQUARE DUCT TO ROUND DUCT
- DUCT CAP
- ROUND DUCT DOWN
- ROUND DUCT UP
- RECTANGULAR RETURN DUCT DOWN
- RECTANGULAR RETURN DUCT UP
- RECTANGULAR SUPPLY DUCT DOWN
- RECTANGULAR SUPPLY DUCT UP
- FLEXIBLE DUCT TO DIFFUSER DROP
- CHANGE OF ELEVATION UP OR DOWN IN DIRECTION OF AIRFLOW — D / R
- DUCT LINING (ie. FIRE, ACOUSTICAL, THERMAL) AS SPECIFIC
- RADIUS ELBOW (45° & 90°)
- RECTANGULAR ELBOW (45° & 90°)
- RECTANGULAR 90° SPLIT — VD
- RECTANGULAR TEE SPLIT (NO VOLUME DAMPER REQUIRED ON EQUAL SPLITS) — VD VD
- RADIUS TEE SPLIT — VD VD

FANS

- CENTRIFUGAL
- PLUG
- AXIAL FLOW/PROPELLER
- ROOF MOUNTED EXHAUST
- ROOF MOUNTED OUTSIDE AIR INTAKE
- ROOF MOUNTED LOUVERED VENTILATION HOOD
- ROOF MOUNTED SUPPLY

MECHANICAL TWO-LINE DIAGRAM

- DUCT TRANSITION (SQUARE TO ROUND)
- DUCT CAP
- 90° RECTANGULAR TURNING VANE
- SOUND ATTENUATOR
- TRANSFER DUCT w/ INTERNAL LINING
- RECTANGULAR 90° SPLIT
- RECTANGULAR TEE SPLIT (NO VOLUME DAMPER REQUIRED ON EQUAL SPLITS)
- RADIUS TEE SPLIT
- SIDEWALL REGISTER TAP
- BRANCH DUCT TAP (w/ SMACNA 45° FITTING) — VD
- SPIN-IN DUCT TAP — VD
- CONICAL DUCT TAP
- INTERNAL DUCT LINING
- CHANGE OF ELEVATION (RISE OR DROP) IN DIRECTION OF AIRFLOW — R / D

GRILLES, REGISTERS, & DIFFUSERS

- DUCTED EXHAUST/RETURN REGISTER, CEILING
- RETURN GRILLE TO CEILING PLENUM
- SUPPLY DIFFUSER, CEILING
- SUPPLY DIFFUSER, CEILING, THERMAFUSER
- EXHAUST/RETURN GRILLE OR REGISTER, SIDEWALL
- SUPPLY GRILLE OR REGISTER, SIDEWALL
- SLOT DIFFUSER
- SLOT DIFFUSER - CONTINUOUS
- HEPA FILTERS

MECHANICAL TWO-LINE DIAGRAM

- DIRECTION OF FLOW
- DUCT SIZE, FIRST FIGURE IS SIDE SHOWN (DIMENSIONS ARE INSIDE CLEAR) — 30x12
- SHORT ROUND ELBOW (45° & 90°) CENTERLINE RADIUS = 1.0 * WIDTH
- LONG ROUND ELBOW (45° & 90°) CENTERLINE RADIUS = 1.5 * WIDTH
- RECTANGULAR ELBOW (45° & 90°)
- RECTANGULAR/ROUND RETURN DUCT UP
- RECTANGULAR/ROUND RETURN DUCT DOWN
- RECTANGULAR/ROUND EXHAUST DUCT UP
- RECTANGULAR/ROUND EXHAUST DUCT DOWN
- RECTANGULAR/ROUND SUPPLY DUCT UP
- RECTANGULAR/ROUND SUPPLY DUCT DOWN
- FLEXIBLE DUCT DIFFUSER DROP
- LONG RADIUS TEE SPLIT 90°
- SHORT RADIUS TEE SPLIT 90°
- RECTANGULAR TEE SPLIT (NO VOLUME DAMPER REQUIRED ON EQUAL SPLITS)
- DUCT SPLIT 90° TEE
- CONCENTRIC REDUCER, DUCT TRANSITION (ROUND TO ROUND, SQUARE TO SQUARE)
- (ROUND TO SQUARE, SQUARE TO ROUND)
- ECCENTRIC REDUCER, DUCT TRANSITION (ROUND TO ROUND, SQUARE TO SQUARE)
- (ROUND TO SQUARE, SQUARE TO ROUND)

DAMPERS

- COMBINATION FIRE/SMOKE DAMPER
- FIRE DAMPER
- SMOKE DAMPER
- MANUAL DAMPER
- MOTORIZED DAMPER — M
- BACKDRAFT DAMPER — D

MECHANICAL DEVICES

- TEMPERATURE SENSOR — TS
- HUMIDITY SENSOR — HS
- CO2 SENSOR — CS
- TEMPERATURE & CO2 SENSOR — TC
- TEMPERATURE & HUMIDITY SENSOR — TH
- THERMOSTAT — T
- HUMIDISTAT — H

GENERAL SYMBOLS

- SECTION/DETAIL CALL OUT — # DRAWING TITLE; SECTION OR DETAIL NO. #; FLOOR PLAN; 1/8" = 1'-0"; SCALE OF SECTION, DETAIL OR DRAWING
- CROSS SECTION CALL OUT — DIRECTION OF CUTTING PLANE; LONGITUDINAL OR CROSS SECTION NO. #; M-#; SHEET NO. ON WHICH SECTION IS DRAWN
- DETAIL REFRENCE CALL OUT — DETAIL NO. #; M#-#; SHEET ON WHICH DETAIL IS DRAWN
- ELEVATION CALL OUT — SURFACE SHOWN IN ELEVATION; ELEVATION NO. #; M#-#; SHEET ON WHICH ELEVATION IS DRAWN
- ENLARGED CALL OUT — DETAIL NO. #/M#-#; AREA OF ENLARGED DETAIL; SHEET ON WHICH ENLARGED DETAIL IS DRAWN
- INDICATED PLAN NORTH — NORTH
- NEW CONSTRUCTION KEYED NOTE — #
- REVISION NUMBER — #
- POINT OF CONNECTION
- POINT OF DEMARCATION/ DISCONNECT
- DIRECTION OF FLOW ARROW
- SLOPE ARROW W/ PERCENTAGE — 1%
- RISER DESIGNATION — PIPING TYPE P; RISER NUMBER 1
- PIPE CONTINUATION, SINGLE LINE
- PIPE CONTINUATION, DOUBLE LINE

MECHANICAL TAGS

EQUIPMENT TAG

- TYPE/MARK (SEE SCHEDULE) — X-1
- EXISTING EQUIPMENT TO REMAIN — (E)X-1
- EXISTING EQUIPMENT TO BE RELOCATED — (R)X-1

DIFFUSER TAG

- TYPE — X | 500 — CFM
- NECK SIZE — X"
- TYP. X
- No. OF DIFFUSERS

LINETYPE LEGEND

- DEMOLITION (D) — 20" (D)
- EXISTING TO REMAIN (E) — 20" (E)
- NEW WORK — 20" (SA)

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State of registration TX
Firm Registration No. F-2497
EEA Project No. 20250182

CLIENT:
Gray Street Partners

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	REVISION

PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

MECHANICAL - SYMBOLS & ABBREVIATIONS

DRAWN BY: GE
CHECKED BY: SA
PROJ. NO:
DRAWING NO: **M1**

MECHANICAL ABBREVIATIONS

DESCRIPTION	AAB	DESCRIPTION	AAB
ABOVE CEILING	A/C	HUB DRAIN	HD
ABOVE FINISHED FLOOR	AFF	INCHES PER HOUR	IN/HR
ABOVE GRADE. GROUND	AG	INDIRECT DRAIN/ RECEPTOR	ID
ACCESS PANEL	AP	INDIRECT WASTE	IW
ACRYLONITRILE BUTADIENE STYTENE	ABS	INVERT ELEVATION	IE
AIR ADMITTANCE VALVE	AAV	LAVATORY	LAV
ARCHITECT	ARCH	MAN HOLE	MH
AUTHORITY HAVING JURISDICTION	AHJ	MAXIMUM	MAX
BACKFLOW PREVENTER	BFP	MECHANICAL	MECH
BELOW FINISHED FLOOR	BFF	MINIMUM	MIN
BELOW FLOOR	B/F	MIXING VALVE	MV
BELOW GRADE/ GROUND	BG	MOP SINK	MS
BELOW SLAB	B/S	NORMALLY CLOSED	NC
BOTTOM OF PIPE	BOP	NORMALLY OPEN	NO
BRAKE HORSEPOWER	BHP	NOT IN CONTRACT	NIC
BRITISH THERMAL UNIT	BTUH	NOT TO SCALE	NTS
BTUH (THOUSANDS)	MBH	EXISTING TO BE PROTECTED IN PLACE	(P)
CAST IRON	CI	POLYETHYLENE	PE
CELCIUS	C	POLYETHYLENE CROSS-LINKED	PEX
CHILLED WATER RETURN	CHWR	POLYVINYL CHLORIDE	PVC
CHILLED WATER SUPPLY	CHWS	POLYVYLIDENE FLOURIDE/ DIOFLOURIDE	PVDF
CHLORINATED POLYVINYL CHLORIDE	CPVC	POUND	LB
CLEANOUT	CO	POUNDS PER SQUARE INCH	PSI
CLEANOUT, FLOOR	FCO	POUNDS PER SQUARE INCH ABSOLUTE	PSIA
CLEANOUT, GRADE	GCO	POUNDS PER SQUARE INCH GAUGE	PSIG
CLEANOUT, GRADE TWO-WAY	DGCO	PRESSURE DROP	PD
CLEANOUT, WALL	WCO	PRESSURE REDUCING VALVE	PRV
CLEANOUT, YARD	YCO	PUMP, BOOSTER	BP
CLEANOUT, YARD TWO-WAY	DYCO	PUMP, CHILLED WATER	CHWP
CONDENSER RETURN	CWR	PUMP, CIRCULATION	CP
CONDENSER SUPPLY	CWS	PUMP, HOT WATER	HWP
COPPER	CU	REDUCED PRESSURE ZONE	RPZ
CUBIC FEET	CF	EXISTING TO BE RELOCATED	(R)
CUBIC FEET PER HOUR	CFH	REVOLUTION PER MINUTE	RPM
CUBIC FEET PER MINUTE	CFM	SCHEDULE	SCH
EXISTING TO BE DEMOLISHED/ REMOVED	(D)	SHOWER	SH
DEGREE	D	SINK	SK
DIAMETER	DIA	SQUARE FEET	SF
DRAIN, AREA	AD	STRUCTURAL	STRUC
DRAIN, FLOOR	FD	TEMPERATURE	TEMP
DRAIN, ROOF PRIMARY	RD	TEMPERATURE, ENTERING WATER	EWT
DRAIN, ROOF SECONDARY	SRD	TEMPERATURE, LEAVING WATER	LWT
ELECTRICAL	ELEC	THERMOSTATIC MIXING VALVE	TMV
ELEVATION	ELEV	TOP OF PIPE	TOP
EXISTING	EXIST, (E)	TRAP PRIMER	TP
FAHRENHEIT	F	TYPICAL	TYP
FAT, OIL, AND GAS	FOG	ULTRAVIOLET	UV
FOOT/ FEET	FT	UNDERGROUND	UG
FEET PER MINUTE	FPM	UNIT, AIR HANDLING	AHU
FEET PER SECOND	FPS	UNIT, FAN COIL	FC
FIXTURE UNIT	FU	UNLESS NOTED OTHERWISE	UNO
FLEXIBLE	FLEX	UP/ DOWN	UP/DN
FLOOR	FLR	VACUUM BREAKER	VB
FLOOR DRAIN	FD	VALVE FLOW COEFFICIENT	CV
FLOOR SINK	FS	VENT THRU ROOF	VTR
FUTURE	(F)	WATER GAUGE	WG
GALLON	GAL	WATER CLOSET	WC
GALLONS PER HOUR	GPH	WATER HAMMER ARRESTOR	WHA
GALLONS PER MINUTE	GPM	WATER, OIL, AND GAS	WOG
HEAD IN FEET	FTHD		
HEAD IN INCHES WATER COLUMN	INWC	ELECTRICAL	
HEATING HOT WATER RETURN	HWR	VOLTAGE	V, VOLT
HEATING HOT WATER SUPPLY	HWS	WATTAGE	W, WATT
HEATING, VENTILATION, AIR CONDITIONING	HVAC	KILOWATT	KW
HORSEPOWER	HP	PHASE	PH
HOUR	HR	AMPERE	A, AMP

CODE AND REGULATORIES ABBREVIATIONS

DESCRIPTION	AAB	DESCRIPTION	AAB
AMERICAN NATIONAL STANDARDS	ANSI	INTERNATIONAL ENERGY CONSERVATION CODE	IECC
AMERICAN SOCIETY OF CIVIL ENGINEERS	ASCE	INTERNATIONAL FIRE CODE	IFC
AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS	ASHRAE	INTERNATIONAL FUEL GAS CODE	IFGC
AMERICAN SOCIETY OF MECHANICAL ENGINEERS	ASME	INTERNATIONAL MECHANICAL CODE	IMC
AMERICAN SOCIETY OF PLUMBING ENGINEERS	ASPE	INTERNATIONAL PLUMBING CODE	IPC
AMERICAN SOCIETY OF SANITARY ENGINEERING	ASSE	INTERNATIONAL RESIDENTIAL CODE	IRC
AMERICAN SOCIETY OF TESTING AND MATERIALS	ASTM	NATIONAL ELECTRICAL CODE	NEC
AMERICAN WATER WORKS ASSOCIATION	AWWA	NATIONAL FIRE PROTECTION ASSOCIATION	NFPA
CAST IRON SOIL PIPE INSTITUTE	CISPI	UNIFORM BUILDING CODE	UBC
FACTORY MUTAL	FM	UNIFORM FIRE CODE	UFC
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS	IEEE	UNIFORM PLUMBING CODE	UPC
INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS	IAPMO	UNDERWRITERS LABORATORIES	UL
INTERNATIONAL BUILDING CODE	IBC		

VALVES

- ANGLE GATE
- ANGLE GLOBE
- BALANCING
- BALL
- BELLOWS SEAL GLOBE
- BUTTERFLY
- DIAPHRAGM
- GAS COCK
- GAUGE COCK
- GATE
- GLOBE
- NEEDLE
- PLUG
- PRESSURE REDUCING
- PRESSURE RELIEF
- PRESSURE-TEMPERATURE RELIEF
- QUICK OPENING
- CHECK
- ALARM CHECK
- SPRING CHECK
- SWING CHECK
- BALL CHECK
- BACK FLOW PREVENTER, DOUBLE CHECK TYPE (BFP)
- BACK FLOW PREVENTER, REDUCED PRESSURE ZONE TYPE (BPZ)

PIPING SPECIALITIES

- AIR SEPARATOR (AS)
- AIR VENT, AUTOMATIC W/SERVICE VALVE
- AIR VENT, AUTOMATIC W/SERVICE VALVE
- AIR VENT, MANUAL
- ALIGNMENT GUIDE (PIPE SLEEVE)
- AQUASTAT
- ANCHOR
- BACKWATER VALVE (BWV)
- EXPANSION JOINT
- EXPANSION LOOP
- FILTER (F)
- FLEX CONNECTION (FX)
- FLOWMETER, ORIFICE
- FLOW SWITCH (FS)
- FLOW METER, INSERTION (FIT)
- FLOW METER, VENTURI
- HEAT EXCHANGER, LIQUID
- HEAT TRANSFER SURFACE (INDICATE TYPE)
- METER
- PITCH OF PIPE, RISE (R) OR DROP (D)
- PRESSURE GAUGE AND COCK
- PRESSURE SWITCH (PS)
- PUMP, CIRCULATING
- PUMP SUCTION DIFFUSER (PSD)
- STRAINER, WYE
- STRAINER W/ BLOW DOWN
- STRAINER, DUPLEX
- TEST PLUG
- THERMOMETER
- THERMOMETER IN WELL
- THERMOMETER WELL ONLY (TF)
- THRUST BLOCK (TB)
- WATER HAMMER ARRESTER
- PNEUMATIC THERMOSTAT
- VACUUM BREAKER
- PURGE PORT

PIPING TYPE

WATER

DOMESTIC COLD WATER	CW	
DOMESTIC HOT WATER, 140°F.60°C	HW	
DOMESTIC HOT WATER RETURN	HWR	
HOT WATER (TEMPERATURE INDICATED)	200°S	200°
HOT WATER RETURN (TEMP. INDICATED)	200°R	200°
DEIONIZED WATER	D.I.	D.I.
DISTILLED WATER	DIST	DIST
COLD SOFT WATER	CSW	CSW
HOT SOFT WATER	HSW	HSW
CHILLED DRINKING WATER SUPPLY	DWS	DWS
CHILLED DRINKING WATER RETURN	DWR	DWR

DRAINS & VENTS

STORM DRAIN, RAINWATER DRAIN	SD	SD
OVERFLOW STORM DRAIN	OD	OD
SOIL, WASTE OR SANITARY SEWER	SAN	SAN
GREASE WASTE	GW	GW
INDIRECT DRAIN	D	D
CONDENSATE DRAIN	CD	CD
VENT	V	
ATMOSPHERIC VENT (STEAM, HOT VAPOR)	ATV	ATV
SUB-SOIL DRAIN, FOOTING DRAIN (PERFORATED PIPE)	SSD	SSD

FUELS & OILS

FUEL OIL SUPPLY	FOS	FOS
FUEL OIL TANK VENT	FOV	FOV
REGULAR GASOLINE	RG	RG
DIESEL FUEL	DF	DF
GASOLINE VENT	GV	GV
LUBRICATING OIL	LO	LO
WASTE OIL	WO	WO
WASTE OIL VENT	WOV	WOV

FIRE PROTECTION

FIRE PROTECTION WATER SUPPLY	F	F
AUTOMATIC FIRE SPRINKLER	SP	SP

AIR/GASES & VACUUM

COMPRESSED AIR	CA	CA
COMPRESSED AIR AT PRESSURE	15#A	15#CA
MEDICAL COMPRESSED AIR	MCA	MCA
LABORATORY COMPRESSED AIR	LCA	LCA
OXYGEN	OX	OX
LIQUID OXYGEN	LOX	LOX
NAT'L GAS - LOW PRESSURE	G	G
NAT'L GAS - MEDIUM PRESSURE	MG	MG
NAT'L GAS - HIGH PRESSURE	HG	HG
VACUUM (AIR)	VAC	VAC
MEDICAL VACUUM	MVAC	MVAC
LABORATORY VACUUM	LVAC	LVAC
HOUSE VACUUM	HV	HV
CARBON DIOXIDE	CO2	CO2

STEAM

LOW PRESSURE STEAM	LPS	LPS
LOW PRESSURE STEAM RETURN	LPR	LPR
MEDIUM PRESSURE STEAM	MPS	MPS
MEDIUM PRESSURE STEAM RETURN	MPR	MPR
HIGH PRESSURE STEAM	HPS	HPS
HIGH PRESSURE STEAM RETURN	HPR	HPR

MISC.

PUMP DISCHARGE LINE (X= SYSTEM TYPE)	PDX	PDX
ACID WASTE	AW	AW
ACID VENT	AV	AV

ACTUATORS

ELECTRIC
- MOTOR (E)
- SOLENOID (S)

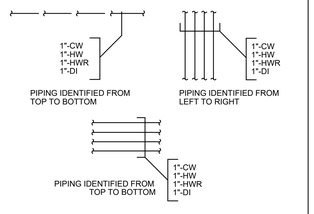
PNEUMATIC
- DIAPHRAGM w/ POSITIVE POSITIONER
- MOTOR (P)
- DIAPHRAGM

MISC
- SPRING
- ELECTRIC-PNEUMATIC CONTROL (E/P)
- PNEUMATIC-ELECTRICAL CONTROL (P/E)
- GAS PRESSURE REGULATOR

PIPE FITTINGS

- CAPPED TEE
- PITCH DOWN IN DIRECTION OF ARROW
- BLIND FLANGE
- PIPE CAP
- INDICATES TIE-IN BETW. EXIST. AND NEW
- ELBOW, TURN-DOWN
- ELBOW, TURN-UP
- FLANGE JOINT
- REDUCER, CONCENTRIC
- REDUCER, ECCENTRIC
- BUSHING
- UNION, SCREWED
- UNION, FLANGED
- VCR FITTING WITH CAP
- BALL JOINT
- PLUGGED PIPE
- COUPLING (JOINT)
- CROSSING (HIGHER PIPE / LOWER PIPE)
- TEE
- TEE, OUTLET DOWN
- TEE, OUTLET UP

PIPING LABELING



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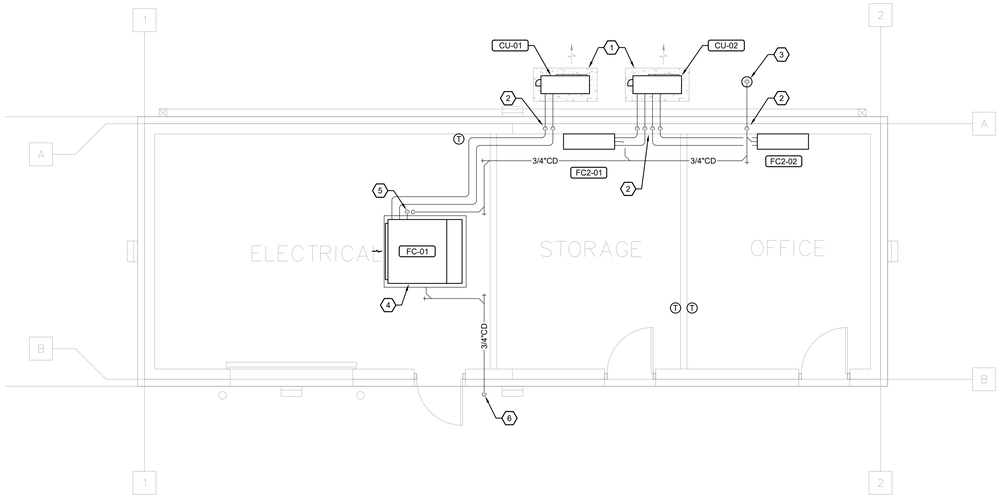
PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

MECHANICAL - SYMBOLS & ABBREVIATIONS

DRAWN BY: GE
CHECKED BY: SA
PROJ. NO:
DRAWING NO: **M2**



1 MECHANICAL PLAN - BUILDING 1
1/4" = 1'-0"
0 2' 4' 8'

NORTH

GENERAL MECHANICAL NOTES

1. COORDINATE LOCATION OF AIR DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLANS. TO ACHIEVE THE BEST COMBINATION OF PERFORMANCE AND AESTHETICS, THE FINAL LOCATIONS OF AIR DEVICES SHALL BE DETERMINED FROM THE ARCHITECTURAL REFLECTED CEILING PLANS. NO CHANGES TO AIR DEVICE LOCATIONS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE ARCHITECT AND ENGINEER. SPRAY PAINT INTERIOR OF DUCTWORK BEHIND OR ABOVE AIR DEVICES TO 12" INSIDE DUCTWORK OPENING WITH FLAT BLACK PAINT TO OBSCURE DUCT INTERIOR. LOCATE LOUVERED RETURN GRILLE BLADES SUCH THAT VISION INTO DUCT INTERIOR IS RESTRICTED.
2. ALL DUCT SIZES ARE INSIDE CLEAR DIMENSIONS IN INCHES.
3. BALANCING DAMPERS ARE REQUIRED AT ALL SUPPLY, RETURN, AND EXHAUST BRANCH CONNECTIONS. REMOTE DAMPER OPERATOR FOR ALL DAMPERS LOCATED ABOVE HARD OR INACCESSIBLE CEILINGS.
4. FLEX DUCT AND ROUND CONNECTIONS TO MAIN DUCT OR BRANCH DUCTS SHALL BE MADE VIA SPIN-IN OR DOVE-TAILED CONICAL TAPS WITH DAMPERS. ALL RECTANGULAR DUCT BRANCHES TAP TO BE MADE WITH 45 DEG SMACNA TAP FITTING.
5. ROUTE ALL SUPPLY AIR DUCT TIGHT TO STRUCTURE UNLESS OTHERWISE NOTED. MAKE TRANSITIONS FLAT ON TOP.
6. FURNISH AND INSTALL ALL MITERED ELBOWS WITH TURNING VANES. RADIUSED RECTANGULAR ELBOWS SHALL HAVE CENTER LINE RADIUS TO WIDTH RATIO (R/W) OF 1.5 UNLESS OTHERWISE SPECIFIED. ALL ROUND ELBOWS SHALL HAVE A CENTERLINE RADIUS TO DIAMETER RATIO (R/D) OF 1.5 UNLESS SHORT RADIUS ELBOWS ARE CALLED FOR ON THE PLANS IN WHICH CASE THE R/D RATIO SHALL BE 1.0.
7. FLEXIBLE DUCTS SHALL NOT EXCEED 5' IN LENGTH. DUCT SHALL HAVE AN INTERNAL DIMENSION EQUAL TO THE CONNECTING ROUND DUCT DIMENSION.
8. INSULATE EXTERIOR OF ALL SUPPLY AIR DIFFUSERS.
9. FLEXIBLE COLLARS SHALL BE FURNISHED AND INSTALLED AT ALL CONNECTIONS BETWEEN VIBRATING EQUIPMENT (FANS, AIR HANDLERS, ROOFTOP UNITS, ETC.) AND DUCTS OR CASINGS. ALSO FURNISH AND INSTALL FLEXIBLE CONNECTIONS WHERE DUCTS CROSS BUILDING EXPANSION JOINTS.
10. LINED RETURN AIR TRANSFER BOOTS SHALL BE INSTALLED THROUGH WALLS AS REQUIRED TO PROVIDE A CONTINUOUS RETURN AIR PATH TO THE AIR HANDLING UNITS.
11. PROVIDE FIRE DAMPERS, SMOKE DAMPERS, AND COMBINATION FIRE/SMOKE DAMPERS WHERE SHOWN ON THE PLANS AND WHERE DUCTWORK PENETRATES FLOORS, FIRE WALLS AND HVAC CHASES REQUIRING PROTECTION IF NOT OTHERWISE SHOWN. ALL FIRE DAMPERS SHALL HAVE A 1.5 HOUR RATING UNLESS NOTED OTHERWISE. ENDS OF DAMPER SHAFTS SHALL BE SCORED TO INDICATE OPEN/CLOSED POSITION. PROVIDE FSD'S WITH OPTIONAL NO-FLOW RATED DUCT SMOKE DETECTOR. INSTALL FD'S, SD'S AND FSD'S IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS IN ORDER TO MAINTAIN THEIR UL LISTING. PROVIDE, INSTALL AND LABEL MINIMUM 14" X 14" DUCT ACCESS DOORS WITHIN 12" OF ALL FD, SD, AND FSD LOCATIONS.
12. INSTALL WALL LOUVERS AND CONNECTING DUCTWORK PER MANUFACTURER'S INSTRUCTIONS. PITCH BOTTOM OF CONNECTING DUCT OR PLENUM TO OUTSIDE WHERE IT CONNECTS TO THE LOUVER SO THAT ANY MOISTURE CARRYOVER WILL DRAIN TO OUTSIDE. INSTALL 12" WIDE ACCESS DOOR HALF THE HEIGHT OF THE DUCT, MINIMUM 12" HIGH, WITHIN 6" OF THE LOUVER UNLESS NOTED OTHERWISE ON THE PLANS.
13. DUCTWORK AND ROOFTOP EQUIPMENT ACCESSORIES SHALL BE SECURED TO STRUCTURE TO WITHSTAND THE SAME WIND LOADING REQUIREMENTS AS THE ROOF CURB AND EQUIPMENT.
14. INSTALL A NEW SET OF AIR FILTERS ON ALL APPLICABLE EQUIPMENT AT COMPLETION OF PROJECT.
15. COORDINATE HOUSEKEEPING PAD HEIGHTS WITH CONDENSATE P-TRAP.
16. PROVIDE SECONDARY CONDENSATE DRAIN PAN FOR EQUIPMENT WITH COOLING COILS SUSPENDED ABOVE CEILING.
17. AN NEBB, TABB, OR AABC CERTIFIED CONTRACTOR SHALL BALANCE ALL AIRSIDE AND WATERSIDE SYSTEMS, INCLUDING ROOM PRESSURE CASCADE DIFFERENTIAL PRESSURES, TO WITHIN +10%/-5% OF THE QUANTITIES AND FLOWRATES SHOWN ON THE DRAWINGS. FURNISH A CERTIFIED TESTING AND BALANCING REPORT TO THE ENGINEER FOR REVIEW AND APPROVAL.
18. PROVIDE AND INSTALL A LABEL ON THE CEILING GRID OR WALL DIRECTLY UNDER OR ADJACENT TO ALL CONCEALED MECHANICAL EQUIPMENT, ISOLATION VALVES, AND CONTROL DEVICES. THE LABEL SHALL CONTAIN EQUIPMENT TAG NUMBER AND POWER SOURCE (IF APPLICABLE), ISOLATION VALVE SIZE AND SYSTEM, OR CONTROL ELEMENT IDENTIFICATION NUMBER.

KEYED NOTES:

1. MOUNT UNIT ON MINIMUM 4" HIGH CONCRETE HOUSEKEEPING PAD.
2. ROUTE PIPING DOWN IN WALL. PROVIDE SLEEVE WITH WEATHERPROOF SEAL AT EXTERIOR WALL PENETRATION.
3. PROVIDE DRYWELL FOR CONDENSATE DRAIN. RE: DETAIL 1/M5 FOR DRYWELL DETAIL.
4. FAN COIL UNIT SUSPENDED FROM STRUCTURE. PROVIDE AUXILIARY DRAIN PAN UNDER ENTIRE UNIT WITH OVERFLOW DRAIN CONNECTION.
5. PROVIDE CONDENSATE DRAIN TRAP AT CONDENSATE DRAIN CONNECTION TO UNIT. RE: 2/M5 FOR CONDENSATE DRAIN DETAIL.
6. ROUTE OVERFLOW CONDENSATE DRAIN PIPING THRU WALL AND TERMINATE OVERHEAD. PROVIDE SLEEVE WITH WEATHERPROOF SEAL EXTERIOR WALL PENETRATION.

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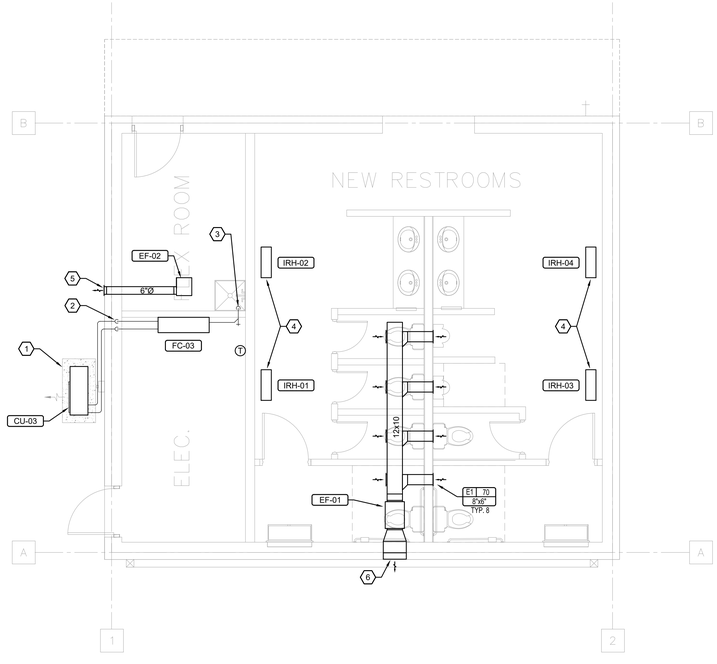
PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

MECHANICAL PLAN - BUILDING 1

DRAWN BY: GE
CHECKED BY: SA
PROJ. NO:
DRAWING NO: **M3**



1 MECHANICAL PLAN - BUILDING 2
1/4" = 1'-0"
0 2' 4' 8'

NORTH

KEYED NOTES:

1. MOUNT UNIT ON MINIMUM 4" HIGH CONCRETE HOUSEKEEPING PAD.
2. ROUTE PIPING DOWN IN WALL. PROVIDE SLEEVE WITH WEATHERPROOF SEAL AT EXTERIOR WALL PENETRATION.
3. ROUTE CONDENSATE PIPING DOWN WALL AND DISCHARGE INTO MOP SINK BELOW.
4. WALL MOUNTED RADIANT HEATER MOUNTED AT APPROX. 10' FROM FINISHED FLOOR. REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR CLEARANCE REQUIREMENTS.
5. TERMINATE 6" EXHAUST DUCT WITH WALL CAP.
6. PROVIDE EXHAUST LOUVER EQUAL TO GREENHECK MODEL EHH-501-24x18. PROVIDE WITH FACTORY FURNISHED BIRDSCREEN.

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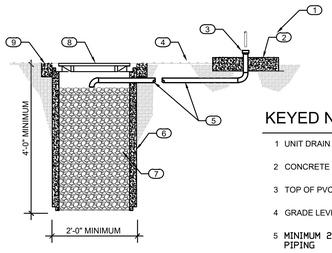
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DRAWING TITLE:

MECHANICAL PLAN - BUILDING 2

DRAWN BY: GE
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PROJ. NO:
DRAWING NO: **M4**

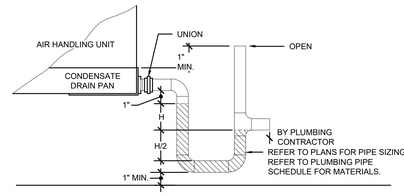


KEYED NOTES:(#)

1. UNIT DRAIN OUTLET WITH AIR GAP
2. CONCRETE PAD
3. TOP OF PVC TO BE ABOVE TOP OF PAD
4. GRADE LEVEL
5. MINIMUM 2-INCH SCHEDULE 40 PVC PIPING
6. CONCRETE REINFORCED PIPE MINIMUM 24-INCHES DIAMETER
7. 3/4-INCH GRAVEL FILLED BED
8. CAST IRON RING & COVER (MANHOLE). PROVIDE VEHICLE TRAFFIC RATED ASSEMBLY WHERE REQUIRED.
9. FLUSH MOUNTED CONCRETE MANHOLE PAD

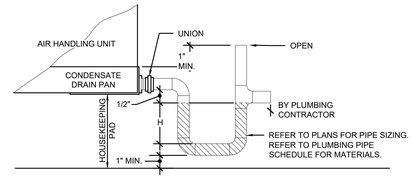
NOTE:
- WELL HOLES ARE TO BE BORED, MAINTAIN MIN. 10'-0" DISTANCE FROM ALL BUILDING FOUNDATIONS.
- WHERE SANITARY SEWER SYSTEM IS USED, RE: ONLY PIPING FROM UNIT TO DRAIN INLET.

1 OUTDOOR DRYWELL
N.T.S.



DRAW-THROUGH UNIT DRAIN

NOTE: H = FAN INLET PRESSURE (IN. WC.)



BLOW-THROUGH UNIT DRAIN

NOTE: H = FAN OUTLET PRESSURE (IN. WC.)

2 CONDENSATE DRAIN
N.T.S.

DX SPLIT SYSTEM SCHEDULE

			FC-01	FC2-01	FC2-02	FC-03
INDOOR UNIT	TAG					
	GENERAL	MANUFACTURER	MITSUBISHI-TRANE	MITSUBISHI-TRANE	MITSUBISHI-TRANE	MITSUBISHI-TRANE
		MODEL	TPEFYP072MH1MDA	MSZ-GX09NL	MSZ-GX12NL	MSY-GX12NL
		TYPE	HORIZONTAL CONCEALED	DUCTLESS WALL MOUNTED	DUCTLESS WALL MOUNTED	DUCTLESS WALL MOUNTED
		SERVICE	ELECTRICAL ROOM	STORAGE ROOM	OFFICE	ELECTRICAL ROOM
		TOTAL AIRFLOW (CFM)	2,154	448	448	448
		ELEVATION (FT ABOVE MSL)	800	800	800	800
		UNIT WEIGHT (LBS)	214	30	30	30
	COOLING CASE 1	ENTERING AIR (DB)	75.0	75.0	75.0	75.0
		ENTERING AIR (WB)	62.4	62.4	62.4	62.4
		LEAVING AIR (DB)	55.0	55.0	55.0	55.0
		LEAVING AIR (WB)	54.0	54.0	54.0	54.0
		TOTAL CAPACITY (MBH)	72.0	6.8	9.1	10.1
		SENSIBLE CAPACITY (MBH)	NA	6.8	8.4	8.8
	HEAT PUMP	HEATING CAPACITY @ 17 DEG. F. (MBH)	56.0	7.0	9.3	
		ENTERING AIR (DB)	65.0	65.0	65.0	
		LEAVING AIR (DB)	88.1	79.4	84.2	
	SUPPLY FAN	TYPE	FWD CURVED	FWD CURVED	FWD CURVED	FWD CURVED
		POSITION	BLOW THRU	BLOW THRU	BLOW THRU	BLOW THRU
		DRIVE	DIRECT DRIVE	DIRECT DRIVE	DIRECT DRIVE	DIRECT DRIVE
		DISCHARGE CONFIGURATION	HORIZONTAL	HORIZONTAL	HORIZONTAL	HORIZONTAL
		TOTAL STATIC (IN. WG)	0.6	0.6	0.6	0.6
		MOTOR TYPE	DC	DC	DC	DC
	ELECTRICAL DATA	VOLTS / PHASE	208/1	208/1	208/1	208/1
		MIN. CIRCUIT AMPS	7.1	POWERED BY OUTDOOR UNIT	POWERED BY OUTDOOR UNIT	POWERED BY OUTDOOR UNIT
		MAX. OVERCURRENT PROTECTION	15			
OUTDOOR UNIT	TAG		CU-01	CU-02		CU-03
	GENERAL	MAKE	MITSUBISHI-TRANE	MITSUBISHI-TRANE		MITSUBISHI-TRANE
		MODEL	MXZ-SM72TL	MXZ-2D20NL		MUY-GX12NL
		SERVICE	FC-01	FC2-01 & FC2-02		FC-03
		TYPE	HEAT PUMP	HEAT PUMP		COOLING ONLY
		NOMINAL TONS (ARI STD. COND.)	6.0	1.5		1.0
		MIN. # OF COMPRESSOR STAGES	VARIABLE	VARIABLE		VARIABLE
		MIN. EFFICIENCY RATING:	25 IEER	20 SEER2		25.6 SEER2
		COP @ 47 DEG. F.	4.38	3.9		
		CASE 2 COND. ENTERING AIR (DB)	95.0	105.0		105.0
		HEATING MODE COND. ENTERING AIR (DB)	17.0	22.0		
		UNIT WEIGHT (LBS)	421	120		120
	ELECTRICAL DATA	VOLTS / PHASE	208/3	208/1		208/1
		MIN. CIRCUIT AMPS	32.0	21.7		12.0
		MAX. OVERCURRENT PROTECTION	57	38		15

NOTES:
1. PROVIDE THE MAKE AND MODEL SPECIFIED OR AN ENGINEER APPROVED EQUAL.
2. THE TOTAL AND SENSIBLE COOLING COIL CAPACITIES ARE TO BE BASED UPON THE SCHEDULED EVAPORATOR ENTERING AND LEAVING AIR CONDITIONS AND CONDENSER ENTERING AIR CONDITION.
3. PROVIDE DX SPLIT SYSTEMS WITH CONTROLS INCLUDING WALL MOUNTED ELECTRONIC, 7-DAY PROGRAMMABLE THERMOSTATS WITH AUTOMATIC HEAT/COOL SWITCH-OVER CAPABILITY.
4. COOLING COIL DRAIN PANS SHALL BE SLOPED FOR COMPLETE DRAINAGE WITH NO STANDING WATER (IAQ PANS).
5. PROVIDE ALL UNITS WITH STANDARD SIZE (LOCALLY STOCKED) PLEATED FILTERS. FILTERS WITH CUSTOM DIMENSIONS ARE NOT ACCEPTABLE.
6. PROVIDE CU-01 OUTDOOR CONDENSING UNIT WITH LOW AMBIENT CONTROLS TO ALLOW COOLING OPERATION AT 0 DEG. F AND WITH HAIL GUARDS.
7. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND REQUIREMENTS, INCLUDING DISTANCE AND ELEVATION LIMITS. 1" CLOSED-CELL FOAM INSULATION FOR SUCTION LINE (BOTH LINES FOR HEAT PUMP SYSTEMS); 1-1/2" FOR HOT GAS HEAT RECOVERY. ARMACELL AP/ARMAFLEX OR EQUAL.
8. INSTALL INDOOR UNITS WITH VIBRATION ISOLATION IN ACCORDANCE WITH THE VIBRATION ISOLATION SCHEDULE.
9. WHEN CONDENSING UNITS ARE INSTALLED ON THE GROUND, PROVIDE 6" THICK REINFORCED CONCRETE PAD, 6" LARGER ON ALL SIDES THAN THE CONDENSING UNIT. INSTALL PAD LEVEL ON 6" OF COMPACTED FILL.
10. INSTALL GALVANIZED SHEETMETAL SECONDARY DRAIN PAN UNDER INDOOR DX EVAPORATOR SECTIONS INSTALLED ABOVE CEILINGS. SUPPORT DRAIN PAN INDEPENDENT OF THE DX UNIT.
11. ALL MOTORS SHALL BE PREMIUM HIGH EFFICIENCY RATING.
12. MOTORS 1HP AND LESS SHALL BE ECM. ALL MOTORS SHALL HAVE THE MEANS TO ADJUST FAN SPEED FOR BALANCING OR REMOTE CONTROL.
13. CONTROL PANEL SHORT CIRCUIT CAPACITY SHALL MATCH FEEDER KAIC OR PROVIDE WIRING FOR SEPARATE 120V FEED.

AIR DISTRIBUTION DEVICE SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	DESCRIPTION	MOUNTING LOCATION	NECK SIZE (IN.)	CFM RANGE	CONSTRUCTION	ACCESSORIES
E1	PRICE	635	RETURN / EXHAUST	SINGLE DEFLECTION LOUVERED GRILLE 3/4" BLADE SPACING 35 DEG. DEFLECTION BLADES PARALLEL TO LONG DIMENSION	SIDEWALL/DUCT MOUNTED	SEE PLANS	SEE PLANS	ALUMINUM	PROVIDE WITH OPPOSED BLADE VOLUME DAMPER.

GENERAL NOTES:
1. PROVIDE MAKE AND MODEL SPECIFIED OR ENGINEER APPROVED SUBSTITUTE.
2. COORDINATE AIR DEVICE COLOR SELECTION WITH ARCITECT. FOR BIDDING PURPOSES USE STANDARD WHITE, UNLESS STATED OTHERWISE.

INFRARED HEATER SCHEDULE

			IRH-01	IRH-02	IRH-03	IRH-04
GENERAL		TAG				
		MANUFACTURER	INDEECO	INDEECO	INDEECO	INDEECO
		MODEL	STT-U18-21618	STT-U18-21618	STT-U18-21618	STT-U18-21618
		TYPE	ELECTRIC INFRARED FLAT PANEL EMITTER	ELECTRIC INFRARED FLAT PANEL EMITTER	ELECTRIC INFRARED FLAT PANEL EMITTER	ELECTRIC INFRARED FLAT PANEL EMITTER
		SERVICE	RESTROOM	RESTROOM	RESTROOM	RESTROOM
		TOTAL AIRFLOW (ACFM)				
PERFORMANCE	GENERAL EMITTER	TYPE	ELECTRIC	ELECTRIC	ELECTRIC	ELECTRIC
		WATTS	2,161	2,161	2,161	2,161
		BTU	7,373	7,373	7,373	7,373
		MIN. # OF STAGES	1	1	1	1
ELECTRICAL		VOLTS / PHASE	208/1	208/1	208/1	208/1
		MCA	18.1	18.1	18.1	18.1

NOTES:
1. PROVIDE MAKE AND MODEL SPECIFIED OR ENGINEER APPROVED EQUAL.
2. REFER TO THE DRAWINGS FOR UNIT CONFIGURATION, CONNECTION SIDES, AND ACCESS LOCATIONS.
4. CONCTRATOR SHALL CONFIRM COLOR/FINISH WITH OWNER PRIO TO ORDERING.

FAN SCHEDULE

		EF-01	EF-02
GENERAL	TAG		
	MANUFACTURER	GREENHECK	GREENHECK
	MODEL	SQ-99-VG	SP-B150
	TYPE	IN-LINE	CEILING MOUNTED
	SERVICE	RESTROOM EXHAUST	FLEX ROOM
	TOTAL AIRFLOW (ACFM)	560	100
	ELEVATION (FT ABOVE MSL)	800	800
	UNIT WEIGHT (LBS)	50	10
PERFORMANCE	FAN ENTERING AIR TEMP (F)	85	85
	RPM	1,487	708
	STATIC PRESSURE (IN. W.C.)	0.58	0.25
	BHP	0.2	0.0
	MAX SONES	10.9	0.6
MOTOR	POWER (HP)	1/4	38 WATTS
	SPEED (RPM)	1,800	1,050
	V / PH	115/1	115/1
	MCA (AMPS)	4.8	2.2
	MOP (AMPS)	15	15
	MIN EFFICIENCY (%)	80%	80%
	DRIVE TYPE	DIRECT	DIRECT
	MOTOR TYPE	EC	N/A
	CONTROL	OCCUPANCY SENSOR	OCCUPANCY SENSOR

NOTES:
1. PROVIDE MAKE AND MODEL SPECIFIED OR ENGINEER APPROVED EQUAL.
2. REFER TO THE DRAWING FOR UNIT CONFIGURATION.
3. PROVIDE FANS WITH THE FOLLOWING OPTIONS:
   A. NEOPRENE OR SPRING ISOLATORS
   B. BACKDRAFT DAMPER
4. FURNISH ALL FANS WITH FACTORY SUPPLIED AND MOUNTED NEMA 1 DISCONNECT SWITCH.
5. FURNISH AND INSTALL FLEXIBLE DUCT CONNECTION AT THE CONNECTIONS TO THE UNIT. TRANSITION DUCTWORK FROM FULL SIZE UNIT OPENING TO THE DUCTWORK DIMENSIONS SHOWN ON THE PLANS.
6. INTERLOCK FAN WITH OCCUPANCY SENSOR. FAN SHALL RUN FOR 60 MINUTES WHEN ACTIVATED.
7. ALL MOTORS SHALL BE PREMIUM HIGH EFFICIENCY RATING.

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State of registration TX
Firm Registration No. F-2497
EEA Project No. 20250182

CLIENT:
Gray Street Partners

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	REVISION

PROJECT NAME:
1611 BROADWAY

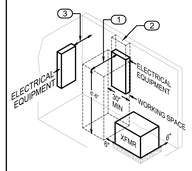
1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

MECHANICAL - SCHEDULES AND DETAILS

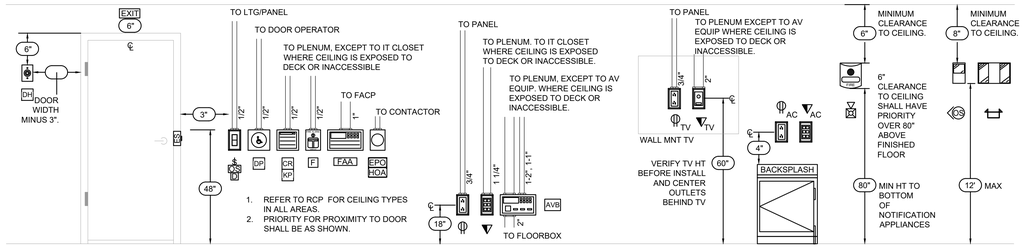
DRAWN BY: GE
CHECKED BY: SA
PROJ. NO:
DRAWING NO: **M5**

ELECTRICAL EQUIPMENT CLEARANCE REQUIREMENTS



KEYED NOTES:

1. 3' (0-150V TO GND),3.5' (151V-600V TO GND), 4' (OVER 150V WITH EXPOSED LIVE PARTS ON OTHER SIDE).
2. DEDICATED EQUIPMENT SPACE SHALL BE KEPT CLEAR TO 6FT ABOVE EQUIPMENT OR TO STRUCTURE OF ALL BUT CONDUIT SERVING EQUIPMENT.
3. MIN OFF SET SHALL BE DEPTH OF EQUIPMENT ON PERPENDICULAR WALL



BID NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SCOPE OF WORK UNLESS EXPLICITLY NOTED OTHERWISE. WHERE WORK IS NOTED TO BE BY SPECIALIST CONTRACTOR SUCH AS FIRE ALARM CONTRACTOR, THIS WORK SHALL BE PART OF THE CONTRACT UNLESS EXPLICITLY NOTED OTHERWISE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE COMPLETE CONTRACT DOCUMENTS AS SOME SCOPE REQUIRING ELECTRICAL WORK SUCH AS HVAC CONTROL POWER, CONTROL POWER TRANSFORMERS, DAMPERS, FLUSH VALVES, LIFT STATIONS, ETC MAY BE SHOWN ON OTHER DISCIPLINES' PLANS.
3. PRIOR TO BID, THE GENERAL CONTRACTOR (GC), ELECTRICAL, AND SPECIAL SYSTEMS CONTRACTORS SHALL COORDINATE THE PROJECT SCOPE TO VERIFY THAT ALL WORK AND EQUIPMENT NECESSARY FOR THE OPERATION OF THE IT, FIRE ALARM, SECURITY, A/V, AND OTHER SPECIAL SYSTEMS ARE INCLUDED IN THE BID.
4. THE GC SHALL COORDINATE WITH THE MECHANICAL, CONTROLS, PROCESS, PLUMBING, AND ELECTRICAL CONTRACTOR TO CONFIRM THAT ALL ELECTRICAL WORK AND EQUIPMENT NECESSARY FOR THE HVAC CONTROLS SYSTEM, AUTOMATIC FLUSH VALVES, ETC IS INCLUDED IN THE BID.
5. WHERE THE CONTRACT DOCUMENTS ARE UNCLEAR OR DO NOT SPECIFY WHO IS RESPONSIBLE FOR THE SCOPE, THE GC SHALL BE RESPONSIBLE FOR DELEGATION OF THE PROJECT SCOPE AND VERIFICATION THAT ALL SUB CONTRACTORS ARE AWARE OF WHICH COMPONENTS OF THE SCOPE ARE IN THEIR CONTRACT.
6. THE SPECIFICATION REQUIREMENTS SHOWN ON THIS PAGE ARE PROVIDED TO GIVE A GENERAL CONCEPT OF THE PROJECT REQUIREMENTS. MORE DETAILED REQUIREMENTS ARE SHOWN ON THE PLANS AND IN THE WRITTEN SPECIFICATIONS.

NAMEPLATE REQUIREMENTS

ELECTRICAL PANELS

PANEL L1
208/120V, 3PH, 4W
225A, FED FROM H1
VIA XFMR T-L1

EQUIPMENT CONTROLS

CWP-VFD
208/120V, 3PH, 4W
5HP, FED FROM L1

RECEPTACLES

PNL # CKT

J-BOXES

PWR	IT	FIRE
L1#1 120V	COM	FA NAC
NO PAINT	ORANGE COVER	RED COVER

LIGHTING

LIGHTING SYMBOLOGY GENERAL NOTES

1. USING THE LUMINAIRE TAG FOR REFERENCE, REFER TO THE LUMINAIRE (FIXTURE) SCHEDULE FOR THE DESCRIPTION OF EACH FIXTURE TYPE.
2. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR ADDITIONAL INFORMATION ABOUT LUMINAIRES, THE CEILING, MOUNTING HEIGHTS, ETC.

A a # — LUMINAIRE TAG, REFER TO SCHEDULE; LOWER CASE LETTER INDICATES SWITCHLEG (WHERE APPLICABLE); NUMBER INDICATES DAY LIGHTING CONTROL GROUP

EXIT LIGHTING

- EXIT SIGN - SINGLE FACE
- EXIT SIGN - DUAL FACE
- DUAL HEAD EMERGENCY LT WITH INTEGRAL BATTERY PACK
- E/NL — EMERGENCY/EGRESS LIGHTHING SHOWN HATCHED AND/OR TAGGED WITH "E" (AS IN "AE") UNSWITCHED WHERE NOTED NL
- X — LIGHTING CONTROL TAG (SEE LIGHTING CONTROL MATRIX)

SPECIFICATIONS

1. EDGE LIT, LED EXIT SIGNS.
2. INTEGRAL 90 MIN BATTERY PACK
3. SELF DIAGNOSTIC
4. INTEGRAL TEST SWITCH

1. EMERGENCY/EGRESS LIGHTING SHALL USE SELF CONTAINED BATTERY PACKS, UNO.
2. INTEGRAL 90 MIN BATTERY PACK
3. SELF DIAGNOSTIC
4. INTEGRAL TEST SWITCH

ABBREVIATIONS

A.	AMPERE	LOTO	LOCK OUT TAG OUT
AC	ABOVE COUNTER	LTG	LIGHT OR LIGHTING
AFF	ABOVE FINISHED FLOOR	MCB	MAIN CIRCUIT BREAKER
AIC	AMP INTERRUPTING CAPACITY	MCC	MOTOR CONTROL CENTER
A/V	AUDIO VISUAL	MCP	MOTOR CIRCUIT PROTECTOR
ATS	AUTOMATIC TRANSFER SWITCH	MIN	MINIMUM
BLDG	BUILDING	MH	METAL HALIDE
C	CONDUIT	MLO	MAIN LUGS ONLY
CKT	CIRCUIT	MNS	MASS NOTIFICATION SYSTEM
CM	CONTROL MODULE	MRS	MOTOR RATED SWITCH
CONN	CONNECT OR CONNECTION	MSB	MAIN SWITCH BOARD
CT	CURRENT TRANSFORMER	MTD	MOUNTED
DIM	DIMENSION	MTS	MANUAL TRANSFER SWITCH
EA	EACH	MV	MEDIUM VOLTAGE
EC	ELECTRICAL CONTRACTOR	N.I.C.	NOT IN CONTRACT
EF	EXHAUST FAN	NL	NIGHT LIGHT (UNSWITCHED)
ELEC	ELECTRIC,ELECTRICAL	NTS	NOT TO SCALE
EMER	EMERGENCY	Ø	PHASE
EPO	EMERGENCY POWER OFF	OL	OVERLOAD
EWC	ELECTRIC WATER COOLER	OE	OVER HEAD ELECTRIC
FACP	FIRE ALARM CONTROL PANEL	PS	PULL STRING
FLA	FULL LOAD AMPS	RECPT	RECEPTACLE
FS	FLOW SWITCH	RGS	RIGID GALVANIZED STEEL
FSD	FIRE SMOKE DAMPER	SPD	SURGE PROTECTION DEVICE
GC	GENERAL CONTRACTOR	TS	TAMPER SWITCH
GFI	GROUND FAULT INTERRUPTER	TYP.	TYPICAL
GND	GROUND	UG	UNDERGROUND
HOA	HAND-OFF-AUTO	UNO	UNLESS NOTED OTHERWISE
HP	HORSEPOWER	V	VOLTAGE
HPS	HIGH PRESSURE SODIUM	WH	WATER HEATER
HTR	HEATER	WP	WEATHER PROOF
J-BOX	JUNCTION BOX	WR	WEATHER RATED
KCM	THOUSAND CIRCULAR MILLS	XFMR	TRANSFORMER

RECEPTACLES

- SIMPLEX RECEPTACLE
- DUPLEX RECEPTACLE
- QUADRAPLEX RECEPTACLE
- FLOOR MOUNTED RECEPTACLE
- CEILING MOUNTED RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE
- SWITCHED RECEPTACLE - 1/2 SWITCHED
- SWITCHED QUAD RECEPT. - 1/2 SWITCHED
- USB RECEPTACLE

AC — L1#1 GFI — PANEL NAME & CIRCUIT NUMBER

SPECIFICATION NOTES:

GFI = INTEGRAL GROUND FAULT TRIP MODULE
IG = ISOLATED GROUND
MG = MARINE GRADE
TL = TWIST-LOCK
TR = TAMPER RESISTANT
WP = WEATHER RESISTANT RECEPTACLE WITH METAL WEATHERPROOF WHILE IN USE COVER

MOUNTING REQUIREMENTS:

48" = MOUNT AT 48 INCHES ABOVE FINISHED FLOOR
AC = MOUNT ABOVE COUNTER 4" ABOVE BACK-SPLASH

LIGHTING FIXTURES

A a — LUMINAIRE TAG, REFER TO SCHEDULE; FIXTURE IS IN DAYLIGHTING ZONE (SEE LIGHTING CONTROLS SECTION); LOWER CASE LETTER INDICATES SWITCHLEG (WHERE APPLICABLE)

L1#1 E/NL — PANEL NAME & CIRCUIT NUMBER; E = BACK UP POWERED; NL = UNSWITCHED NIGHT LIGHT

EXIT/EMERGENCY LIGHTING

- EXIT SIGN - SINGLE FACE
- EXIT SIGN - DUAL FACE
- DUAL HEAD EMERGENCY LT WITH INTEGRAL BATTERY PACK
- E/NL — EMERGENCY/EGRESS LIGHTHING SHOWN HATCHED AND/OR TAGGED WITH "E" (AS IN "AE") UNSWITCHED WHERE NOTED NL

a $3 — SPECIFICATION NOTES:

(BLANK)= SEE LIGHTING CONTROL MATRIX
3 = THREE WAY (LINE VOLTAGE)
4 = FOUR WAY (LINE VOLTAGE)
D = LINE VOLTAGE DIMMER
EP = EXPLOSION PROOF
K = KEY OPERATED
M = MANUAL MOTOR STARTER
P = PILOT LIGHT
T = TIMER

SWITCHING INSTRUCTIONS:

LOWER CASE LETTER DESIGNATES A SWITCHLEG, LETTER WILL BE SHOWN NEXT TO EACH FIXTURE CONTROLLED BY SWITCH

LIGHTING CONTROL MATRIX WILL HAVE ADDITIONAL SWITCH FEATURES. SEE SCHEDULE SHEET(S).

LIGHTING CONTROLS

X — ROOM LIGHTING CONTROL TAG (SEE LIGHTING CONTROL MATRIX)

SWITCHES

- $ — WALL CONTROL (SEE LIGHTING CONTROL MATRIX)
- DFS — DOOR FRAME SWITCH

OCCUPANCY/DAYLIGHT SENSORS

- OSA — AIMABLE WALL MOUNTED
- OS — 360° CEILING MOUNTED
- DS — DAYLIGHT SENSOR
- * — FIXTURE IS IN PRIMARY DAYLIGHTING ZONE
- ** — FIXTURE IS IN SECONDARY DAYLIGHTING ZONE

AUTOMATED CONTROLS

- LC — LIGHTING CONTACTOR
- PC — PHOTOCELL
- TC — TIMECLOCK
- LCP — LIGHTING CONTROL PANEL
- LCS — LIGHTING CONTROL TOUCHSCREEN
- WDP — WALL MOUNTED DIMMER PANEL

SITE ELECTRICAL

SITE WIRING

- CIRCUIT WIRING
- UNDERGROUND CIRCUIT WIRING
- EXISTING UNDERGROUND
- MULT-CONDUIT UNDERGROUND (CONCRETE ENCASED WHERE NOTED)
- UE — UNDERGROUND HV/MV UTILITY LINE
- OE — OVERHEAD HV/MV UTILITY LINE
- UT — UNDERGROUND TELECOM SERVICE
- STUB UP / TURN DOWN

EXTERIOR IN GRADE EQUIPMENT

- PB — IN GRADE 600V PULL BOX
- CP — IN GRADE COMMUNICATIONS PULL BOX
- EM — ELECTRICAL MANHOLE
- CM — COMMUNICATIONS MANHOLE
- MV PB — UNDERGROUND UTILITY PULL BOX

EXTERIOR ABOVE GRADE EQUIPMENT

- TRANSFORMER PAD
- T — POLE MOUNTED TRANSFORMER
- UTILITY POLE
- EQUIPMENT MOUNTING RACK
- MV SWI — MV PAD MOUNT SWITCH
- C — COMMUNICATIONS SERVICE ENCLOSURE

ELECTRICAL ONE LINE

ONE LINE

- MOLDED/INSULATED CASE BREAKER
- DRAWOUT CIRCUIT BREAKER, AIR TYPE
- DRAWOUT CIRCUIT BREAKER, VAC TYPE
- THERMAL OVERLOAD
- FUSED DISCONNECT SWITCH
- FUSE, HOLDER & PULLER
- POTENTIAL TRANSFORMER
- CURRENT TRANSFORMER
- CT ENCLOSURE
- M — UTILITY METER
- SPD — SURGE PROTECTION DEVICE
- GEN — GENERATOR REMOTE ANNUNCIATION PNL
- X — MOTOR, "X" INDICATING HORSE POWER
- AUTOMATIC TRANSFER SWITCH
- ST — SHUNT TRIP (K=KIRK KEY INTERLOCK, RT=REMOT TRIP)
- K — KIRK-KEY

ELECTRICAL EQUIPMENT

DISTRIBUTION EQUIPMENT

- ELECTRICAL BRANCH PANEL
- TRANSFORMER
- J — JUNCTION BOX
- FBF — FLOORBOX
- SURFACE RACEWAY
- EQUIP MOUNTED ON CHANNEL RACK

EQUIPMENT CONTROLLERS

DISCONNECTS AND OCPD

- CB — ENCLOSED CIRCUIT BREAKER
- DISCONNECT SWITCH
- $H — HORSE POWER RATED TOGGLE SWITCH
- $M — MANUAL MOTOR STARTER W/ OVERLOADS
- $U — DISCONNECT MOUNTED ON UNISTRUT

MOTOR AND EQUIPMENT CONTROLS

- MAGNETIC STARTER - FVNR U.N.O.
- COMBINATION STARTER & DISCONNECT
- MAGNETIC CONTACTOR (LTG CONTACTOR)
- VFD — VARIABLE FREQUENCY DRIVE
- EPO — EMERGENCY POWER OFF PUSHBUTTON
- HOA — "HAND-OFF-AUTO" CONTROL SELECTOR

SPECIAL SYSTEMS

TELECOM OUTLETS & DEVICES

- DATA OUTLET
- COMINATION DATA AND VOICE OUTLET
- VOICE OUTLET
- FLOOR MOUNTED DATA OUTLET
- AVB — AUDIO VIDEO INPUT JACK BOX
- WAP — WIRELESS ACCESS POINT
- A/V — A/V OUTLET BOX
- TV — TV/CATV OUTLET

FIRE ALARM AND (VOICE/ MASS) NOTIFICATION DEVICES

- HORN
- COMBINATION HORN/STROBE
- COMBINATION SPEAKER/STROBE
- S — SPEAKER, WALL MOUNT — C - CEILING MOUNT — WP - WEATHERPROOF
- cd — VISUAL ONLY, CEILING MOUNTED, CLEAR LENS, cd=CANDELA RATING/SETTING
- cd — VISUAL ONLY, WALL MOUNTED, CLEAR LENS, cd=CANDELA RATING/SETTING
- cd — MNS, CEILING MOUNTED, AMBER LENS, cd=CANDELA RATING/SETTING
- cd — MNS, WALL MOUNTED, AMBER LENS, cd=CANDELA RATING/SETTING
- W cd C — COMBINATION SPEAKER/VISUALS, CEILING MOUNTED, AMBER AND CLEAR LENS, cd=CANDELA RATING/SETTING, W=WATTAGE
- W cd — COMBINATION SPEAKER/VISUALS, WALL MOUNTED, AMBER AND CLEAR LENS, cd=CANDELA RATING/SETTING, W=WATTAGE
- W cd WP — COMBINATION SPEAKER/VISUALS, WALL MOUNTED, WEATHERPROOF, AMBER AND CLEAR LENS, cd=CANDELA RATING/SETTING, W=WATTAGE

FIRE DETECTION DEVICES

- F — MANUAL PULL STATION
- S — AREA SMOKE DETECTOR
- S SB — AREA SMOKE DETECTOR WITH SOUNDER BASE
- CARBON MONOXIDE DETECTOR
- AREA HEAT DETECTOR
- S — DUCT MOUNTED SMOKE DETECTOR
- H — HOOD FIRE SUPPRESSION SYSTEM RELAY
- VS — VALVE SUPERVISORY SWITCH
- WF — WATER FLOW SWITCH

FIRE ALARM SYSTEM CONTROLS

- FACP — FIRE DETECTION & ALARM CONTROL PNL
- MNS — MASS NOTIFICATION SYSTEM
- NAC — NOTIFICATION CIRCUIT EXPANSION PNL
- FAA — FACP REMOTE ANNUNCIATOR PANEL
- LOC — LOCAL OPERATOR CONSOLE
- HFS — KITCHEN HOOD FIRE SUPPRESSION PNL
- AO — ADDRESSABLE OUTPUT CONTROL MODULE
- MOTORIZED SMOKE FIRE DAMPER
- LT — LOW TEMPERATURE SWITCH
- MM — MONITOR MODULE

ACCESS CONTROL (ACS) & INTRUSTION DETECTION SYSTEMS

- CR — CARD READER FOR CAC SMART CARD
- KP — KEY PAD
- P1 — CONCEALED DOOR POSITION SWITCH
- P2 — OVERHEAD DOOR POSITION SWITCH
- REX — REQUEST TO EXIT
- E1 — ELECTRIFIED EXIT PUSH BAR
- DP — DOOR OPEN PUSHBUTTON
- J CCTV — CCTV CAMERA, INFRASTRUCTURE ONLY

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210.955.9930 main
www.eeace.com

State of registration TX
Firm Registration No. F-2497
EEA Project No. 20250182

CLIENT:
Gray Street Partners

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	REVISION

Digitally Signed



Ryan A. Royal, P.E.
2026.03.24 18:14:10-05'00'

PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

ELECTRICAL - SYMBOLS

DRAWN BY: JPM
CHECKED BY: RR
PROJ. NO:
DRAWING NO: **E1**

26 00 00 - ELECTRICAL GENERAL CONDITIONS

CODE REQUIREMENTS

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF LAWS, RULES, REGULATIONS, CODES STANDARDS, AND ORDINANCES OF FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION, AND ALL EQUIPMENT AND MATERIALS SHALL COMPLY WITH SAID AUTHORITIES WHETHER INDICATED ON THE CONTRACT DOCUMENTS OR NOT.
2. ALL WORK SHALL BE PERFORMED PER:
   - 2.1. 2021 INTERNATIONAL ENERGY CONSERVATION CODE - IECC WITH LOCAL CITY AMENDMENTS
   - 2.2. THE LATEST EDITION OF THE AUSTIN ENERGY DESIGN CRITERIA MANUAL AS OF PERMITTING DATE
   - 2.3. 2023 NATIONAL ELECTRICAL CODE - NEC WITH LOCAL CITY AMENDMENTS
   - 2.4. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
3. THE PUBLICATIONS AND STANDARDS OF THE FOLLOWING AUTHORITIES, IN ADDITION TO THOSE SPECIFIED IN RELATED PROJECT DOCUMENTS, SHALL BE OBSERVED DURING CONSTRUCTION AND ARE REFERENCED IN THE DOCUMENTATION BY THE ABBREVIATIONS NOTED:
   - 3.1. UNITED STATES OF AMERICA STANDARDS INSTITUTE - USASI
   - 3.2. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS - IEEE
   - 3.3. NATIONAL ELECTRICAL CODE - NEC
   - 3.4. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
   - 3.5. UNDERWRITER'S LABORATORY - UL
   - 3.6. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION - NEMA
   - 3.7. CERTIFIED BALLAST MANUFACTURERS - CBM
   - 3.8. AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM
   - 3.9. OCCUPATIONAL SAFETY AND HEALTH ACT - OSHA
   - 3.10. INTERNATIONAL CODES BY THE INTERNATIONAL CODE COUNCIL
     - 3.10.1. INTERNATIONAL BUILDING CODE - IBC
     - 3.10.2. INTERNATIONAL ENERGY CODE - IECC
4. UNLESS NOTED OTHERWISE, EQUIPMENT AND DEVICES SHALL BE MOUNTED PER ADA AND TAS REQUIREMENTS.
   - 4.1. OPERABLE DEVICES (SWITCHES, CARD READERS, ETC) AT OR BELOW 48" AFF.
   - 4.2. RECEPTACLES, TELEPHONE AND DATA OUTLETS AT 18" AFF (15" MIN TO BOTTOM OF DEVICE), UNO.

SCOPE OF WORK

1. THE SCOPE OF WORK SHALL INCLUDE COMPLETE PROVISIONS FOR ELECTRICAL POWER DISTRIBUTION TO ALL LIGHTING, DEVICES, APPLIANCES, AND EQUIPMENT SHOWN ON THE CONSTRUCTION DOCUMENTS.
   - 1.1. PROVISIONS INCLUDE, BUT ARE NOT LIMITED TO, ALL SUPPLIES, MATERIALS, EQUIPMENT, TOOLS AND LABOR.
   - 1.2. PROVISIONS ALSO INCLUDE ALL MISCELLANEOUS MATERIALS REQUIRED TO COMPLETE THE WORK SHOWN INCLUDING, BUT NOT LIMITED TO, SUPPORTS, HANGERS, RACEWAYS, BOXES, SLEEVES, SEALS, EQUIPMENT PADS, WIRING CONNECTORS, TERMINALS, LABELS, SIGNS, AND MARKERS.
   - 1.3. THE CONSTRUCTION DOCUMENTS INCLUDE ALL PLANS, ELEVATIONS, DETAILS, DIAGRAMS, SCHEDULES, AND NOTES ON THE DRAWINGS.
   - 1.4. WHERE USED ON THE PLANS AND IN THE SPECIFICATIONS AND WHERE NOT SPECIFICALLY NOTED OTHERWISE, THE TERM "PROVIDE" AND THE TERM "INSTALL" SHALL MEAN FURNISH, INSTALL, CONNECT AND TEST.
   - 1.5. UNLESS EXPLICITLY NOTED "BY OTHERS" OR "EXISTING", ALL ITEMS SHOWN GRAPHICALLY OR SPECIFIED BY NOTES AND DETAILS ON THE PLANS SHALL BE FURNISHED, INSTALLED, CONNECTED, AND TESTED AS NEEDED. "BY OTHERS" IS IMPLIED TO BE OTHER SUB-CONTRACTORS.
2. ADDITIONALLY, THE SCOPE OF WORK SHALL INCLUDE
   - 2.1. APPLICATION FOR TEMPORARY AND PERMANENT ELECTRICAL SERVICE, PERMITTING, INSPECTION, AND PAYMENT OF ALL ASSOCIATED FEES.
   - 2.2. TESTING AND COMMISSIONING OF ELECTRICAL SYSTEMS.
   - 2.3. EQUIPMENT RENTAL.
   - 2.4. TEMPORARY CONSTRUCTION POWER AND LIGHTING.
   - 2.5. PROVISIONS FOR MAINTAINING THE FUNCTIONALITY OF EXISTING TO REMAIN BUILDING COMMUNICATIONS, FIRE ALARM, SECURITY/ACCESS CONTROL, PUBLIC ADDRESS, AND BELL SYSTEMS THAT WILL BE AFFECTED BY THE WORK.
   - 2.6. COMPUTER BASED SHORT CIRCUIT COORDINATION STUDY AND ARC FLASH HAZARD ANALYSIS SHALL BE PERFORMED BY A STATE REGISTERED PROFESSIONAL ENGINEER AND PROVIDED BY PANEL MANUFACTURER THROUGH THE ELECTRICAL CONTRACTOR. STUDY TO INCLUDE AT A MINIMUM, EXECUTIVE SUMMARY OF FINDINGS, TIME CURRENT CURVES, ONE-LINE MODEL, ELECTRICAL DISTRIBUTION RECOMMENDATIONS, AND ARC FLASH WARNING LABELS.
     - 2.6.1. SHORT CIRCUIT STUDY TO COMPLY WITH IEEE 399 AND IEEE 551.
     - 2.6.2. COORDINATION STUDY TO COMPLY WITH IEEE 242 AND IEEE 399.
     - 2.6.3. ARC FLASH ANALYSIS TO COMPLY WITH IEEE 1584 AND NFPA 70E.

SUBMITTALS

1. PRODUCT DATA: SUBMIT CATALOG DATA SHOWING MANUFACTURER'S NAME AND CONTACT INFORMATION, ALL STANDARD FEATURES, AMPERAGE, VOLTAGE, AIC RATINGS, DIMENSIONS, WEIGHTS, LISTINGS & PRODUCT LABELS, MATERIAL TYPES, FINISHES AND CLEARLY INDICATING WHICH OPTIONAL FEATURES WILL BE PROVIDED.
   - 1.1. WHERE MULTIPLE SIZES ARE LISTED, INDICATE SIZES TO BE USED.
   - 1.2. WHERE MULTIPLE PRODUCTS ARE SHOWN ON THE SAME PAGE, INDICATE WHICH PRODUCTS TO BE USED.
2. SHOP DRAWINGS (WHERE APPLICABLE): MANUFACTURER OR CONTRACTOR PREPARED DRAWINGS SHOWING ALL RELEVANT DIMENSIONS, WEIGHTS, ELECTRICAL & MECHANICAL CONNECTION REQUIREMENTS, CONDUIT ENTRY POINTS, ASSEMBLY REQUIREMENTS, LIFTING REQUIREMENTS, LIFTING POINTS, REQUIRED CLEARANCES. INCLUDE PLAN VIEWS & ELEVATIONS.
   - 2.1. INCLUDE ALL RELEVANT ELECTRICAL DIAGRAMS INCLUDING SCHEMATIC AND INTERCONNECTION DIAGRAMS FOR POWER, SIGNAL, AND CONTROL WIRING.

COORDINATION

1. THE CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL AND OTHER DRAWINGS RELATED TO THIS PROJECT FOR ADDITIONAL WORK TO BE PROVIDED.
2. ALL POWER OUTAGES SHALL BE COORDINATED IN WRITING WITH OWNER ONE (1) WEEK (MIN) PRIOR TO THE OUTAGE.
3. COOPERATE FULLY WITH THE OWNER OR HIS REPRESENTATIVE DURING CONSTRUCTION OPERATIONS TO MINIMIZE CONFLICTS AND TO FACILITATE OWNER USAGE SO AS NOT TO INTERFERE WITH THE OWNER'S OPERATIONS.
4. THE DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW SWITCHES, POWER AND DATAUTLETS, SPECIAL SYSTEMS COMPONENTS (FA, ACCESS CONTROL, A/V, ETC), ELECTRICAL EQUIPMENT, EQUIPMENT CONNECTIONS, REQUIRED RACEWAY, ETC. IN THEIR EXACT DIMENSIONED LOCATIONS. THE CONTRACTOR MUST CAREFULLY REVIEW THE ARCHITECTURAL, STRUCTURAL MECHANICAL, PLUMBING, FIRE PROTECTION, AND SPECIAL SYSTEMS PLANS TO IDENTIFY CONFLICTS AND AREAS THAT REQUIRE COORDINATION.
5. COORDINATE ELECTRICAL AND SPECIAL SYSTEMS EQUIPMENT ROUGH-IN WITH FURNITURE, MILLWORK, SIGNS, MECHANICAL AND PLUMBING SYSTEMS, SPRINKLER SYSTEMS, ARCHITECTURAL AND STRUCTURAL ELEMENTS, AND THE OWNER'S REPRESENTATIVE. MINOR CHANGES IN ELECTRICAL EQUIPMENT LOCATIONS AND LAYOUT THAT ARE REQUIRED BY SITE CONDITIONS OR ORDERED BY THE DESIGN TEAM PRIOR TO PERFORMANCE OF WORK SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL CHARGES TO THE OWNER.
6. MAINTAIN REQUIRED NEC WORKING SPACE AND DEDICATED EQUIPMENT SPACE AROUND ALL ELECTRICAL EQUIPMENT, CONTROLS PANELS, ETC THAT ARE SUBJECT TO MAINTENANCE, TESTING, OR USER INTERFACE. COORDINATE WITH OTHER TRADES. IF CLEARANCE CANNOT BE PROVIDED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO ROUGH-IN.
7. COORDINATE COLOR SELECTIONS FOR LUMINAIRES AND ALL DEVICE PLATES WITH ARCHITECT.
8. COORDINATE POWER REQUIREMENTS FOR HVAC CONTROLS, FIRE ALARM, SECURITY, AND OTHER SPECIAL SYSTEMS TO MAKE SURE THAT ALL WORK IS COVERED IN THE BID.

DELIVERY AND STORAGE

1. STORE ALL ELECTRICAL/SPECIAL SYSTEMS EQUIPMENT/MATERIALS IN CLEAN, DRY SPACE LOCATED ABOVE GRADE. PROTECT FROM DIRT, WATER, CONSTRUCTION DEBRIS, TRAFFIC, FREEZE, AND DETERIORATION FROM SUN LIGHT.
2. MAINTAIN FACTORY WRAPPING OR PROVIDE APPROPRIATE COVER FOR ALL LARGE ELECTRICAL EQUIPMENT. FOLLOW ALL MANUFACTURER RECOMMENDATIONS FOR HUMIDITY AND MAX/MIN TEMPERATURES FOR STORING ELECTRICAL EQUIPMENT.

QUALIFICATIONS

1. MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SHOWN ON THE CONSTRUCTION DOCUMENTS WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE.
2. INSTALLER: A STATE LICENSED ELECTRICIAN WITH DOCUMENTED EXPERIENCE INSTALLING ALL EQUIPMENT SPECIFIED HERE IN SHALL DIRECTLY SUPERVISE ALL WORK. WHERE NOTED IN THE SPECIFICATIONS, REQUIRED BY CODE, OR REQUIRED BY THE MANUFACTURER, INSTALLER SHALL BE A MANUFACTURER TRAINED AND/OR CERTIFIED INSTALLER OF THE SPECIFIC PRODUCT TO BE INSTALLED.
3. WHERE TESTING IS REQUIRED BY THE CONSTRUCTION DOCUMENTS, EQUIPMENT MANUFACTURER, OR CODE; TESTING SHALL BE PERFORMED BY AN AGENCY WITH DOCUMENTED EXPERIENCE AND PROPERLY CALIBRATED, FULLY FUNCTIONING EQUIPMENT, THAT IS A MEMBER OF THE INTERNATIONAL ELECTRICAL TESTING ASSOCIATION, MANUFACTURER CERTIFIED, OR A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL), AND IS ACCEPTABLE TO THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).

QUALITY ASSURANCE

1. UNLESS OTHERWISE APPROVED, ALL EQUIPMENT SHALL BE NEW, PROPERLY DESIGNED, FROM A REPUTABLE MANUFACTURER MEETING THE SPECIFICATION QUALIFICATIONS, IN COMPLIANCE WITH THE SPECIFICATION REQUIREMENTS, AND IN FULL WORKING ORDER.
2. WHERE TWO OR MORE ITEMS OF THE SAME CLASS OF EQUIPMENT ARE REQUIRED, THESE ITEMS SHALL BE PRODUCTS OF A SINGLE MANUFACTURER; HOWEVER, THE COMPONENT PARTS OF THE ITEM NEED NOT BE THE PRODUCTS OF THE SAME MANUFACTURER UNLESS STATED IN THE TECHNICAL SECTION.
3. LISTING AND LABELING: WHERE REQUIRED, ALL ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES SHALL BE LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO LOCAL AUTHORITIES HAVING JURISDICTION AND MARKED FOR THE INTENDED USE. TESTING AGENCY SHALL BE UL UNLESS NOTED OTHERWISE OR PRE-APPROVED BY OWNER AND LOCAL A.H.J.
4. ALL EQUIPMENT USED FOR TESTING SHALL BE IN FULL WORKING ORDER AND CALIBRATED PER THE MANUFACTURER'S RECOMMENDATIONS.
5. IF CONFLICTS BETWEEN THE SPECIFICATIONS AND DRAWINGS OCCUR, THE HIGHER QUALITY OR QUANTITY SHALL BE PROVIDED AND INSTALLED. WHEN CONFLICTS EXIST, CONTRACTOR SHALL PROVIDE A WRITTEN REQUEST FOR CLARIFICATION FROM THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL EXPENSES INCURRED AS A RESULT OF THE CONTRACTOR'S FAILURE TO OBTAIN CLARIFICATION.

INSTALLATION

1. THE CONTRACTOR SHALL PROVIDE CONCRETE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT. THE CONCRETE SHALL PROTRUDE AT LEAST 3" PAST THE EDGE OF THE ELECTRICAL EQUIPMENT ON ALL SIDES. THE CONCRETE PAD SHALL BE 6" TALL AND CONTAIN A 1/2" CHAMFER ON ALL SIDES. PROVIDE A MINIMUM OF 3000PSI CONCRETE AND #4 REBAR OR AS RECOMMENDED BY THE STRUCTURAL ENGINEER.
2. NO FOREIGN SYSTEMS SUCH AS PIPING, DUCT WORK, ETC SHALL BE INSTALLED ABOVE ELECTRICAL EQUIPMENT.
3. PROVIDE SLEEVES FOR PENETRATIONS THROUGH WALLS/FLOORS. SEAL ALL OPENINGS. USE FIRE-RATED SEALANT FOR OPENINGS IN RATED FLOORS AND WALLS.

26 05 19 - CONDUCTORS AND CABLES (600V AND LESS)

GENERAL REQUIREMENTS

1. ALL BUILDING WIRING (THHN/THWN) SHALL BE INSULATED COPPER CONDUCTORS RUN FROM LOAD TO SOURCE INSIDE RACEWAY OR NM CABLE ROUTED THROUGH WOODEN MEMBERS AS ALLOWED BY NEC ARTICLE 334, CONTINUOUS (WITHOUT SPLICES) BETWEEN JUNCTION AND PULL BOXES.
2. ALL SINGLE POLE CIRCUITS SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR ROUTED TO THE SOURCE PANEL.
3. FIELD VERIFY WHETHER A NEUTRAL IS REQUIRED FOR ALL TWO AND THREE POLE CIRCUITS. FOR ALL LOADS EXCEPT MOTORS, A NEUTRAL IS ASSUMED TO BE REQUIRED UNLESS FIELD DETERMINED TO BE UNNECESSARY.
4. ALL POWER & CONTROL WIRING ROUTED THROUGH RETURN AIR PLENUMS SHALL BE PLENUM RATED.
5. UP TO 3-20A CIRCUITS MAY SHARE A RACEWAY FOR HOMERUNS WHERE SUITABLE & PER NEC CONDUIT FILL RULES.
6. 120V, 20A. HOME RUNS LONGER THAN 100' AND 277V, 20A. HOME RUNS LONGER THAN 150' SHALL BE #10 MIN.
7. PROVIDE COLOR CODING FOR ALL WIRING IN ACCORDANCE WITH LOCAL ADOPTED CODE OR OWNER'S REQUIREMENTS. IF THIS PROJECT DOES NOT HAVE LOCAL REQUIREMENTS OR OWNER STANDARDS, ALL WIRING SHALL BE COLOR-CODED AS FOLLOWS:

	208Y/120 VOLT SYSTEM	480/277 VOLT SYSTEM
NEUTRAL:	WHITE	GRAY
PHASE A OR L1	RED	BROWN
PHASE B OR L2	BLACK	YELLOW
PHASE C OR L3	BLUE	PURPLE
GROUND	GREEN	GREEN
ISOLATED GROUND	GREEN W/YELLOW TRACER	GREEN W/YELLOW TRACER

BUILDING WIRE

1. CONDUCTOR: SOFT DRAWN COPPER, 98% CONDUCTIVITY.
2. INSULATION RATING: 600V, 90°C
3. INSULATION MATERIAL: NM CABLE WHERE ALLOWED BY NEC ARTICLE 334. IN SPACES WHERE NM CABLE IS NOT ALLOWED, USE THHN,THWN IN CONDUIT. USE XHHW CONDUCTORS IN CONDUIT WHERE INSTALLED IN UNDERGROUND AND ON ALL LOAD SIDE CONDUCTORS OF A VFD.
4. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.
5. CONDUCTORS #10 AWG SHALL BE SOLID OR STRANDED. FINAL CONNECTION SHALL BE MADE WITH WIRE TYPE CONSISTENT WITH UL LISTING AND MANUFACTURER REQUIREMENTS FOR EQUIPMENT, FIXTURE, AND/OR DEVICE.
6. CONDUCTORS #12 SHALL BE SOLID.
7. FEEDER CONDUCTORS #1/0 AND LARGER ARE ALLOWED TO BE ALUMINUM WITH ENGINEER'S APPROVAL.

METAL CLAD CABLE

1. CONDUCTOR: SOFT DRAWN COPPER, 98% CONDUCTIVITY.
2. INSULATION: 600V, 90°C, THHN/THWN U.N.O.
3. ARMOR: STEEL OR ALUMINUM; INTERLOCKED METAL TAPE.
4. ALL HOME RUNS SHALL BE IN CONDUIT (NOT MC CABLE) FROM PANEL TO FIRST WIRING DEVICE, OR TO JUNCTION BOX LOCATED IN ACCESSIBLE CEILING SPACE ABOVE FIRST WIRING DEVICE.
5. ALL SWITCH LEGS SHALL BE PROVIDED WITH CONDUIT TO JUNCTION BOX ABOVE ACCESSIBLE CEILING TO ALLOW FOR FUTURE MODIFICATION.
6. MC CABLE SHALL NOT BE USED FOR CONNECTING TO DEDICATED RECEPTACLES OR PIECES OF EQUIPMENT.
7. NO EXPOSED MC CABLE WILL BE ALLOWED.

CONNECTORS AND TERMINATIONS

1. PROVIDE FACTORY-FABRICATED, METAL CONNECTOR OF THE SIZE, RATING, MATERIAL, TYPE AND CLASS REQUIRED BY EQUIPMENT MANUFACTURER AND THE NEC.
2. CONNECTORS SHALL BE INSULATED TO 600V AND CONDUCTING COMPONENTS SHALL MATCH MATERIAL OF WIRING (COPPER U.N.O.)
3. TERMINAL LUGS FOR WIRES #6 AWG AND SMALLER SHALL BE SOLDERLESS, COMPRESSION TYPE COPPER.
4. TERMINAL LUGS FOR #4 AWG AND LARGER SHALL BE COMPRESSION TYPE COPPER WITH INSULATING SEALING COLLARS.
5. ALL TERMINALS, LUGS AND BUS JOINTS SHALL BE TIGHTENED PER THE MANUFACTURER'S TORQUE REQUIREMENTS. PROVIDE TORQUE LOG AS PART OF THE PROJECT CLOSEOUT SUBMITTALS.

26 05 26 - GROUNDING AND BONDING

GENERAL REQUIREMENTS

1. ALL RACEWAYS AND CIRCUITS SHALL BE PROVIDED WITH A NEC 250 COMPLIANT GREEN GROUND CONDUCTOR.
2. ALL EQUIPMENT SHALL BE PROPERLY BONDED.
3. UPON COMPLETION OF THE WORK, ALL FEEDERS OF THE ELECTRICAL INSTALLATION SHALL BE MEGGER TESTED AND PROVED TO BE FREE OF UNWANTED GROUNDS AND OTHER DEFECTS.
4. INSTALL BRANCH CIRCUITS FEEDING ISOLATED GROUND RECEPTACLES WITH SEPARATE INSULATED GROUNDING CONDUCTOR, CONNECTED ONLY AT ISOLATED GROUND RECEPTACLE, GROUND TERMINALS, AND GROUND BUS OF SERVING PANEL.

PRODUCTS

1. ROD ELECTRODES: 10 FOOT, 3/4" DIAMETER, COPPER. EXOTHERMIC WELDED CONNECTION.
2. GROUNDING AND BONDING WIRE: 600V, STRANDED COPPER; SOLID COPPER MAY BE USED FOR #8 AWG AND SMALLER. MATCH BUILDING WIRE INSULATION EXCEPT WHERE NOTED AS BARE.
3. MECHANICAL CONNECTORS: BRONZE CONNECTORS, SUITABLE FOR GROUNDING AND BONDING APPLICATIONS. LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCEPTABLE TO THE A.H.J.
4. GROUND BUS: RECTANGULAR ANNEALED COPPER, MIN. 12" LONG, 1/4" BY 2" IN CROSS SECTION U.N.O. PRE-DRILLED WITH 9/32" HOLES SPACED 1" APART WITH STANDOFF INSULATORS. ALL TERMINATION LUGS SHALL BE 2 HOLE TYPE.

SERVICE ENTRANCE GROUNDING ELECTRODE SYSTEM

1. ALL RACEWAYS AND CIRCUITS SHALL BE PROVIDED WITH A NEC 250 COMPLIANT GREEN GROUND CONDUCTOR.
2. AT A MINIMUM, A GROUNDING ELECTRODE CONDUCTOR, SIZED PER NEC ARTICLE 250, SHALL BE CONNECTED FROM THE GROUND BUS OF THE SERVICE ENTRANCE DISCONNECT TO A 3/4"x10' COPPER CLAD STEEL GROUND ROD, TO THE BUILDING METAL COLD WATER AND GAS PIPING AT THE POINT OF ENTRANCE INTO THE BUILDING, STRUCTURAL STEEL, 20' OF BARE COPPER ENCASED IN THE SLAB, AND ANY OTHER AVAILABLE ELECTRODES AS DEFINED BY NEC 250.52(A). ADDITIONAL GROUNDING REQUIREMENTS MAY BE SPECIFIED ON THE PLANS TO ACHIEVE A MINIMUM GROUND RESISTANCE OF 5 OHMS.
3. ROUTING OF GROUNDING ELECTRODE CONDUCTORS SHALL BE IN METAL CONDUIT IN ALL LOCATIONS THAT ARE SUBJECT TO PHYSICAL ABUSE OR ENVIRONMENTAL DETERIORATION SUCH AS EXTERIOR MOUNTED, EXPOSED BELOW LAY IN CEILING, ETC.
4. PROVIDE A #4 GROUND FROM THE SERVICE ENTRANCE GROUND BUS TO ALL TELEPHONE SERVICE BOARDS AND COMMUNICATIONS EQUIPMENT ROOMS AND TERMINATE AT A GROUND BUS.
5. GROUNDING SYSTEM RESISTANCE SHALL BE 5 OHMS MAXIMUM. SYSTEM SHALL BE TESTED IN ACCORDANCE WITH IEEE 142. PROVIDE ADDITIONAL GROUNDING ELECTRODES AS REQUIRED TO ACHIEVE SPECIFIED RESISTANCE.

26 05 29 - HANGERS AND SUPPORTS

1. SUPPORT RACEWAYS USING GALVANIZED STEEL OR MALLEABLE IRON STRAPS; CHANNEL OR PIPE CLAMPS AS APPROPRIATE.
2. PROVIDE ALL RACKS WITH 25% SPARE CAPACITY.
3. ALL RACKS SHALL BE DEDICATED TO ELECTRICAL DEVICES AND NOT OTHER SYSTEMS.
4. PROVIDE SUPPORTS AT ALL BOXES, ELEC. EQUIP., LOADS, AND AT CODE REQUIRED INTERVALS ALONG RACEWAYS.

26 05 33 - RACEWAYS AND BOXES

GENERAL REQUIREMENTS

1. POWER, LIGHTING, COMMUNICATIONS, FIRE ALARM, ACCESS CONTROL/SECURITY, CONTROLS, AND OTHER SPECIAL SYSTEMS MAY BE RUN EXPOSED WHERE PROPERLY SUPPORTED AND PROTECTED.
2. PROVIDE RACEWAY AND BOXES FOR ALL EQUIPMENT; LIGHTING; WIRING DEVICES; COMMUNICATIONS EQUIPMENT AND OUTLETS; FIRE ALARM EQUIPMENT, APPLIANCES, AND DEVICES; ACCESS CONTROL/SECURITY POINTS; CONTROLS POINTS; AND OTHER SPECIAL SYSTEMS SHOWN ON PLANS TO ABOVE CEILING.
3. PROVIDE RACEWAY BOXES AT OTHER LOCATIONS AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS, AND COMPLIANCE WITH REGULATORY REQUIREMENTS. RACEWAY AND BOXES ARE SHOWN IN APPROXIMATE LOCATIONS UNLESS DIMENSIONED. PROVIDE RACEWAY TO COMPLETE WIRING SYSTEM.
4. ALL BOXES SHALL BE LOCATED IN AN ACCESSIBLE SPACE AS DEFINED BY THE NEC.
5. DO NOT INSTALL RACEWAYS WITH MORE THAN THE EQUIVALENT OF THREE NINETY DEGREE BENDS BETWEEN PULL POINTS.
6. ROUTE ALL RACEWAYS PARALLEL AND PERPENDICULAR TO WALLS, FLOORS, AND CEILINGS.
7. ALL EXPOSED CONDUIT SHALL BE RUN PARALLEL AND TIGHT TO STRUCTURAL ELEMENTS. FOLLOW ALL SURFACE CONTOURS; DO NOT ROUTE IN FREE AIR FROM POINT TO POINT.
8. INSTALL RACEWAYS SO THAT IT DRAINS TO JUNCTION AND PULL BOXES TO AVOID MOISTURE TRAPS AT LOW POINTS.
9. ALL SPARE CONDUITS SHALL BE PROVIDED WITH PULL STRING, LABELED, AND CAPPED AT BOTH ENDS.
10. CLOSE ENDS AND UNUSED OPENINGS IN SURFACE RACEWAYS, WIREWAY, BOXES, AND ENCLOSURES.
11. WHERE POSSIBLE, ALL CONDUIT ROUTED THROUGH ROOF STRUCTURE SHALL SHARE COMMON PENETRATIONS AS MECHANICAL DUCTWORK OR PIPING. COORDINATE WITH MECHANICAL CONTRACTOR.
12. ALL ROOF AND WALL PENETRATIONS SHALL BE FLASHED AND SEALED TO MAINTAIN THE FIRE RATING AND WATERPROOFING OF THE STRUCTURE PER THE MANUFACTURER OF THE MATERIAL'S RECOMMENDED PRACTICES.

CONDUIT

1. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUITS SERVING ALL EQUIPMENT, INCLUDING BUT NOT LIMITED TO, LIGHTING, RECEPTACLES, HEATING, AIR CONDITIONING, PLUMBING EQUIPMENT, TELEPHONE, DATA, SPEAKERS, AND ELECTRICAL EQUIPMENT. WHEN NM CABLE IS USED, CONDUIT IS NOT REQUIRED.
2. CONDUIT TYPES ALLOWED ARE SUMMARIZED IN THE TABLE BELOW. CONTRACTOR SHALL ONLY INSTALL CONDUIT LISTED WITHIN UNLESS OTHERWISE SPECIFIED IN SPECIFICATIONS OR ON DRAWINGS. ALL CONDUIT IS TO BE UL LABELED. EMT CONNECTORS SHALL BE STEEL COMPRESSION. SET SCREW CONNECTORS ARE NOT PERMITTED.

LOCATION	RACEWAYS ALLOWED
UNDERGROUND	RMC, RNC, IMC
IN CONCRETE	RMC, RNC, IMC
EXTERIOR ABOVE GRADE	RMC
EXTERIOR, WET/DAMP	RMC, IMC, RNC, LFMC
DRY, CONCEALED	RMC, IMC, EMT, FMC
DRY, EXPOSED	<10' AFF: RMC, IMC >10' AFF: EMT, IMC, LFMC, FMC
SLAB ON GRADE	RMC, IMC, RNC

3. MINIMUM SIZE OF CONDUIT SHALL BE 3/4" AND 1" FOR ALL UNDERGROUND CONDUIT.
4. WHEN USING CONDUIT, IT SHALL BE CONCEALED EXCEPT FOR UNFINISHED AREAS, SUCH AS EQUIPMENT ROOMS. EXPOSED CONDUIT SHALL BE ALLOWED ONLY AS NOTED ON PLAN AND AS APPROVED BY THE G.C.'S CONSTRUCTION MANAGER. PAINTING OF CONDUITS, NOTED ON DRAWINGS OR SPECIFICATIONS WILL BE BY THE G.C. AND APPROVED BY THE ARCHITECT.
5. WHERE EXPOSED, CONDUIT SHALL BE RMC OR IMC BELOW 10', AND RMC, IMC, OR EMT ABOVE 10'. PROVIDE RMC IN ALL LOCATIONS WHERE SUBJECT TO PHYSICAL DAMAGE.
6. SUPPORT ALL CONDUIT, INCLUDING SEISMIC AND SWAY BRACING, IN ACCORDANCE WITH THE NEC AND LOCAL CODES.
7. ALL CONDUITS MUST BE SIZED PER NEC AND LOCAL CODES.
8. ALL CONDUITS THAT TRAVERSE EXPANSION JOINTS SHALL HAVE EXPANSION FITTINGS LISTED FOR THE USE. OZ GEDNEY TYPE TX OR EQUIVALENT. PROVIDE EXTERNAL BONDING JUMPER.
9. ALL CONDUIT SHALL HAVE INSULATED THROAT CONNECTOR OR BUSHING IN PLACE PRIOR TO PULLING CONDUCTORS.
10. ALL CONNECTIONS TO MOTORS, INSTRUMENTS, MACHINES, AND EQUIPMENT SUBJECT TO MOVEMENT OR VIBRATION SHALL BE MADE USING LIQUID-TIGHT, FLEXIBLE METAL CONDUIT (LFMC), WITH A MAXIMUM LENGTH OF 36".
11. PROVIDE WRAPPED RIGID STEEL CONDUIT WHERE ENTERING/EXITING SLABS OR GRADE AND FOR ELBOWS 1" AND LARGER.
12. PROVIDE RIGID STEEL CONDUIT WITHIN 5' OF BUILDING FOUNDATIONS.
13. ANY EXPOSED RNC CONDUIT SHALL BE SCHEDULE 80 PVC.
14. RNC IS PROHIBITED FROM INDOOR INSTALLATIONS UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.

OUTLET BOXES

1. ALL OUTLET BOXES SHALL BE GALVANIZED PRESSED STEEL OF THE STANDARD KNOCKOUT TYPE. NO ROUND OUTLET BOXES SHALL BE PERMITTED, EXCEPT AS SPECIFICALLY NOTED ON DRAWINGS. CONCEALED BOXES SHALL NOT BE LESS THAN 4" SQUARE AND 1-1/2" DEEP, WITH PLASTER RINGS.
2. USE MULTI-GANG BOXES IN ALL POSSIBLE LOCATIONS.
3. ALL KNOCKOUT BOXES, UPON WHICH LIGHTING FIXTURES ARE TO BE INSTALLED, SHALL BE EQUIPPED WITH 3/8" FIXTURE STUDS.
4. EXTERIOR BOXES SHALL BE CAST RUST-RESISTING METAL WITH GASKETED COVERS.
5. INSTALL BOXES RIGIDLY FROM BUILDING STRUCTURE AND SUPPORT INDEPENDENTLY OF THE CONDUIT SYSTEM. ALSO PROVIDE SUITABLE BOX EXTENSIONS TO EXTEND BOXES TO FINISHED FACES OF FLOORS, CEILINGS, WALLS, ETC. ALL OUTLET BOXES SHALL BE PROVIDED WITH CADDY "QUICK-MOUNT BOX SUPPORT" TO MINIMIZE THE DEFLECTION THAT OCCURS WHEN PLUGGING/UNPLUGGING INTO THESE DEVICES.
6. USE CONCRETE TIGHT, MASONRY RATED BOXES AND FITTINGS WHERE INSTALLED IN CONCRETE, STONE, BRICK, OR CMU.
7. EXTERIOR OUTLET BOXES SHALL BE CAST METAL, GASKETED, AND RATED NEMA 3R MIN.
8. ALL LUMINARIE OR FAN OUTLET BOXES SHALL BE RATED FOR 50LBS. FOR GREATER THAN 50LB, BOXES MUST BE MARKED FOR MAXIMUM ALLOWABLE WEIGHT LIMIT.

JUNCTION AND PULL BOXES

1. THE PLANS INDICATE ONLY SCHEMATIC ROUTINGS FOR CONDUIT RUNS. CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL BOXES WHERE REQUIRED BY FIELD CONDITIONS OR BY CODE.
2. BOXES AND COVERS SHALL BE GALVANIZED STEEL OF CODE GAUGE SIZE.
3. INSTALL BOXES RIGIDLY SUPPORTED FROM THE BUILDING STRUCTURE AND SUPPORTED INDEPENDENT OF THE CONDUIT SYSTEM.
4. ARRANGE CIRCUITS TO AVOID THE USE OF JUNCTION BOXES IN INACCESSIBLE LOCATIONS. THE USE OF JUNCTION BOXES ABOVE DRYWALL CEILINGS SHOULD BE IN LOCATIONS NEAR ACCESS FRAMES USED FOR DIFFUSERS AND RETURN AIR GRILLES OR ACCESS PANELS AS LOCATED ON PLANS.
5. JUNCTION AND PULL BOXES MUST BE LABELED WITH CIRCUIT NUMBER IDENTIFICATION AND SYSTEM TYPE ON COVER WITH AN INDELIBLE MARKER.
6. PROVIDE BOXES FOR UTILITY SERVICE CONDUIT(S) OR CABLING PER UTILITY PROVIDER'S SPECIFICATIONS.
7. NONMETALLIC HANDHOLES MAY BE USED FOR SITE LIGHTING AND CONTROLS CIRCUITS. ALL HANDHOLES SHALL HAVE RATED COVERS FOR THEIR LOCATION.
8. USE CONCRETE TIGHT, MASONRY RATED BOXES AND FITTINGS WHERE INSTALLED IN CONCRETE, STONE, BRICK, OR CMU.
9. EXTERIOR BOXES SHALL BE CAST METAL, GASKETED, AND RATED NEMA 3R MIN.
10. ALL ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE 16 GAUGE SHEET METAL (MIN) AND PROVIDED WITH MANUFACTURER'S CORROSION RESISTANT PAINT, CONTINUOUS HINGE, AND LATCHING DOOR. (UNLESS NOTED OTHERWISE)

26 05 53 - IDENTIFICATION

GENERAL REQUIREMENTS

1. PROVIDE APPROPRIATE LABELS AND WARNING SIGNS FOR ALL EQUIPMENT, WIRING DEVICES, CONDUCTORS, CABLES, BOX, AND ENCLOSURES



1 SITE ELECTRICAL PLAN
3/32" = 1'-0"
0 8' 16' 24'

GENERAL NOTES:

A. REFER TO SPECIFICATIONS, SCHEDULES, DETAILS AND GENERAL NOTES SHEET FOR ADDITIONAL SITE REQUIREMENTS.

B. BURIED CONDUIT SHALL BE INSTALLED AT 24" BELOW FINISHED GRADE, UNO. 18 " MAY BE USED AT LOCATIONS NOT SUBJECT TO VEHICLE OR EQUIPMENT LOADING, BUT ONLY WITH ENGINEER APPROVAL.

C. SITE ELECTRICAL CONDUIT ROUTING IS DIAGRAMMATIC. EC MAY ADJUST PATHS AS REQUIRED PER SITE CONDITIONS AND WITHIN THE FOLLOWING LIMITATIONS: DO NOT ROUTE EXPOSED. DO NOT ROUTE UNDER EXISTING, NEW, OR FUTURE BUILDINGS OR STRUCTURES. ONLY ROUTE UNDER SIDEWALKS OR WITHIN THE DRIP LINE OF TREES WHERE UNAVOIDABLE.

D. VERIFY EXISTING BURIED UTILITY LOCATIONS PRIOR TO TRENCHING FOR CONDUIT OR BORING FOR LIGHT POLE FOUNDATIONS. USE GROUND PENETRATING RADAR SCAN.

E. VERIFY NEW BURIED UTILITY LOCATIONS AND COORDINATE INSTALLATION WITH UTILITIES THAT REQUIRE A SPECIFIC SLOPE (DRAIN LINES, ETC.). EC SHALL BE RESPONSIBLE FOR COORDINATING WITH OTHER TRADES.

F. REFER TO ONE LINE DIAGRAM AND PANEL SCHEDULES FOR CONDUIT AND CONDUCTOR SIZES NOT SHOWN.

KEYED NOTES: ⟨X⟩

1. EXISTING OVERHEAD THREE-PHASE PRIMARY ELECTRICAL CONDUCTORS TO REMAIN.
2. APPROXIMATE LOCATION OF EXISTING UTILITY TRANSFORMER POLE TO REMAIN.
3. APPROXIMATE LOCATION OF EXISTING UTILITY POLE, TO BE USED IN LIEU OF OPTION 1 POLE IF NEW POLE IN SIDEWALK IS NOT PERMITTED.
4. EXTEND OVERHEAD THREE-PHASE PRIMARY ELECTRICAL CONDUCTORS TO NEW RISER POLE. THIS ROUTING TO BE USED IN LIEU OF OPTION 1 IF NEW POLE IN SIDEWALK IS NOT PERMITTED.
5. PROPOSED LOCATION FOR NEW UTILITY RISER POLE. PROVIDE CONDUITS TO POLE PER CPS ENERGY STANDARDS. COORDINATE EXACT LOCATION AT THE SITE WITH CPS ENERGY.
6. NEW UNDERGROUND PRIMARY DUCTBANK PER CPS ENERGY STANDARDS.
7. PROPOSED LOCATION FOR NEW PAD-MOUNTED UTILITY TRANSFORMER. PROVIDE PAD AND CONDUIT STUBUPS PER CPS ENERGY STANDARDS. COORDINATE EXACT LOCATION AT THE SITE WITH CPS ENERGY.
8. UTILITY METER. MOUNT TO EXTERIOR OF BUILDING AND PROVIDE 1-1/4" CONDUIT TO TRANSFORMER PAD. COORDINATE INSTALLATION WITH CPS ENERGY STANDARDS.
9. EXISTING TRANSFORMER POLE AND OVERHEAD CONDUCTORS TO BE REMOVED BY CPS ENERGY.
10. DRIVABLE SURFACE TO BE MAINTAINED BETWEEN PAD-MOUNTED TRANSFORMER AND ENTRANCE GATE TO ALLEY.
11. OWNER-SELECTED 20-FOOT POLE LIGHT WITH LED LIGHT FIXTURE, NOT TO EXCEED 100 W.

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State of registration TX
Firm Registration No. F-2497
EEA Project No. 20250182

CLIENT:
Gray Street Partners

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	REVISION

Digitally Signed
STATE OF TEXAS
RYAN A. ROYAL
94773
LICENSED
PROFESSIONAL ENGINEER
Ryan A. Royal, P.E.
2026.03.24 18:10:51-05'00'

PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

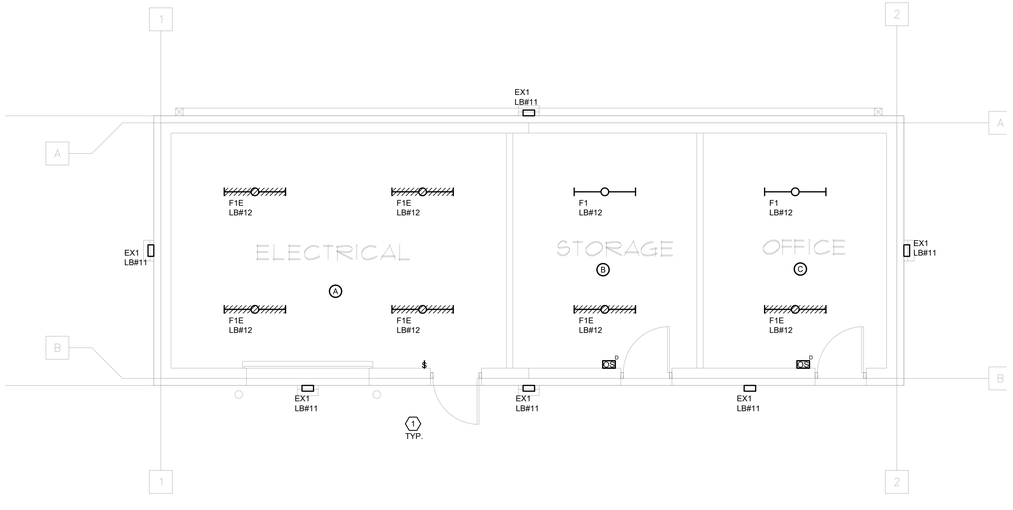
DRAWING TITLE:

ELECTRICAL SITE PLAN

DRAWN BY: JPM
CHECKED BY: RR
PROJ. NO:
DRAWING NO: **E3**

GENERAL NOTES:

A. REFER TO SPECIFICATIONS, SCHEDULES, DETAILS AND GENERAL NOTES SHEET FOR ADDITIONAL SITE



1 ELECTRICAL LIGHTING PLAN - BUILDING 1

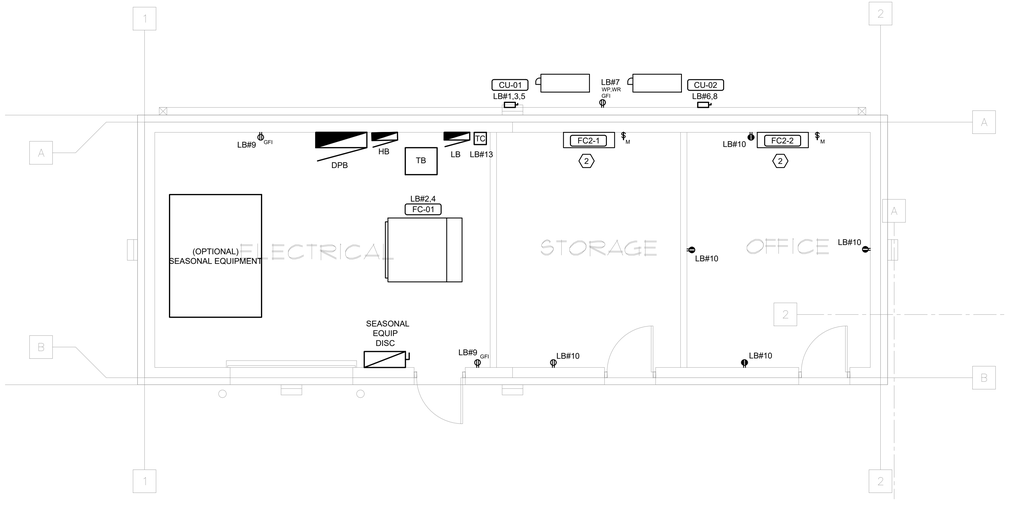
1/4" = 1'-0"

0 2' 4' 8'

NORTH

KEYED NOTES:

1. LIGHT FIXTURE CONTROLLED BY PHOTOCELL.
2. INDOOR UNIT POWERED BY OUTDOOR UNIT. REFER TO MECHANICAL SCHEDULES FOR ADDITIONAL INFORMATION.



2 ELECTRICAL POWER PLAN - BUILDING 1

1/4" = 1'-0"

0 2' 4' 8'

NORTH

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CLIENT:
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NO	DATE	REVISION

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STATE OF TEXAS
RYAN A. ROYAL
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LICENSED PROFESSIONAL ENGINEER

Ryan A. Royal, P.E.
2026.03.24 18:15:17-05'00'

PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

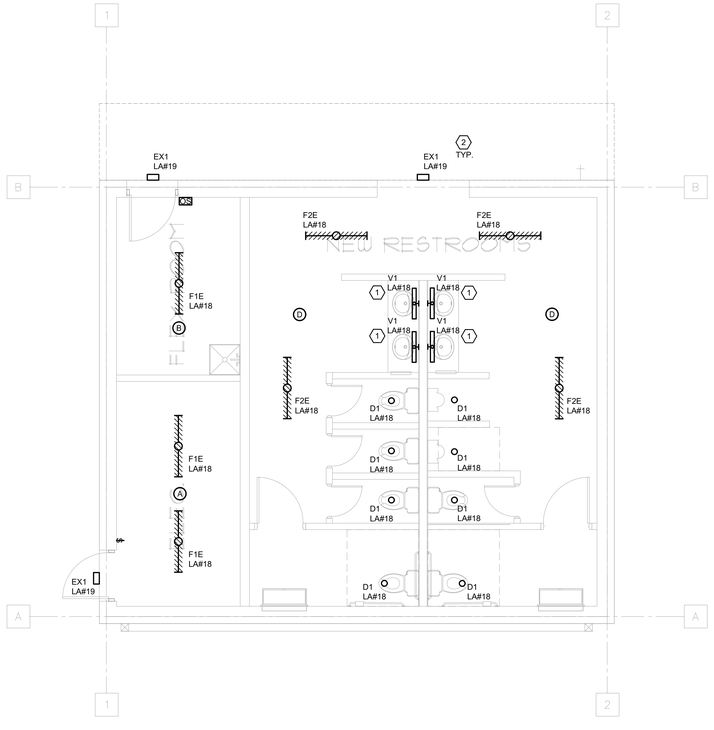
DRAWING TITLE:

ELECTRICAL PLAN - BUILDING 1

DRAWN BY: JPM
CHECKED BY: RR
PROJ. NO:
DRAWING NO: **E4**

GENERAL NOTES:

A. REFER TO SPECIFICATIONS, SCHEDULES, DETAILS AND GENERAL NOTES SHEET FOR ADDITIONAL SITE



1 ELECTRICAL PLAN - LIGHTING - BUILDING 2

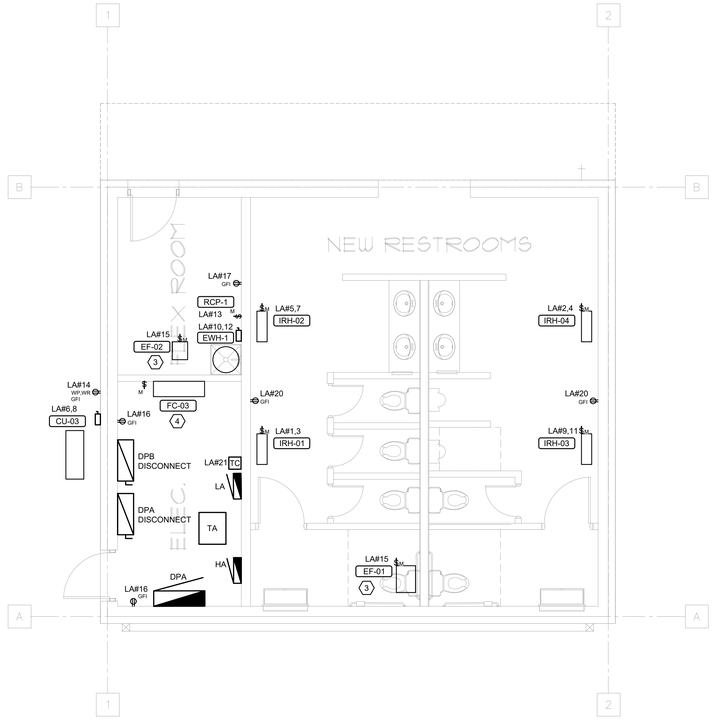
1/4" = 1'-0"

0 2' 4' 8'

NORTH

KEYED NOTES:

1. CONNECT VANITY LIGHT TO LIGHTING CONTROLS FURNISHED INTEGRAL TO LINEAR FIXTURES IN ROOM.
2. CONNECT EXTERIOR LIGHT FIXTURE TO TIME CLOCK CONTROLS.
3. PROVIDE 20A, 120V RELAY AND CONNECT TO LIGHTING CONTROLS FURNISHED INTEGRAL TO LINEAR FIXTURES IN THE ROOMS, FOR CONTROL OF EXHAUST FAN WITH BATHROOM LIGHTING.
4. INDOOR UNIT POWERED BY OUTDOOR UNIT. REFER TO MECHANICAL SCHEDULES FOR ADDITIONAL INFORMATION.



2 ELECTRICAL PLAN - POWER - BUILDING 2

1/4" = 1'-0"

0 2' 4' 8'

NORTH

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NO	DATE	REVISION

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ENGINEER

Ryan A. Royal, P.E.
2026.03.24 18:14:58-05'00'

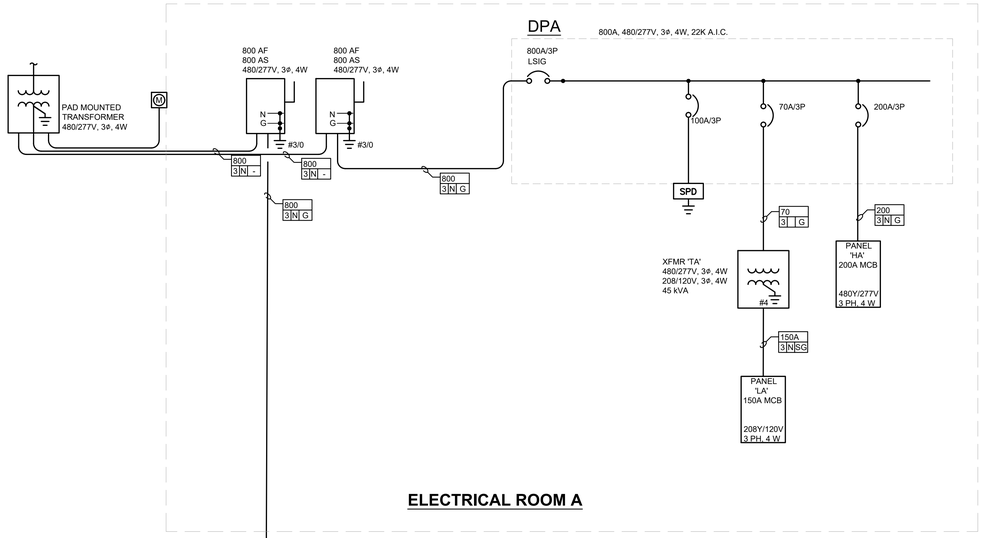
PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

ELECTRICAL PLAN - BUILDING 2

DRAWN BY: JPM
CHECKED BY: RR
PROJ. NO:
DRAWING NO: **E5**



1 ELECTRICAL ONE-LINE DIAGRAM
NOT TO SCALE

CONDUIT & CONDUCTOR SCHEDULE

ONE LINE TAG	COPPER NO. OF SETS	COPPER SIZE OF CONDUCTORS	COPPER SIZE OF GROUND (G)	COPPER SIZE OF SERVICE GROUND (SG)	COPPER CONDUIT SIZE	ALUMINUM NO. OF SETS	ALUMINUM SIZE OF CONDUCTORS	ALUMINUM SIZE OF GROUND (G)	ALUMINUM SIZE OF SERVICE GROUND (SG)	ALUMINUM CONDUIT SIZE
20		#12	#12	#8	3/4"					
30		#10	#10	#8	3/4"					
40		#8	#10	#8	1"					
50		#6	#10	#8	1"					
60		#4	#10	#8	1-1/4"					
70		#4	#8	#8	1-1/4"					
80		#3	#8	#8	1-1/4"					
90		#2	#8	#8	1-1/2"					
100 (SEE NOTE 3)		#1	#8	#6	1-1/2"					
110		#1	#6	#6	1-1/2"					
125		#1/0	#6	#6	2"					
150		#1/0	#6	#6	2"					
175		#2/0	#6	#4	2"					
200		#3/0	#6	#4	3"		#4/0	#4	#2	3"
225		#4/0	#4	#2	3"		250kcmil	#4	#2	3"
250		250kcmil	#4	#2	3"		300kcmil	#2	#1/0	3"
300		350kcmil	#4	#2	3"		350kcmil	#2	#1/0	3"
350		500kcmil	#3	#1/0	4"		500kcmil	#2	#1/0	4"
400	(2)	#3/0	#3	#1/0	3"	(2)	#4/0	#1	#1/0	3"
500	(2)	250kcmil	#2	#1/0	3"	(2)	250kcmil	#1	#1/0	3"
600	(2)	350kcmil	#1	#2/0	3"	(2)	350kcmil	#1/0	#3/0	3"
700	(2)	500kcmil	#1/0	#2/0	4"	(2)	500kcmil	#2/0	#4/0	4"
800	(4)	#3/0	#1/0	#2/0	3"	(3)	350kcmil	#3/0	#4/0	3"
1000	(3)	400kcmil	#2/0	#3/0	4"	(3)	400kcmil	#3/0	#4/0	4"
1200	(4)	350kcmil	#3/0	#4/0	3"	(4)	350kcmil	#4/0	#4/0	3"
1400	(4)	500kcmil	#4/0	250kcmil	4"	(4)	500kcmil	250kcmil	250kcmil	4"
1600	(5)	400kcmil	#4/0	250kcmil	4"	(5)	500kcmil	250kcmil	250kcmil	4"
2000	(6)	400kcmil	250kcmil	300kcmil	4"	(6)	400kcmil	350kcmil	300kcmil	4"
2500	(7)	500kcmil	350kcmil	500kcmil	4"	(7)	500kcmil	400kcmil	500kcmil	4"
3000	(8)	500kcmil	400kcmil	500kcmil	4"	(9)	500kcmil	600kcmil	600kcmil	4"
4000	(10)	600kcmil	500kcmil	600kcmil	4"	(10)	600kcmil	600kcmil	600kcmil	4"

COPPER ONLY

NOTES:
1. ALL FEEDERS ARE 4 WIRE PLUS GROUND, UNLESS NOTED OTHERWISE.
2. OPTIONAL SIZES MAY BE USED WHERE SPECIFIED CONDUIT AND CONDUCTORS ARE NOT FEASIBLE.
3. FOR EQUIP. WITH 75 C TERMINATIONS, 100A OR BELOW MAY BE SIZED PER 75C COLUMN IN TABLE 310.16 (RE: 110.14(C)(1)(a)(3))
4. ALL CONDUCTORS ARE COPPER UNLESS NOTED OTHERWISE.
5. COPPER CONDUCTORS SHALL BE USED FOR ANY EQUIPMENT THAT REQUIRES IT.
6. SERVICE GROUND (SG) SIZED PER TABLE 250.102(C)(1)

ELECTRICAL EQUIPMENT SCHEDULE

EQUIPMENT MARK	EQUIPMENT DISCRIPTION	VOLTAGE	PH	FUSED / NON-FUSED	ENCLOSURE RATING	DUTY RATING	WIRE SIZE	REMARKS
CU-01	CONDENSER 1	208	3	NF	N3R	60A	(3)#8, (1)#10G, 1"C.	
CU-02	CONDENSER 2	208	1	NF	N3R	30A	(2)#10, (1)#10G, 3/4"C.	
CU-03	CONDENSER 3	208	1	NF	N3R	30A	(2)#12, (1)#12G, 3/4"C.	
FC-01	FAN COIL 1	208	1	NF	N1	30A	(2)#12, (1)#12G, 3/4"C.	
EF-01	EXHAUST FAN 1	120	1	N/A	N1	30A	(2)#12, (1)#12G, 3/4"C.	
EF-02	EXHAUST FAN 2	120	1	N/A	N1	30A	(2)#12, (1)#12G, 3/4"C.	
EWH-1	ELETRICAL WATER HEATER	208	1	NF	N1	30A	(2)#12, (1)#12G, 3/4"C.	
IRH-01	INFRARED HEATER 1	208	1	NF	N1	30A	(2)#12, (1)#12G, 3/4"C.	
IRH-02	INFRARED HEATER 2	208	1	NF	N1	30A	(2)#12, (1)#12G, 3/4"C.	
IRH-03	INFRARED HEATER 3	208	1	NF	N1	30A	(2)#12, (1)#12G, 3/4"C.	
IRH-04	INFRARED HEATER 4	208	1	NF	N1	30A	(2)#12, (1)#12G, 3/4"C.	
RCP-1	RECIRCULATION PUMP	120	1	N/A	N1	30A	(2)#12, (1)#12G, 3/4"C.	

NOTES
1. PROVIDE ALL DISCONNECTS WITH LOCK OUT TAG OUT PROVISIONS
2. MOUNT DISCONNECTS TO STRUCTURE ADJACENT TO EQUIPMENT. DO NOT MOUNT TO EQUIPMENT.
3. REFER TO GENERAL NOTES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION
4. EC SHALL INSTALL ALL DISCs, STARTERS, VFDs, & MAKE ELECTRICAL TERMINATIONS. HVAC CNTRLS WIRING & TERMINATIONS BY CONTROLS CONTRACTOR

BUILDING LOAD ANALYSIS

	CONNECTED KVA	DEMAND KVA	NOTES
LIGHTING LOAD	2.85	3.56	125% OF CONTINUOUS LOAD
RECEPTACLE LOADS	2.88	2.88	100% < 10KVA 50% > 10KVA
NON-CONTINUOUS LOAD EQUIPMENT	3.41	3.41	100% OF NON-CONT. LOAD
HVAC LOAD	32.58	32.58	
25% OF LARGEST MOTOR LOAD	1.50	1.50	LARGEST HVAC UNIT
SEASONAL LOADS			
SEASONAL EQUIPMENT	690.00	690.00	
FOOD TRUCKS	43.20	43.20	
TOTAL KVA		777.13	KVA
TOTAL AMPS AT 480V/3P		934.74	AMPS

ELECTRICAL SERVICE PLANNING APPLICATION INFORMATION

Type of Service:	Utility Service Pad Mount Transformer Feeding Two 800A Taps
Voltage:	480/277V, 3 Phase, 4 Wire
Conductor Sizes per Tap:	4 Sets of (4)#3/0 in 3"C.
Main Service Disconnect Size per Tap:	800A
Main Service Disconnect Type per Tap:	Service Disconnect

Note: The electrical contractor should coordinate with the general contractor and the owner to initiate the electrical service application process as soon as construction has begun to insure that utility company requirements are met and electrical service is installed on schedule.

AIC CALCULATIONS

FAULT LABEL	FAULT LOCATION	A.F.C. (A)	FEEDER SIZE	XFMR KVA	C VALUE (OR %Z)	CONDUCTOR LENGTH (FT)	VOLTAGE L-L (V)	NUMBER OF PHASES	NUMBER OF SETS	CALCULATED FAULT VALUE (A)	CONDUIT & CONDUCTOR	CONN. LOAD (AMPS)	VOLTAGE DROP* (%)	VOLTAGE DROP TOTAL**
F001	DPA DISC	18723	3/0		12844	25	480	3	4	18127	STEEL/COPPER	800	0.16%	0.16%
F002	DPA	18127	3/0		12844	25	480	3	4	17568	STEEL/COPPER	800	0.16%	0.33%
F003	HA	17568	1/0		8925	10	480	3	1	16403	STEEL/COPPER	200	0.09%	0.42%
F004	DPB DISC	18723	3/0		12844	25	480	3	4	18127	STEEL/COPPER	800	0.16%	0.16%
F005	DPB	18127	3/0		12844	210	480	3	4	14303	STEEL/COPPER	800	1.38%	1.55%
F006	HB	14303	1/0		8925	10	480	3	1	13521	STEEL/COPPER	200	0.09%	1.64%
F007	TA	17568	4	45	3806	10	480	3	1	5828	STEEL/COPPER	70	0.08%	0.41%
F008	LA	5828	1/0		8925	10	208	3	1	5527	STEEL/COPPER	150	0.16%	0.57%
F009	TB	14303	1/0	75	8925	10	480	3	1	5777	STEEL/COPPER	125	0.06%	1.61%
F010	LB	5777	250		16483	10	208	3	1	5613	STEEL/COPPER	250	0.14%	1.75%

* VOLTAGE DROP (%) - POINT TO POINT CALCULATION
** VOLTAGE DROP TOTAL - TOTAL VOLTAGE DROP BACK TO SERVICE

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NO	DATE	REVISION

Digitally Signed
STATE OF TEXAS
RYAN A. ROYAL
94773
LICENSED
PROFESSIONAL ENGINEER
Ryan A. Royal, P.E.
2026.03.24 18:16:01-05'00'

PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

ELECTRICAL - ONE LINE DIAGRAM

DRAWN BY: JPM
CHECKED BY: RR
PROJ. NO:
DRAWING NO: **E6**

PANEL HA

EEA PROJECT NAME: 20250182
EEA PROJECT NUMBER: SATX OBSERVATION WHEEL
3/24/2026 17:57

PANEL OPTIONS:

BUS RATING: 200A
MAIN: 200A MCB
VOLTAGE: 480/277V,3PH,4W
LOCATION: REFER TO PLANS
FED FROM: REFER TO ONE LINE
FEEDER SIZE: REFER TO ONE LINE

AIC RATING: 22kA
BUSSING: COPPER
MOUNTING: SURFACE
NEMA ENCLOSURE: NEMA 1

CB OPT: ST - SHUNT TRIP
SS - SOLID STATE
GF - GROUND FAULT CIRCUIT INTERRUPTER
FR - FULLY RATED
L - LOCKABLE
EP - EQUIPMENT GROUND FAULT (30mA)

LOAD (VA)						CKT	LOAD SERVED	CB OPT	CB AMP/ POLE	Ø	CB AMP/ POLE	CB OPT	LOAD SERVED	CKT	LOAD (VA)					
LIGHT	RECPT	CONT	MISC	MOTOR	KITCH	NO								NO.	LIGHT	RECPT	CONT	MISC	MOTOR	KITCH
						1	SPARE		20/1	A	20/1		SPARE	2						
						3	SPARE		20/1	B	20/1		SPARE	4						
						5	SPARE		20/1	C	20/1		SPARE	6						
						7	SPARE		20/1	A	20/1		SPARE	8						
						9	SPARE		20/1	B	20/1		SPARE	10						
						11	SPACE		-	C	-		SPACE	12						
						13	SPACE		-	A	-		SPACE	14						
						15	SPACE		-	B	-		SPACE	16						
						17	SPACE		-	C	-		SPACE	18						
						19	SPACE		-	A	-		SPACE	20						
						21	SPACE		-	B	-		SPACE	22						
						23	SPACE		-	C	-		SPACE	24						
						25	SPACE		-	A	-		SPACE	26						
						27	SPACE		-	B	-		SPACE	28						
						29	SPACE		-	C	-		SPACE	30						
						31	SPACE		-	A	-		SPACE	32						
						33	SPACE		-	B	-		SPACE	34						
						35	SPACE		-	C	-		SPACE	36						
						37	SPACE		-	A	-		SPACE	38						
						39	SPACE		-	B	-		SPACE	40						
						41	SPACE		-	C	-		SPACE	42						

PHASE LOADING

LIGHT	RECPT	CONT	MISC	MOTOR	KITCH	TOTAL		CONNECTED AMPS PER PHASE
0	0	0	0	0	0	0	PHASE A	**0 A**
0	0	0	0	0	0	0	PHASE B	**0 A**
0	0	0	0	0	0	0	PHASE C	**0 A**
0	0	0	0	0	0		TOTAL	
						LARGEST MOTOR LOAD		

PANEL TOTALS

	LIGHT	RECPT	CONT	MISC	MOTOR	KITCH
CONNECTED KVA TOTALS	0.00	0.00	0.00	0.00	0.00	0.00
DEMAND FACTOR	1.25	(1)	1.25	1	(2)	0.65
DEMAND KVA TOTALS	0.00	0.00	0.00	0.00	0.00	0.00

TOTAL CONNECTED KVA	0.00
TOTAL DEMAND KVA	0.00
THREE PHASE VOLTAGE	480
TOTAL PANEL DEMAND AMPERAGE	**0**

FOOTNOTES:
(1) = PER 2023 NEC ARTICLE 220.47
(2) = PER 2023 NEC ARTICLE 220.50

PANEL LA

EEA PROJECT NAME: 20250182
EEA PROJECT NUMBER: SATX OBSERVATION WHEEL
3/24/2026 17:57

PANEL OPTIONS:

BUS RATING: 150A
MAIN: 150A MCB
VOLTAGE: 208/120V,3PH,4W
LOCATION: REFER TO PLANS
FED FROM: REFER TO ONE LINE
FEEDER SIZE: REFER TO ONE LINE

AIC RATING: 10kA
BUSSING: COPPER
MOUNTING: SURFACE
NEMA ENCLOSURE: NEMA 1

CB OPT: ST - SHUNT TRIP
SS - SOLID STATE
GF - GROUND FAULT CIRCUIT INTERRUPTER
FR - FULLY RATED
L - LOCKABLE
EP - EQUIPMENT GROUND FAULT (30mA)

LOAD (VA)						CKT	LOAD SERVED	CB OPT	CB AMP/ POLE	Ø	CB AMP/ POLE	CB OPT	LOAD SERVED	CKT	LOAD (VA)					
LIGHT	RECPT	CONT	MISC	MOTOR	KITCH	NO.								NO.	LIGHT	RECPT	CONT	MISC	MOTOR	KITCH
			1882			1	IRH-01		25/2	A	25/2		IRH-04	2				1882		
			1882			3				B				4				1882		
			1882			5	IRH-02		25/2	C	15/2		CU-03	6				1248		
			1882			7				A				8				1248		
			1882			9	IRH-03		25/2	B	20/2		EWH-1	10				1250		
			1882			11				C				12				1250		
				100		13	RCP-1		20/1	A	20/1		EXTERIOR REC	14		180				
				805		15	EF-01 & 02		20/1	B	20/1		ELECTRICAL ROOM REC	16		360				
	180					17	JANITOR CLOSET REC		20/1	C	20/1		INTERIOR LTS	18	1087					
36						19	EXTERIOR LTS		20/1	A	20/1		RR REC	20		360				
	180					21	TIME CLOCK		20/1	B	20/1		SPARE	22						
						23	SPARE		20/1	C	20/1		SPARE	24						
						25	SPARE		20/1	A	20/1		SPARE	26						
						27	SPARE		20/1	B	20/1		SPARE	28						
						29	SPARE		20/1	C	20/1		SPARE	30						
						31	SPARE		20/1	A	20/1		SPARE	32						
						33	SPARE		20/1	B	20/1		SPARE	34						
						35	SPARE		20/1	C	20/1		SPARE	36						
						37	SPARE		20/1	A	20/1		SPARE	38						
						39	SPARE		20/1	B	20/1		SPARE	40						
						41	SPARE		20/1	C	20/1		SPARE	42						

PHASE LOADING

LIGHT	RECPT	CONT	MISC	MOTOR	KITCH	TOTAL		CONNECTED AMPS PER PHASE
36	540	0	6894	100	0	7570	PHASE A	**63 A**
0	540	0	6896	805	0	8241	PHASE B	**69 A**
1087	180	0	6262	0	0	7529	PHASE C	**63 A**
1123	1260	0	20052	905	0		TOTAL	
						LARGEST MOTOR LOAD		

PANEL TOTALS

	LIGHT	RECPT	CONT	MISC	MOTOR	KITCH
CONNECTED KVA TOTALS	1.12	1.26	0.00	20.05	0.91	0.00
DEMAND FACTOR	1.25	(1)	1.25	1	(2)	0.65
DEMAND KVA TOTALS	1.40	1.26	0.00	20.05	0.91	0.00

TOTAL CONNECTED KVA	23.34
TOTAL DEMAND KVA	23.62
THREE PHASE VOLTAGE	208
TOTAL PANEL DEMAND AMPERAGE	**66**

FOOTNOTES:
(1) = PER 2023 NEC ARTICLE 220.47
(2) = PER 2023 NEC ARTICLE 220.50

PANEL HB

EEA PROJECT NAME: 20250182
EEA PROJECT NUMBER: SATX OBSERVATION WHEEL
3/24/2026 17:57

PANEL OPTIONS:

BUS RATING: 200A
MAIN: 200A MCB
VOLTAGE: 480/277V,3PH,4W
LOCATION: REFER TO PLANS
FED FROM: REFER TO ONE LINE
FEEDER SIZE: REFER TO ONE LINE

AIC RATING: 22kA
BUSSING: COPPER
MOUNTING: SURFACE
NEMA ENCLOSURE: NEMA 1

CB OPT: ST - SHUNT TRIP
SS - SOLID STATE
GF - GROUND FAULT CIRCUIT INTERRUPTER
FR - FULLY RATED
L - LOCKABLE
EP - EQUIPMENT GROUND FAULT (30mA)

LOAD (VA)						CKT	LOAD SERVED	CB OPT	CB AMP/ POLE	Ø	CB AMP/ POLE	CB OPT	LOAD SERVED	CKT	LOAD (VA)					
LIGHT	RECPT	CONT	MISC	MOTOR	KITCH	NO								NO.	LIGHT	RECPT	CONT	MISC	MOTOR	KITCH
600						1	POLE LTS		20/1	A	20/1		SPARE	2						
						3	SPARE		20/1	B	20/1		SPARE	4						
						5	SPARE		20/1	C	20/1		SPARE	6						
						7	SPARE		20/1	A	20/1		SPARE	8						
						9	SPARE		20/1	B	20/1		SPARE	10						
						11	SPACE		-	C	-		SPACE	12						
						13	SPACE		-	A	-		SPACE	14						
						15	SPACE		-	B	-		SPACE	16						
						17	SPACE		-	C	-		SPACE	18						
						19	SPACE		-	A	-		SPACE	20						
						21	SPACE		-	B	-		SPACE	22						
						23	SPACE		-	C	-		SPACE	24						
						25	SPACE		-	A	-		SPACE	26						
						27	SPACE		-	B	-		SPACE	28						
						29	SPACE		-	C	-		SPACE	30						
						31	SPACE		-	A	-		SPACE	32						
						33	SPACE		-	B	-		SPACE	34						
						35	SPACE		-	C	-		SPACE	36						
						37	SPACE		-	A	-		SPACE	38						
						39	SPACE		-	B	-		SPACE	40						
						41	SPACE		-	C	-		SPACE	42						

PHASE LOADING

LIGHT	RECPT	CONT	MISC	MOTOR	KITCH	TOTAL		CONNECTED AMPS PER PHASE
600	0	0	0	0	0	600	PHASE A	**2 A**
0	0	0	0	0	0	0	PHASE B	**0 A**
0	0	0	0	0	0	0	PHASE C	**0 A**
600	0	0	0	0	0		TOTAL	
						LARGEST MOTOR LOAD		

PANEL TOTALS

	LIGHT	RECPT	CONT	MISC	MOTOR	KITCH
CONNECTED KVA TOTALS	0.60	0.00	0.00	0.00	0.00	0.00
DEMAND FACTOR	1.25	(1)	1.25	1	(2)	0.65
DEMAND KVA TOTALS	0.75	0.00	0.00	0.00	0.00	0.00

TOTAL CONNECTED KVA	0.60
TOTAL DEMAND KVA	0.75
THREE PHASE VOLTAGE	480
TOTAL PANEL DEMAND AMPERAGE	**1**

FOOTNOTES:
(1) = PER 2023 NEC ARTICLE 220.47
(2) = PER 2023 NEC ARTICLE 220.50

PANEL LB

EEA PROJECT NAME: 20250182
EEA PROJECT NUMBER: SATX OBSERVATION WHEEL
3/24/2026 17:57

PANEL OPTIONS:

BUS RATING: 250A
MAIN: 250A MCB
VOLTAGE: 208/120V,3PH,4W
LOCATION: REFER TO PLANS
FED FROM: REFER TO ONE LINE
FEEDER SIZE: REFER TO ONE LINE

AIC RATING: 10kA
BUSSING: COPPER
MOUNTING: SURFACE
NEMA ENCLOSURE: NEMA 1

CB OPT: ST - SHUNT TRIP
SS - SOLID STATE
GF - GROUND FAULT CIRCUIT INTERRUPTER
FR - FULLY RATED
L - LOCKABLE
EP - EQUIPMENT GROUND FAULT (30mA)

LOAD (VA)						CKT	LOAD SERVED	CB OPT	CB AMP/ POLE	Ø	CB AMP/ POLE	CB OPT	LOAD SERVED	CKT	LOAD (VA)					
LIGHT	RECPT	CONT	MISC	MOTOR	KITCH	NO.								NO.	LIGHT	RECPT	CONT	MISC	MOTOR	KITCH
				3072		1				A				2					738	
				3072		3	CU-01		50/3	B	15/2		FC-01	4					738	
				3072		5				C	30/2		CU-02	6					2257	
	180					7	EXTERIOR REC		20/1	A				8					2257	
	360					9	ELECTRICAL REC		20/1	B	20/1		OFFICE/STORAGE REC	10		900				
72						11	EXTERIOR LTS		20/1	C	20/1		INTERIOR LTS	12	1056					
	180					13	TIME CLOCK		20/1	A	20/1		SPARE	14						
						15	SPARE		20/1	B	20/1		SPARE	16						
						17	SPARE		20/1	C	20/1		SPARE	18						
						19	SPARE		20/1	A	20/1		SPARE	20						
						21	SPARE		20/1	B	20/1		SPARE	22						
						23	SPARE		20/1	C	20/1		SPARE	24						
						25	SPARE		20/1	A	20/1		SPARE	26						
						27	SPARE		20/1	B	20/1		SPARE	28						
						29	SPARE		20/1	C	20/1		SPARE	30						
						31	SPARE		20/1	A	20/1		SPARE	32						
						33	SPARE		20/1	B	20/1		SPARE	34						
						35	SPARE		20/1	C	20/1		SPARE	36						
						37	SPARE		20/1	A	20/1		SPARE	38						
						39	SPARE		20/1	B	20/1		SPARE	40						
						41	SPARE		20/1	C	20/1		SPARE	42						

PHASE LOADING

LIGHT	RECPT	CONT	MISC	MOTOR	KITCH	TOTAL		CONNECTED AMPS PER PHASE
0	360	0	0	6067	0	6427	PHASE A	**54 A**
0	1260	0	0	3810	0	5070	PHASE B	**42 A**
1128	0	0	0	5329	0	6457	PHASE C	**54 A**
1128	1620	0	0	15206	0		TOTAL	
						LARGEST MOTOR LOAD		

PANEL TOTALS

	LIGHT	RECPT	CONT	MISC	MOTOR	KITCH
CONNECTED KVA TOTALS	1.13	1.62	0.00	0.00	15.21	0.00
DEMAND FACTOR	1.25	(1)	1.25	1	(2)	0.65
DEMAND KVA TOTALS	1.41	1.62	0.00	0.00	15.21	0.00

TOTAL CONNECTED KVA	17.95
TOTAL DEMAND KVA	18.24
THREE PHASE VOLTAGE	208
TOTAL PANEL DEMAND AMPERAGE	**51**

FOOTNOTES:
(1) = PER 2023 NEC ARTICLE 220.47
(2) = PER 2023 NEC ARTICLE 220.50

Lighting Control Matrix

ID	ROOM TYPE	LOCAL CONTROL FUNCTIONS	SENSOR MOUNTING	LIGHTS AUTO ON LEVEL	OCCUPANCY SHUTOFF	TIMECLOCK CONTROL	DIMMABLE	DAYLIGHT CONTROL	RECEPTACLE CONTROL	SCHEDULE NOTES
A	ELECTRICAL ROOM	ON/OFF	N/A	N/A	N/A	NO	NO	NO	NO	2
B	JANITOR / STORAGE	ON/OFF	WALL (INTEGRAL)	0%	20 MIN	NO	NO	NO	NO	
C	OFFICE (ENCLOSED)	ON/OFF/DIM	WALL (INTEGRAL)	0%	20 MIN	NO	YES	NO	YES	
D	RESTROOM (MULTI)	ON/OFF	FIXTURE (INTEGRAL)	100%	20 MIN	NO	YES	NO	NO	1

GENERAL NOTES

A. PROVIDE ALL POWER PACKS, RELAYS, PHOTOCELLS, TIME CLOCKS, CONTROLLERS AND BRIDGING DEVICES, AS REQUIRED FOR A FUNCTIONAL CONTROL SYSTEM.
B. OCCUPANCY SENSORS TO BE PLACED PER MANUFACTURER RECOMMENDATIONS. LAYOUT SHOWN ON PLAN IS FOR SCHEMATIC PURPOSES ONLY.
C. CONTRACTOR TO PROVIDE SHOP DRAWING INDICATING LOCATIONS OF ALL CONTROL DEVICES AS PART OF THE LIGHTING SUBMITTAL FOR APPROVAL PRIOR TO INSTALLATION.
D. AUTO ON LEVEL : 0% = MANUAL ON.
E. REFER TO LIGHTING PLANS FOR ROOM TYPE DESIGNATIONS PER THE ID COLUMN ABOVE.
F. ALL EMERGENCY LIGHTING CONTROLLED BY AUTOMATIC MEANS SHALL BE CONTROLLED THROUGH A LISTED UL924 CONTROL DEVICE THAT BRINGS LIGHTS TO FULL OUTPUT UPON LOSS OF NORMAL BRANCH POWER, SIGNAL FROM FIRE ALARM SYSTEM, OR SIGNAL FROM OTHER DESIGNATED CONTROL PANEL.
G. MANUAL OFF: WHEN LIGHTS ARE MANUALLY TURNED OFF, THEY ARE TO REMAIN OFF UNTIL THEY ARE MANUALLY TURNED ON, THEN AUTO-ON/OFF CONTROL WILL TAKE OVER.
H. ALL ROOMS TO BE TIED TO THE LOW VOLTAGE CONTROL SYSTEM UNLESS NOTED OTHERWISE.
I. ALL WALL MOUNTED OCCUPANCY SENSORS SHALL HAVE INTGRAL ON/OFF BUTTONS, AND UP/DOWN DIMMING BUTTONS WHERE APPLICABLE.
J. LIGHTING CONTROL ZONES: LIGHTS TO BE CONTROLLED TOGETHER, PER LOWER-CASE LETTER.
K. WHERE INDICATED AS "DIMMABLE" THE PROVIDED CONTROLS SHALL BE COMPATIABLE WITH THE FIXURE SHOWN IN THE LUMINAIRE SCHEDULE.

SCHEDULE NOTES

1. MANUAL CONTROL NOT REQUIRED PER IECC C405.2.1.1.
2. AUTOMATIC SHUTOFF WOULD ENDANGER OCCUPANT SAFETY OR SECURITY, THEREFORE SPACE IS EXEMPT FROM AUTOMATIC SHUT-OFF.

LUMINAIRE SCHEDULE

TYPE	MANUFACTURER	CATALOG NO.	LED		VOLTS	MOUNTING	REMARKS
			WATTS	LUMENS			
D1	LITHONIA	LDN4CYL-40/07-L04AR-LSS-MVOLT-GZ10-FCM-90CRI-xxx	8.6	750	120V	SURFACE	4" SURFACE MOUNTED CYLINDER DOWNLIGHT, 750 LUMEN
EX1	ACUITY	WST-LED-P1-35K-VF-MVOLT-E20WH	12	1650	120V	SURFACE	FIXTURE SHOWN AS EXAMPLE WALLPACK TO BE CHOSEN BY OWNER.
F1 F1E	LITHONIA	FEM-L48-6000LM-LPAFL-MD-MVOLT-GZ10-35K-80CRI-ACF120 FEM-L48-6000LM-LPAFL-MD-MVOLT-GZ10-35K-80CRI-E10WMCP-ACF120	132	6200	120V	SUSPENDED	4' SUSPENDED LINEAR WITH LOW PROFILE LENS AND AIRCRAFT CABLE SAME AS F1 BUT WITH BATTERY PACK
F2E	LITHONIA	FEM-L48-6000LM-LPAFL-MD-MVOLT-GZ10-35K-80CRI-E10WMCP-NLTAIR2-RSBOR10-ACF120	132	6200	120V	SUSPENDED	4' SUSPENDED LINEAR WITH LOW PROFILE LENS AND AIRCRAFT CABLE FIXTURE PROVIDED WITH INTEGRATED SENSOR AND BATTERY PACK
V1	ACUITY	FMVCCLS-24IN-MVOLT-30K35K40K-90CRI	23.5	1900	120V	SURFACE	24" VANITY FIXTURE

NOTES:

1. WHETHER INDICATED IN CATALOG NUMBER OR NOT, CONTRACTOR TO PROVIDE ALL NECESSARY ACCESSORIES AND MOUNTING HARDWARE REQUIRED FOR A COMPLETE INSTALLATION.
2. COORDINATE FIXTURE COLOR SELECTION WITH ARCHITECT PRIOR TO PURCHASE.
3. LEDs SHALL MEET THE FOLLOWING MIN SPECS IN ADDITION TO THE REQUIREMENTS SHOWN ELSEWHERE:
   A. 50,000 HOUR RATED, MIN CRI = 80 (FOR INTERIOR LIGHTING), 1 TO 10V DIMMABLE
   B. LAMP CCT SHALL CONFORM TO ANSI C78.377A COLOR BINNING AND UTILIZE 4 STEP MACADAM ELLIPSE ALGORITHM BINNING PROCESS
4. LED DRIVERS SHALL MEET THE FOLLOWING MIN SPECS IN ADDITION TO THE REQUIREMENTS SHOWN ELSEWHERE:
   A. THD LESS THAN 10 %, POWER FACTOR GREATER THAN 90%

EEA
500 N. Loop 1604 E., Suite 220
San Antonio, Texas 78232 USA
210.955.9930 main
www.eeace.com

State of registration TX
Firm Registration No. F-2497
EEA Project No. 20250182

CLIENT:
Gray Street Partners

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	REVISION

Digitally Signed
STATE OF TEXAS
RYAN A. ROYAL
94773
LICENSED
PROFESSIONAL ENGINEER
Ryan A. Royal, P.E.
2026.03.24 18:11:44-05'00'

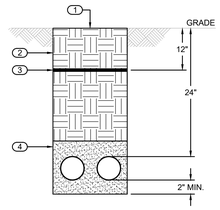
PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

ELECTRICAL - SCHEDULES

DRAWN BY: JPM
CHECKED BY: RR
PROJ. NO:
DRAWING NO: **E7**



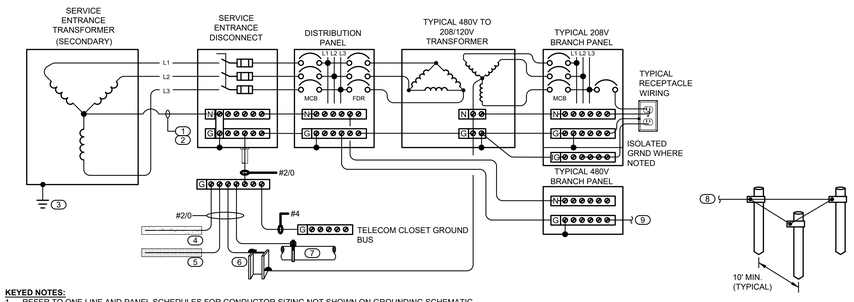
GENERAL NOTES:

A. WIDEN TRENCH AS NECESSARY TO KEEP CONDUITS EQUALLY SPREAD AS THE NUMBER OF CONDUITS INCREASES.

KEYED NOTES:

1. SAWCUT EXISTING PARKING LOTS AND STREETS. REPLACE ASPHALT TO MATCH EXISTING. IN GRASSY AREAS REPLACE GRASS TO MATCH.
2. BACKFILL WITH EXISTING (EXCAVATED) SOIL IN 6" LIFTS AND COMPACT TO 95%. REMOVE ROCKS LARGER THAN 3" DIAMETER.
3. CONTINUOUS 6" WIDE RED METALLIC DETECTION MARKER TAPE.
4. BED CONDUIT USING STABILIZED SAND. WET AND COMPACT.

2	TYPICAL CONDUIT TRENCH SECTION
NTS	



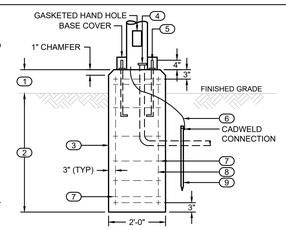
KEYED NOTES:

1. REFER TO ONE LINE AND PANEL SCHEDULES FOR CONDUCTOR SIZING NOT SHOWN ON GROUNDING SCHEMATIC.
2. UNO, ALL GROUNDING CONDUCTORS SHALL BE COPPER TYPE THHN/THWN.
3. TRANSFORMER GROUNDING PER UTILITY PROVIDER'S SPECIFICATION.
4. 20' OF BARE COPPER CONDUCTOR ENCASED IN 2" MIN. OF CONCRETE FOUNDATION IN DIRECT CONTACT WITH EARTH.
5. 20' OF BARE COPPER CONDUCTOR BURIED IN DIRECT CONTACT WITH EARTH AT 2' BELOW GRADE
6. CAD WELD CONNECTION TO BUILDING STEEL.
7. BONDING STRAP AT METAL COLD WATER AND GAS PIPING.
8. PROVIDE COPPER CLAD STEEL GROUND RODS AS REQUIRED TO ACHIEVE SPECIFIED GROUND RESISTANCE MEASURED AT THE SERVICE GROUND BUS. CAD-WELD TO BARE CU CABLE BURIED AT 24"
9. EQUIPMENT GROUNDING CONDUCTOR WITH ALL BRANCH CIRCUITS.

1	GROUNDING SCHEMATIC
NTS	

GENERAL NOTES:

A. CONTRACTOR SHALL COORDINATE WITH OWNER TO VERIFY THE OWNER-SELECTED POLES WIND RATING IS ADEQUATE FOR THE LOCAL CONDITIONS AND MEET ALL LOCAL CODES.
B. PROVIDE 4 GALVANIZED CARBON STEEL, "L" SHAPED BOLTS RATED 55,000 PSI WITH HEX NUT AND WASHER.
C. PROVIDE LEVELING SHIMS AS NEEDED.
D. CONTACT ENGINEER FOR ADJUSTMENTS TO DEPTH IF DRILLING IN ROCK OR SAND.
E. 18" DIAMETER MAY BE USED FOR 8FT OR LESS POLES WITH 8" MAX WIDTH BOLT PATTERNS.



KEYED NOTES:

1. TOP OF FOOTING DIMENSION TO EXTEND 12" AFG
2. BURIAL DEPTH SHALL BE BASED ON 20FT POLE = 6FT BURIAL DEPTH
3. 3000 PSI CONCRETE. POUR AGAINST UNDISTURBED OR COMPACTED EARTH. SMOOTH ALL EXPOSED EDGES.
4. CONDUIT BUSHING. STUB UP TO 2" FROM BOTTOM EDGE OF HAND HOLE.
5. VERIFY BOLT TYPE WITH POLE MANUFACTURER PROVIDED BY OWNER PRIOR TO CONSTRUCTION OF BASE AND USE THEIR BOLT PATTERN. SECURELY TIE TO VERTICAL REINFORCING BAR. PROVIDE BASE COVER.
6. #8 BARE COPPER WIRE OUT OF BASE.
7. #3 TIES AT 12"O.C. PROVIDE ADDITIONAL #3 TIE AT TOP AND BOTTOM OF FOUNDATION
8. 6-#6 VERTICAL BARS
9. 5/8"Ø X 10' LONG COPPER CLAD STEEL GROUND ROD ADJACENT TO FOOTING.

3	LIGHTING POLE FOUNDATION
NTS	

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STATE OF TEXAS
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Ryan A. Royal, P.E.
2026.03.24 18:14:37-05'00'

PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

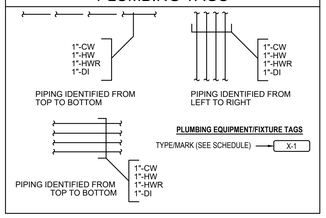
ELECTRICAL - DETAILS

DRAWN BY: JPM
CHECKED BY: RR
PROJ. NO:
DRAWING NO: **E8**

PIPING SPECIALITIES

AIR SEPARATOR
AIR VENT, AUTOMATIC W/SERVICE VALVE
AIR VENT, AUTOMATIC W/SERVICE VALVE
AIR VENT, MANUAL
ALIGNMENT GUIDE (PIPE SLEEVE)
AQUASTAT
ANCHOR
BACKWATER VALVE
EXPANSION JOINT
EXPANSION LOOP
FILTER
FLEX CONNECTION
FLOWMETER, ORIFICE
FLOW SWITCH
FLOW METER, INSERTION
FLOW METER, VENTURI
HEAT EXCHANGER, LIQUID
HEAT TRANSFER SURFACE (INDICATE TYPE)
METER
PITCH OF PIPE, RISE (R) OR DROP (D)
PRESSURE GAUGE AND COCK
PRESSURE SWITCH
PUMP, CIRCULATING
PUMP SUCTION DIFFUSER
STRAINER, WYE
STRAINER W/ BLOW DOWN
STRAINER, DUPLEX
TEST PLUG
THERMOMETER
THERMOMETER IN WELL
THERMOMETER WELL ONLY
THRUST BLOCK
WATER HAMMER ARRESTER
PNEUMATIC THERMOSTAT
VACUUM BREAKER
PURGE PORT

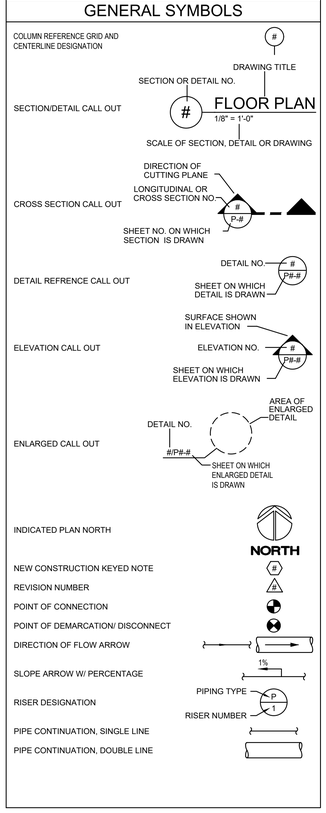
PLUMBING TAGS



PLUMBING VALVES

ANGLE GATE
ANGLE GLOBE
BALANCING
BALL
BELLOWS SEAL GLOBE
BUTTERFLY
DIAPHRAGM
GAS COCK
GAUGE COCK
GATE
GLOBE
NEEDLE
PLUG
PRESSURE REDUCING
PRESSURE RELIEF
PRESSURE-TEMPERATURE RELIEF
QUICK OPENING
CHECK
ALARM CHECK
SPRING CHECK
SWING CHECK
BALL CHECK
BACK FLOW PREVENTER, DOUBLE CHECK TYPE
BACK FLOW PREVENTER, REDUCED PRESSURE ZONE TYPE

GENERAL SYMBOLS



PLUMBING PIPE TYPES

SYSTEM TYPE	ABBV	LINE TYPE
WATER SYSTEMS		
DOMESTIC COLD WATER	DCW	
DOMESTIC HOT WATER	DHW	
DOMESTIC HOT WATER 140	DHW140	
DOMESTIC HOT WATER RETURN	DHWR	
DOMESTIC HOT WATER RETURN 140	DHWR140	
INDUSTRIAL COLD WATER	ICW	
INDUSTRIAL HOT WATER	IHW	
INDUSTRIAL HOT WATER 140	IHW140	
INDUSTRIAL HOT WATER RETURN	IHWR	
INDUSTRIAL HOT WATER RETURN 140	IHWR140	
INDUSTRIAL SOFT COLD WATER	ISCW	
INDUSTRIAL SOFT HOT WATER	ISHW	
INDUSTRIAL SOFT HOT WATER 140	ISHW140	
INDUSTRIAL SOFT HOT WATER RETURN	ISHWR	
INDUSTRIAL SOFT HOT WATER RETURN 140	ISHWR140	
REVERSE OSMOSIS WATER	RO	
SOFT COLD WATER	DSCW	
SOFT HOT WATER	DSHW	
SOFT HOT WATER 140	DSHW140	
SOFT HOT WATER RETURN	DSHWR	
SOFT HOT WATER RETURN 140	DSHWR140	
TRAP PRIMER	TP	
WASTE SYSTEMS		
SYSTEM TYPE	ABBV	LINE TYPE
ACID WASTE	AW	
CONDENSATE	CD	
CONDENSATE - OVERFLOW	OCD	
GREASE WASTE	GW	
INDUSTRIAL WASTE	IW	
LABORATORY WASTE	LW	
SANITARY SEWER	SS	
VENT SYSTEMS		
SYSTEM TYPE	ABBV	LINE TYPE
ACID WASTE VENT	AV	
GREASE WASTE VENT	GV	
INDUSTRIAL WASTE VENT	IV	
LABORATORY WASTE VENT	LV	
SANITARY SEWER VENT	V	
STORM DRAINAGE SYSTEMS		
SYSTEM TYPE	ABBV	LINE TYPE
PRIMARY STORM DRAIN, RAINWATER	SD	
SECONDARY STORM DRAIN, RAINWATER	SSD	
SUB-SURFACE STORM DRAIN	SUB	
NATURAL GAS SYSTEMS		
SYSTEM TYPE	ABBV	LINE TYPE
LOW PRESSURE GAS (LESS THAN 2 PSI)	G	
MEDIUM PRESSURE GAS (2PSI - 5 PSI)	MPG	
HIGH PRESSURE GAS (GREATER THAN 5 PSI)	HPG	
LIQUID GAS	LG	
SPECIALTY GASES & VACUUM SYSTEMS		
SYSTEM TYPE	ABBV	LINE TYPE
CARBON DIOXIDE	CO2	
COMPRESSED AIR	CA	
COMPRESSED DRY AIR	CDA	
LABORATORY COMPRESSED AIR	LA	
LABORATORY VACUUM	LVAC	
LIQUID OXYGEN	LOX	
MEDICAL AIR	MA	
MEDICAL VACUUM	MVAC	
NITROGEN	N2	
NITROUS OXIDE	N2O	
VACUUM	VAC	

PIPE FITTINGS

CAPPED TEE
BLIND FLANGE
PIPE CAP
INDICATES TIE-IN BETW. EXIST. AND NEW
ELBOW, TURN-DOWN
ELBOW, TURN-UP
FLANGE JOINT
REDUCER, CONCENTRIC
REDUCER, ECCENTRIC
UNION, SCREWED
UNION, FLANGED
VCR FITTING WITH CAP
BALL JOINT
PLUGGED PIPE
COUPLING (JOINT)
CROSSING
HIGHER PIPE
LOWER PIPE
TEE
TEE, OUTLET DOWN
TEE, OUTLET UP
P-TRAP

PLUMBING DRAINS

FLOOR DRAIN - ROUND TOP
FLOOR DRAIN - SQUARE TOP
PRIMARY ROOF DRAIN
SECONDARY ROOF DRAIN
FLOOR SINK
TRENCH DRAIN
AREA DRAIN
ROOF RECEPTOR
HUB DRAIN
FLOOR CLEAN OUT
WALL CLEANOUT
YARD CLEANOUT
DOUBLE YARD CLEANOUT

PLUMBING ABBREVIATIONS

DESCRIPTION	AAB	DESCRIPTION	AAB
ABOVE CEILING	A/C	LAVATORY	LAV
ABOVE FINISHED FLOOR	AFF	MAN HOLE	MH
ABOVE GRADE. GROUND	AG	MAXIMUM	MAX
ACCESS PANEL	AP	MECHANICAL	MECH
ACRYLONITRILE BUTADIENE STYTENE	ABS	MINIMUM	MIN
AIR ADMITTANCE VALVE	AAV	MIXING VALVE	MV
ARCHITECT	ARCH	MOP SINK	MS
AUTHORITY HAVING JURISDICTION	AHJ	NORMALLY CLOSED	NC
BACKFLOW PREVENTER	BFP	NORMALLY OPEN	NO
BELOW FINISHED FLOOR	BFF	NOT IN CONTRACT	NIC
BELOW FLOOR	B/F	NOT TO SCALE	NTS
BELOW GRADE/ GROUND	BG	EXISTING TO BE PROTECTED IN PLACE	(P)
BELOW SLAB	B/S	POLYETHYLENE	PE
BOTTOM OF PIPE	BOP	POLYETHYLENE CROSS-LINKED	PEX
BRAKE HORSEPOWER	BHP	POLYVINYL CHLORIDE	PVC
BRITISH THERMAL UNIT	BTUH	POLYVYLIDENE FLOURIDE/ DIOFLOURIDE	PVDF
BTUH (THOUSANDS)	MBH	POUND	LB
CAST IRON	CI	POUNDS PER SQUARE INCH	PSI
CELCIUS	C	POUNDS PER SQUARE INCH ABSOLUTE	PSIA
CHILLED WATER RETURN	CHWR	POUNDS PER SQUARE INCH GAUGE	PSIG
CHILLED WATER SUPPLY	CHWS	PRESSURE DROP	PD
CHLORINATED POLYVINYL CHLORIDE	CPVC	PRESSURE REDUCING VALVE	PRV
CLEANOUT	CO	PUMP, BOOSTER	BP
CLEANOUT, FLOOR	FCO	PUMP, CHILLED WATER	CHWP
CLEANOUT, GRADE	GCO	PUMP, CIRCULATION	CP
CLEANOUT, GRADE TWO-WAY	DGCO	PUMP, HOT WATER	HWP
CLEANOUT, WALL	WCO	REDUCED PRESSURE ZONE	RPZ
CLEANOUT, YARD	YCO	EXISTING TO BE RELOCATED	(R)
CLEANOUT, YARD TWO-WAY	DYCO	REVOLUTION PER MINUTE	RPM
CONDENSER RETURN	CWR	SCHEDULE	SCH
CONDENSER SUPPLY	CWS	SHOWER	SH
COPPER	CU	SINK	SK
CUBIC FEET	CF	SQUARE FEET	SF
CUBIC FEET PER HOUR	CFH	STRUCTURAL	STRUC
CUBIC FEET PER MINUTE	CFM	TEMPERATURE	TEMP
EXISTING TO BE DEMOLISHED/ REMOVED	(D)	TEMPERATURE, ENTERING WATER	EWT
DEGREE	D	TEMPERATURE, LEAVING WATER	LWT
DIAMETER	DIA	THERMOSTATIC MIXING VALVE	TMV
DRAIN, AREA	AD	TOP OF PIPE	TOP
DRAIN, FLOOR	FD	TRAP PRIMER	TP
DRAIN, ROOF PRIMARY	RD	TYPICAL	TYP
DRAIN, ROOF SECONDARY	SRD	ULTRAVIOLET	UV
ELECTRICAL	ELEC	UNDERGROUND	UG
ELEVATION	ELEV	UNIT, AIR HANDLING	AHU
EXISTING	EXIST, (E)	UNIT, FAN COIL	FC
FAHRENHEIT	F	UNLESS NOTED OTHERWISE	UNO
FAT, OIL, AND GAS	FOG	UP/ DOWN	UP/DN
FOOT/ FEET	FT	VACUUM BREAKER	VB
FEET PER MINUTE	FPM	VALVE FLOW COEFFICIENT	CV
FEET PER SECOND	FPS	VENT THRU ROOF	VTR
FIXTURE UNIT	FU	WATER GAUGE	WG
FLEXIBLE	FLEX	WATER CLOSET	WC
FLOOR	FLR	WATER HAMMER ARRESTOR	WHA
FLOOR SINK	FS	WATER, OIL, AND GAS	WOG
FUTURE	(F)		
GALLON	GAL	ELECTRICAL	
GALLONS PER HOUR	GPH	VOLTAGE	V, VOLT
GALLONS PER MINUTE	GPM	WATTAGE	W, WATT
HEAD IN FEET	FTHD	KILOWATT	KW
HEAD IN INCHES WATER COLUMN	INWC	PHASE	PH
HEATING HOT WATER RETURN	HWR	AMPERE	A, AMP
HEATING HOT WATER SUPPLY	HWS		
HEATING, VENTILATION, AIR CONDITIONING	HVAC		
HORSEPOWER	HP		
HOUR	HR		
HUB DRAIN	HD		
INCHES PER HOUR	IN/HR		
INDIRECT DRAIN/ RECEPTOR	ID		
INDIRECT WASTE	IW		
INVERT ELEVATION	IE		

CODE AND REGULATORIES ABBREVIATIONS

DESCRIPTION	AAB	DESCRIPTION	AAB
AMERICAN NATIONAL STANDARDS	ANSI	NATIONAL ELECTRICAL CODE	NEC
AMERICAN SOCIETY OF CIVIL ENGINEERS	ASCE	NATIONAL FIRE PROTECTION ASSOCIATION	NFPA
AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS	ASHRAE	UNIFORM BUILDING CODE	UBC
AMERICAN SOCIETY OF MECHANICAL ENGINEERS	ASME	UNIFORM FIRE CODE	UFC
AMERICAN SOCIETY OF PLUMBING ENGINEERS	ASPE	UNIFORM PLUMBING CODE	UPC
AMERICAN SOCIETY OF SANITARY ENGINEERING	ASSE	UNDERWRITERS LABORATORIES	UL
AMERICAN SOCIETY OF TESTING AND MATERIALS	ASTM		
AMERICAN WATER WORKS ASSOCIATION	AIWWA		
CAST IRON SOIL PIPE INSTITUTE	CISPI		
FACTORY MUTAL	FM		
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS	IEEE		
INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS	IAPMO		
INTERNATIONAL BUILDING CODE	IBC		
INTERNATIONAL ENERGY CONSERVATION CODE	IECC		
INTERNATIONAL FIRE CODE	IFC		
INTERNATIONAL FUEL GAS CODE	IFGC		
INTERNATIONAL MECHANICAL CODE	IMC		
INTERNATIONAL PLUMBING CODE	IPC		
INTERNATIONAL RESIDENTIAL CODE	IRC		

PLUMBING GENERAL NOTES

1. **CONTRACTOR SHALL REVIEW AND ADHERE TO ALL NOTES LOCATED IN THE MEP SHEET SET.**
2. PROVIDE PIPING MATERIALS AND FACTORY-FABRICATED PIPING PRODUCTS OF SIZES, TYPES, PRESSURE RATINGS, AND CAPACITIES AS INDICATED. WHERE NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER TO COMPLY WITH INSTALLATION REQUIREMENTS. PROVIDE SIZES, AND TYPES MATCHING PIPING AND EQUIPMENT CONNECTIONS; PROVIDE FITTINGS OF MATERIALS WHICH MATCH PIPE MATERIALS USED IN SOIL, AND VENT PIPING SYSTEMS.
3. NOT ALL PIPE SIZES ARE SHOWN ON PLANS FOR CLARITY. REFER TO RISER DIAGRAMS FOR PIPING SIZES.
4. COORDINATE FIRE ALARM CONNECTIONS TO FIRE PROTECTION SYSTEM WITH FIRE PROTECTION CONTRACTOR.
5. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.
6. SLEEVE FOUNDATION BEAM PENETRATIONS WITH SCH. 40 STEEL PIPE SLEEVE OF 2" LARGER DIAMETER.
7. DOMESTIC WATER SYSTEMS:
   - 7.1. STOP VALVES SHALL BE **TWO OR THREE PIECE** BRONZE BALL VALVES WITH STAINLESS STEEL BALLS AND TEFLON PACKING AND GASKETS.
   - 7.2. HANGERS SHALL BE B-LINE MODEL B3104 FOR STEEL PIPE OR B-LINE MODEL B3104CT FOR COPPER TUBE.
   - 7.3. ALL PLUMBING EQUIPMENT CONNECTIONS SHALL BE MADE WITH UNIONS/FLANGES AND VALVES SO THAT THE CONNECTED EQUIPMENT CAN BE REMOVED WITHOUT OBSTRUCTION.
   - 7.4. INSTALL SHUT-OFF VALVES AT EACH BRANCH SERVING A RESTROOM OR FIXTURE GROUPING. INSTALL HOT AND COLD WATER SHUT-OFF VALVES AND SHOCK ARRESTORS ACCESSIBLY AT EACH FIXTURE BATTERY. COORDINATE ACCESS PANEL LOCATIONS WITH ARCHITECT.
   - 7.5. POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE PER CODE.
   - 7.6. UPON COMPLETION OF A SECTION OR OF THE ENTIRE WATER SUPPLY SYSTEM, IT SHALL BE TESTED AND PROVED TIGHT UNDER A WATER PRESSURE OF 125 PSIG FOR 2 HOURS. THE WATER USED FOR THE TEST SHALL BE OBTAINED FROM A POTABLE SOURCE OF SUPPLY.
8. SANITARY WASTE AND VENT SYSTEMS:
   - 8.1. HANGERS FOR HORIZONTAL SANITARY PIPING SHALL BE EXPANSION RING OR CLEVIS TYPE SPACED NO MORE THAN 5 FEET APART. VERTICAL PIPE PASSING THROUGH SLABS SHALL BE SUPPORTED WITH B-LINE MODEL B3373 FOR STEEL PIPE OR B-LINE MODEL B3373CT FOR COPPER TUBE. EACH HORIZONTAL JOINT IS ADEQUATELY SUPPORTED ON ONE SIDE OF THE JOINT WITHIN 12" OF THE JOINT. HANGERS ARE INSTALLED ON BOTH SIDES OF EACH NO HUB JOINT WITHIN 12" OF THE JOINTS AND OFFSETS ARE RESTRAINED IN AN APPROVED MANNER. (ABOVE SLAB ONLY)
   - 8.2. INTERNATIONAL PLUMBING CODE: BUILDING DRAIN PIPING 8" DIAMETER AND LARGER SHALL BE RUN AT A MINIMUM SLOPE OF 1/16" PER LINEAR FOOT. BUILDING DRAIN PIPING 3" THROUGH 6" DIAMETER SHALL BE RUN AT A MINIMUM SLOPE OF 1/8" PER FOOT. BUILDING DRAIN PIPING 2-1/2" DIAMETER AND LESS SHALL BE RUN AT A MINIMUM SLOPE OF 1/4" PER LINEAR FOOT.
   - 8.3. PROVIDE TRAP PRIMER ON ALL FLOOR DRAINS. LOCATE TRAP PRIMERS EXPOSED IN MECHANICAL ROOMS, OR IN WET WALL OF RESTROOMS. PROVIDE TRAP PRIMER ACCESS PANEL IN WALL OF A COLOR TO MATCH WALL. COORDINATE LOCATION WITH PLUMBING FIXTURES AND TILE PATTERNS.
   - 8.4. INSULATE EXPOSED LAVATORY P-TRAPS TO MEET ADA REQUIREMENTS.
   - 8.5. PLUMBING CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR ON FLOOR CONSTRUCTION FOR RECEIVING DRAINS TO REQUIRED INVERT ELEVATIONS AND PROPER FLOOR SLOPE TO DRAIN LOCATIONS.

PLUMBING SHEET INDEX

SHEET NUMBER	SHEET DESCRIPTION
P1	PLUMBING - SYMBOLS & ABBREVIATIONS
P2	PLUMBING - SPECIFICATIONS
P3	PLUMBING PLAN - BUILDING 2
P4	PLUMBING - SCHEDULES
P5	PLUMBING - DETAILS

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State of registration TX
Firm Registration No. F-2497
EEA Project No. 20250182

CLIENT:
Gray Street Partners

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	REVISION

PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

PLUMBING - SYMBOLS & ABBREVIATIONS

DRAWN BY: EC
CHECKED BY: SA
PROJ. NO:
DRAWING NO: **P1**

22 00 00 - PLUMBING GENERAL REQUIREMENTS

1. CODE REQUIREMENTS

1.1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF LAWS, RULES, REGULATIONS, CODES STANDARDS, AND ORDINANCES OF FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION, AND ALL EQUIPMENT AND MATERIALS SHALL COMPLY WITH SAID AUTHORITIES WHETHER INDICATED ON THE CONTRACT DOCUMENTS OR NOT.

1.2. ALL WORK SHALL BE PERFORMED PER:

1.2.1. 2024 INTERNATIONAL PLUMBING CODE

1.2.2. 2024 INTERNATIONAL FUEL GAS CODE

1.2.3. 2024 INTERNATIONAL BUILDING CODE

1.2.4. 2024 INTERNATIONAL FIRE CODE

1.2.5. 2024 INTERNATIONAL MECHANICAL CODE

1.3. THE PUBLICATIONS AND STANDARDS OF THE FOLLOWING AUTHORITIES, IN ADDITION TO THOSE SPECIFIED IN RELATED SUPPLEMENTARY CONDITIONS, SHALL BE OBSERVED DURING CONSTRUCTION AND ARE REFERENCED IN THE DOCUMENTATION BY THE ABBREVIATIONS NOTED:

1.3.1. AMERICAN NATIONAL STANDARDS - ANSI

1.3.2. AMERICAN SOCIETY OF CIVIL ENGINEERS - ASCE

1.3.3. AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS - ASHRE

1.3.4. AMERICAN SOCIETY OF MECHANICAL ENGINEERS - ASME

1.3.5. AMERICAN SOCIETY OF PLUMBING ENGINEERS - ASPE

1.3.6. AMERICAN SOCIETY OF SANITARY ENGINERINGS - ASSE

1.3.7. AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM

1.3.8. AMERICAN WATER WORKS ASSOCIATION - AWWA

1.3.9. AMERICANS WITH DISABILITIES ACT - ADA

1.3.10. CAST IRON SOIL PIPE INSTITUTE - CISPI

1.3.11. FACTORY MUTUAL - FM

1.3.12. INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS - IEEE

1.3.13. INTERNATIONAL ASSOCIATED OF PLUMBING AND MECHANICAL OFFCIALS - IAPMO

1.3.14. NATIONAL ELECTRICAL CODE - NEC

1.3.15. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA

1.3.16. UNDERWRITER'S LABORATORY - UL

1.3.17. OCCUPATIONAL SAFETY AND HEALTH ACT - OSHA

2. GENERAL REQUIREMENTS

2.1. CONFLICT RESOLUTION: WHERE CONFLICTS MAY EXIST BETWEEN THE MINIMUM REQUIREMENTS OF VARIOUS LAWS, CODES, AUTHORITIES, AND/OR WITHIN THE CONSTRUCTION DOCUMENTS, THE HIGHER QUALITY, GREATER QUANTITY, MORE RESTRICTIVE AND/OR MORE EXPENSIVE REQUIREMENT SHALL BE THE BASIS OF CONTRACTOR PRICING AND THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER AND OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE ISSUE PRIOR TO EXECUTING WORK IN QUESTION.

2.2. SHOULD ANY ERRORS, OMISSIONS, OR AMBIGUITIES EXIST IN THE DRAWINGS, THE CONTRACTOR SHALL BRING THESE TO THE ATTENTION OF THE ENGINEER IMMEDIATELY FOR ADJUSTMENT IN WRITING BEFORE SIGNING THE CONTRACT OR PROCEEDING WITH WORK. OTHERWISE, HE SHALL AT HIS OWN EXPENSE, SUPPLY THE PROPER MATERIALS AND LABOR TO MAKE GOOD ANY DAMAGE OR DEFECT CAUSED BY SUCH UNINTENTIONAL ERROR.

2.3. CONTRACTOR IS RESPONSIBLE FOR CHECKING ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS FOR ACCURACY, AND CONFIRMING THAT THE WORK IS BUILDABLE AS SHOWN AND MEETS ALL APPLICABLE CODES BEFORE PROCEEDING WITH CONSTRUCTION. IF THERE ARE ANY QUESTIONS REGARDING THESE OR OTHER COORDINATION ISSUES, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK IN QUESTION OR RELATED WORK.

2.4. CONTRACTOR SHALL DIRECT ALL QUESTIONS TO THE OWNER'S PROJECT COORDINATOR. THE CONTRACTOR SHALL VERIFY ALL WORKING CONDITIONS SUCH AS START TIMES, NOISE AND VIBRATION LIMITATIONS, CONFINED SPACE, ETC. THROUGH THE PROJECT COORDINATOR AND APPROVAL SHALL BE RECEIVED TO START WORK.

2.5. DEVIATION TO THE INTENDED DESIGN OR THE SCOPE OF WORK MUST BE APPROVED BY THE PROJECT ENGINEER PRIOR TO COMMENCING WORK. FAILURE TO DO SO MAY RESULT IN THE WORK TO BE REMOVED AT NO COST TO THE OWNER.

2.6. DISPOSE OF DEBRIS, TRASH, AND HAZARDOUS MATERIALS IN ACCORDANCE WITH ALL APPLICABLE CODES.

2.7. WORK AREAS SHALL BE KEPT CONTINUOUSLY, AT ALL TIMES, FREE OF DEBRIS AND NON-HAZARDOUS MATERIAL TO THE SATISFACTION OF THE PROJECT COORDINATOR. ALL EXISTING PIPING AND CONDUITS SHALL HAVE TEMPORARY PROJECTION DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE STORAGE OF MATERIALS, PARKING OF VEHICLES, AND RESTRICTIONS OF WORK WITH THE PROJECT COORDINATOR. AFTER PROJECT COMPLETION, THE SITE SHALL BE CLEANED UP AND RESTORED TO ITS CONDITION OR BETTER PRIOR TO THE START OF THE PROJECT TO THE SATISFACTION OF THE PROJECT COORDINATOR.

3. SCOPE OF WORK

3.1. THE SCOPE OF WORK SHALL INCLUDE COMPLETE PROVISIONS FOR PLUMBING SYSTEMS TO FIXTURES, DEVICES, APPLIANCES, AND EQUIPMENT SHOWN ON THE CONSTRUCTION DOCUMENTS.

3.1.1. PROVISIONS INCLUDE, BUT ARE NOT LIMITED TO, ALL SUPPLIES, MATERIALS, EQUIPMENT, TOOLS AND LABOR.

3.1.2. PROVISIONS ALSO INCLUDE ALL MISCELLANEOUS MATERIALS REQUIRED TO COMPLETE THE WORK SHOWN INCLUDING, BUT NOT LIMITED TO, SUPPORTS, HANGERS, ANGLE STOPS, VALVES, SLEEVES, SEALS, EQUIPMENT PADS, WAX CONNECTIONS, GRIDS, STRAINER, P-TRAPS, TAGS, LABELS, SIGNS, AND MARKERS.

3.1.3. THE CONSTRUCTION DOCUMENTS INCLUDE ALL PLANS, ELEVATIONS, DETAILS, DIAGRAMS, SCHEDULES, AND NOTES ON THE DRAWINGS AND THE WRITTEN SPECIFICATIONS INCLUDING ANY ITEMS MENTIONED IN EITHER THE SPECIFICATIONS OR ON THE DRAWINGS BUT NOT IN THE OTHER.

3.1.4. WHERE USED ON THE PLANS AND IN THE SPECIFICATIONS AND WHERE NOT SPECIFICALLY NOTED OTHERWISE, THE TERM "PROVIDE" AND THE TERM "INSTALL" SHALL MEAN FURNISH, INSTALL, CONNECT AND TEST.

3.1.5. UNLESS EXPLICITLY NOTED "BY OTHERS" OR "EXISTING", ALL ITEMS SHOWN GRAPHICALLY OR SPECIFIED BY NOTES AND DETAILS ON THE PLANS SHALL BE FURNISHED, INSTALLED, CONNECTED, AND TESTED AS NEEDED.

3.2. ADDITIONALLY, THE SCOPE OF WORK SHALL INCLUDE

3.2.1. APPLICATION FOR TEMPORARY AND PERMANENT PLUMBING SYSTEMS, PERMITTING, INSPECTION, AND PAYMENT OF ALL ASSOCIATED FEES.

3.2.2. TESTING AND COMMISSIONING OF PLUMBING SYSTEMS.

3.2.3. EQUIPMENT RENTAL

3.2.4. TEMPORARY CONSTRUCTION WATER SUPPLY AND DEWATERING.

3.2.5. PROVISIONS FOR MAINTAINING THE FUNCTIONALITY OF EXISTING TO REMAIN BUILDING COLD WATER, HOT WATER AND HOT WATER RETURN, SANITARY SEWER AND VENT, PRIMARY AND SECONDARY STORM DRAIN, PLUMBING FIXTURES AND EQUIPMENT SYSTEMS THAT WILL BE AFFECTED BY THE WORK.

4. SUBMITTALS

4.1. PRODUCT DATA: SUBMIT CATALOG DATA SHOWING MANUFACTURER'S NAME AND CONTACT INFORMATION, ALL STANDARD FEATURES, PLUMBING CONNECTION SIZES, LOCATIONS, FLOW REQUIREMENTS, PRESSURE REQUIREMENTS, WATER QUALITY REQUIREMENTS, ELECTRICAL AMPERAGE, VOLTAGE, POWER, DIMENSIONS, CLEARANCES, WEIGHTS, LISTINGS & PRODUCT LABELS, MATERIAL TYPES, FINISHES AND CLEARLY INDICATING WHICH OPTIONAL FEATURES WILL BE PROVIDED.

4.2. WHERE MULTIPLE SIZES ARE LISTED, INDICATE SIZES TO BE USED.

4.3. WHERE MULTIPLE PRODUCTS ARE SHOWN ON THE SAME PAGE, INDICATE WHICH PRODUCTS TO BE USED.

4.4. WHERE MULTIPLE ACCESSORIES/OPTIONS ARE SHOWN, INDICATE ALL APPLICABLE ACCESSORIES/OPTIONS.

4.5. EQUIPMENT DRAWINGS: MANUFACTURER OR CONTRACTOR PREPARED DRAWINGS SHOWING ALL RELEVANT DIMENSIONS, WEIGHTS, ELECTRICAL, MECHANICAL & PLUMBING CONNECTION REQUIREMENTS, CONDUIT ENTRY POINTS, ASSEMBLY REQUIREMENTS, LIFTING REQUIREMENTS, LIFTING POINTS, REQUIRED CLEARANCES. INCLUDE PLAN VIEWS & ELEVATIONS.

4.6. INCLUDE ALL RELEVANT PLUMBING DIAGRAMS INCLUDING SCHEMATIC DIAGRAMS FOR COLD WATER, HOT WATER AND HOT WATER RETURN, NATURAL GAS, SANITARY SEWER AND VENT SYSTEMS, SIGNAL, AND CONTROL WIRING.

5. COORDINATION

5.1. THE CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL, FIRE PROTECTION, ELECTRICAL AND OTHER DRAWINGS RELATED TO THIS PROJECT FOR ADDITIONAL WORK TO BE PROVIDED.

5.2. ALL PLUMBING SYSTEM SHUTDOWNS SHALL BE COORDINATED IN WRITING WITH OWNER ONE (1) WEEK (MIN) PRIOR TO THE SHUTDOWN.

5.3. COOPERATE FULLY WITH THE OWNER OR HIS REPRESENTATIVE DURING CONSTRUCTION OPERATIONS TO MINIMIZE CONFLICTS AND TO FACILITATE OWNER USAGE SO AS NOT TO INTERFERE WITH THE OWNER'S OPERATIONS.

5.4. THE DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW ALL PIPING, FITTINGS, VALVES, ACCESSORIES, FIXTURES AND EQUIPMENT IN THEIR EXACT DIMENSIONED LOCATIONS AND/OR ELEVATIONS. THE CONTRACTOR MUST CAREFULLY REVIEW THE ARCHITECTURAL, STRUCTURAL MECHANICAL, ELECTRICAL, FIRE PROTECTION, AND SPECIAL SYSTEMS PLANS TO IDENTIFY CONFLICTS AND AREAS THAT REQUIRE COORDINATION.

5.5. PRIOR TO COMMENCE OF ANY WORK THE PLUMBING CONTRACTOR SHALL PRODUCE SHOP DRAWINGS.

5.5.1. SHOP DRAWINGS ARE REQUIRED TO SHOW EXACT LOCATIONS AND ELEVATIONS OF ALL PIPING, VALVES AND ACCESSORIES.

5.5.2. CONSTRUCTION DOCUMENTS SHALL NOT BE CONSIDERED SHOP DRAWINGS.

5.5.3. SHOP DRAWINGS SHALL BE FULLY COORDINATED WITH ALL DISCIPLINES ON THE PROJECT.

5.6. COORDINATE PLUMBING SYSTEMS EQUIPMENT ROUGH-IN WITH FURNITURE, MILLWORK, SIGNS, MECHANICAL, ELECTRICAL AND FIRE PROTECTION SYSTEMS, ARCHITECTURAL AND STRUCTURAL ELEMENTS, AND THE OWNER'S REPRESENTATIVE. MINOR CHANGES IN PLUMBING EQUIPMENT LOCATIONS AND LAYOUT THAT ARE REQUIRED BY SITE CONDITIONS OR ORDERED BY THE DESIGN TEAM PRIOR TO PERFORMANCE OF WORK SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL CHARGES TO THE OWNER.

5.7. MAINTAIN REQUIRED NEC WORKING SPACE AND DEDICATED EQUIPMENT SPACE AROUND ALL PLUMBING EQUIPMENT, CONTROLS PANELS, ETC THAT ARE SUBJECT TO MAINTENANCE, TESTING, OR USER INTERFACE. COORDINATE WITH OTHER TRADES. IF CLEARANCE CANNOT BE PROVIDED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO ROUGH-IN.

5.8. COORDINATE COLOR SELECTIONS FOR ACCESS PANELS AND ALL DEVICE PLATES WITH ARCHITECT.

6. DELIVERY AND STORAGE

6.1. STORE ALL PLUMBING SYSTEMS EQUIPMENT/MATERIALS IN CLEAN, DRY SPACE LOCATED ABOVE GRADE, PROTECT FROM DIRT, WATER, CONSTRUCTION DEBRIS, TRAFFIC, FREEZE, AND DETERIORATION FROM SUN LIGHT.

6.2. MAINTAIN FACTORY WRAPPING OR PROVIDE APPROPRIATE COVER FOR ALL LARGE PLUMBING EQUIPMENT. FOLLOW ALL MANUFACTURER RECOMMENDATIONS FOR HUMIDITY AND MAX/MIN TEMPERATURES FOR STORING PLUMBING EQUIPMENT.

7. QUALIFICATIONS

7.1. MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SHOWN ON THE CONSTRUCTION DOCUMENTS WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE

7.2. INSTALLER: A STATE LICENSED PLUMBER WITH DOCUMENTED EXPERIENCE INSTALLING ALL EQUIPMENT SPECIFIED HERE IN SHALL DIRECTLY SUPERVISE ALL WORK. WHERE NOTED IN THE SPECIFICATIONS, REQUIRED BY CODE, OR REQUIRED BY THE MANUFACTURER, INSTALLER SHALL BE A MANUFACTURER TRAINED AND/OR CERTIFIED INSTALLER OF THE SPECIFIC PRODUCT TO BE INSTALLED.

7.3. WHERE TESTING IS REQUIRED BY THE CONSTRUCTION DOCUMENTS, EQUIPMENT MANUFACTURER, OR CODE; TESTING SHALL BE PERFORMED BY AN AGENCY WITH DOCUMENTED EXPERIENCE AND PROPERLY CALIBRATED, FULLY FUNCTIONING EQUIPMENT, AND IS ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.

8. QUALITY ASSURANCE

8.1. UNLESS OTHERWISE APPROVED, ALL EQUIPMENT SHALL BE NEW, PROPERLY DESIGNED, FROM A REPUTABLE MANUFACTURER MEETING THE SPECIFICATION QUALIFICATIONS, IN COMPLIANCE WITH THE SPECIFICATION REQUIREMENTS, AND IN FULL WORKING ORDER.

8.2. WHERE TWO OR MORE ITEMS OF THE SAME CLASS OF EQUIPMENT ARE REQUIRED, THESE ITEMS SHALL BE PRODUCTS OF A SINGLE MANUFACTURER; HOWEVER, THE COMPONENT PARTS OF THE ITEM NEED NOT BE THE PRODUCTS OF THE SAME MANUFACTURER UNLESS STATED IN THE TECHNICAL SECTION.

8.3. LISTING AND LABELING: WHERE REQUIRED, ALL ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES SHALL BE LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND MARKED FOR THE INTENDED USE. TESTING AGENCY SHALL BE UL UNLESS NOTED OTHERWISE OR PRE-APPROVED BY OWNER AND AHJ.

8.4. ALL EQUIPMENT USED FOR TESTING SHALL BE IN FULL WORKING ORDER AND CALIBRATED PER THE MANUFACTURER'S RECOMMENDATIONS.

9. IDENTIFICATION

9.1. PROVIDE APPROPRIATE TAGS, LABELS AND WARNING SIGNS FOR ALL FIXTURES, EQUIPMENT, PIPING, FITTINGS, VALVES, AND ACCESSORIES. PROVIDE BURIED WARNING LABEL FOR ALL UNDERGROUND PIPING. WARNING LABELS SHALL BE DETECTABLE FOR ALL NON METALLIC PIPING.

10. GENERAL REQUIREMENTS - PIPING

10.1. VERIFY LOCATION AND ELEVATIONS FOR ALL EXISTING PLUMBING PIPING PRIOR START OF ANY WORK. NOTIFY OWNER, ARCHITECT, ENGINEER OF ANY DISCREPANCIES FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION.

10.2. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT IS INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.

10.3. PVC SHALL NOT TO BE USED IN THE FOLLOWING LOCATIONS:

10.3.1. HVAC PLENUMS OR IN EXTERIOR LOCATIONS WHERE EXPOSED TO SUNLIGHT; COATINGS OR WRAPS ARE NOT ALLOWED IN THESE LOCATIONS.

10.3.2. DOMESTIC WATER SUPPLY SYSTEMS INSIDE OF THE BUILDING.

10.4. ALL EXTERIOR PLUMBING PIPING SHALL BE INSTALLED BELOW THE FROST LEVEL WITH MINIMUM COVER OF 24 INCHES, A MINIMUM 24 INCHES OF COVER SHALL BE PROVIDED UNLESS OTHERWISE INDICATED.

10.5. ALL TRENCHES SHALL BE BACKFILLED TO A POINT AT LEAST 12 INCHES ABOVE TOP OF PIPE WITH SAND. ALL BACKFILL ABOVE SAND SHALL NOT HAVE CLODS OF EARTH OR STONE LARGER THAN 1 1/2" DIAMETER.

10.6. TRENCHES SHALL BE BACKFILLED IN ONE FOOT LAYERS, MOISTENED AND TAMPED.

10.7. ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT. ROUTE PARALLEL AND PERPENDICULAR TO WALLS.

10.8. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.

10.9. INSTALL PIPING TO MAINTAIN HEADROOM WITHOUT INTERFERING WITH USE OF SPACE OR TAKING MORE SPACE THAN NECESSARY.

10.10. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.

10.11. PROVIDE CLEARANCE IN HANGERS AND FROM STRUCTURE AND OTHER EQUIPMENT FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.

10.12. ACCESS PANELS SHALL BE PROVIDED FOR ALL NON ACCESSIBLE VALVES. COORDINATE LOCATION, SIZE, COLOR WITH OWNER/ARCHITECT.

10.13. INSTALL FIRE STOPPING AT FIRE RATED CONSTRUCTION PERIMETERS AND OPENINGS CONTAINING PENETRATING SLEEVES AND PIPING.

10.14. INSTALL UNIONS DOWNSTREAM OF VALVES AND AT EQUIPMENT OR APPARATUS CONNECTIONS.

10.15. INSTALL NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.

10.16. INSTALL SLEEVE PIPES PASSING THROUGH PARTITIONS, WALLS AND FLOORS.

10.17. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.

10.18. PROTECT PIPING SYSTEMS FROM ENTRY OF FOREIGN MATERIALS BY TEMPORARY COVERS, COMPLETING SECTIONS OF THE WORK, AND ISOLATING PART OF COMPLETED SYSTEM.

10.19. INSTALL PIPING PENETRATING ROOFED AREAS TO MAINTAIN INTEGRITY OF ROOF ASSEMBLY.

22 05 16 - EXPANSION FITTINGS AND LOOPS

1. GENERAL

1.1.CODE REFERENCES

1.1.1. AMERICAN SOCIETY OF MECHANICAL ENGINEERS:

1.1.1.1. ASME B31.9 - BUILDING SERVICES PIPING.

1.1.1.2. ASME SECTION IX - BOILER AND PRESSURE VESSEL CODE - WELDING AND BRAZING QUALIFICATIONS.

1.2.AMERICAN WELDING SOCIETY:

1.2.1. AWS D1.1 - STRUCTURAL WELDING CODE - STEEL.

1.3.DESIGN REQUIREMENTS

1.3.1. PROVIDE STRUCTURAL WORK AND EQUIPMENT REQUIRED FOR EXPANSION AND CONTRACTION OF PIPING. VERIFY ANCHORS, GUIDES, AND EXPANSION JOINTS PROVIDE AND ADEQUATELY PROTECT SYSTEM.

1.3.2. EXPANSION COMPENSATION DESIGN CRITERIA:

1.3.2.1. INSTALLATION TEMPERATURE: **70** DEGREES F.

1.3.2.2. DOMESTIC HOT WATER: **140** DEGREES F.

1.3.2.3. SAFETY FACTOR: **30** PERCENT.

2. PRODUCTS

2.1. FLEXIBLE PIPE CONNECTORS

2.1.1. STEEL PIPING: STAINLESS STEEL INNER HOSE, DOUBLE BRAIDED STAINLESS STEEL EXTERIOR SLEEVE, 200 PSIG WOG AND 250 DEGREES F, FLANGED, THREADED WITH UNION OR WELDED JOINTS. MAXIMUM OFFSET 1 INCH ON EACH SIDE OF INSTALLED CENTER LINE.

2.1.2. COPPER PIPING: BRONZE INNER HOSE, BRAIDED BRONZE EXTERIOR SLEEVE, 200 PSIG WOG AND 250 DEGREES F, FLANGED, THREADED WITH UNION OR WELDED JOINTS. MAXIMUM OFFSET 1 INCH ON EACH SIDE OF INSTALLED CENTER LINE.

2.2. EXPANSION JOINTS

2.2.1. STAINLESS STEEL BELLOWS TYPE: 3 INCH AND SMALLER STEEL PIPE, PRESSURE RATING 200 PSIG WOG AND 250 DEGREES F, MAXIMUM COMPRESSION 3 INCH, MAXIMUM EXTENSION 1/4 INCH, FLANGED, THREADED OR WELDED JOINTS.

2.2.2. EXTERNAL RING CONTROLLED STAINLESS STEEL BELLOWS TYPE: STEEL PIPING 3 INCH AND LARGER, 200 PSIG WOG AND 250 DEGREES F, 1-1/4 INCH MAXIMUM COMPRESSION, 3/8 INCH MAXIMUM EXTENSION, 5/16 INCH MAXIMUM OFFSET, FLANGED JOINT WITH INTERNAL FLOW LINER.

2.2.3. DOUBLE SPHERE, FLEXIBLE COMPENSATORS: STEEL PIPING 2 INCH AND LARGER TEFLON BODY, WORKING PRESSURE 150 PSI, 225 DEGREES F, MAXIMUM COMPRESSION 1-1/8 INCH, MAXIMUM ELONGATION 7/8 INCH, MAXIMUM OFFSET 7/8 INCH, MAXIMUM ANGULAR MOVEMENT 45 DEGREES, TAPPED STEEL FLANGES, GALVANIZED FLANGES OR GALVANIZED UNIONS. CONTROL RODS.

2.2.4. TWO-PLY BRONZE BELLOWS TYPE: COPPER PIPING 2 INCH AND SMALLER, BRONZE WITH ANTI-TORQUE DEVICE, LIMIT STOPS, INTERNAL GUIDES PRESSURE RATING 200 PSI WOG AND 250 DEGREES, MAXIMUM COMPRESSION 3 INCHES, MAXIMUM EXTENSION 1/4 INCH, SOLDERED JOINTS.

2.2.5. LOW PRESSURE COMPENSATORS WITH TWO-PLY BRONZE BELLOWS: COPPER OR STEEL PIPING 2 INCH AND SMALLER, WORKING PRESSURE 80 PSIG, MAXIMUM TEMPERATURE 250 DEGREES F, MAXIMUM COMPRESSION 1/2 INCH, MAXIMUM EXTENSION 5/32 INCH, SOLDERED JOINTS.

2.2.6. COPPER WITH PACKED SLIDING SLEEVE: COPPER OR STEEL PIPING 2 INCH AND LARGER, MAXIMUM TEMPERATURE 225 DEGREES F, FLANGED OR THREADED JOINTS,

2.3. ACCESSORIES

2.3.1. PIPE ALIGNMENT GUIDES: TWO PIECE WELDED STEEL WITH ENAMEL PAINT, BOLTED, WITH SPIDER TO FIT STANDARD PIPE, FRAME WITH FOUR MOUNTING HOLES, CLEARANCE FOR MINIMUM 1 INCH THICK INSULATION, MINIMUM 3 INCH TRAVEL.

2.3.2. SWIVEL JOINTS: FABRICATED STEEL, BRONZE, DUCTILE IRON OR CAST STEEL BODY, DOUBLE BALL BEARING RACE, FIELD LUBRICATED, WITH RUBBER OR BUNA-N O-RING SEALS.

3. EXECUTION

3.1. INSTALLATION

3.1.1. INSTALL WORK IN ACCORDANCE WITH **ASME B31.9**.

3.1.2. INSTALL FLEXIBLE PIPE CONNECTORS ON PIPES CONNECTED TO EQUIPMENT SUPPORTED BY VIBRATION ISOLATION. PROVIDE LINE SIZE FLEXIBLE CONNECTORS.

3.1.3. INSTALL FLEXIBLE CONNECTORS AT RIGHT ANGLES TO DISPLACEMENT. INSTALL ONE END IMMEDIATELY ADJACENT TO ISOLATED EQUIPMENT AND ANCHOR OTHER END. INSTALL IN HORIZONTAL PLANE UNLESS INDICATED OTHERWISE.

3.1.4. RIGIDLY ANCHOR PIPE TO BUILDING STRUCTURE. PROVIDE PIPE GUIDES TO DIRECT MOVEMENT ONLY ALONG AXIS OF PIPE. ERECT PIPING SO STRAIN AND WEIGHT IS NOT ON CAST CONNECTIONS OR APPARATUS.

3.1.5. PROVIDE SUPPORT AND ANCHORS FOR CONTROLLING EXPANSION AND CONTRACTION OF PIPING. PROVIDE LOOPS, PIPE OFFSETS, AND SWING JOINTS, OR EXPANSION JOINTS [**WHERE REQUIRED**] [**AS INDICATED ON DRAWINGS**]. REFER TO SECTION 220529 FOR PIPE HANGER INSTALLATION REQUIREMENTS.

3.1.6. PROVIDE GROOVED PIPING SYSTEMS WITH MINIMUM ONE JOINT PER INCH PIPE DIAMETER INSTEAD OF FLEXIBLE CONNECTOR SUPPORTED BY VIBRATION ISOLATION. GROOVED PIPING SYSTEMS NEED NOT BE ANCHORED.

3.1.7. PROVIDE EXPANSION LOOPS AS INDICATED ON DRAWINGS.

3.1.8. FURNISH INSPECTION SERVICES BY FLEXIBLE PIPE MANUFACTURER'S REPRESENTATIVE FOR FINAL INSTALLATION AND CERTIFY INSTALLATION IS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND CONNECTORS ARE PERFORMING SATISFACTORILY.

22 05 23 - GENERAL DUTY VALVE FOR PLUMBING

1. GENERAL

1.1. ASTM INTERNATIONAL

1.1.1. ASTM D1785 - STANDARD SPECIFICATION FOR POLY VINYL CHLORIDE (PVC) PLASTIC PIPE, SCHEDULES 40, 80 AND 120.

1.1.2. ASTM D4101 - STANDARD SPECIFICATION FOR PROPYLENE INJECTION AND EXTRUSION MATERIALS.

1.2. MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY:

1.1.1. MSS SP 67 - BUTTERFLY VALVES

1.1.2. MSS SP 70 - CAST IRON GATE VALVES, FLANGED AND THREADED ENDS

1.1.3. MSS SP 71 - CAST IRON SWING CHECK VALVES, FLANGED AND THREADED ENDS

1.1.4. MSS SP 78 - CAST IRON PLUG VALVES, FLANGED AND THREADED ENDS

1.1.5. MSS SP 80 - BRONZE GATE, GLOBE, ANGLE AND CHECK VALVES.

1.1.6. MSS SP 110 - BALL LVES THREADED, SOCKET-WELDING, SOLDER JOINT, GROOVED AND FLARED ENDS.

2. PRODUCTS

2.1. GATE VALVES

2.1.1. 2 INCHES AND SMALLER: MSS SP 80, CLASS 125, BRONZE BODY, BRONZE TRIM, THREADED BONNET, NON-RISING STEM, HAND-WHEEL, INSIDE SCREW, SOLID WEDGE DISC, ALLOW SEAT RINGS, SOLDER OR THREADED ENDS.

2.1.2. 2-1/2 INCHES AND LARGER: MSS SP 70, CLASS 125, CAST IRON BODY, BRONZE TRIM, BOLTED BONNET, NON-RISING STEM, HAND-WHEEL, OUTSIDE SCREW AND YOKE, SOLID WEDGE DISC WITH BRONZE SEAT RINGS, FLANGED ENDS. FURNISH CHAIN-WHEEL OPERATORS FOR VALVES 6 INCHES AND LARGER MOUNTED OVER 8 FEET ABOVE FLOOR.

2.2. BALL VALVES

2.2.1. 2 INCHES AND SMALLER: MSS SP 110, CLASS 150, BRONZE, TWO PIECE BODY, TYPE 316 STAINLESS STEEL BALL, FULL PORT, TEFLON SEATS, BLOW-OUT PROOF STEM, SOLDER OR THREADED ENDS WITH UNION, LEVER HANDLE.

2.2.2. 2 INCHES AND SMALLER: 150 PSI AT 73 DEGREES F WATER TEMPERATURE, MAXIMUM SERVICE TEMPERATURE: 140 DEGREES F ASTM D1785 PVC BODY AND BALL, DOUBLE LEVER HANDLE, EPDM SEALS, TEFLON SEATS, FULL PORT, DOUBLE UNION TYPE WITH SOCKET OR THREADED ENDS.

2.2.3. 2 INCHES AND SMALLER: 150 PSI AT 73 DEGREES F WATER TEMPERATURE, MAXIMUM SERVICE TEMPERATURE: 210 DEGREES F, ASTM D1785 CPVC BODY AND BALL, DOUBLE LEVER HANDLE, EPDM SEALS, TEFLON SEATS, FULL PORT, DOUBLE UNION TYPE WITH SOCKET OR THREADED ENDS.

2.2.4. 2 INCHES AND SMALLER: 150 PSI AT 73 DEGREES F WATER TEMPERATURE, MAXIMUM SERVICE TEMPERATURE: 180 DEGREES F, ASTM D4101 BLACK POLYPROPYLENE BODY AND BALL, DOUBLE LEVER HANDLE, EPDM SEALS, TEFLON SEATS, FULL PORT, DOUBLE UNION TYPE WITH SOCKET OR THREADED ENDS.

2.3. PLUG VALVES

2.3.1. 2 INCHES AND SMALLER: MSS SP 78, CLASS 150, SEMI-STEEL CONSTRUCTION, ROUND PORT, FULL PIPE AREA, PRESSURE LUBRICATED, TEFLON PACKING, THREADED ENDS. FURNISH ONE PLUG VALVE WRENCH FOR EVERY TEN PLUG-VALVES WITH MINIMUM OF ONE WRENCH.

2.3.2. 2-1/2 INCHES AND LARGER: MSS SP 78, CLASS 150, SEMI-STEEL CONSTRUCTION, ROUND PORT, FULL PIPE AREA, PRESSURE LUBRICATED, TEFLON PACKING, FLANGED ENDS. FURNISH WRENCH-OPERATED OR WORM GEAR-OPERATED.

2.4. BUTTERFLY VALVES

2.4.1. 2-1/2 INCHES AND LARGER: MSS SP 67, CLASS 150, BODY: CAST OR DUCTILE IRON,[WAFER LUG OR GROOVED ENDS, STAINLESS STEEL STEM, EXTENDED NECK, STAINLESS STEEL DISC, EPDM SEAT, INFINITE POSITION LEVER HANDLE WITH MEMORY STOP, HAND-WHEEL AND GEAR DRIVE, FURNISH GEAR OPERATORS FOR VALVES 8 INCHES AND LARGER, CHAIN-WHEEL OPERATORS FOR VALVES MOUNTED OVER 8 FEET ABOVE FLOOR.

2.4.2. 2 INCHES THROUGH 10 INCHES: 150 PSI AT 73 DEGREES F WATER TEMPERATURE, MAXIMUM SERVICE TEMPERATURE: 140 DEGREES F, TWO] PIECE BODY, ASTM D1785 PVC, LUG TYPE FLANGE FACING, DISC ENCAPSULATED WITH EPDM, STAINLESS STEEL SHAFT, LOCKING LEVER HANDLE.

2.4.3. 2 INCHES THROUGH 10 INCHES: 150 PSI AT 73 DEGREES F WATER TEMPERATURE, MAXIMUM SERVICE TEMPERATURE 210 DEGREES F, [ONE] [TWO] PIECE BODY, ASTM D1785 CPVC, LUG TYPE FLANGE FACING, DISC ENCAPSULATED WITH EPDM, STAINLESS STEEL SHAFT, LOCKING LEVER HANDLE.

2.5. HORIZONTAL SWING CHECK VALVES:

2.5.1. 2 INCHES AND SMALLER: MSS SP 80, CLASS 150, BRONZE BODY AND CAP, BRONZE SEAT, TEFLON DISC, SOLDER OR THREADED ENDS.

2.5.2. 2-1/2 INCHES AND LARGER: MSS SP 71, CLASS 125, CAST IRON BODY, BOLTED CAP, BRONZE OR CAST IRON DISC, RENEWABLE DISC SEAL AND SEAT, FLANGED ENDS.

2.5.3. 2-1/2 INCHES AND LARGER: MSS SP 71, CLASS 125], CAST IRON BODY, BRONZE SWING DISC, RENEWABLE DISC SEAL AND SEAT, FLANGED ENDS, OUTSIDE LEVER AND SPRING.

2.6. SPRING LOADED CHECK VALVES:

2.6.1. 2 INCHES AND SMALLER: MSS SP 80, CLASS 250 , BRONZE BODY, IN-LINE SPRING LIFT CHECK, SILENT CLOSING, TEFLON DISC, INTEGRAL SEAT, SOLDER OR THREADED ENDS.

2.6.2. 2-1/2 INCHES AND LARGER: MSS SP 71, CLASS 125 , GLOBE STYLE, CAST IRON BODY, BRONZE SEAT, CENTER GUIDED BRONZE DISC, STAINLESS STEEL SPRING AND SCREWS, FLANGED ENDS.

3. EXECUTION

3.1. INSTALLATION

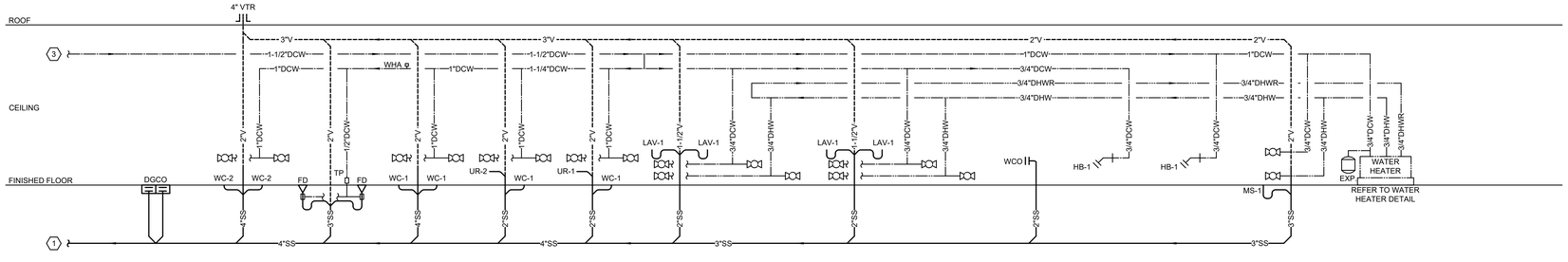
3.1.1. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.

3.1.2. INSTALL BRASS MALE ADAPTERS EACH SIDE OF VALVES IN COPPER PIPED SYSTEM. SOLDER ADAPTERS TO PIPE.

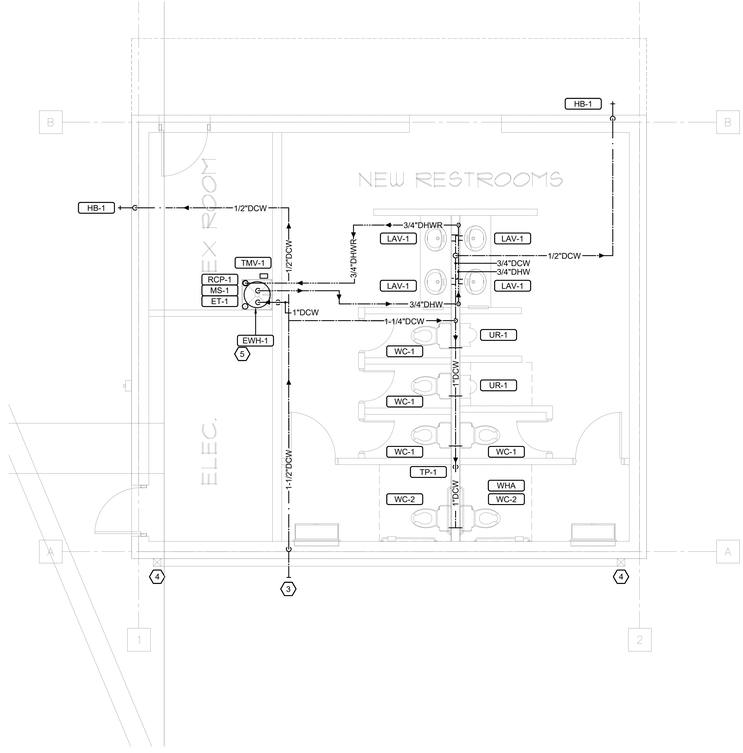
3.1.3. INSTALL 3/4 INCH BALL VALVES WITH CAP FOR DRAINS AT MAIN SHUT-OFF VALV

KEYED NOTES:

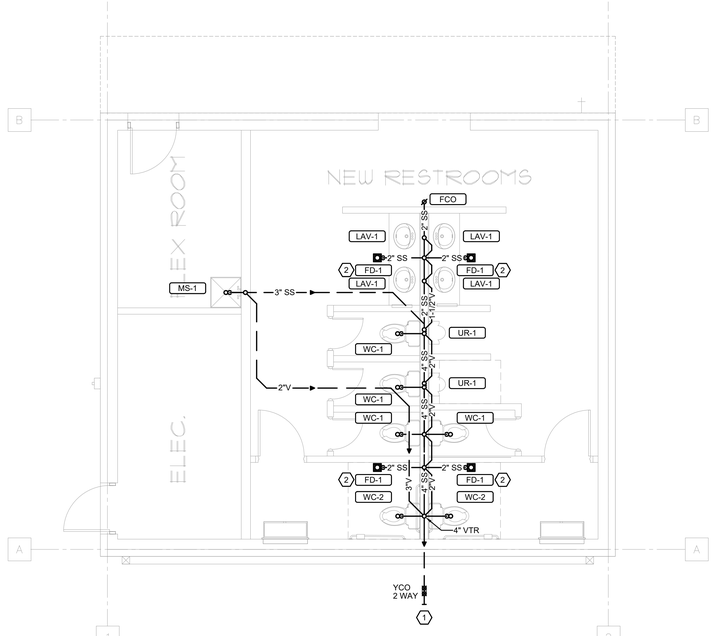
1. 4" SANITARY STUB-OUT. REFER TO CIVIL FOR CONTINUATION.
2. PROVIDE RECTORSEAL 97041.
3. 1-1/2" DOMESTIC COLD WATER STUB-OUT. REFER TO CIVIL FOR CONTINUATION.
4. STORM GUTTER DOWNSPOUT. REFER TO CIVIL AND ARCHITECTURAL FOR CONTINUATION.
5. PROVIDE NEW WATER HEATER PER SCHEDULE. INSTALL ABOVE MOP SINK ON ENGINEERED WALL MOUNTED PLATFORM IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE WITH SECONDARY DRAIN PAN. ROUTE DRAIN PAN AND RELIEF PIPING TO TERMINATE AT NEARBY MOP SINK WITH AIR GAP OF TWICE PIPE DIAMETER.



1 PLUMBING RISER DIAGRAM - BUILDING 2
NOT TO SCALE



2 PLUMBING PLAN - DOMESTIC WATER - BUILDING 2
1/4" = 1'-0"
0 2' 4' 8'
NORTH



3 PLUMBING PLAN - WASTE & VENT - BUILDING 2
1/4" = 1'-0"
0 2' 4' 8'
NORTH

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State of registration TX
Firm Registration No. F-2497
EEA Project No. 20250182

CLIENT:
Gray Street Partners

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	REVISION

PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

PLUMBING PLAN - BUILDING 2

DRAWN BY: EC
CHECKED BY: SA
PROJ. NO:
DRAWING NO: **P3**

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	REMARKS	POWER REQUIRED?
WC-1	WATER CLOSET FLOOR MOUNT STANDARD GUEST	FIXTURE: AMERICAN STANDARD "CADET 3" 2700A.101; WHITE, VITEROUS CHINA, FLOOR MOUNTED, FLOOR OUTLET, TANK-TYPE. 1.28 GPF, LEFT SIDE TRIP LEVER, TWO PIECE DESIGN, ELONGATED BOWL, FULLY GLAZED TRAPWAY, COLOR MATCHED SOLID PLASTIC SEAT AND COVER WITH SLOW CLOSE HINGES SANITARY SEAT LIFT TAB AND EVERCLEAN SURFACE, MOUNTED AT STANDARD HEIGHT. TANK COVER: AMERICAN STANDARD 7354125-400; VITREOUS CHINA TANK COVER ANGLE STOP: ZURN Z8800 SERIES; LEAD FREE, CHROME PLATED SOLID BRASS, QUARTER TURN STOP WITH ROUND WHEEL AND BRAIDED STAINLESS STEEL CLOSET RISER. WAX RING: ZURN Z5972-COMB; WAX RING, CLOSET BOLT KIT	N
WC-2	WATER CLOSET FLOOR MOUNT ADA PUBLIC	FIXTURE: AMERICAN STANDARD "CHAMPION PRO" 211AA.104; WHITE, VITREOUS CHINA, FLOOR MOUNTED, FLOOR OUTLET, TANK-TYPE. 1.28 GPF, LEFT SIDE TRIP LEVER, ONE PIECE DESIGN, ELONGATED BOWL, FULLY GLAZED TRAPWAY, COLOR MATCHED SOLID PLASTIC SEAT AND COVER WITH SLOW CLOSE HINGES SANITARY SEAT LIFT TAB AND EVERCLEAN SURFACE, MOUNTED AT ADA HEIGHT. FOR RIGHT SIDE TRIP LEVER SEE MODEL 211AA.105 ANGLE STOP: ZURN Z8800 SERIES; LEAD FREE, CHROME PLATED SOLID BRASS, QUARTER TURN STOP WITH ROUND WHEEL AND BRAIDED STAINLESS STEEL CLOSET RISER. WAX RING: ZURN Z5972-COMB; WAX RING, CLOSET BOLT KIT	N
UR-1	URINAL WALL MOUNT ADA PUBLIC	FIXTURE: ZURN Z5755-U; WHITE, VITREOUS CHINA, WALL MOUNTED WALL OUTLET, WASHDOWN TOP SPUD FLUSH VALVE 0.5 GPF, MOUNT AT ADA HEIGHT WHERE REQUIRED. FLUSH VALVE: ZURN Z6203-EWS-YB-YC-BG; TOP MOUNT, PISTON TYPE, MANUAL OPERATED, 0.5 GPF WITH BIO CARE HANDLE. CARRIER: ZURN Z1221, PLATE TYPE SYSTEM WALL CARRIER	N
LAV-1	LAVATORY UNDERMOUNT ADA PUBLIC	BOWL: KOHLER "STINSON" 442007-U-O; WHITE, UNDERMOUNT, VITREOUS CHINA, RECTANGULAR BASIN, FRONT OVERFLOW, CENTER BACK DRAIN, OVERALL DIMENSIONS 20.1875-INCH WIDE x 14.375-INCH LONG x 7.0625-INCH DEPTH, BASIN DIMENSIONS 18.1875-INCH x 11.875-INCH x 5-INCH DEPTH, FAUCET: KOHLER "HINT" K-37891-4-CP; LEAD FREE, DECK MOUNTED, SINGLE HOLE, 0.5 GPM FLOW. POLISHED CHROME FINISH, SINGLE LEVER HANDLE, 3.9375-INCH OFFSET AND 3.375-INCH ABOVE RIM. INCLUDES POP-UP METAL STRAINER. P-TRAP: ZURN Z8700-PC; CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT 1-1/4-INCH x 1-1/4-INCH ANGLE STOPS: ZURN Z8800 SERIES; LEAD FREE, CHROME PLATED SOLID BRASS, QUARTER TURN STOP WITH ROUND WHEEL AND BRAIDED STAINLESS STEEL SUPPLY FOR BOTH HOT AND COLD WATER CONNECTIONS. INSULATION: ZURN Z8946-NT; SATIN WHITE PVC RESIN, ANTIMICROBIAL, KIT INCLUDES ONE P-TRAP AND ONE HOT AND ONE COLD ANGLE STOP PROTECTOR.	N
MS-1	MOP SINK	FIXTURE: ZURN Z5850-D3-RG; ENAMELED CAST IRON CORNER FLOOR MOUNTED SINK, 28-INCH x 28-INCH WITH 8-INCH HIGH CURB, REMOVABLE VINYL-COATED RIM GUARD WITH 3-INCH GRID DRAIN FAUCET: ZURN Z843MX-XL-CS-HCT-WHI-SH; POLISHED CHROME PLATED AST BRASS FAUCET, QUARTER TURN INLETS WITH CHECK STOPS, HOT/COLD INDEXES, WALL HUNG, VACUUM BREAKER, PAIL HOOK, WALL HOOK BRAKCET, 5-FOOT HOSE AND WALL SUPPORT.	N
FD-1	FLOOR DRAIN	FIXTURE: ZURN Z415S-P; DURA-COATED CAST IRON BODY, BOTTOM OUTLET, TYPE "S" SQUARE HEEL PROOF PERFORATED POLISHED NICKLE BRONZE STRAINER, WITH TRAP PRIMER CONNECTION. SEE FLOOR PLANS FOR SIZES	N
HB-1	WALL HYDRANT	FIXTURE: WOODFORD 65; AUTOMATIC DRAINING FREEZELESS HYDRANT WITH SINGLE CHECK HOSE. ASSE 1019-B APPROVED, CHROME FINISH.	N
YCO	YARD CLEANOUT	FIXTURE: ZURN Z1400-BZ1; DURA-COATED CAST IRON BODY, BOTTOM OUTLET, WITH GAS AND WATER TIGHT THREADED ABS TAPERED PLUG. POLISHED NICKLE BRONZE TOP.	N
FCO	FLOOR CLEANOUT	FIXTURE: J.R. SMITH 4023 HARD FLOOR: ROUND CHROME PLATED SCORIATED COVER, CARPET AREAS: NICKEL BRONZE TOP AND CARPET CLAMP OR CARPET MARKER. VERIFY FLOOR MATERIALS USED FROM ARCHITECTURAL PLANS. CLEANOUT TO BE FULL SIZE OF SOIL PIPE UP TO AND INCLUDING 4-INCH ID. REFERENCE PLANS FOR SOIL PIPE SIZE.	N
TP-1	TRAP PRIMER	FIXTURE: PRECISION PLUMBING PRODUCTS PR-50; LEAD FREE, AUTOMATIC PRESSURE DROP ACTUATED TRAP PRIMER. OPERATING RANGE BETWEEN 20-80 PSI. MINIMUM OF 3 PSI DROP TO ACTIVATE.	N
WHA	WATER HAMMER ARRESTOR	FIXTURE: ZURN Z1700; PDI WH-201 AND ASSE 1010 CERTIFIED, MAXIMUM WORKING PRESSURE IS 125 PSI. SEE DETAILS FOR SIZING REQUIREMENTS	N

PLUMBING PIPING SCHEDULE

PIPING ID	SERVICE	SIZE	MATERIAL TYPE	FITTING TYPE	JOINT TYPE	INSULATION TYPE	VALVES	REMARKS
COLD WATER - DOMESTIC	ABOVE GRADE	ALL	TYPE "L" COPPER HARD DRAWN TUBING ASTM B88	WROUGHT COPPER FITTINGS PER ASME B16.22	SOLDER 95% TIN, 5% SILVER PER ASTM B32, LEAD FREE	1/2 INCH CF TO PREVENT CONDENSATION	2" AND BELOW: BA-1 2-1/2" AND LARGER: BF-1	LEAD-FREE VIEGA PROPRESS OR EQUAL ALLOWED FOR COPPER PIPING 4-INCH AND BELOW, EDPM O-RINGS.
	BELOW GRADE (WITHIN 5-FEET OF BUILDING)	ALL	TYPE "K" COPPER HARD DRAWN TUBING ASTM B88	WROUGHT COPPER FITTINGS PER ASME B16.22	SOLDER 95% TIN, 5% SILVER PER ASTM B32, LEAD FREE	1/2 INCH CF TO PREVENT CONDENSATION		WRAP WITH 2-INCH, 20 MIL VINYL TAPE, WITH 50% OVERLAP, NO INSULATION REQUIRED.
HOT WATER - DOMESTIC HOT WATER RETURN - DOMESTIC UP TO 140 DEGREE F	ABOVE GRADE	ALL	TYPE "L" COPPER HARD DRAWN TUBING ASTM B88	WROUGHT COPPER FITTINGS PER ASME B16.22	SOLDER 95% TIN, 5% SILVER PER ASTM B32, LEAD FREE	1-1/2 INCH GF < 1-1/2 INCH PIPE 2 INCH GF 1-1/2 INCH & LARGER EXTERIOR PIPING: CF INSULATION, SAME THICKNESS	2" AND BELOW: BA-1 2-1/2" AND LARGER: BF-1	LEAD-FREE VIEGA PROPRESS OR EQUAL ALLOWED FOR COPPER PIPING 4-INCH AND BELOW, EDPM O-RINGS.
	BELOW GRADE (WITHIN 5-FEET OF BUILDING)	ALL	TYPE "K" COPPER HARD DRAWN TUBING ASTM B88	WROUGHT COPPER FITTINGS PER ASME B16.22	SOLDER 95% TIN, 5% SILVER PER ASTM B32, LEAD FREE			WRAP WITH 2-INCH, 20 MIL VINYL TAPE, WITH 50% OVERLAP, INSULATION REQUIRED.
SANITARY SEWER AND SANITARY SEWER VENT	ABOVE GRADE	8 INCH AND SMALLER	HUBLESS CAST-IRON SOIL PIPE MEETING CISPI 301 AND ASTM A 74 SERVICE CLASS	HUBLESS, CAST-IRON SOIL PIPE FITTINGS CISPI 301	HEAVY DUTY, FM APPROVED TYPE 304 STAINLESS STEEL ASTM C 1277 W/ ASTM C564 RUBBER GASKET AND STOP	1/2 INCH CF TO PREVENT CONDENSATION		ALL AIR HANDLER MECHANICAL ROOMS FLOOR DRAIN PIPING TO BE INSULATED TO NEAREST VERTICAL MAIN TO PREVENT CONDENSATION. 1 INCH GF - ASJ CONCEALED 1 INCH GF - PVC EXPOSED
		10 INCH AND LARGER	HUB AND SPIGOT CAST-IRON SOIL PIPE MEETING CISPI 301 AND ASTM A 74 SERVICE CLASS	HUB AND SPIGOT CAST IRON MEETING CISPI 301 AND ASTM A 74 STANDARDS	NEOPRENE GASKETS C-564	N/A		
	BELOW GRADE (WITHIN 5-FEET OF BUILDING)	ALL	HUB AND SPIGOT CAST-IRON SOIL PIPE MEETING CISPI 301 AND ASTM A 74 SERVICE CLASS	HUB AND SPIGOT CAST IRON MEETING CISPI 301 AND ASTM A 74 STANDARDS	NEOPRENE GASKETS C-564	N/A		
CONDENSATE PIPING	ABOVE GRADE	ALL	TYPE "L" COPPER HARD DRAWN TUBING ASTM B88	WROUGHT COPPER FITTINGS PER ASME B16.22	SOLDER 95% TIN, 5% SILVER PER ASTM B32, LEAD FREE	1/2 INCH CF TO PREVENT CONDENSATION HEAT TRACE WHERE SHOWN ON PLANS		VIEGA PROPRESS OR EQUAL ALLOWED ON COPPER PIPING 4-INCH AND BELOW, EPDM O-RINGS CONDENSATE PIPING TO BE SLOPED MINIMUM 1/8-INCH PER FOOT TOWARDS DRAIN

NOTES:

1. INSULATION TYPE: GF - GLASS FIBER, CG - CELLULAR GLASS, CF - FLEXIBLE ELASTOMERIC CELLULAR FOAM.
2. INSULATION JACKET TYPE:
   A. INTERIOR CONCEALED LOCATIONS: ALL SERVICE JACKET (ASJ)
   B. INTERIOR EXPOSED LOCATIONS: PVC ABOVE 8 FEET ABOVE FINISH FLOOR, ALUMINUM (ALJ) 8 FEET ABOVE FINISHED FLOOR
   C. EXTERIOR LOCATIONS: ALUMINUM (ALJ)
3. ALL PLUMBING MATERIALS TO MEET PLUMBING CODE REQUIREMENTS. ALL DOMESTIC WATER SUPPLY PIPING, FITTINGS AND COMPONENTS TO MEET NSF 14 REQUIREMENTS.
4. PROVIDE FREEZE PROTECTION OF PIPING AND ACCESSORIES IN EXTERIOR AND INTERIOR UNCONDITIONED SPACES WHERE SHOWN ON THE PLANS. INSULATE PER MANUFACTURER'S INSTRUCTIONS BUT NOT LESS THAN THICKNESS SHOWN ON THE SCHEDULE.
5. PROVIDE PRODUCT LISTED OR ENGINEER PRE-APPROVED EQUAL, APPLIES TO ALL PRODUCTS LISTED IN SCHEDULE.
6. ALL MATERIALS USED IN POTABLE WATER SYSTEMS SHALL MEET THE REQUIREMENTS OF NSF/ANSI 14 AND NSF/ANSI 61 AS APPLICABLE.
7. INSTALL ALL PRODUCTS PER THE MANUFACTURERS RECOMMENDATIONS.
8. ALL PIPING IS TO BE SUPPORTED PER ANSI B31.9, ASME B31.1, MSS SP-58 AND MSS SP-69 AND MANUFACTURER'S INSTRUCTIONS.
9. CLEAN AND FLUSH ALL NEWLY INSTALLED PIPING AND STRAINER / FILTERS WITH SYSTEM APPROPRIATE MATERIAL PRIOR TO PUTTING SYSTEM INTO OPERATION. DISINFECT POTABLE WATER SYSTEMS PER CODE.
10. PVC, CPVC AND CAST IRON PIPE AND FITTINGS SHALL BE BY CHARLOTTE PIPE OR EQUAL.
11. PVC SHALL NOT TO BE USED IN THE FOLLOWING LOCATIONS:
    A. HVAC PLENUMS OR IN EXTERIOR LOCATIONS WHERE EXPOSED TO SUNLIGHT; COATINGS OR WRAPS ARE NOT ALLOWED IN THESE LOCATIONS.
    B. DOMESTIC WATER SUPPLY SYSTEMS INSIDE OF THE BUILDING.
12. PIPING SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH THE APPLICABLE CODES AND LOCAL AHJ.
13. WHEN JOINING DISIMILAR METALS USE DIELECTRIC NIPPLES OR COUPLINGS, OR DIELECTRIC FLANGE KITS ON LARGER PIPING. DIELCTRIC UNIONS ARE NOT ALLOWED.

VALVES:

BA-1 BALL VALVE: 600 PSI WOG TWO PIECE LEAD-FREE BRASS OR BRONZE, FULL PORT BALL VALVE, ASTM B584, THREADED ENDS, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, BLOWOUT PROOF STEM (EXTENDED STEM FOR INSULATED LINES). APOLLO 77 SERIES OR EQUAL.

BA-2 BALL VALVE: 600 PSI WOG TWO PIECE BRONZE FULL PORT BALL VALVE, ASTM B584, THREADED ENDS, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, BLOWOUT PROOF STEM, UL-RATED FOR NATURAL GAS AND FLAMMABLE LIQUIDS. APOLLO 80-100 SERIES OR EQUAL.

BF-1 BUTTERFLY VALVE: 200 PSI BI-DIRECTIONAL DEAD-END SERVICE WITHOUT A DOWNSTREAM FLANGE REQUIRED, LEAD-FREE DUCTILE IRON LUG BODY, ALUMINUM BRONZE DISC, EPDM SEAT, 10-POSITION LEVER HANDLE (GEAR OPERATOR FOR VALVES LARGER THAN 8"), EXTENDED NECK FOR INSULATED LINES. NIBCO LD-2000 OR EQUAL.

GA-1 GATE VALVE: CL. 150 CARBON STEEL GATE VALVE, RISING STEM, FLANGE END, ASTM A216 GR. WCB, UL-RATED FOR NATURAL GAS AND FLAMMABLE LIQUIDS SHUT OFF.

MASTER MIXING VALVE ASSEMBLY SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	SERVICE	PIPE SIZE (INCHES)		TEMPERATURE (DEG. F)		FLOW (GPM)		MAX. PRESSURE DROP (PSIG)	NOTES
					INLET	OUTLET	EWT	LWT	MINIMUM	DESIGN		
TMV-1	LEONARD	TM-26-LF	FLEX ROOM	DOMESTIC HOT WATER	3/4	3/4	140	120	1	2	5	1, 2, 3

NOTES:

1. LEAD-FREE CONSTRUCTION COMPLIANCE
2. INSTALL MASTER MIXING VALVE ASSEMBLY IN AN UN-OBSTRUCTED ACCESSIBLE LOCATION.
3. SEE DETAIL ##### FOR INSTALLATION REQUIREMENTS OF MASTER MIXING VALVE ASSEMBLY.

EXPANSION TANK SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	SERVICE	SYSTEM CONNECTION (INCHES)	SYSTEM CHARGE (PSIG)	TANK				WEIGHT (LBS)		NOTES
							NOMINAL VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	DIAMETER (INCHES)	HEIGHT (INCHES)	SHIPPING	OPERATION	
ET-1	AMTROL	ST-12C	FLEX ROOM	DOMESTIC HOT WATER	3/4	55	6.4	3.2	12	18	26	53	1, 2, 3

NOTES:

1. TANK IS FACTORY PRE-CHARGED AND SHALL BE FIELD ADJUSTED TO MEET REQUIREMENTS OF THE PROJECT.
2. MUST BE STAMPED WITH A MINIMUM WORKING PRESSURE OF 150 PSI.
3. LEAD-FREE CONSTRUCTION COMPLIANCE

CIRCULATION PUMP SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	SERVICE	PUMP			ELECTRICAL				NOTES
					FLOW (GPM)	HEAD (FTHD)	SPEED (RPM)	POWER (HP)	V	PH	HZ	
RCP-1	GRUNDFOS	ALPHA HWR 15-29	FLEX ROOM	DOMESTIC HOT WATER	2	5	-	-	115	1	60	1, 2, 3

NOTES:

1. PROVIDE THE MAKE AND MODEL SPECIFIED OR AN ENGINEER APPROVED EQUAL.
2. PROVIDE WITH UNIONS, CHECK VALVE, BALL VALVES. SEE DETAILS FOR ADDITIONAL INFORMATION.
3. INSTALL TO MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.

MINIMUM PLUMBING FIXTURE CONNECTION SCHEDULE

FIXTURE TYPE	CONNECTIONS (INCHES)				
	WASTE	TRAP	VENT	CW	HW
FLOOR DRAIN	2	2	1 1/2	1/2	-
HOSE BIBB/ WALL HYDRANT	-	-	-	1/2	-
LAVATORY	2	1 1/4	1 1/2	1/2	1/2
SERVICE/ MOP SINK	3	1 1/2	1 1/2	3/4	3/4
URINAL FLUSHOMETER VALVE	2	2	1 1/2	3/4	-
WATER CLOSET FLUSHOMETER VALVE	3	INT.	2	1	-
WATER CLOSET TANK TYPE	3	INT.	2	1/2	-

TRAP PRIMER SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	TRAP PRIMER				DIMENSIONS			ELECTRICAL			NOTES
				MOUNTING	WATER INLET PIPE SIZE (INCHES)	OUTLET PIPE SIZE (INCHES)	# OF OUTLETS	LENGTH (INCHES)	WIDTH (INCHES)	HEIGHT (INCHES)	POWER (WATTS)	VOLTAGE	CIRCUIT BREAKER (AMPS)	
TP-1	PRECISION PLUMBING PRODUCTS	PR-500	PRESSURE ACTIVATED	-	1/2	1/2	2	2	2	12	-	-	-	1, 2, 3, 4

NOTES:

1. PROVIDE THE MAKE AND MODEL SPECIFIED OR AN ENGINEER APPROVED EQUAL.
2. UNIT IS PROVIDED WITH INTEGRAL ATMOSPHERIC VACUUM BREAKER.
3. UNIT MUST BE INSTALLED MINIMUM OF 18 INCHES ABOVE FINISHED FLOOR.
4. PROVIDE WITH BRANCH SUPPLY VALVE UPSTREAM OF TRAP PRIMER AND GRAVITY FLOW COPPER WATER TUBE TO TRAP PRIMER CONNECTION AT DRAIN BODY.

ELECTRIC WATER HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	SERVICE	TEMPERATURE (F)			RECOVERY (GPH)	STORAGE (GAL)	DIMENSIONS (INCHES)			WEIGHT (LBS)		ELECTRICAL								NOTES
					CW	HW	DELTA TEMP			LENGTH/ DIAMETER	WIDTH	HEIGHT	DRY	TOTAL	# ELEMENTS	INPUT/ ELEMENT (WATTS)	SIMULTANEOUS OPERATION (Y / N)	TOTAL INPUT (WATTS)	BALANCED LOAD (Y / N)	V	PH	HZ	
EWH-1	AO SMITH	DEL-20	FLEX ROOM	DOMESTIC HOT WATER	60	140	80	13	19	22	-	23	73	240	1	2500	N	2500	-	208	1	60	1, 2, 3, 4, 5, 6, 7, 8, 9, 10

NOTES:

1. PROVIDE THE MAKE AND MODEL SPECIFIED OR AN ENGINEER APPROVED EQUAL.
2. PROVIDE AND INSTALL WITH CIRCULATION PUMP AND AQUASTAT. SEE CIRCULATION PUMP SCHEDULE FOR ADDITIONAL INFORMATION.
3. PROVIDE AND INSTALL WITH THERMAL EXPANSION TANK. SEE EXPANSION TANK SCHEDULE FOR ADDITIONAL INFORMATION.
4. PROVIDE WITH TEMPERATURE AND PRESSURE RELIEF VALVE
5. PROVIDE WITH VACUUM RELIEF VALVE ON THE COLD WATER ENTRY SIDE WITH DI-ELECTRIC UNIONS.
6. PROVIDE WITH MINIMUM 18-INCH HEAT TRAPS INSTALLED ON THE ENTERING AND LEAVING CONNECTION
7. PROVIDE WITH DRAIN AND TEMPERATURE AND RELIEF VALVE PIPING FULL SIZE (MINIMUM 3/4-INCH) TO APPROVED INDIRECT WASTE RECEPTOR WITH CODE COMPLIANT AIR GAP.
8. PROVIDE WITH CODE COMPLIANT DRAIN PAN AND EXPANSION TANK.
9. MAXIMUM STORAGE TEMPERATURE OF 140 DEGREE F. PROVIDE WITH SCHEDULED TEMPERING VALVE(S).
10. ALL PIPING SHALL BE INSTALLED WITH INSULATION AS SCHEDULED.

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State of registration TX
Firm Registration No. F-2497
EEA Project No. 20250182

CLIENT:
Gray Street Partners

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	REVISION

PROJECT NAME:
1611 BROADWAY

1611 BROADWAY SAN ANTONIO, TX 78215

DRAWING TITLE:

PLUMBING - SCHEDULES & DETAILS

DRAWN BY: EC
CHECKED BY: SA
PROJ. NO:
DRAWING NO: **P4**

FIXTURE UNIT SIZING INFORMATION

FIXTURE	TYPES OF SUPPLY CONTROL	FIXTURE–UNITS			
		PUBLIC		PRIVATE	
		CW	HW	CW	HW
WATER CLOSET	FLUSH VALVE	8	–	5	–
WATER CLOSET	FLUSH TANK	5	–	2 1/2	–
PEDESTAL URINAL	FLUSH VALVE	4	–	–	–
STALL OR WALL MOUNTED UNRINAL	FLUSH VALVE	4	–	–	–
STALL OR WALL MOUNTED UNRINAL	FLUSH TANK	3	–	–	–
LAVATORY	FAUCET	1 1/2	1 1/2	1	1
BATHTUB	FAUCET	2	3	1 1/2	1–1/2
SHOWER HEAD	MIXING VALVE	2	3	1	2
BATHROOM GROUP	FLUSH VALVE CLOSET	–	–	8	3
BATHROOM GROUP	FLUSH TANK CLOSET	–	–	6	3
SEPARATE SHOWER	MIXING VALVE	–	–	1	2
SERVICE SINK	FAUCET	3	3	–	–
LAUNDRY TUBS (1–3)	FAUCET	–	–	3	3
COMBINATION FIXTURE	FAUCET	–	–	3	3

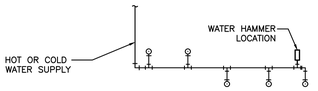
ARRESTOR SIZING

PDI SIZE	FIXTURE UNIT CAPACITY	PIPE SIZE
A	1 – 11	1/2
B	12 – 32	3/4
C	33 – 60	1
D	61 – 113	1 1/4
E	114 – 154	1 1/2
F	155 – 330	2

LONG RUNS OF PIPING

LENGTH OF PIPE (FEET)	NOMINAL PIPE DIAMETER											
	1/2		3/4		1		1 1/4		1 1/2		2	
	*	**	*	**	*	**	*	**	*	**	*	**
25	A	B	A	B	B	C	C	D	D	E	E	F
50	A	B	B	C	C	D	D	E	E	F	F	CF
75	B	C	C	B	D	E	AE	F	F	CF	EF	FF
100	C	D	D	E	E	F	F	CF	CF	EF	FF	EFF
125	C	D	D	E	E	CF	AF	DF	EF	FF	EFF	BFFF
150	D	E	E	F	F	CF	DF	FF	FF	DFF	FFF	FFFF

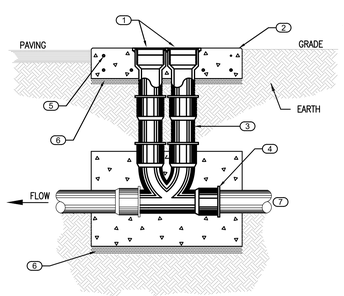
* FLOW PRESSURE UP TO 65 PSIG
** FLOW PRESSURE OVER 65 PSIG AND UP TO 80 PSIG



NOTES:

- PROVIDE A WATER HAMMER ARRESTOR AT ALL FLUSH VALVES, AND/OR QUICK CLOSING VALVES.
- FOR BATTERIES OF FIXTURES, PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON & O–RING CONSTRUCTION, HAVING PDI #WH–201, ASSE #1010 & ANSI #A112.26.1M CERTIFICATION. INSTALL IN VERTICAL POSITION. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE. PROVIDE ACCESSIBILITY WHERE REQUIRED BY LOCAL CODE.
- RULE 1 – BRANCH LINES OF 20 FEET OR LESS. WATER HAMMER ARRESTOR SHALL BE PLACED AT THE END OF BRANCH LINE BETWEEN THE LAST TWO FIXTURES SERVED, AS SHOWN. SELECT REQUIRED MODEL USING FIXTURE UNIT SIZING.
- RULE 2 – BRANCH LINES EXCEEDING OF 20 FEET. AN ADDITIONAL WATER HAMMER ARRESTOR SHALL BE PLACED AS TO RIGHT. SELECT REQUIRED MODELS USING FIXTURE UNIT SIZING. THE SUM OF HTE FIXTURE UNITS RATING OF UNITS X AND UNIT Y BE EQUAL TO OR GREATER THAN THE DEMAND ON THE BRANCHES.

2 WATER HAMMER ARRESTOR DETAIL
NOT TO SCALE



KEYED NOTES: (#)

1 CAST IRON CLEAN OUT FERRULE WITH TAPERED COUNTER SUNK BRASS PLUG

2 24 INCH x 18 INCH x 6 INCH THICK 2000 PSI REINFORCED CONCRETE CLEAN OUT PAD WITH 3/4 INCH CHAMFERED EDGES

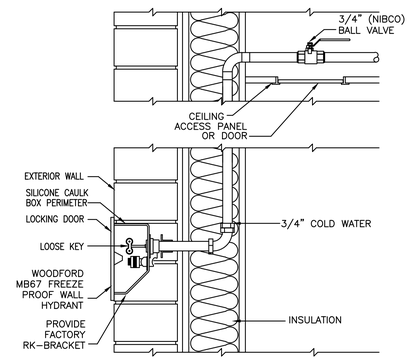
3 CAST IRON EXTENSION AS REQUIRED

4 SANITARY TEE OR LONG SWEEP BEND ENCASED IN CONCRETE

5 PROVIDE #4 REBAR ALL SIDES IN 200 PSI CONCRETE

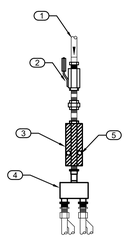
6 MINIMUM 3 INCH SAND BASE

7 SANITARY SEWER LINE. SEE PLUMBING PLANS FOR CONTINUATION



NOTE: ALL WALL HYDRANTS SHALL HAVE FACTORY INTEGRAL VACUUM BREAKER.

6 CLEANOUT - EXTERIOR TWO WAY - DETAIL
NOT TO SCALE



NOTE: TRAP PRIMERS TO BE MOUNTED ABOVE LAY-IN CEILING ABOVE RESTROOMS.

KEYED NOTES: (#)

1 1/2 INCH DOMESTIC WATER SUPPLY FROM NEAREST DOMESTIC WATER MAIN

2 BALL VALVE

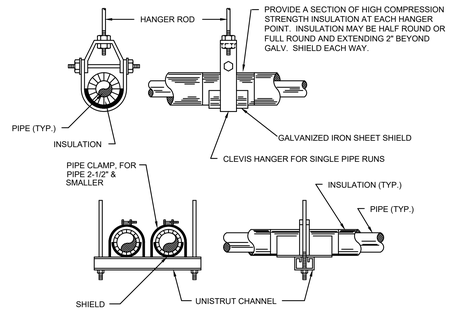
3 DIELECTRIC UNION

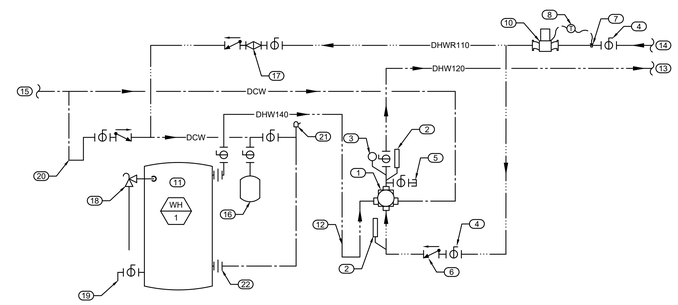
4 PRESSURE ACTIVATED TRAP PRIMER. SEE PLUMBING SCHEDULE FOR ADDITIONAL INFORMATION

5 VACUUM BREAKER PORTS

6 TRAP PRIMER DISTRIBUTION UNIT. SEE PLUMBING SCHEDULE FOR ADDITIONAL INFORMATION

4 FROST PROOF WALL HYDRANT (HB-1) - DETAIL
NOT TO SCALE





KEYED NOTES: (#)

1 THERMOSTATIC MASTER MIXING VALVE. SEE PLUMBING SCHEDULE FOR ADDITIONAL INFORMATION.

2 THERMOMETER

3 PRESSURE GAUGE

4 FULL PORT BALL VALVE TYPE ISOLATION VALVE

5 TEST PORT

6 CHECK VALVE

7 THERMOWELL

8 AQUASTAT

9 NOT USED

10 CIRCULATION PUMP ON DOMESTIC HOT WATER 120F SYSTEM. SEE PLUMBING SCHEDULE FOR ADDITIONAL INFORMATION

11 WATER HEATERS. SEE PLUMBING SCHEUDLE FOR ADDITIONAL INFORMATION

12 MINIMUM 24 INCH HEAT TRAP ON HOT WATER SIDE OF THERMOSTATIC MIXING VALVE.

13 DOMESTIC HOT WATER SUPPLY WATER AT 120F TO SERVE BUILDING.

14 DOMESTIC HOT WATER RETURN WATER AT 110F FROM THE BUILDING.

15 DOMESTIC COLD WATER SUPPLY WATER TO SERVE THE DOMESTIC HOT WATER SYSTEM.

16 NEW EXPANSION TANK FOR DOMESTIC HOT WATER SYSTEM. SEE PLUMBING SCHEDULE FOR ADDITIONAL INFORMATION.

17 BALANCE VALVE

18 ROUTE PRESSURE AND TEMPERATURE RELIEF VALVE TO NEAREST DRAIN RECEPTOR

19 ROUTE TANK DRAIN TO NEAREST DRAIN RECEPTOR

20 MINIMUM 24 INCH HEAT TRAP ON COLD WATER SERVING WATER HEATER.

21 VACUUM BREAKER

22 UNION

5 TRAP PRIMER - PRESSURE ACTIVATED - DETAIL
NOT TO SCALE

3 PIPING HANGERS AND SUPPORT - DETAIL
NOT TO SCALE

1 SIMPLEX ELECTRIC WATER HEATER - MASTER MIXING VALVE PIPING DIAGRAM
NOT TO SCALE

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