THE SQUARE AT CRYSTAL FALLS

1900 S BAGDAD ROAD, BLDG. 3 (2)

LEANDER, TEXAS 78641

SHELL BUILDING OWNER:

BANDALI COMMERCIAL
CONTACT: AMAN BANDALI
7817 ROCK WOOD LANE, SUITE 300
AUSTIN, TX 78701
(512) 374-4949
AMAN@BANDALICOMMERCIAL.COM

ARCHITECT:

CORNERSTONE ARCHITECTS
CONTACT: KRISTIN SCHIEFFER
7000 BEE CAVE RD, SUITE 200
AUSTIN, TX 78746
(512) 329-0007
KRISTIN@CORNERSTONEARCHITECTSLLP.COM

STRUCTURAL ENGINEER:

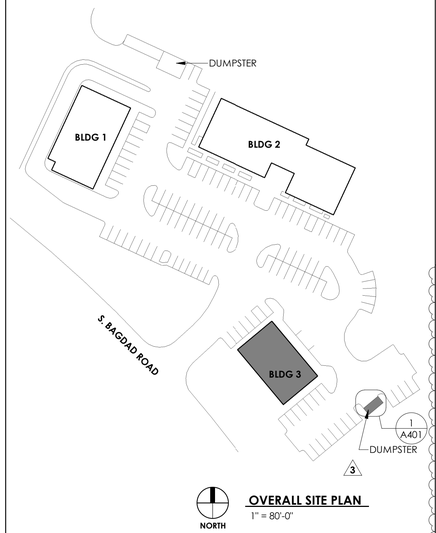
JCAA CONSULTING ENGINEERS LLC
CONTACT: NICHOLAS H. ROHR, P.E., S.E.
4100 WADSWORTH BLVD.
WHEAT RIDGE, CO 80033
(561) 562-9919
ROHR@JCAACE.COM

CIVIL ENGINEEER:

JAMISON CIVIL ENGINEERING LLC
CONTACT: STEPHEN R. JAMISON, P.E.
13812 RESEARCH BLVD. #B-2
AUSTIN, TX 78750
(737) 484-0880
STEVE@JAMISONENG.COM

MEP ENGINEER:

AYS ENGINEERING, LLC
CONTACT: ROSS ALEMAN, P.E.
411 W. MAIN ST. SUITE 310
ROUND ROCK, TX 78664
(512) 961-6835
RALEMAN@AYSENG.COM



OVERALL SITE PLAN
1" = 80'-0"

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE TO ALLOW UNINTERRUPTED PROGRESS OF ALL WORK AND TO COMPLETE PROJECT WITHIN THE ESTABLISHED SCHEDULE.
2. CONTRACTOR TO VERIFY DELIVERY DATES FOR ANY LONG LEAD TIME ITEMS AND MATERIALS TO ENSURE THEIR INSTALLATION ON THE PROPER SEQUENCE OF THE JOB.
3. THESE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS ARE INTENDED TO MEET ALL APPLICABLE CODES AND ORDINANCES. CONTRACTOR TO COMPLY WITH ALL LOCAL CODES, ORDINANCES.
4. ANY DISCREPANCIES IN CONSTRUCTION DOCUMENTS TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO WORK BEING PERFORMED OR MATERIALS BEING ORDERED.
5. (5) ALL PERMIT COSTS TO BE PAID FOR BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ASSURING THAT ALL PERMITS NECESSARY TO LEGALLY PERFORM THE WORK HAVE BEEN OBTAINED PRIOR TO COMMENCING CONSTRUCTION.
6. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD. REPORT ANY AND ALL DISCREPANCIES, ERRORS OR OMISSIONS TO THE ARCHITECT PRIOR TO COMMENCING WORK AND/ OR THE ORDERING OF MATERIALS.
7. UNDER NO CIRCUMSTANCES SHALL ANY DIMENSIONS BE SCALED FROM THESE DRAWINGS. ANY CRUCIAL DIMENSION NOT GIVEN SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. EXISTING DIMENSIONS CAN BE VERIFIED IN THE FIELD.
8. THE CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS OR PERSONS IS CHARGE OF UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCING WORK.
9. CONTRACTOR SHALL CLEAN UP AREAS AFFECTED BY DAILY WORK AND REMOVE DEBRIS AND MATERIALS FROM THE SITE UPON COMPLETION OF THE WORK AND MAINTAIN A CLEAN AND ORDERLY WORK AREA AT ALL TIMES.
10. LOCATION, SIZE, QUANTITY AND GRAPHIC DESIGNATIONS FOR FIRE EXTINGUISHERS SHALL BE DETERMINED BY GOVERNING FIRE DEPARTMENT.
11. THESE DRAWINGS DO NOT ADDRESS ANY FIRE ALARM OR FIRE SUPPRESSION/ SPRINKLER SYSTEM REQUIREMENTS. SYSTEM DESIGN AND REQUIRED PERMITS FROM OTHERS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE SEPARATE FROM THIS SUBMITTAL.
12. ARCHITECTS ARE GOVERNED BY THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS, (512) 458-1363.
13. ALL SIGNAGE PERMIT APPLICATIONS TO BE SUBMITTED AT A LATER DATE. BUILDING SIGNAGE TO BE PERMITTED SEPARATELY BY FUTURE TENANTS.

CODE SUMMARY

GOVERNING AGENCIES:
CITY OF LEANDER
TEXAS ACCESSIBILITY STANDARDS COMMISSION

GOVERNING CODE:
2015 INTERNATIONAL BUILDING CODE
(AS ADOPTED BY THE CITY OF LEANDER)
2015 INTERNATIONAL PLUMBING CODE
2015 INTERNATIONAL MECHANICAL CODE
2014 NATIONAL ELECTRIC CODE (NFPA 10)
2015 INT.'L ENERGY CONSERVATION CODE
2015 INTERNATIONAL FIRE CODE
2015 INTERNATIONAL FUEL GAS CODE
2012 TEXAS ACCESSIBILITY STANDARDS

PROJECT DESCRIPTION:
1 STORY SHELL RETAIL/ BUSINESS BUILDING

BUILDING TYPE:
V-B NON RATED
NON SPRINKLERED

PROJECT AREA:

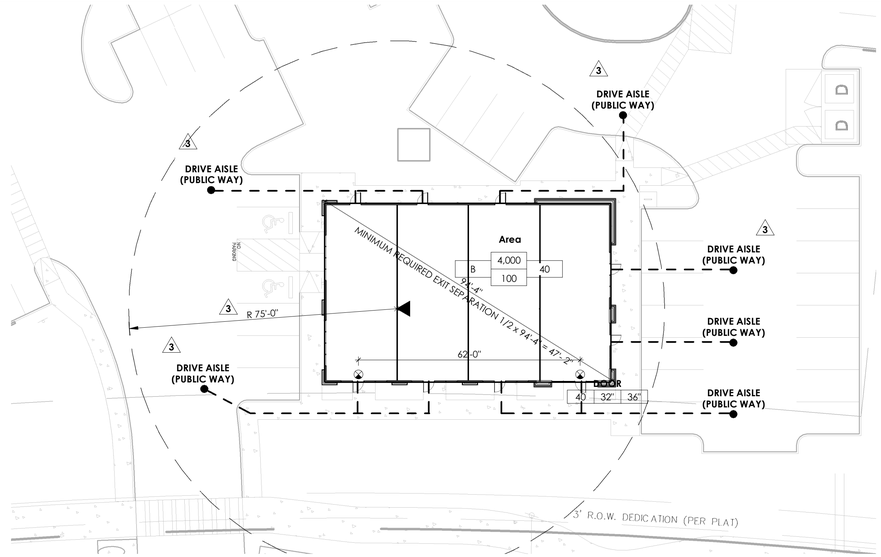
ALLOWABLE BUILDING HEIGHT	40 FT
ALLOWABLE NUMBER OF STORIES	2
ALLOWABLE AREA	9,000 SF
BUILDING HEIGHT	28'-6"
NUMBER OF STORIES	1
TOTAL BUILDING AREA	4,000 SF - CONDITIONED SPACE

OCCUPANCY TYPE:
OCCUPANCY TYPE
CLASSIFICATION - "BUSINESS"
OCCUPANT LOAD FACTOR: 1 PER 100 S.F.
OCCUPANCY LOAD: 4,000/100 = 40 OCCUPANTS

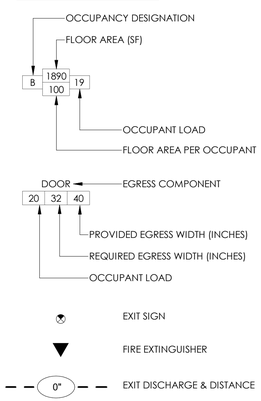
RESTROOM, SERVICE SINK, AND DRINKING FOUNTAIN REQUIREMENTS:
RESTROOMS TO BE DESIGNED AND PROVIDED WITH EACH SEPARATE FINISH-OUT, ACCORDING TO OCCUPANCY USAGE AND CURRENT APPLICABLE CODE

FIRE RATED ASSEMBLIES:
N/A

EGRESS SYSTEM:
REFER TO LIFE SAFETY ANALYSIS ON THIS SHEET



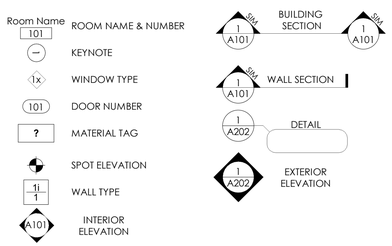
EGRESS LEGEND



EGRESS NOTES

IBC 1005.3.2	MAXIMUM REQUIRED EGRESS WIDTH: 0.2 INCH/OCC. OTHER EGRESS COMPONENTS. 0.2 X 59 = 11.8 INCHES PROVIDED = 36 INCHES
TABLE IBC 1006.3.1	MAXIMUM NUMBER OF EXITS: 2 EXITS FOR 1 - 500 OCCUPANT LOAD
IBC 1007.1.1	EXIT DOOR SEPARATION DISTANCE TO BE A DISTANCE APART EQUAL TO NOT LESS THAN ONE-HALF OF THE LENGTH OF THE OVERALL DIAGONAL DIMENSION OF THE BUILDING
TABLE IBC 1017.2	EXIT ACCESS TRAVEL DISTANCE OCCUPANCY DISTANCE(W/O SPRINKLER SYSTEM) B 200'

ANNOTATION SYMBOLS



SCHEDULE OF RESPONSIBILITY

ITEM	SPECIFICATION			PURCHASING			INSTALLATION		
	GC	OWNER	OTHER	GC	OWNER	OTHER	GC	OWNER	OTHER
GENERAL									
PERMITS					●				
ADA INSPECTIONS					●				
ALL ACCENT LIGHTING			ARCH	●			●		
FIRE EXTINGUISHERS			OTHER	●			●		
EXTERIOR SIGNAGE			V		●				V
TELEPHONE SYSTEM									
CONDUIT			MEP	●			●		
SECURITY SYSTEM									
CONDUIT			V	●			●		

LEGEND: ARCH = ARCHITECT, I.D. = INTERIOR DESIGNER, G.C. = GENERAL CONTRACTOR, MEP = ENGINEER, COD = CODE, V = VENDOR (BY OWNER)

INDEX OF DRAWINGS

5 100% CDS - REV 05 - VE - AUG XX, 2024

ALIGN
AUSTIN ARCHITECTS

2 BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD , BLDG. 3
LEANDER, TEXAS 78641

2 06.17.22 Revision 2
3 09.12.22 City Comments
5 07.XX.24 VE

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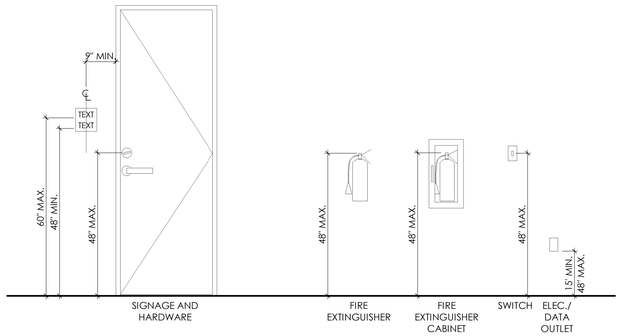
RODNEY PALMER
ARCHITECT
08.09.2024
100% CDS - REV05 - VE

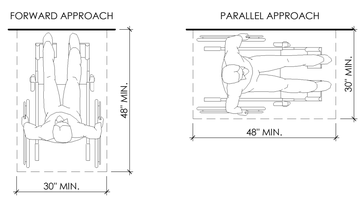
COVER & LIFE SAFETY

SHEET: G000

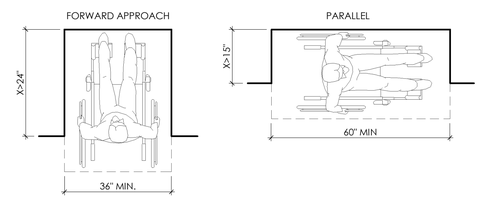
PROJECT NO:	21099
DRAWN BY:	MD,AG
DATE:	09.12.22
PROJECT MGR:	KS



3 **TAS - TYP. MOUNTING HEIGHTS**
1/2" = 1'-0"

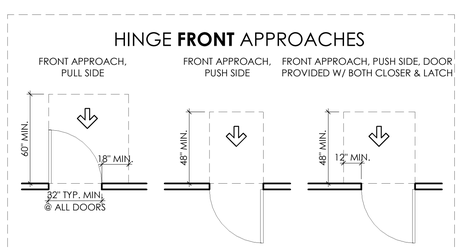


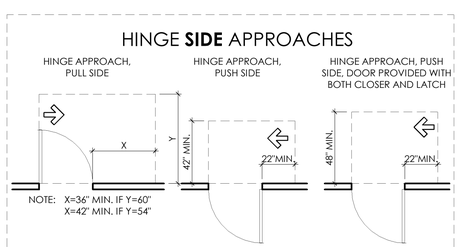
POSITION OF CLEAR FLOOR OR GROUND SPACE

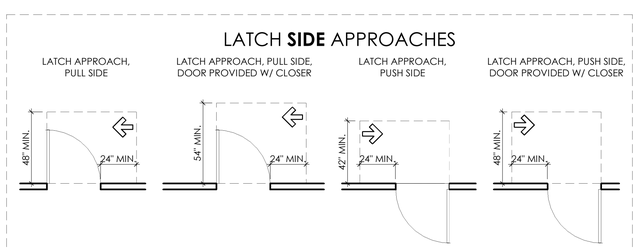


MANEUVERING CLEARANCE IN AN ALCOVE

2 **MANEUVERING CLEARANCES**
1/2" = 1'-0"







TAS - MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS
1 1/4" = 1'-0"

ALIGN
AUSTIN ARCHITECTS

BUILDING 3

THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD , BLDG. 3
LEANDER, TEXAS 78641

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REGISTERED ARCHITECT
08.09.2024
100% CDS - REV05 - VE

TEXAS ACCESSIBILITY STANDARDS

SHEET: G001

PROJECT NO:	21099
DRAWN BY:	MD
DATE:	09.12.22
PROJECT MGR:	KS

LEGEND

- 5 1/2" TILT WALL PANEL U.N.O.
- 3 5/8" METAL STUDS U.N.O.
- 6" METAL STUDS U.N.O.

WALL LEGEND

Prefix — SUFFIX

8MO

3

FIRE RATING

PREFIX

0 FURRING
1 5 1/2" TILT WALL PANEL
2 7 1/4" TILT WALL PANEL
3 9 1/4 TILT WALL PANEL
4 3 5/8" METAL STUD
5 6" METAL STUD
6 8" METAL STUD

SUFFIX

A LOW WALL - HEIGHT PER ELEVATIONS
B R-25 BATT INSULATION

FIRE RATING

N NON RATED
1 1-HOUR RATING
2 2-HOUR RATING
3 3-HOUR RATING
4 4-HOUR RATING

PLAN KEY-NOTES

1 OUTLINE OF SOFFIT/ROOF ABOVE
2 LEAVE OUT IN CONCRETE FOR FUTURE UTILITIES, SEE MEP
3 TILT WALL PANEL JOINT
4 DOWNSPOUT LOCATION, PROVIDE 4" PREFINISHED METAL DOWNSPOUT, FINISH TO MATCH ADJACENT WALL FINISH MATERIAL, TYP.
5 STEEL COLUMN, SEE STRUCTURAL
6 PROVIDE 4" DIAMETER PVC PIPE SLEEVES FOR REFRIGERANT LINES RUNNING FROM ROOF
3 7 RECESSED KNOX BOX LOCATION, 4-6 FEET FROM FINISHED GRADE, UNOBSTRUCTED VIEW FROM THE FRONTING FIRE DEPARTMENT ROADWAY, TO INCLUDE VEGETATION GROWTH UPON MATURITY
8 CONCRETE SIDEWALK/ PAVING - SEE CIVIL & STRUCTURAL FOR ADDITIONAL INFORMATION.
9 ALUMINUM THRU-WALL SCUPPER, PAINTED TO MATCH DOWNSPOUTS.
10 STEEL TUBE AWNING, BY FUTURE TENANT
11 22 GA. ARCHITECTURAL STANDING SEAM ROOF, EQUAL TO BERRIDGE, <ZINC GREY> , CEE-LOCK W/ 1/2" TALL RIBS @ 16"O.C., TYP., OVER HIGH-HEAT PEEL AND STICK MEMBRANE
12 TAPERED INSULATION TO CREATE MIN. OF 1/4"/12" SLOPE AWAY FROM PARAPET, TYP.
13 90 MIL TPO ROOF SYSTEM
5 14 PREFAB. ALUMINUM CANOPY, EQUAL TO ARCHITECTURAL FABRICATIONS, HELIOS CANOPY SYSTEM, 20 YR WARRANTY POWDER-COATED FINISH.
15 PREFINISHED METAL COPING, SEE WALL DETAILS FOR ADDITIONAL INFORMATION.
16 SMOOTH STONE WALL CAP, SLOPED TO DRAIN, SEE WALL DETAILS FOR ADDITIONAL INFORMATION.
17 LINE OF FRAME WALL BELOW, TYP.
18 LOCATION FOR FUTURE RTU ZONE ON ROOF. SEE MEP AND STRUCTURAL FOR ADDDITIONAL INFORMATION.
19 5" PREFINISHED SQUARED METAL GUTTER
20 TPO WALKWAY PAD, INSTALLED PER MANUFACTURER REQUIREMENTS. EQUAL TO FIRESTONE ULTRAPLY
21 LOCATION OF ELECTRICAL PANEL BOX, SEE MEP
22 WALL MOUNTED ACCESS LADDER WITH SECURITY DOOR, PER CODE

GENERAL PLAN NOTES

A. FIRE EXTINGUISHERS - PROVIDE A MINIMUM SIZE 2A; 10ABC FIRE EXTINGUISHERS MEETING THE TRAVEL DISTANCE OF 75 FEET TO AN EXTINGUISHER FROM ALL PORTIONS. INSTALLATION LOCATIONS TO BE VERIFIED BY LICENSED INSPECTOR. SEE LIFE SAFETY PLAN FOR SUGGESTED LOCATIONS.

B. SPRAY FOAM INSULATION APPLICATION IS TO BE INSTALLED PER CODE AND AN ICC-ES REPORT MUST BE PROVIDED TO FIRE DEPARTMENT FOR SEPARATE REVIEW AND APPROVAL.

C. REFER TO WALL SECTIONS & DETAILS SHEETS FOR EXTERIOR WALL TYPES

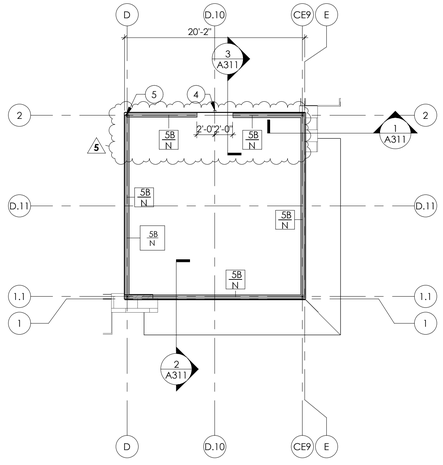
D. KNOX BOX LOCATION(S) TO BE APPROVED BY FIRE DEPARTMENT AND SHALL BE INSTALLED NO LESS THAN 48" AND NO MORE THAN 72" ABOVE FINISHED GRADE.

E. ALL SIGNAGE REQUIRES A SEPARATE APPLICATION AND APPROVAL FROM THE BUILDING INSPECTIONS DEPARTMENT. NO SIGNAGE IS APPROVED WITH THE SITE DEVELOPMENT PLAN OR BUILDING'S CONSTRUCTION DOCUMENTS.

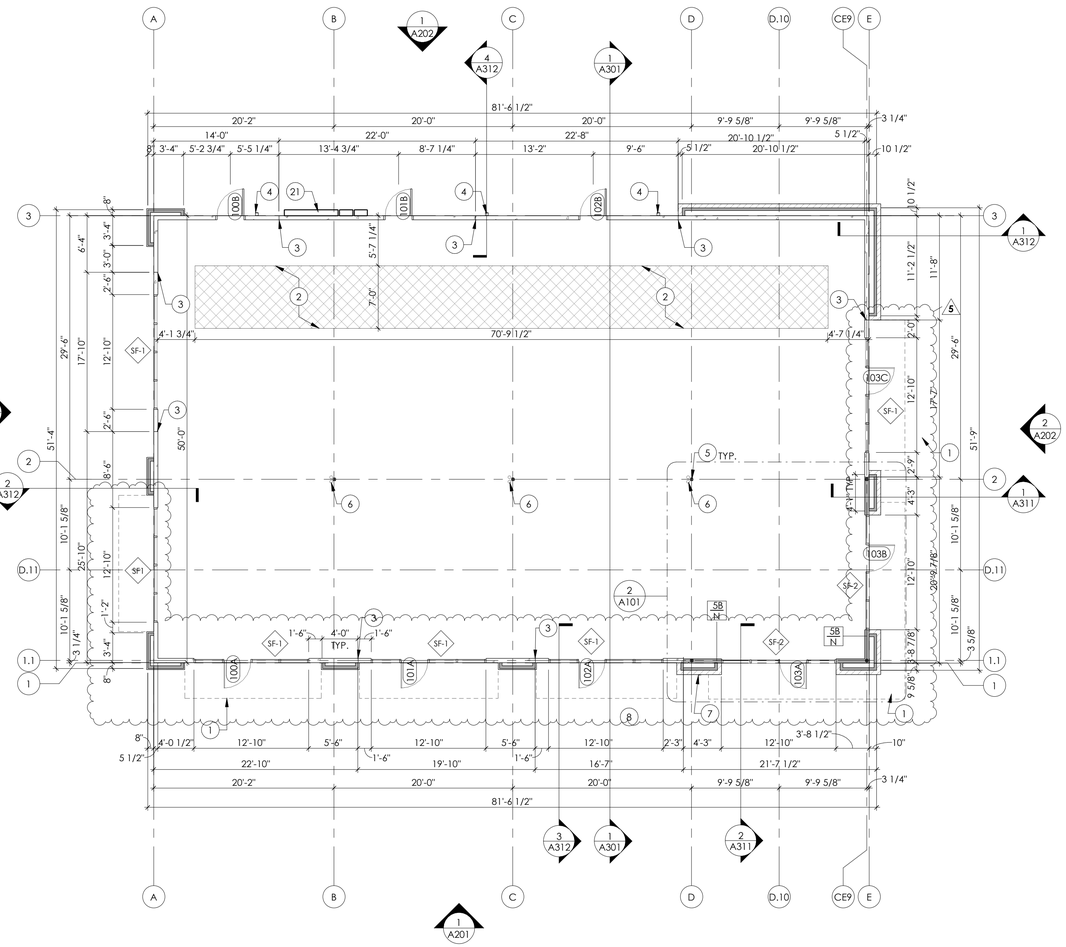
F. DIMENSIONS ARE TO THE FACE OF STUD OR FACE OF CMU UNO.

G. ALIGN FACE OF WALLS WITH FACE OF COLUMN WRAPS, WHERE POSSIBLE, WHERE OCCURS, TYP., UNO.

H. PROVIDE C.J'S AT 30'-0" OC MAX AT DOORS AND WINDOWS (AS INDICATED ON INTERIOR ELEVATIONS OF GYP BD WALL ASSEMBLIES.)



2 TOWER PLAN
1/8" = 1'-0"



1 FLOOR PLAN
1/8" = 1'-0"
NORTH

ALIGN
AUSTIN ARCHITECTS

BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD , BLDG 3
LEANDER, TEXAS 78641

3 09.12.22 City Comments
5 07.XX.24 VE

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RODNEY PALMER
01.28.2022
100% CDS - REV05 - VE

FLOOR PLAN

SHEET: A101

PROJECT NO:	21099
DRAWN BY:	AG,MD
DATE:	09.12.22
PROJECT MGR:	KS

PLAN KEY-NOTES

1 OUTLINE OF SOFFIT/ROOF ABOVE
2 LEAVE OUT IN CONCRETE FOR FUTURE UTILITIES, SEE MEP
3 TILT WALL PANEL JOINT
4 DOWNSPOUT LOCATION. PROVIDE 4" PREFINISHED METAL DOWNSPOUT, FINISH TO MATCH ADJACENT WALL FINISH MATERIAL, TYP.
5 STEEL COLUMN, SEE STRUCTURAL
6 PROVIDE 4" DIAMETER PVC PIPE SLEEVES FOR REFRIGERANT LINES RUNNING FROM ROOF
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13 90 MIL TPO ROOF SYSTEM
14 PREFAB. ALUMINUM CANOPY, EQUAL TO ARCHITECTURAL FABRICATIONS, HELIOS CANOPY SYSTEM, 20 YR WARRANTY POWDER-COATED FINISH.
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GENERAL PLAN NOTES

A. FIRE EXTINGUISHERS - PROVIDE A MINIMUM SIZE 2A: 10ABC FIRE EXTINGUISHERS MEETING THE TRAVEL DISTANCE OF 75 FEET TO AN EXTINGUISHER FROM ALL PORTIONS. INSTALLATION LOCATIONS TO BE VERIFIED BY LICENSED INSPECTOR. SEE LIFE SAFETY PLAN FOR SUGGESTED LOCATIONS.

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G. ALIGN FACE OF WALLS WITH FACE OF COLUMN WRAPS, WHERE POSSIBLE, WHERE OCCURS, TYP., UNO.

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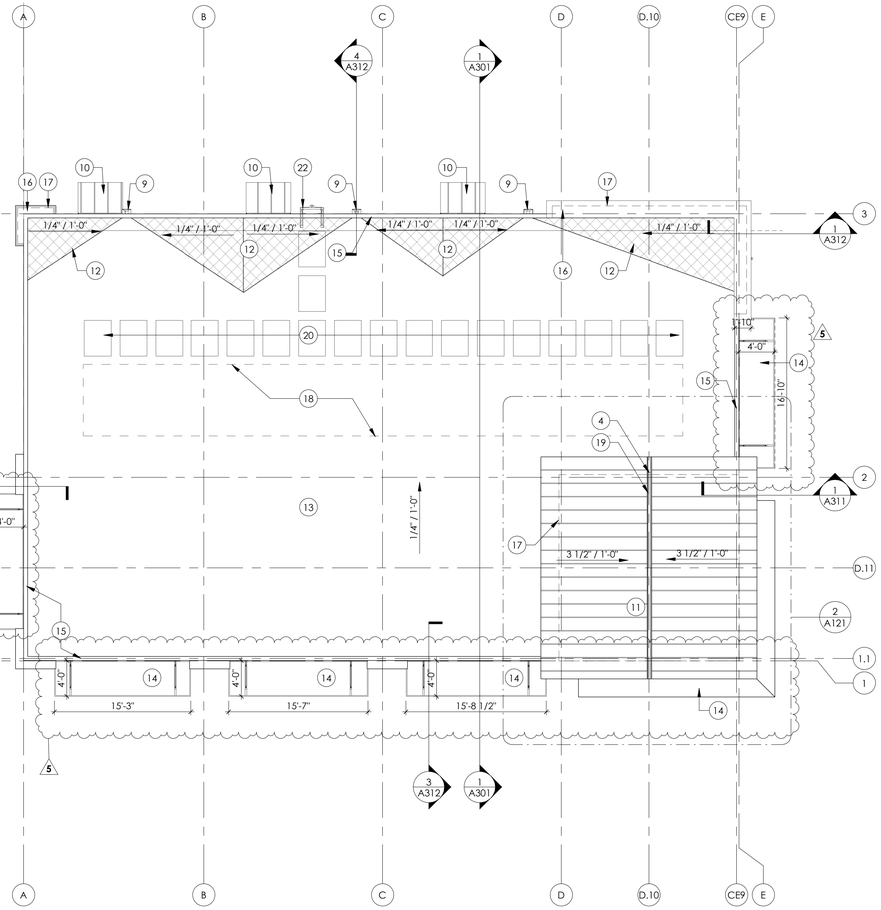
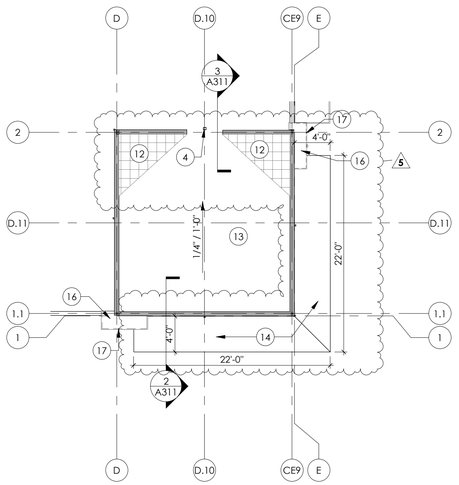


1 ROOF PLAN
1/8" = 1'-0"



2 LOWER ROOF PLATE
1/8" = 1'-0"

NORTH

ALIGN
AUSTIN ARCHITECTS

BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD , BLDG. 3
LEANDER, TEXAS 78641

5 07.XX.24 VE

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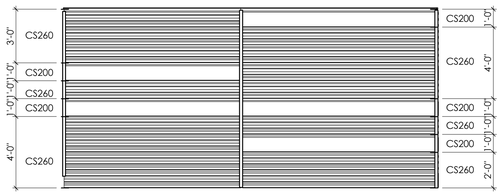
01.28.2022
100% CDS - REV05 - VE

ROOF PLAN

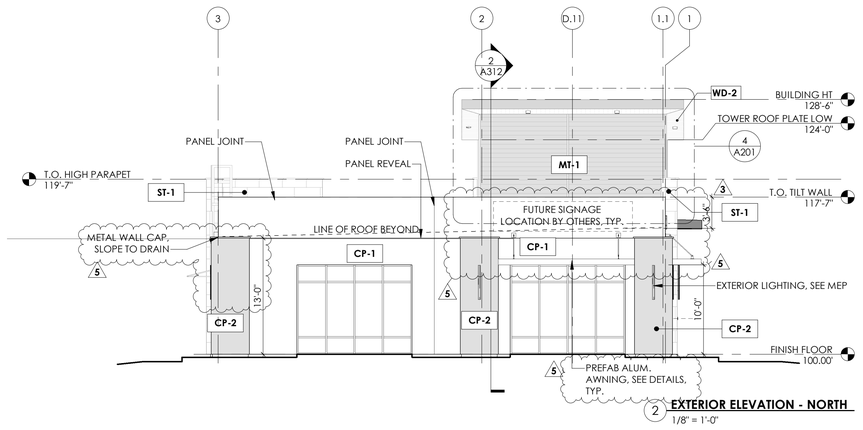
SHEET: A121

PROJECT NO:	21099
DRAWN BY:	AG
DATE:	09.12.22
PROJECT MGR:	KS

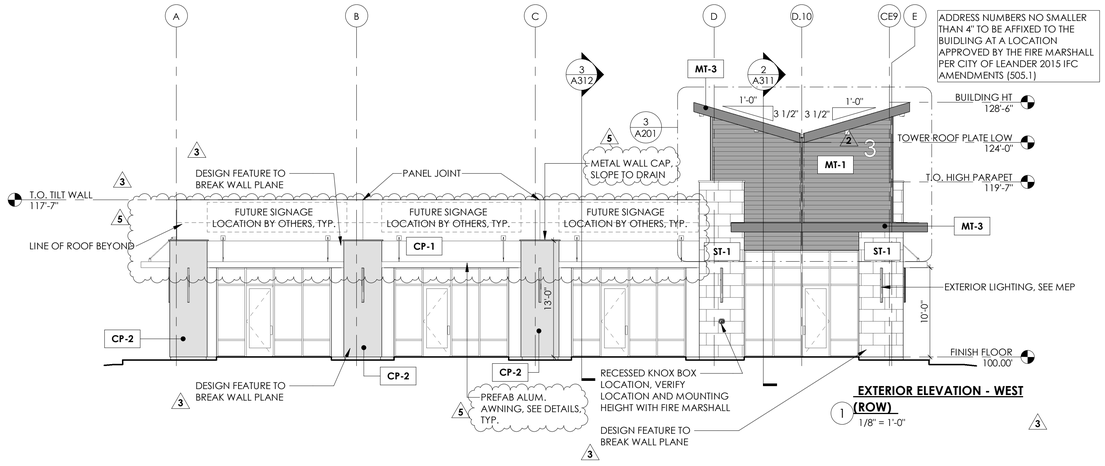


4 **NORTH CENTRIA PANEL LAYOUT**
1/4" = 1'-0"

3 **WEST CENTRIA PANEL LAYOUT**
1/4" = 1'-0"



2 **EXTERIOR ELEVATION - NORTH**
1/8" = 1'-0"



1 **EXTERIOR ELEVATION - WEST (ROW)**
1/8" = 1'-0"

MATERIAL LEGEND

	MT-1	22 GA GALVANIZED CENTRIA PANEL, CONCEPT SERIES (REFER TO PANEL LAYOUT DETAILS FOR PROFILE), CHARCOAL GREY
	MT-2	22 GA ARCHITECTURAL METAL STANDING SEAM ROOF, EQUAL TO BERRIDGE, PREWEATHERED GALVALUME, CEE-LOCK W/ 1 1/2" TALL RIBS AT 16" O.C.
	MT-3	PREFINISHED METAL FASCIA, PREWEATHERED GALVALUME
	CP-1	STUCCO 1, APPLIED STUCCO FINISH, COLOR TO MATCH STO EIDER WHITE
	CP-2	STUCCO 2, COLOR TO MATCH STO ELEPHANT EAR
	ST-1	STONEBROOK NATURAL STONE VENEER, WHITE, FACE CUT ALL SIDES
	WD-1	NICHIHA WOOD SERIES, VINTAGEWOOD, CEDAR

EXTERIOR WALL MATERIAL (EWS) CALCULATIONS:

NORTH:

	ACTUAL
GROSS WALL AREA	918.22 SF
DOORS AND WINDOWS	256.66 SF (27.9%)
NET WALL AREA	661.56 SF
EWS	661.56 SF (100%)

EAST :

	ACTUAL
GROSS WALL AREA	1493.47 SF
DOORS AND WINDOWS	81.66 SF (5.5%)
NET WALL AREA	1411.81 SF
EWS	1411.81 SF (100%)

SOUTH :

	ACTUAL
GROSS WALL AREA	1154.02 SF
DOORS AND WINDOWS	281.26 SF (24.4%)
NET WALL AREA	872.79 SF
EWS	602.44 SF (69%)

WEST (FRONT PRIMARY/ STREET FACING WALL):

	ACTUAL
GROSS WALL AREA	1604.96 SF
DOORS AND WINDOWS	537.92 SF (33.5%)
NET WALL AREA	1067.04 SF
EWS	835.57 SF (78.3%)

TOTAL BUIDING:

	ACTUAL	REQUIRED
GROSS WALL AREA	5170.67 SF	
DOORS AND WINDOWS	1210.98 SF (23.4%)	
NET WALL AREA	4013.2 SF	
EWS	3511.38 SF (87.5%)	85% MIN REQ'D (3411.22 SF)

NOTES:

EXTERIOR SURFACE AREA OF BUILDING IS COMPRISED OF AT LEAST 85% MASONRY FOR FIRST STORY WALLS AND ATLEAST 50% MASONRY FOR THE EXTERIOR SURFACE AREA OF EACH ADDITIONAL STORY PER CITY OF LEANDER COMPOSITE ZONING ORDINANCE, ARTICLE VI, SECTION 6, PARAGRAPH G-1.

A MINIMUM OF 15% OF THE FRONT PRIMARY BUILDING FACADE CONSISTS OF WINDOW AND DOOR OPENINGS PER CITY OF LEANDER COMPOSITE ZONING ORDINANCE, ARTICLE VI, SECTION 2, PARAGRAPH B-1.

EWS = CUT STONE AND CONCRETE TILT WALL WITH A DECORATIVE FINISH

(4) DESIGN FEATURES REPRESENTED ON THE BUILDING FRONT PER CITY OF LEANDER COMPOSITE ZONING ORDINANCE, ARTICLE VII, SECTION 2, PARAGRAPH B-2.

3 **NOTES:**

1. ALL PERMANENT EXTERIOR LIGHTING SHALL BE NON-FLASHING AND SHIELDED SUCH THAT THE LIGHT SOURCES IS NOT VISIBLE FROM THE PUBLIC RIGHT-OF-WAY OR ADJACENT RESIDENTIAL USES AT THE PROPERTY LINE. WALL PACK LIGHTING AND OTHER LIGHTING THAT DIRECTS THE LIGHT IN A HORIZONTAL DIRECTION WITHOUT AN ADEQUATE SHIELD IS NOT PERMITTED IF THERE ARE STREETS OR RESIDENTIAL USES IN THE DIRECTION OF THE LIGHT.
2. ALL SITE UTILITY LINES ARE PROPOSED TO BE LOCATED UNDERGROUND.
3. WINDOWS SHALL HAVE A MAXIMUM EXTERIOR REFLECTIVITY OF TWENTY (20%) PERCENT.

ALIGN
AUSTIN ARCHITECTS

2
BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD , BLDG. 3
LEANDER, TEXAS 78641

2 06.17.22 Revision 2
3 09.12.22 City Comments
5 07.XX.24 VE

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01.28.2022
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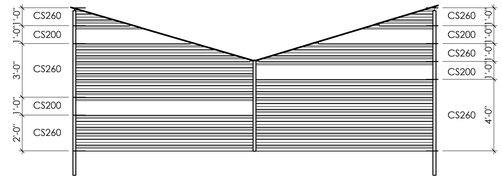
EXTERIOR ELEVATIONS

SHEET: A201

PROJECT NO:	21099
DRAWN BY:	AG,MD
DATE:	09.12.22
PROJECT MGR:	KS

4 **SOUTH CENTRIA PANEL LAYOUT**
1/4" = 1'-0"



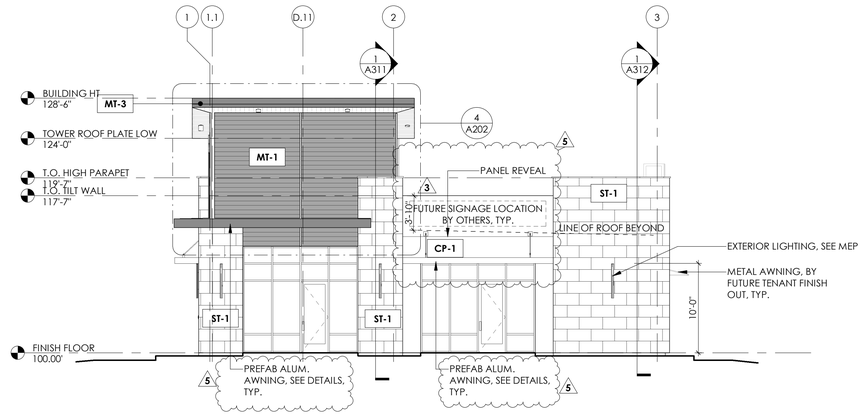
3 **EAST CENTRIA PANEL LAYOUT**
1/4" = 1'-0"

MATERIAL LEGEND

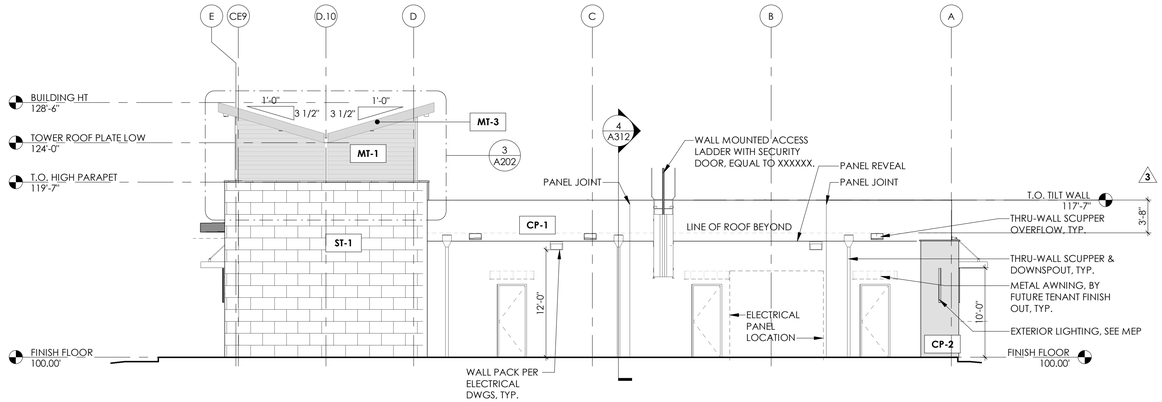
	MT-1	22 GA GALVANIZED CENTRIA PANEL, CONCEPT SERIES (REFER TO PANEL LAYOUT DETAILS FOR PROFILE), CHARCOAL GREY
	MT-2	22 GA ARCHITECTURAL METAL STANDING SEAM ROOF, EQUAL TO BERRIDGE, PREWEATHERED GALVALUME, CEE-LOCK W/ 1 1/2" TALL RIBS AT 16" O.C.
	MT-3	PREFINISHED METAL FASCIA, PREWEATHERED GALVALUME
	CP-1	STUCCO 1, APPLIED STUCCO FINISH, COLOR TO MATCH STO EIDER WHITE
	CP-2	STUCCO 2, COLOR TO MATCH STO ELEPHANT EAR
	ST-1	STONEBROOK NATURAL STONE VENEER, WHITE, FACE CUT ALL SIDES
	WD-1	NICHIHA WOOD SERIES, VINTAGEWOOD, CEDAR

NOTES:

1. ALL PERMANENT EXTERIOR LIGHTING SHALL BE NON-FLASHING AND SHIELDED SUCH THAT THE LIGHT SOURCES IS NOT VISIBLE FROM THE PUBLIC RIGHT-OF-WAY OR ADJACENT RESIDENTIAL USES AT THE PROPERTY LINE. WALL PACK LIGHTING AND OTHER LIGHTING THAT DIRECTS THE LIGHT IN A HORIZONTAL DIRECTION WITHOUT AN ADEQUATE SHIELD IS NOT PERMITTED IF THERE ARE STREETS OR RESIDENTIAL USES IN THE DIRECTION OF THE LIGHT.
2. ALL SITE UTILITY LINES ARE PROPOSED TO BE LOCATED UNDERGROUND.
3. WINDOWS SHALL HAVE A MAXIMUM EXTERIOR REFLECTIVITY OF TWENTY (20%) PERCENT.



2 **EXTERIOR ELEVATION - SOUTH**
1/8" = 1'-0"



1 **EXTERIOR ELEVATION - EAST**
1/8" = 1'-0"

ALIGN
AUSTIN ARCHITECTS

BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD , BLDG. 3
LEANDER, TEXAS 78641

3 09.12.22 City Comments
5 07.XX.24 VE

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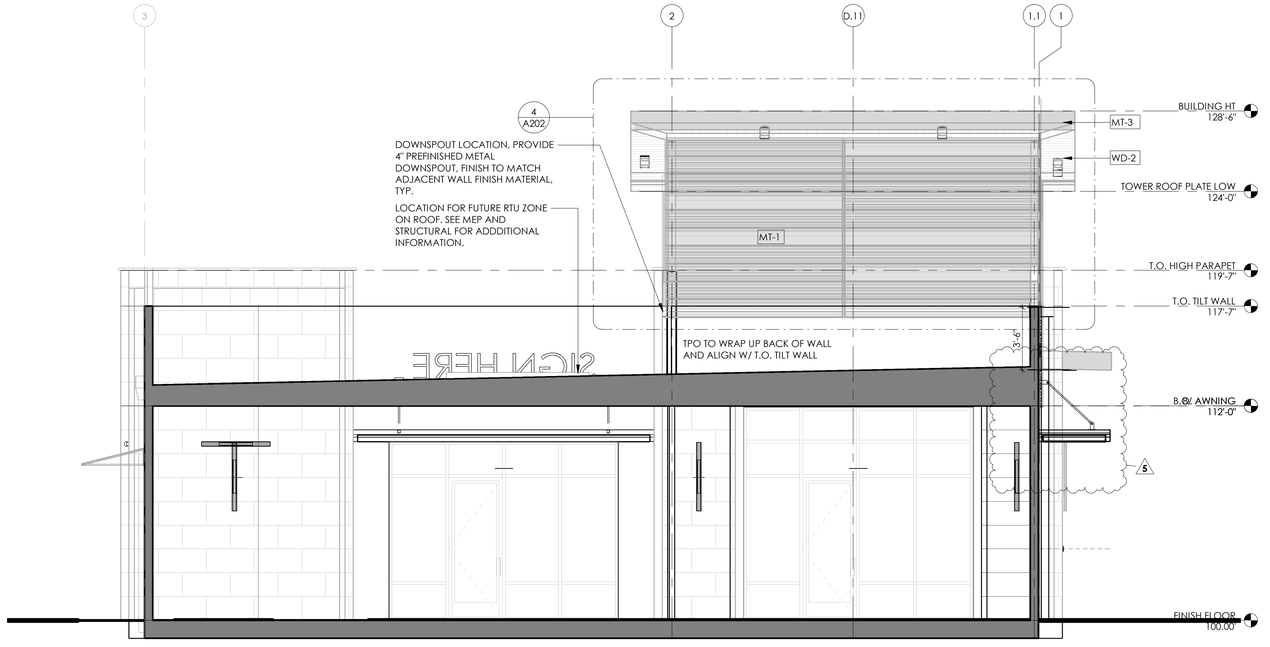
EXTERIOR ELEVATIONS

SHEET: A202

PROJECT NO:	21099
DRAWN BY:	AG
DATE:	09.12.22
PROJECT MGR:	KS



1 **BUILDING SECTION B**
1/4" = 1'-0"

ALIGN
AUSTIN ARCHITECTS

BUILDING 3

THE SQUARE AT CRYSTAL FALLS
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LEANDER, TEXAS 78641

5 07.XX.24 VE

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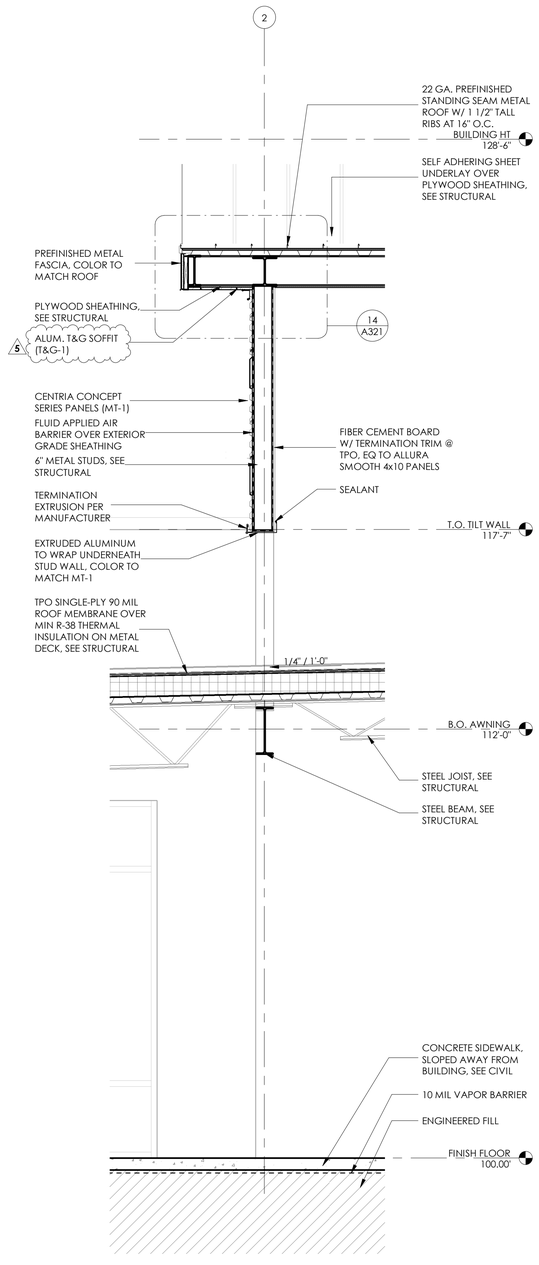
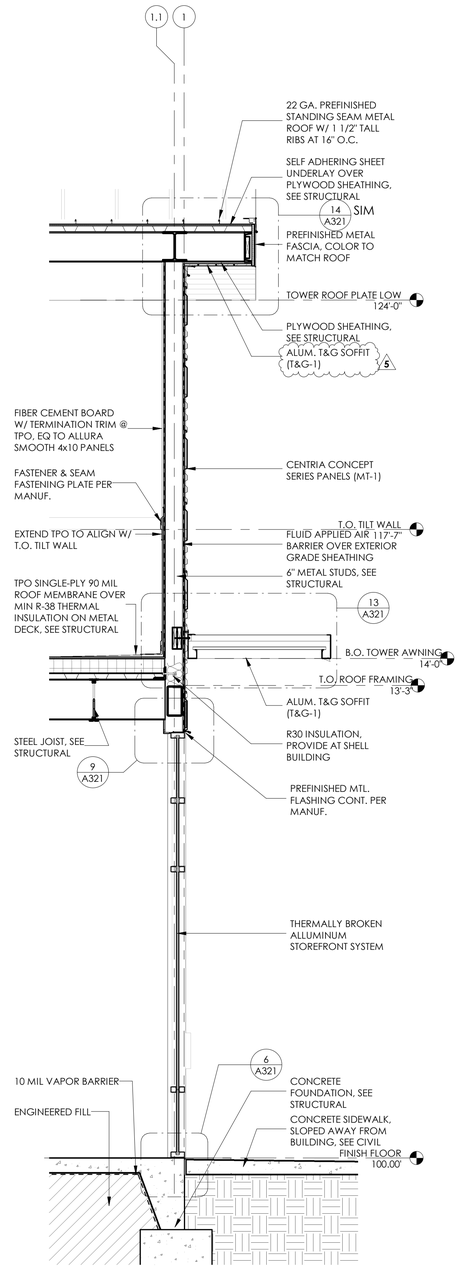
BUILDING SECTIONS

SHEET: A301

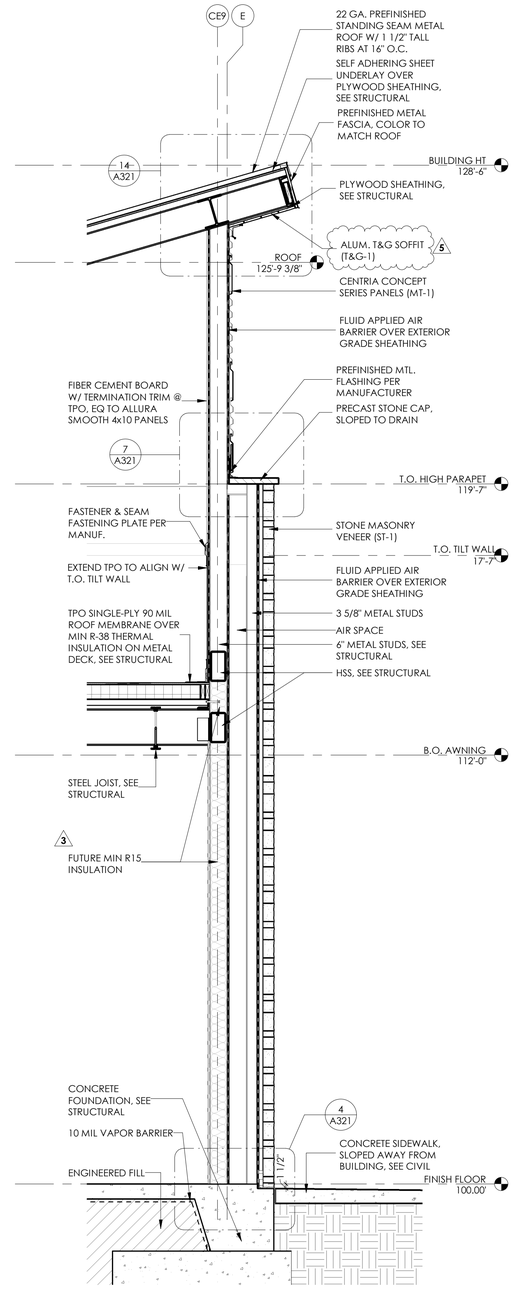
PROJECT NO:	21099
DRAWN BY:	AG
DATE:	09.12.22
PROJECT MGR:	KS



3 **Section 4**
1/2" = 1'-0"



2 **WALL SECTION**
1/2" = 1'-0"



1 **WALL SECTION**
1/2" = 1'-0"

ALIGN
AUSTIN ARCHITECTS

BUILDING 3

THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD - BLDG. 3
LEANDER, TEXAS 78641

3 09.12.22 City Comments
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ARCHITECT
01.28.2022
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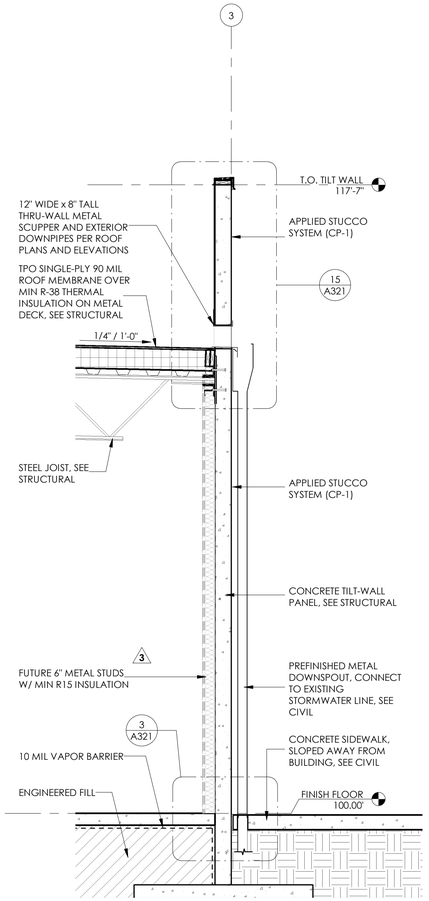
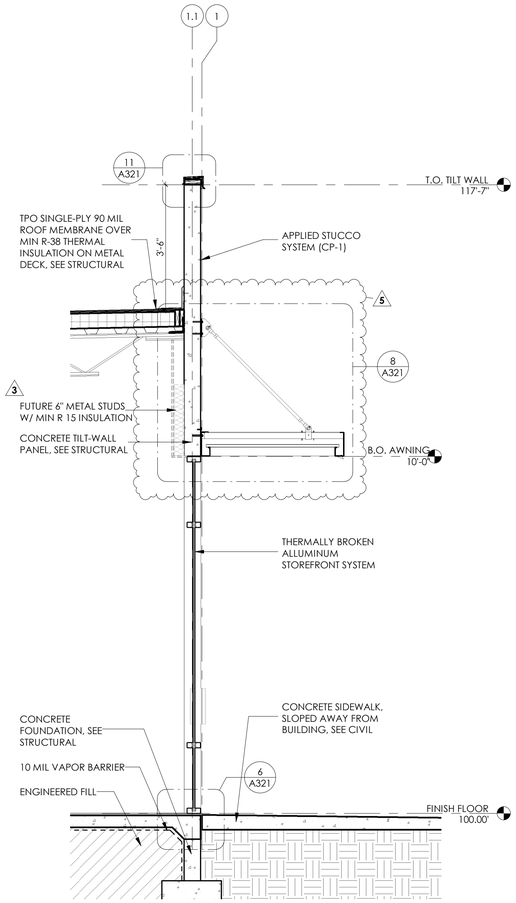
WALL SECTIONS

SHEET: A311

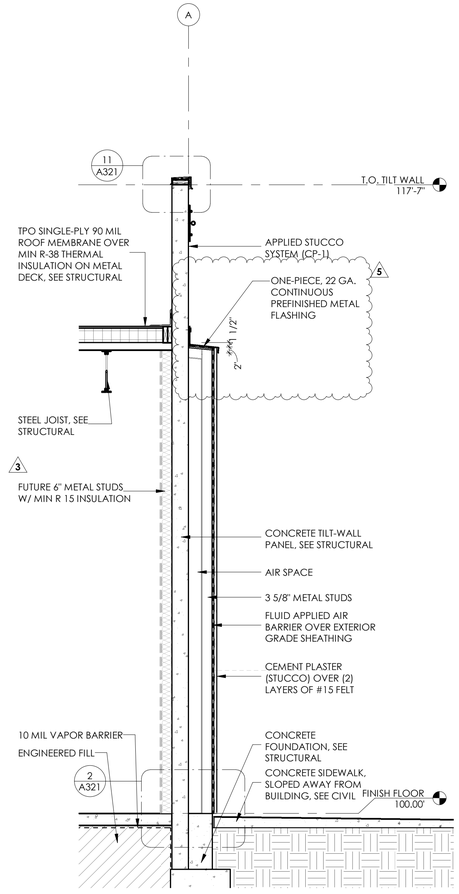
PROJECT NO:	21099
DRAWN BY:	AG
DATE:	09.12.22
PROJECT MGR:	KS



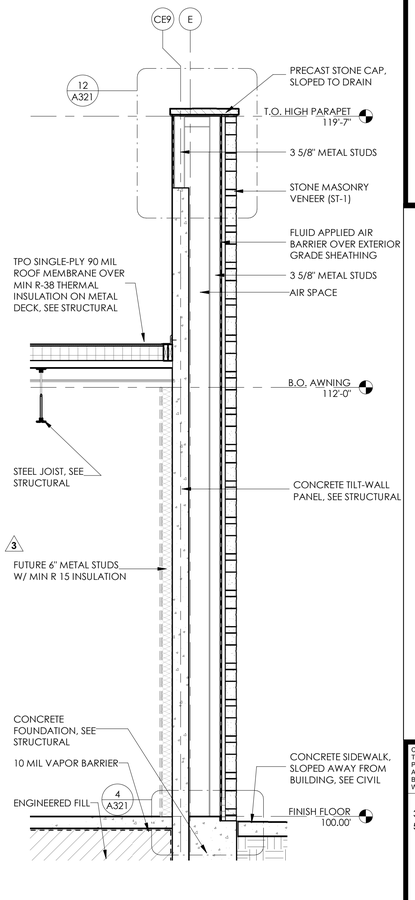
4 **WALL SECTION**
1/2" = 1'-0"



3 **WALL SECTION**
1/2" = 1'-0"



2 **WALL SECTION**
1/2" = 1'-0"



1 **WALL SECTION**
1/2" = 1'-0"

ALIGN
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BUILDING 3

THE SQUARE AT CRYSTAL FALLS
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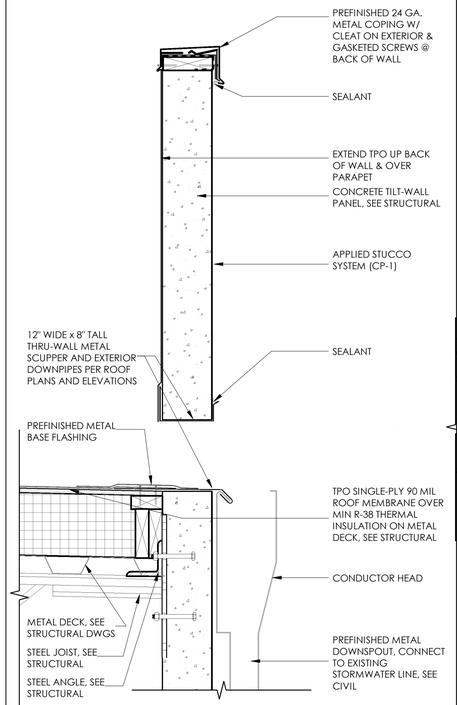
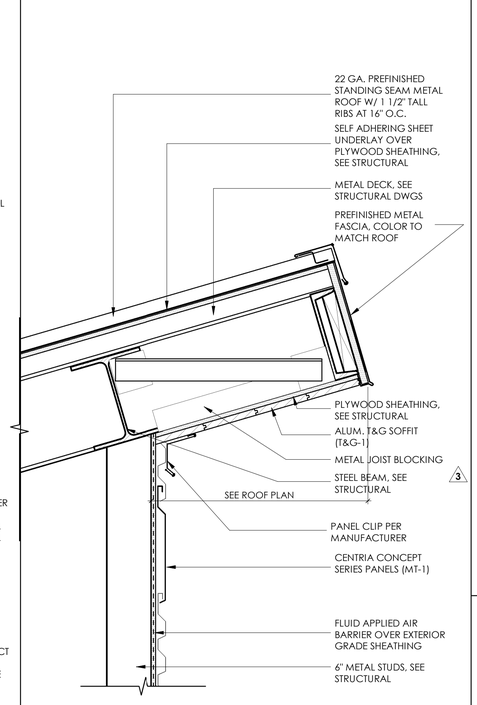
WALL SECTIONS

SHEET: A312

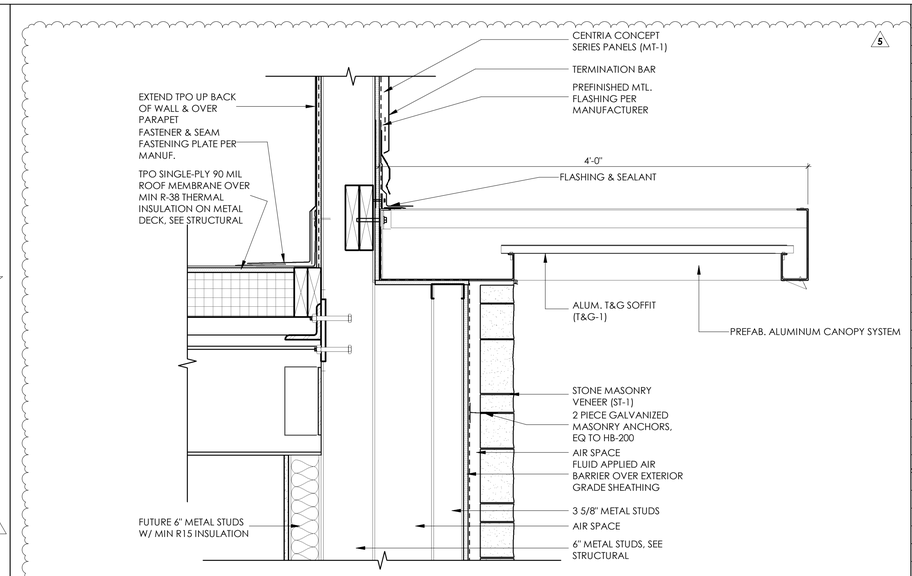
PROJECT NO:	21099
DRAWN BY:	AG
DATE:	09.12.22
PROJECT MGR:	KS



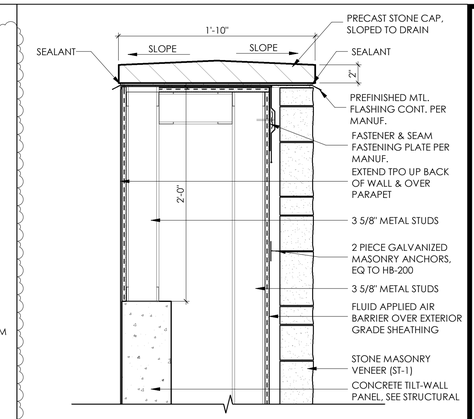
15 **THRU-WALL SCUPPER**
1 1/2" = 1'-0"



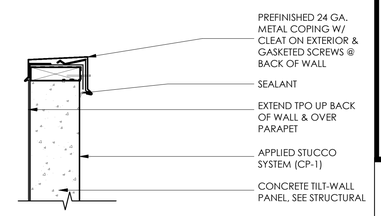
14 **TOWER SOFFIT**
1 1/2" = 1'-0"



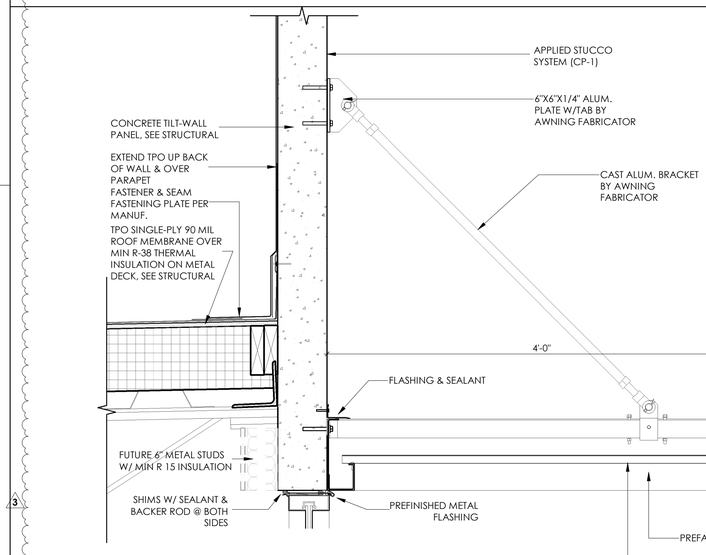
13 **CANTELIEVERED AWNING TYP.**
1 1/2" = 1'-0"



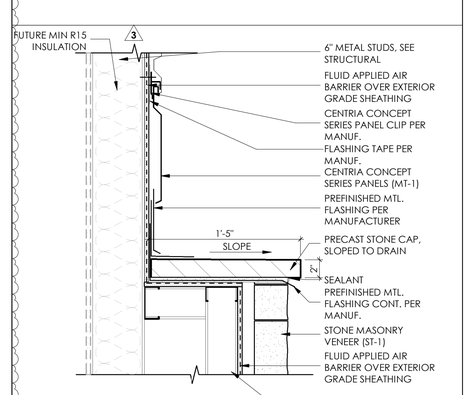
12 **PARAPET CAP @ STONE**
1 1/2" = 1'-0"



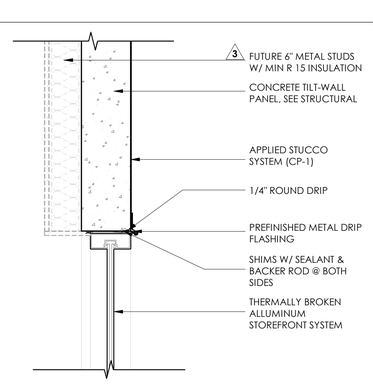
11 **TYP. PARAPET CAP**
1 1/2" = 1'-0"



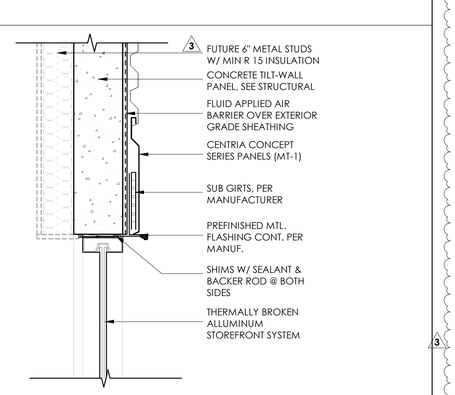
8 **SUSPENDED AWNING**
1 1/2" = 1'-0"



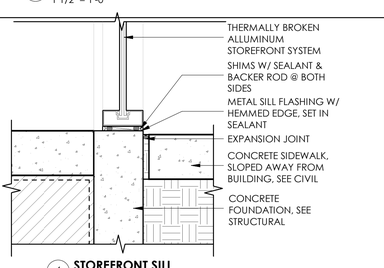
7 **STONE CAP**
1 1/2" = 1'-0"



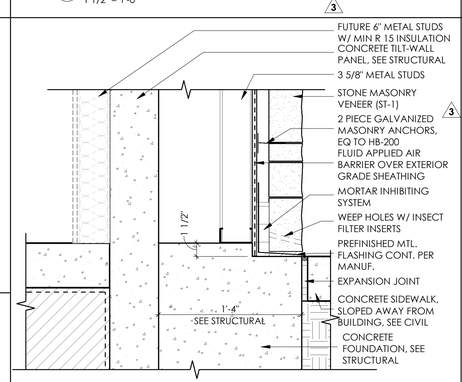
10 **STOREFRONT HEADER @ STUCCO**
1 1/2" = 1'-0"



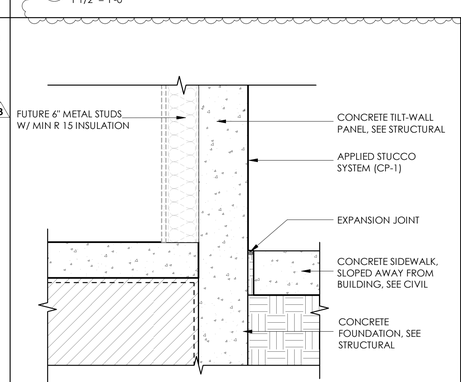
9 **STOREFRONT HEADER**
1 1/2" = 1'-0"



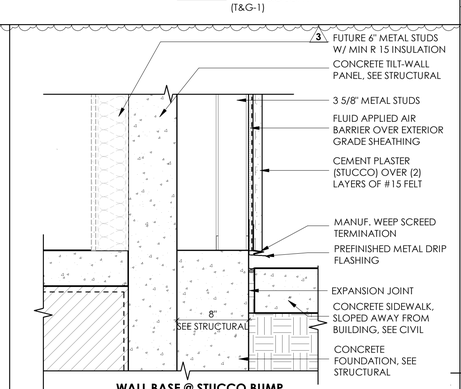
6 **STOREFRONT SILL**
1 1/2" = 1'-0"



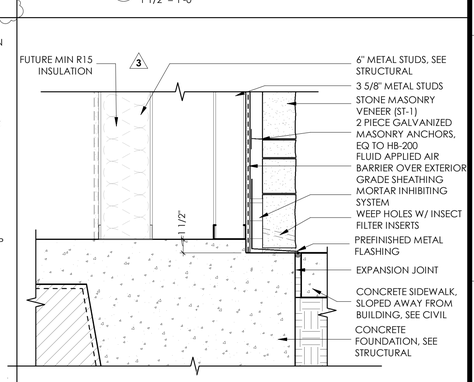
4 **WALL BASE @ STONE BUMP OUT**
1 1/2" = 1'-0"



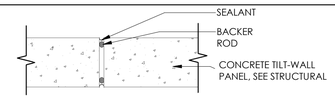
3 **WALL BASE TYP.**
1 1/2" = 1'-0"



2 **WALL BASE @ STUCCO BUMP OUTS**
1 1/2" = 1'-0"



1 **WALL BASE @ TOWER WALLS**
1 1/2" = 1'-0"



5 **TILT WALL PANEL JOINT**
1 1/2" = 1'-0"

ALIGN
AUSTIN ARCHITECTS

BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD , BLDG. 3
LEANDER, TEXAS 78641

3 09.12.22 City Comments
5 07.XX.24 VE

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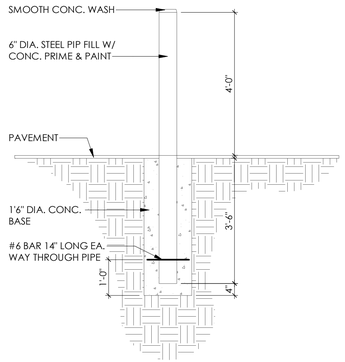
100% CDS - REV05 - VE

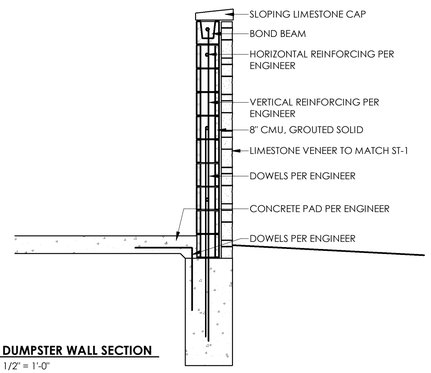
SECTION DETAILS

SHEET: A321

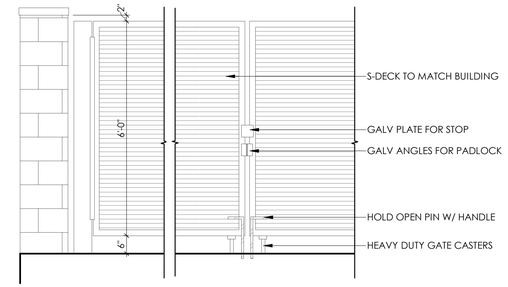
PROJECT NO:	21099
DRAWN BY:	AG
DATE:	09.12.22
PROJECT MGR:	KS



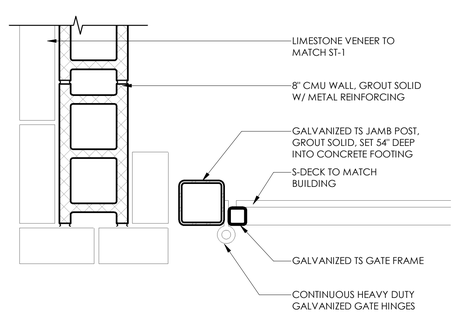
5 **TYP. BOLLARD**
1/2" = 1'-0"



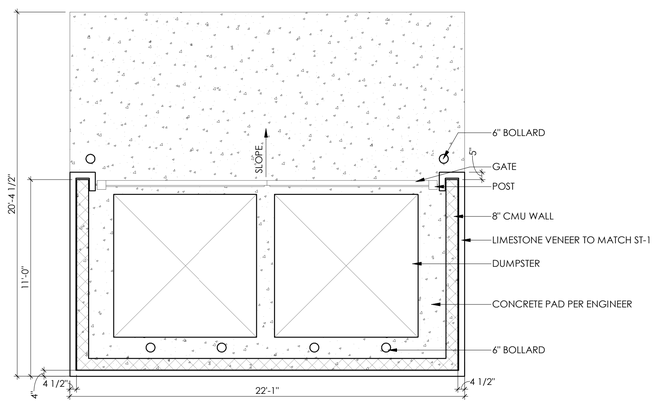
4 **DUMPSTER WALL SECTION**
1/2" = 1'-0"



3 **DUMPSTER GATE ELEVATION**
1/2" = 1'-0"



2 **DUMPSTER GATE POST**
1 1/2" = 1'-0"



1 **DUMPSTER ENCLOSURE PLAN**
1/4" = 1'-0"

ALIGN
AUSTIN ARCHITECTS

BUILDING 3

THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD , BLDG. 3
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3 09.12.22 City Comments

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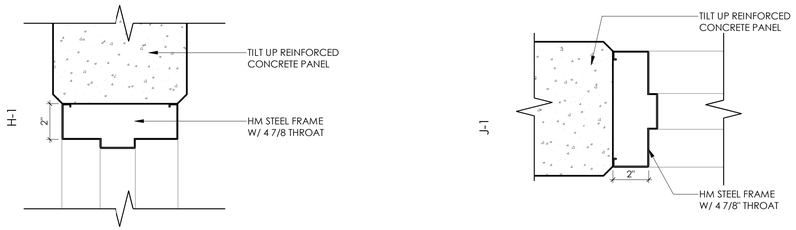
DUMPSTER ENCLOSURE

SHEET: A401

3

PROJECT NO:	21099
DRAWN BY:	AG
DATE:	09.12.22
PROJECT MGR:	KS



HM JAMB AND HEAD DETAIL

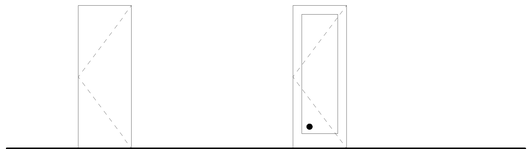
DOOR SCHEDULE

	DOOR					FRAME		DETAIL			
MARK	WIDTH	HEIGHT	THICKNESS	MATERIAL	TYPE	TYPE	MATERIAL	JAMB	HEAD	REMARK	HARDWARE
100A	3'-0"	8'-0"	1 3/4"	AL	FG	SF-1	AL	MANUF	MANUF	1	1
100B	3'-0"	8'-0"	1 3/4"	HM	F	HM	HM	J-1	H-1	2,3	2
101A	3'-0"	8'-0"	1 3/4"	AL	FG	SF-1	AL	MANUF	MANUF	1	1
101B	3'-0"	8'-0"	1 3/4"	HM	F	HM	HM	J-1	H-1	2,3	2
102A	3'-0"	8'-0"	1 3/4"	AL	FG	SF-1	AL	MANUF	MANUF	1	1
102B	3'-0"	8'-0"	1 3/4"	HM	F	HM	HM	J-1	H-1	2,3	2
103A	3'-0"	8'-0"	1 3/4"	AL	FG	SF-2	AL	MANUF	MANUF	1	1
103B	3'-0"	8'-0"	1 3/4"	AL	FG	SF-2	AL	MANUF	MANUF	1	1
103C	3'-0"	8'-0"	1 3/4"	AL	FG	SF-1	AL	MANUF	MANUF	1	1

REMARKS:
1. COORDINATE EXACT DOOR LOCATION WITH FUTURE TENANT
2. PROVIDE INSULATED HM DOOR, SHOP PRIMED, FIELD PAINTED
3. COODINATE DOOR INSTALLATION WITH FUTURE TENANT

HARDWARE SCHEDULE

HARDWARE SET	QUALITY LEVEL	HINGES					LOCK FUNCTION, CYLINDERS & BOLTS											EXIT DEVICES			OPERATING TRIM			ACCESSORIES & PROTECT. TRIM					CLOSER & SILENCERS						STOPS & HOLDERS				GASKETS & THRESHOLDS					REMARKS
	STANDARD	COMMERCIAL	HEAVY DUTY	COMMERCIAL	CONTINUOUS HINGE	FULL MORTISE	FULL SURFACE	WIDE THROW	PASSAGE	OFFICE	PRIVACY	DUMMY	ENTRY	MORTISE SET	STOREROOM	ELECTRIFIED	INTERCHANGEABLE	HD DEADLATCH	DEADLATCH PADDLE	MORTIS FIRE DEVICE	PANIC DEVICE	CONCEALED VERT. ROD EXIT DEVICE	LEVER	PUSH PLATE	PULL BAR	PUSH AND PULL BARS	KICKPLATE	ASTRAGAL	PEEP HOLE	LOCK GUARD	OVERHEAD SURFACE CLOSER	CONCLD. CLOSER (MORTISED)	CONCLD. CLOSER (EXPOSED)	HINGE CLOSER	SILENCER	FLOOR STOP	HINGE STOP	MAGNETIC HOLD OPEN	OVER HEAD STOP	WALL STOP	ADHESIVE GASKET	SWEEP	MEETING STILE GASKET	DRIP STRIP	SMOKE GASKETS	THRESHOLD	
SET #1	X		X										X					X	X							X					X											X	PERIMETER GASKETING BY DOOR MANUF.
SET #2	X				X								X													X		X			X									X	X		X		X	

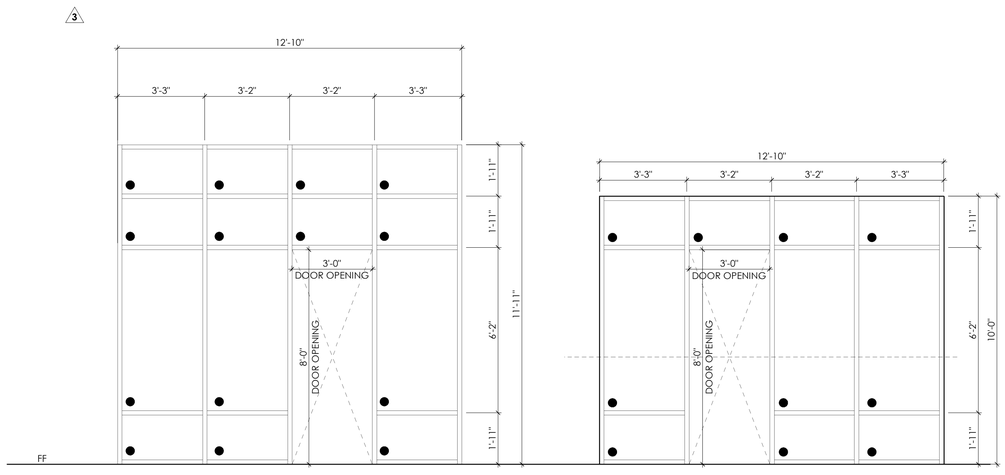


WINDOW LEGEND

○ 1" INSULATED, CLEAR, LOW-E GLAZING GL-1, EQUAL TO PPG SOLARBAN 90 XL CLEAR, ANNEALED

● 1" INSULATED, CLEAR, LOW-E GLAZING GL-1, EQUAL TO PPG SOLARBAN 90 XL CLEAR, TEMPERED

VITRO SOLARBAN 90 XL CLEAR
SHGC 0.23
VLT 51%
REFLECTANCE 12%MAX



WINDOW TYPE SF - 2
ALUMINUM STOREFRONT
THERMALLY BROKEN
INSULATED
LOW-E GLAZING
DARK BRONZE ANODIZED

WINDOW TYPE SF - 1
ALUMINUM STOREFRONT
THERMALLY BROKEN
INSULATED
LOW-E GLAZING
DARK BRONZE ANODIZED

ALIGN
AUSTIN ARCHITECTS

BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD , BLDG. 3
LEANDER, TEXAS 78641

3 09.12.22 City Comments

NOT FOR REGULATORY APPROVAL, PERMITTING, OR CONSTRUCTION.
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF
RODNEY PALMER
01.28.2022
100% CDS - REV05 - VE

DOOR/WINDOW - SCHEDULES DETAILS

SHEET: A501

PROJECT NO: 21099
DRAWN BY: AG
DATE: 09.12.22
PROJECT MGR: KS

LIGHTING DETAIL

WALL SCONCE B

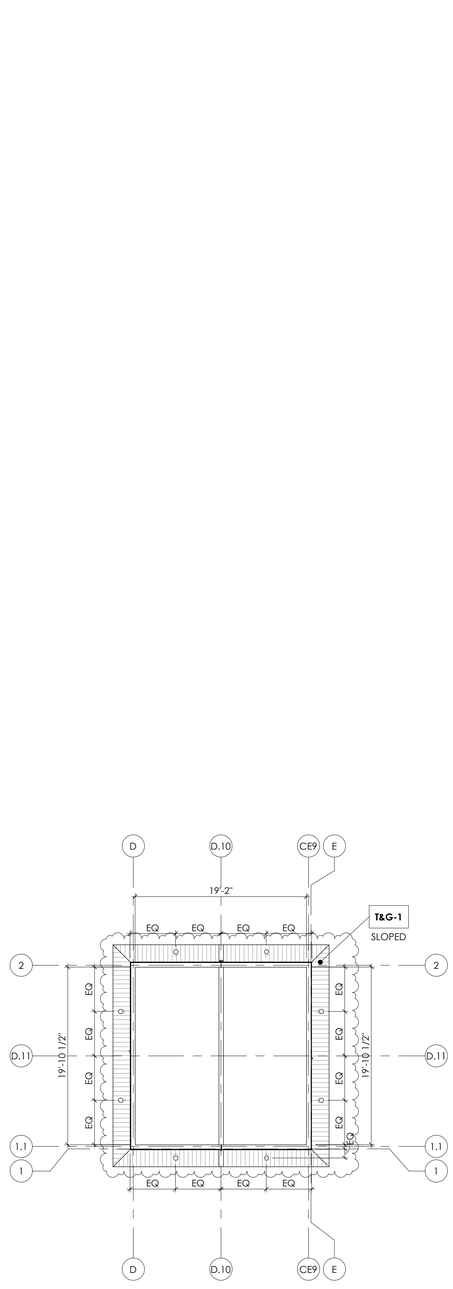
WALL SCONCE A

WALL MOUNTED SECURITY

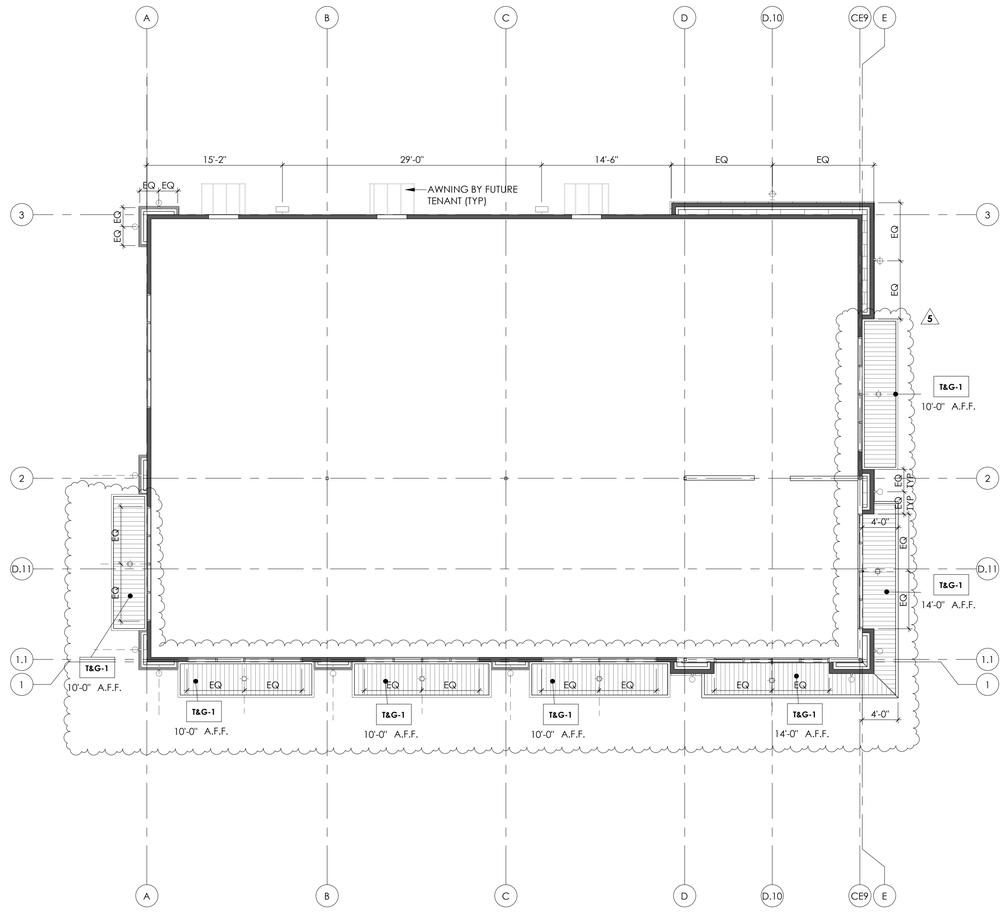
NOTE: ALL FIXTURES TO BE IN ACCORDANCE WITH CITY CODE SECTION 12: OUTDOOR LIGHTING.
A. FIXTURES ARE NON-FLASHING AND SHIELDED SUCH THAT THE LIGHT SOURCE IS NOT VISIBLE FROM THE PUBLIC ROW OR ADJACENT RESITENTIAL USES
B. THE LEVEL OF ILLUMINATION AS MEASURED IN FOOT CANDLES AT A HEIGHT OF 3'-0" AT THE PROBPERTY LINIE DOES NOT EXCEED 2 FOOT CANDLES.

RCP LEGEND

- RECESSED CAN
- DIRECTIONAL DOWNLIGHT
- WALL MOUNTED SECURITY
- WALL SCONCE A
- WALL SCONCE B
- T&G-1 — ALUMINUM T&G SOFFIT, PER SELECTION (5)



3 **TOWER REFLECTED CEILING PLAN**
1/8" = 1'-0"



2 **REFLECTED CEILING PLAN**
1/8" = 1'-0"

ALIGN
AUSTIN ARCHITECTS

BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD , BLDG. 3
LEANDER, TEXAS 78641

3 09.12.22 City Comments
5 07.XX.24 VE

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RODNEY PALMER
01.28.2022
100% CDS - REV05 - VE

REFLECTED CEILING PLAN

SHEET: A601

PROJECT NO:	21099
DRAWN BY:	AG
DATE:	09.12.22
PROJECT MGR:	KS

STRUCTURAL GENERAL NOTES

GENERAL CRITERIA

1. THESE GENERAL NOTES SHALL APPLY UNLESS SPECIFICALLY NOTED ON THE PLANS AND DETAILS.

2. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE, AND SHALL BE RESPONSIBLE FOR CONDITIONS OF ALL WORK AND MATERIALS, INCLUDING THOSE FURNISHED BY SUBCONTRACTORS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL WORK WITH THE ARCHITECTURAL, CIVIL, MEP CONTRACT DOCUMENTS, AS WELL AS ANY OTHER APPLICABLE TRADES

3. DISCREPANCIES AND/OR VARIATIONS SHALL IMMEDIATELY BE REPORTED TO THE ARCHITECT AND ENGINEER.

4. PERFORM ALL CONSTRUCTION IN CONFORMANCE WITH THE BUILDING CODE AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS. THE PROJECT CODES REFER TO THE BUILDING CODES AND DESIGN STANDARDS REFERENCED IN "DESIGN CRITERIA" GENERAL NOTES.

5. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE REACHES ITS FINAL CONDITION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF TEMPORARY BRACING AND CONSTRUCTION SUPPORTS, FOR NEW AND EXISTING STRUCTURES, AS NECESSARY TO COMPLETE THE PROJECT. NO PORTION OF THE PROJECT WHILE UNDER CONSTRUCTION IS INTENDED TO BE STABLE IN THE ABSENCE OF THE CONTRACTOR'S TEMPORARY SUPPORTS AND BRACES.

6. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

7. THE DRAWINGS SHOW ONLY REPRESENTATIVE AND TYPICAL DETAILS TO ASSIST THE CONTRACTOR. THE DRAWINGS DO NOT ILLUSTRATE EVERY CONDITION. ALL ATTACHMENTS, CONNECTIONS, FASTENINGS, ETC., SHALL BE PROPERLY SECURED IN CONFORMANCE WITH THE BEST PRACTICE, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING THEM.

8. ASSUME EQUAL SPACING BETWEEN ESTABLISHED DIMENSIONS, IF NOT INDICATED ON DRAWINGS. CENTERLINES OF COLUMNS AND FOUNDATIONS COINCIDE WITH GRID LINE INTERSECTIONS, U.N.O. CENTERLINES OF GRADE BEAMS AND WALLS COINCIDE WITH CENTERLINES OF FOUNDATIONS, U.N.O. CENTERLINES OF FRAMING MEMBERS COINCIDE WITH COLUMN CENTERLINES, U.N.O. THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITIES FROM DAMAGE.

9. THE CONTRACTOR SHALL VERIFY THAT CONSTRUCTION LOADS DO NOT EXCEED THE CAPACITY OF THE STRUCTURE AT THE TIME THE LOAD IS APPLIED.
10. THE CONTRACTOR SHALL COORDINATE THE BOTTOM OF BASE PLATE ELEVATIONS WITH THE AS-BUILT TOP OF SUPPORT ELEVATIONS.

11. THE CONTRACT STRUCTURAL DRAWINGS SHALL NOT BE USED IN WHOLE OR IN PART FOR SHOP DRAWING SUBMITTALS.

12. CONTRACTOR SHALL NOTE THAT THE STRUCTURAL ENGINEER OF RECORD (SER) REQUIRES A MINIMUM OF TWO WEEKS TO REVIEW ALL SHOP DRAWING SUBMITTALS.

13. THE GEOTECHNICAL REPORT IS A SEPARATE DOCUMENT (NOT PART OF THE CONTRACT DOCUMENTS) FURNISHED BY THE PROJECT OWNER. THE CONTRACTOR SHALL OBTAIN A COPY OF THE REPORT FOR REFERENCE AS IT DESCRIBES SUB-SURFACE CONDITIONS THAT MAY BE ENCOUNTERED DURING INSTALLATION OF FOUNDATIONS AND CONTAINS OTHER INFORMATION PERTINENT TO CONSTRUCTION DRAWINGS.

14. THE GEOTECHNICAL ENGINEER SHALL BE RETAINED TO REVIEW THE FINAL DESIGN PLANS AND SPECIFICATIONS SO COMMENTS CAN BE MADE REGARDING INTERPRETATION AND IMPLEMENTATION OF THE GEOTECHNICAL RECOMMENDATIONS IN THE DESIGN AND SPECIFICATIONS.

15. THE GEOTECHNICAL ENGINEER SHALL BE RETAINED TO PROVIDE TESTING AND OBSERVATIONS DURING EXCAVATION, GRADING, FOUNDATION INSTALLATION, AND OTHER CONSTRUCTION PHASES OF THE PROJECT.

STRUCTURAL DESIGN CRITERIA

1. PROJECT CODE:
   A. BUILDING CODE............2015 INTERNATIONAL BUILDING CODE
   B. STRUCTURAL CONCRETE............ACI 318 - CURRENT EDITION
   C. CONCRETE MASONRY............ACI 530 - CURRENT EDITION
   D. STRUCTURAL STEEL............AISC-360 - CURRENT EDITION
   E. COLD FORMED STEEL............AISI S100 - CURRENT EDITION
2. GRAVITY LOADS
   A. DEAD LOADS
   B. ROOF............20 PSF
3. LIVE LOADS
   A. ROOF............20 PSF
   B. 1ST FLOOR CORRIDOR/ STAIRS............100 PSF
4. SNOW LOADS
   A. GROUND SNOW LOAD, Pg............5 PSF
   B. IMPORTANCE FACTOR, I............1.0
   C. SNOW EXPOSURE FACTOR, Ce............1.0
   D. THERMAL FACTOR, Ct............1.0
5. WIND LOADS
   A. Vult............115 MPH
   B. RISK CATEGORY............II
   C. EXPOSURE............C
   D. INTERNAL PRESSURE COEFFICIENT............+/- 0.18
   E. IMPORTANCE FACTOR............1.0
   F. DESIGN WIND PRESSURE - COMPONENTS AND CLADDING REFER TO WIND PRESSURE DIAGRAMS
5. SEISMIC LOADS
   A. SEISMIC DESIGN CATEGORY............A
   B. SITE CLASS............D
   C. SEISMIC IMPORTANCE FACTOR, Ie............1.0
   D. RISK CATEGORY............II
   E. Ss............0.062
   F. S1............0.034
   G. Sds............0.066
   H. Sd1............0.054
   I. BASIC SEISMIC FORCE RESISTING SYSTEM............ORDINARY REINFORCED CONCRETE SHEAR WALLS
   J. Cs............0.01
   K. R............4
   L. ANALYSIS PROCEDURE............EQUIVALENT LATERAL FORCE PROCEDURE
   M. SEISMIC BASE SHEAR, V (ULT.)............0.01W
6. FOUNDATION DESIGN
   A. FOUNDATION TYPE............SHALLOW SPREAD FOOTINGS
   B. ALLOWABLE BEARING PRESSURE............8000 PSF
   C. GEOTECHNICAL REPORT
      - REPORT: SUBSURFACE EXPLORATION AND GEOTECHNICAL EVALUATION OF SQUARE AT CRYSTAL FALLS, LEANDER, TEXAS
      - REPORT NO: AE32-0702
      - DATED: 08/31/2021

STRUCTURAL FOUNDATION SUBGRADE PREPARATION NOTES

1. FOOTING SIZES AND REINFORCING IS BASED ON AN ALLOWABLE SOIL BEARING PRESSURE PER THE DESIGN CRITERIA. ALL FOOTINGS SHALL BEAR ON PREPARED SUBGRADE PER GEOTECHNICAL REPORT.

2. THE SUBGRADE NOTES PROVIDED BELOW ARE INTENDED ONLY AS A SUMMARY OF THE GEOTECHNICAL ENGINEERS RECOMMENDATION. THE CONTRACTOR SHALL VERIFY FOUNDATION INSTALLATION AND CONSTRUCTION IS IN CONFORMANCE WITH THE RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT.

3. FOR A DISTANCE OF 5'-0" OUTSIDE THE BUILDING LINE, REMOVE VEGETATION (TREE STUMPS AND MAJOR ROOT SYSTEMS SHALL BE COMPLETELY REMOVED), DEBRIS, TOPSOILS, FILL SOILS, UNDERGROUND FEATURES, AND ANY OTHER DELETERIOUS MATERIAL FROM THE BUILDING AREA.

4. PROVIDE A MINIMUM (1) FOOT FLEXIBLE BASE OVER NATIVE SOILS AND/OR COMPACTED FILL SOIL SUBGRADE PER GEOTECH REPORT.

5. FLEXIBLE BASE SHOULD CONSIST OF CRUSHED LIME AND GENERALLY CONFORM TO TxDOT ITEM 247 TYPE A, GRADE 1, REF. GEOTECH FOR ALL COMPACTION REQUIREMENTS. GEOTECH TO CONFIRM IN FIELD.

6. UNDER FLEX BASE, ALL FILL SHALL MEET GEOTECH REQUIREMENTS. PROOF ROLL FILL PER GEOTECH REQUIREMENTS. GEOTECH SHALL OBSERVE ALL PROOF-ROLLING.

7. ANY SOFT OR PUMPING/RUTTING AREAS SHOULD BE SCARIFIED AND RECOMPACTED/TESTED.

8. ANY STANDING WATER ON THE SURFACE OF THE VAPOR BARRIER SHALL BE REMOVED OR DRIED PRIOR TO CONCRETE PLACEMENT.

9. LABORATORY MOISTURE-DENSITY CURVE OR CURVES AS REQUIRED AND RESULTS OF AT LEAST 2 FIELD DENSITY CHECKS PER LIFT ARE TO BE SUBMITTED TO THE ARCHITECT OR ENGINEER.

10. ALL FOUNDATION EXCAVATIONS SHALL BE EXTENDED TO FINAL GRADE AND THE FOOTINGS CONSTRUCTED AND POURED AS SOON AS POSSIBLE TO MINIMIZE POTENTIAL DAMAGE (DUE TO WETTING AND/OR DRYING) TO BEARING SOILS. FOUNDATION CONCRETE SHALL NOT BE PLACED ON SOILS THAT HAVE BEEN DISTURBED BY RAINFALL OR REF.PAGE.

11. EXTEND ALL FOOTINGS A MINIMUM 12" INTO WEATHERED LIMESTONE, AND AT LEAST 18" BELOW FINAL ADJACENT GRADE.

12. PROVIDE 10 MIL. VAPOR RETARDER UNDER ALL CONCRETE SLABS. VAPOR RETARDERS SHALL CONFORM TO ASTM E 1745 CLASS A REQUIREMENTS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ASTM E 1643-98.

STRUCTURAL CONCRETE NOTES

1. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST AMERICAN CONCRETE INSTITUTE BUILDING CODE (ACI 318-14). ALL CONCRETE FLOOR AND SLAB CONSTRUCTION SHALL CONFORM TO ACI 302.1R-04. ALL CONCRETE WORK SHALL ALSO CONFORM TO "SPECIFICATIONS FOR STRUCTURAL CONCRETE", ACI 301.

2. PROVIDE NORMALWEIGHT CONCRETE WITH CURED DENSITY OF 145 +/- 5 PCF, AND AGGREGATE CONFORMING TO ASTM C33, U.N.O. WHERE INDICATED, PROVIDE LIGHTWEIGHT CONCRETE WITH CURED DENSITY OF 112+/-3 PCF AND AGGREGATE CONFORMING TO ASTM C330

3. CONCRETE STRENGTH SHALL MEET THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS (f'c) U.N.O.:
   A. 28 DAY COMPRESSIVE STRENGTH
      a. FOOTINGS............3,000 PSI
      b. SLAB ON GRADE............4,000 PSI
      c. SITE-CAST WALL PANELS............4,000 PSI
   B. MINIMUM CEMENT CONTENT............520-610 LB/CY
   C. NOMINAL MAX AGGREGATE SIZE
      a. SLAB ON GRADE............3/4"
      b. TYPICAL............1"
   D. AIR CONTENT
      a. CONCRETE EXPOSED TO FREEZE/THAW......4 1/2% +/- 1 1/2"
      b. TROWEL-FINISHED INTERIOR SLABS............LESS THAN 3%

4. FLY ASH CAN BE SUBSTITUTED FOR CEMENT UP TO 25% BY WEIGHT. CALCIUM CHLORIDE IS NOT ACCEPTABLE FOR USE IN MIX..

5. FURNISH MIX DESIGNS FOR ALL CLASSES OF CONCRETE. RETAIN A QUALIFIED TESTING LABORATORY TO MAKE CONCRETE CYLINDERS AND PERFORM COMPRESSIVE TESTS.

6. PORTLAND CEMENT SHALL CONFORM TO ASTM C-150. AGGREGATE SHALL CONFORM TO ASTM C-33.

7. PROVIDE CONTROL JOINTS IN ALL SLABS AT A SPACING NOT TO EXCEED 15'-0" O.C. EACH WAY. JOINT DEPTH SHALL BE A MINIMUM OF 1/4 THE SLAB THICKNESS. IF JOINTS ARE SAW-CUT, THE CUTTING SHALL TAKE PLACE IMMEDIATELY AFTER FINISHING THE SLAB. JOINTS SHALL NOT BE LOCATED IN LINE WITH AND ABOVE GRADE BEAMS IF APPLICABLE. COORDINATE LOCATION OF JOINTS WITH ARCHITECT.

8. REF. ARCHITECTURAL AND MECHANICAL PLANS FOR VERIFICATION OF ALL DEPRESSIONS, OPENINGS, CAST-IN-PLACE ACCESSORIES, ETC.

9. ALL FLOOR SLABS SHALL BE CONSTRUCTED TO HAVE A MINIMUM FLATNESS OF Ff=35 AND A MINIMUM LEVELNESS OF FI=25 IN ACCORDANCE WITH ASTM E 1155.

10. CURE CONCRETE SURFACE EITHER BY WATER CURING, WET COVERING, OR APPLYING A LIQUID MEMBRANE-FORMING CURING COMPOUND THAT MEETS OR EXCEEDS THE REQUIREMENTS OF ASTM C 309.

11. WHEN WATER CURING OR WET COVERING IS USED PROVIDE 7 DAYS OF UNINTERRUPTED CURING.

12. IF A CURING COMPOUND IS USED, PROVIDE A LETTER OF COMPATIBILITY FROM THE MFR. INSURING THAT THE CURING COMPOUND WILL NOT INTERFERE WITH SUBSEQUENT FLOOR FINISHES.

13. EMBEDDED CONDUITS AND PIPES, AND SLEEVES SHALL MEET THE REQUIREMENTS OF ACI 318-14, INCLUDING THE FOLLOWING REQUIREMENTS:
    - CONDUITS AND PIPES EMBEDDED WITHIN A SLAB, WALL, OR BEAM (OTHER THAN THOSE PASSING THROUGH) SHALL NOT BE LARGER IN OUTSIDE DIMENSION THAN 1/3 THE OVERALL THICKNESS OF THE SLAB, WALL, OR BEAM IN WHICH THEY ARE EMBEDDED.
    - CONDUITS, PIPES, AND SLEEVES SHALL NOT BE SPACED CLOSER THAN 3 DIAMETERS OR WIDTHS ON CENTER.
    - CONDUITS, PIPES, AND SLEEVES SHALL BE OF UN-COATED OR GALVANIZED IRON OR STEEL NOT THINNER THAN STANDARD SCHEDULE 40 PIPE.

STRUCTURAL CONCRETE REINFORCEMENT NOTES

1. ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED, MUST FOLLOW THE ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE", ACI 315 LATEST EDITION.

2. ALL REINFORCING BARS SHALL SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES, UNO:
   DEFORMED BARS............ASTM A615 (GR 60)
   WELDED WIRE REINFORCEMENT........ASTM A1064
   WELDABLE DEFORMED BARS..............ASTMA70

3. STANDARD PROTECTIVE COVER OF REINFORCING BARS UNLESS OTHERWISE NOTED SHALL BE:

CONCRETE EXPOSURE	MEMBER	REINFORCEMENT	SPECIFIED COVER
CAST AGAINST PERMANENTLY IN CONTACT WITH GROUND	ALL	ALL	3 IN
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	ALL	NO. 6 THROUGH NO.18 BARS	2 IN
		NO.5 BAR, W31 OR D31 WIRE AND SMALLER	1 1/2 IN
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLABS, JOISTS, & WALLS	PRIMARY REINFORCEMENT	1 1/2 IN
	BEAMS, COLS. AND TENSION TIES	STIRRPS, TIES, SPIRALS, AND HOOPS	1 1/2 IN

4. CORNER REINFORCING BARS SHALL BE USED AT ALL CORNERS AND INTERSECTIONS. REF. TYPICAL DETAIL.

5. LAP REINFORCING AT SPLICES PER LAP SPLICE SCHEDULE UNLESS NOTED OR DETAILED OTHERWISE.

6. WELDING OR HEAT BENDING OF REINFORCING BARS SHALL NOT BE PERMITTED, UNLESS APPROVED BY THE ENGINEER.

7. PROVIDE (2) #4 X 4'-6' LONG DIAGONAL BARS AT ALL RE-ENTRANT CORNERS.

8. AT CORNERS AND "T" INTERSECTIONS OF ALL BEAMS EXTEND 4 CORNER BARS EQUAL TO THE SCHEDULED STEEL IN THE ADJACENT BEAMS 2'-0" EACH WAY, 2 BARS TOP AND 2 BARS BOTTOM. PROVIDE CORNER BARS AT ALL INTERMEDIATE REINFORCING BARS IN WALLS AND DEEP BEAMS

9. PROVIDE ACCESSORIES FOR SUPPORT OF ALL REINFORCING.

10. WHERE A 90-DEG, 135-DEG, OR 180-DEG HOOK IS GRAPHICALLY INDICATED, PROVIDE CORRESPONDING ACI STARDARD HOOKS UNO

STRUCTURAL STEEL NOTES

1. ALL STRUCTURAL STEEL SHALL BE DESIGNED, DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATIONS.

2. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS UNLESS OTHERIWSE NOTEED ON THE CONTRACT DOCUMENTS:
   A. WIDE-FLANGE............ASTM A-992 (Fy=50 KSI)
   B. HSS (SQUARE, RECTANGULAR)..........ASTM A-500, GRADE C (Fy=50 KSI)
   C. HSS (ROUND)............ASTM A-500, GRADE C (Fy=46 KSI)
   D. PIPE............ASTM A-53, GRADE B (Fy=35 KSI)
   E. ALL OTHER STEEL............ASTM A-36 (Fy= 36 KSI).

2. CONNECTION MATERIAL SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIRMENTS OR AS NEEDED FOR CONNECTION DESIGN:
   A. ANGLES............ASTM A36
   B. WTS............ASTM A992
   C. PLATES............ASTM A572 GR.50
   D. BOLTS............ASTM A325
   E. NUTS............ASTM A563
   F. WASHERS............ASTM F436
   G. ANCHOR RODS............ASTM F1554 GR 55 WITH WELDABILITY SUPPLEMENT S1
   H. HEADED STUD............ASTM A108, GRADE 1010 THROUGH 1020 HEADED STUD TYPE, COLD-FINISHED CARBON STEEL, AWS D1.1., TYPE B.
   I. WELD ELECTRODES............E70XX

3. ALL BEAMS AND COLUMNS SHALL BE FULL LENGTH WITHOUT SPLICES UNLESS OTHERWISE INDICATED ON PLANS.

4. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR VERIFICATION OF ALL BOLTS, BLOCKING ANCHORS, ETC., FOR THE ANCHORAGE OF THEIR RESPECTIVE ITEMS.

5. ALL SHOP AND FIELD WELDS SHALL BE MADE BY WELDERS WHO HAVE BEEN QUALIFIED AND CERTIFIED TO MAKE THE REQUIRED WELDS IN ACCORDANCE WITH THE LATEST AMERICAN WELDING SOCIETY SPECIFICATIONS A.W.S. D1.1.

6. ALL FILLET WELDS SHALL BE 3/16" UNLESS OTHERWISE NOTED.

7. SHOP DRAWINGS SHALL BE PREPARED FOR ALL MISCELLANEOUS STEEL ITEMS INCLUDING STAIRS AND HANDRAILS FOR REVIEW BY THE ARCHITECT AND ENGINEER. CALCULATIONS SHALL BE SUBMITTED WITH THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT STATE

8. ALL STRUCTURAL STEEL, EXCEPT EMBEDDED ITEMS, SHALL BE PAINTED WITH ONE SHOP COAT OF RUST INHIBITIVE PAINT.

9. ALL BOLTS SHALL BE TIGHTENED BY THE AISC "SNUG TIGHT" METHOD UNLESS NOTED OTHERWISE.

10. ALL STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED G-90 COATING. ANY DAMAGE TO THE GALVANIC MATERIAL DURING WELDING SHALL BE TOUCHED UP WITH GALVANIZING REPAIR PAINT: HIGH-ZINC-DUST-CONTENT PAINT FOR REGALVANIZING WELDS AND REPAIR PAINTING GALVANIZED STEEL, WITH DRY FILM CONTAINING NOT LESS THAN 93 PERCENT ZINC DUST BY WEIGHT, AND COMPLYING WITH DOD-P-21035A OR SSPC-PAINT 20.

11. PROVIDE (1/2) TON OF FABRICATED STEEL (INCLUDING ERECTION) IN FORM OF STEEL SHAPES, ANGLES, PLATES, ETC. AS DIRECTED BY ARCHITECT OR STRUCTURAL ENGINEER OF RECORD. ANY UNUSED PORTION OF THIS QUANTITY SHALL BE CREDITED TO THE OWNER PER BID UNIT RATE.

TILT-UP CONCRETE WALLS

1. CONCRETE STRENGTH AT LIFTING SHALL BE AS DETERMINED BY LIFTING ANALYSIS, BUT SHALL NOT BE LESS THAN 75 PERCENT OF THE SPECIFIED 28 DAY STRENGTH.

2. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, REINFORCE THE WALL PANELS AS FOLLOWS:
   1. PROVIDE #5 AT 16" O.C. VERT AND #4 AT 16" O.C. HORIZONTAL EACH WAY IN CENTER OF PANEL.
   2. PROVIDE (1) #5 CONTINUOUS AT TOP, BOTTOM, AND SIDES OF ALL PANELS.
   3. PROVIDE (1) #5 X 5'-0" EACH FACE PLACED DIAGONALLY AT THE CORNERS OF ALL OPENINGS.

3. INSERTS, BRACES, AND OTHER ACCESSORIES REQUIRED TO LIFT AND ERECT THE WALL PANELS SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR. LIFTING ARRANGEMENT SHALL BE SO DEVISED AS TO PREVENT CRACKING OF THE CONCRETE DUE TO ERECTION STRESSES INCLUDING A 50 PERCENT INCREASE IN FORCES DUE TO IMPACT. CONTRACTOR SHALL PROVIDE ANY ADDITIONAL PANEL REINFORCING STEEL REQUIRED FOR LIFTING AND BRACING STRESSES.

4. HOT DIP GALVANIZE ALL ITEMS REQUIRED FOR WALL PANEL CONNECTIONS INCLUDING EMBEDDED ITEMS IN PANELS AND FOUNDATIONS. ALL GALVANIZED SURFACES AFFECTED BY WELDING SHALL BE TOUCHED UP WITH A COLD GALVANIZING COMPOUND.

5. WELDING OF EMBEDDED ITEMS SHALL BE EXECUTED IN SUCH A MANNER TO PREVENT CRACKING, OR SPALLING OF CONCRETE.

6. PROVIDE AND COORDINATE ALL CAST-IN-PLACE ELEMENTS SUCH AS FINISHES, REGLETS, REVEALS, RUSTICATIONS, CHAMFERS, SLEEVES, PLATES, CONDUITS, OPENINGS AND OTHER ACCESSORIES, AS REQUIRED WITH THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.

7. PROVIDE CHAMFER AT ALL EXPOSED EDGES, REF. TO ARCH'L FOR SIZE, 3/4" TYP U.N.O.

8. BRACE WALL PANELS UNTIL PERMANENT CONNECTIONS OF FLOOR AND ROOF HAVE BEEN CONNECTED. ROOF DECK SHALL BE COMPLETELY INSTALLED BEFORE BRACING IS REMOVED.

9. WALL PANELS RECEIVING BACKFILL WITH A DIFFERENCE IN ELEVATION OF MORE THAN 3'-0" FROM ONE FACE OF THE PANEL TO THE OTHER SHALL BE BRACED TO RESIST THE UNBALANCED LATERAL PRESSURES UNTIL THE BRACING FLOOR SLAB HAS BEEN PLACED AND HAS ATTAINED ITS 28 DAY STRENGTH.

STEEL JOISTS

1. ALL STEEL JOISTS AND JOIST GIRDERS SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC AND SJI SPECIFICATIONS FOR OPEN-WEB STEEL JOISTS, "K" SERIES, AND JOIST GIRDERS.

2. STEEL JOISTS SHALL BE WELDED TO SUPPORTING MEMBERS UNLESS NOTED OTHERWISE. STEEL JOISTS AND JOIST GIRDERS SHALL BE BOLTED TO SUPPORTS AT COLUMN LOCATIONS.

3. ALL HORIZONTAL BRIDGING SHALL BE WELDED OR BOLTED TO JOISTS PER SJI SPECIFICATIONS.

4. STEEL JOISTS, JOIST GIRDERS AND ACCESSORIES SHALL BE PAINTED WITH ONE SHOP COAT OF RUST INHIBITIVE PAINT.

5. STEEL JOISTS AND JOIST GIRDERS SHALL BE DESIGNED FOR A NET UPLIFT DUE TO WIND AS INDICATED IN THE DESIGN CRITERIA. NET UPLIFT VALUES WERE OBTAINED BY MULTIPLYING THE MINIMUM DEAD LOAD WITH A 0.6 FACTOR. PROVIDE BOTTOM CHORD BRACING AS REQUIRED FOR STRESS REVERSAL DUE TO UPLIFT.

6. SPECIAL JOISTS AND JOIST GIRDERS THAT REQUIRE SPECIFIC ORIENTATION SHALL BE TAGGED AT ONE END. DEFINE LOCATION OF TAGGED END ON ERECTION DRAWINGS.

7. DIAGONAL BRIDGING SHALL BE PROVIDED BETWEEN ADJACENT JOISTS WHENEVER BOTTOM CHORD HORIZONTAL BRIDGING IS DISCONTINUOUS.

8. HANGERS SUPPORTING MECHANICAL EQUIPMENT FROM JOIST CHORDS SHALL BE LOCATED WITHIN 3 INCHES OF JOIST PANEL POINTS OR JOIST SHALL BE REINFORCED PER JOIST REINFORCING DETAIL. MAX HANGER LOAD = 100 LBS UNLESS SHOWN ON STRUCTURAL PLANS.

STEEL METEAL DECK

A. ROOFS

   1. ALL METAL ROOF DECK SHALL BE 1 1/2" 22 GAGE TYPE "B" DECK AS MANUFACTURED BY VULCRAFT OR APPROVED EQUAL.

   2. ROOF DECK SHALL BE WELDED TO SUPPORTING MEMBERS AROUND PERIMETER EDGE AND INTERIOR SUPPORTS FOR DIAPHRAGM ACTION WITH 5/8" PUDDLE WELDS OR HILTI ENP FASTENERS IN A 36/7 PATTERN.

   3. SIDE LAP CONNECTIONS SHALL BE FASTENED WITH #10 TEK SCREWS AT (4) EQUAL SPACES PER SPAN.

   4. ALL METAL DECK PANELS SHALL SPAN ACROSS A MINIMUM OF FOUR JOISTS OR BEAMS.

   5. ALL METAL ROOF DECK SHALL RECIEVE ONE SHOP COAT OF RUST INHIBITIVE PAINT.

   6. WELDING OF LIGHTGAGE MATERIALS INDICATED ON DETAILS SHALL BE 1/8 INCH FILLET WELDS, UNLESS NOTED OTHERWISE. USE SPECIAL WELDING EQUIPMENT TO PREVENT BLOW-OUT OR BURNING THROUGH MATERIALS.

STEEL CONNECTIONS

1. ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AISC-LOAD AND RESISTANCE FACTOR DESIGN.

2. ALL CONNECTIONS, UNLESS INDICATED AS BEING COMPLETELY DESIGNED ON THE STRUCTURAL DRAWINGS, SHALL BE DESIGNED AND DETAILED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED. THE DESIGN AND DETAILING SHALL COMPLY WITH ALL APPLICABLE CODES AND SPECIFICATION SECTIONS.

3. UNLESS OTHERWISE NOTED, DETAILS INDICATED ON DRAWINGS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF CONNECTIONS. DETAILS INDICATED ON DRAWINGS ARE NOT INTENDED TO CONVEY COMPLETE CONNECTOR SIZES, PLATE SIZES, WELD SIZES, NUMBER OF BOLTS, OR ANY OTHER SPECIFIC INFORMATION THAT IS OBTAINED THROUGH DESIGNING OF AN INDIVIDUAL CONNECTION FOR A GIVEN SET OF LOADS. THESE DETAILS DO NOT SHOW ERECTION AIDS. PROVIDE ERECTION AIDS AS REQUIRED AND REMOVE THEM AFTER WORK IS COMPLETE.

4. SUBMIT CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS TO THE SER FOR REVIEW PRIOR TO REVIEW OF SHOP DRAWINGS. FOR BIDDING PURPOSES, WHERE NO MOMENT IS INDICATED ON DRAWINGS PROVIDE FULL MOMENT CAPACITY OF MEMBER (.9 Fy Z) AND WHERE NO VERTICAL SHEAR IS INDICATED ON DRAWINGS PROVIDE FULL SHEAR CAPACITY (.54 Fy d tw).

5. ALTERNATE CONNECTIONS TO THOSE SHOWN ON DRAWINGS WILL ONLY BE CONSIDERED ACCEPTABLE IF CONTRACTOR FORMALLY SUBMITS ALTERNATES AND THE SER APPROVES THESUBMITTAL.

6. FOR CONNECTION DESIGN AND DETAILING, SET CONNECTION WORK POINT AT INTERSECTION OF MEMBER CENTERLINES, U.N.O.

7. DESIGN ALL CONNECTIONS FOR FORCES INDICATED ON THE DRAWINGS. CONNECTION DESIGN FORCES INDICATED ON THE DRAWINGS ARE FACTORED LRFD U.N.O.

8. DESIGN OF MEMBERS IS BASED ON ASSUMPTION OF 3/4-INCH DIAMETER AND 1-INCH DIAMETER A325 BOLTS. USE NO MORE THAN TWO BOLT DIAMETERS, ONE GRADE PER DIAMETER, SKIP ONE SIZE BETWEEN DIAMETERS.

9. **BEAM CONNECTION DESIGN NOTES**

   A. REF. PLANS AND ELEVATIONS FOR BEAM REACTIONS AND MOMENTS THAT ARE LARGER THAN THE VALUE SHOWN IN SCHEDULES.
   B. DEVELOP THE LARGER OF THE BEAM SHEAR REACTION SCHEDULED, SHOWN ON PLANS OR SHOWN ON ELEVATIONS. DEVELOP THE LARGER OF THE MOMENT SCHEDULED, SHOWN ON PLANS OR SHOWN ON ELEVATIONS.
   C. DEVELOP THE LARGER OF THE AXIAL FORCE DENOTED AS "Ax=" SHOWN ON PLANS OR SHOWN ON ELEVATIONS. REF. STEEL BEAM LEGEND.
   D. WHERE NO AXIAL FORCE IS SHOWN ALL BEAM, CONNECTIONS SHALL BE DESIGNED FOR A MINIMUM AXIAL FORCE EQUAL TO 25% OF THE VERTICAL SHEAR REACTION ACTING CONCURRENTLY WITH THE VERTICAL BEAM SHEAR
   E. ALL BEAM REACTIONS, AXIAL FORCES AND MOMENTS ACT CONCURRENTLY. U.N.O., BEAM REACTIONS ACT IN GRAVITY DIRECTION WHILE AXIAL FORCES AND MOMENTS ARE TO BE CONSIDERED REVERSIBLE.
   F. AT A MINIMUM ALL BOLTED MOMENT AND AXIAL CONNECTION SHALL HAVE PRETENSIONED BOLTS IN STANDARD HOLES. BOLTED MOMENT CONNECTIONS AT CANTILEVERS AND BACKSPANS SHALL USE SLIP CRITICAL BOLTS.
   G. DO NOT USE OVERSIZED OR SLOTTED HOLES FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE SER.

10. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE STRUCTURAL WELDING CODE, ANSI/AWS D1.1, LATEST EDITION. ALL WELD SIZES SHALL BE THE LARGER OF THE SIZE REQUIRED BY CONNECTION FORCES, THE MINIMUM SIZE PER ANSI/AWS D1.1, OR 3/16 INCH MINIMUM FILLET WELD U.N.O. ANY WELD SIZES SHOWN ON THE DESIGN DRAWINGS ARE CONSIDERED EFFECTIVE WELD SIZES AND SHALL BE INCREASED IN ACCORDANCE WITH AWS AS REQUIRED BY GAPS OR SKEWS BETWEEN COMPONENTS.

11. USE RUNOFF TABS AT ALL BEVEL AND FULL PENETRATION WELDS. REMOVE RUNOFF TABS BY NEAT CUTS AFTER WELD IS COMPLETED. GRIND SMOOTH WHERE REQUIRED BY DETAIL.

12. WHERE REQUIRED BY DETAIL REMOVE WELD BACK UP BARS AND GRIND SMOOTH AFTER WELD IS COMPLETED.

13. DESIGN, DETAIL, FURNISH AND INSTALL STIFFENERS, CONTINUITY PLATES, DOUBLER PLATES, OR OTHER NECESSARY ADDITIONAL LOCAL STRENGTHENING MEASURES AS REQUIRED. MEMBER SIZES INDICATED ON THE DRAWINGS ARE BASED ON MEMBER BEHAVIOR AWAY FROM CONNECTIONS.

ALIGN
AUSTIN ARCHITECTS

2
BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD BLDG 3
LEANDER, TEXAS 78641

REVISION:
2 06/20/22 REV 1

STATE OF TEXAS
NICHOLAS H. ROHR
126390
LICENSED
PROFESSIONAL ENGINEER
08/09/24

08/09/2024
100% CDS-REV05-VE

GENERAL NOTES

SHEET: S001

JCAA
4100 Wadsworth Blvd.
Wheat Ridge, CO 80033
p 303.985.3260
TX F-14436
#21.134

PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR

STRUCTURAL SUBMITTALS

SUBMITTAL REVIEW

1. TEN WORKING DAYS PRIOR TO SUBMITTING SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT FOR STRUCTURAL ENGINEER' S REVIEW A SCHEDULE WHICH DETAILS THE ESTIMATED QUANTITY OF SHOP DRAWINGS AND THE DATE THE SHOP DRAWINGS WILL BE RECEIVED BY THE STRUCTURAL ENGINEER. THE STRUCTURAL ENGINEER SHALL HAVE THE OPPORTUNITY TO REVIEW THE PROPOSED SCHEDULE AND SUBMIT COMMENTS TO THE CONTRACTOR. THE FINAL SHOP DRAWING SCHEDULE SHALL BE DEVELOPED AND SUBMITTED TO THE STRUCTURAL ENGINEER. IN ACCORDANCE WITH THE SHOP DRAWING SCHEDULE, THE STRUCTURAL ENGINEER WILL RETURN THE SHOP DRAWING ITEMS WITHIN TEN WORKING DAYS AFTER HAVING RECEIVED THE REPRODUCIBLE SHOP DRAWING.

2. THE CONTRACTOR IS TO REVIEW EACH SUBMITTAL PRIOR TO FORWARDING TO ARCHITECT AND STRUCTURAL ENGINEER. THE CONTRACTOR IS TO STAMP EACH SUBMITTAL VERIFYING THAT THE FOLLOWING IS ADDRESSED:
   A. THE SHOP DRAWING IS REQUESTED.
   B. THE SHOP DRAWING IS BASED ON THE LATEST DESIGN.
   C. THE ARCHITECT' S AND STRUCTURAL ENGINEER' S COMMENTS FROM ANY PREVIOUS SUBMITTALS ARE ADDRESSED.
   D. THE WORK IS COORDINATED AMONG ALL CONSTRUCTION TRADES.
   E. REVISIONS FROM PREVIOUS SUBMITTALS ARE CLEARLY MARKED BY CIRCLING OR CLOUDS.
   F. SUBMITTAL IS COMPLETE.
   G. SUBMITTAL DOES NOT INCLUDE SUBSTITUTION REQUEST
   H. SUBMITTAL SHALL INCLUDE A STAMP INDICATING PROJECT NAME AND LOCATION, SUBMITTAL NUMBER, SPECIFICATION SECTION NUMBER.

3. THE STRUCTURAL ENGINEER SHALL RETURN, WITHOUT COMMENT, SUBMITTALS WHICH THE CONTRACTOR HAS NOT STAMPED OR WHICH DO NOT MEET THE ABOVE REQUIREMENTS. THE STRUCTURAL ENGINEER' S REVIEW OF SUBMITTALS SHALL BE FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. NO WORK SHALL BE STARTED WITHOUT SUCH REVIEW.

4. FOR COMPONENTS THAT REQUIRE ENGINEERING BY THE CONTRACTOR, PROVIDE A NOTE ON EACH SHOP DRAWING, WRITTEN AND SIGNED BY THE SUPPLIER' S ENGINEER, INDICATING THAT THE SHOP DRAWING IS IN CONFORMANCE WITH THE CALCULATIONS OF THE CONTRACTOR' S ENGINEER.

REQUIRED SUBMITTALS

1. THE FOLLOWING ITEMS REQUIRE SUBMITTALS FOR STRUCTURAL REVIEW AS OUTLINED IN THE SPECIFICATIONS:

   1. 03100 - CONCRETE FORMWORK.....CALC
   2. 03200 - CONCRETE REINFORCING LAYOUT
   3. 03300 - CONCRETE MIX DESIGNS
   4. 03300 - CONCRETE CONSTRUCTION JOINT LAYOUT
   5. 03400 - CONCRETE TILT UP WALL PANEL REINFORCING AND LIFTING AND BRACING
   6. 05100 - STRUCTURAL STEEL
   7. 05100 - STRUCTURAL STEEL CONNECTIONS.....CALC - S/S
   8. 05100 - STEEL STAIRS .....CALC - S/S
   9. 05200 - STEEL JOISTS
   10. 05300 - STEEL METAL DECK
   11. 05400 - COLD FORM STEEL .....CALC - S/S

   CALC = CALCULATIONS TO BE PROVIDED TO ENGINEER OF RECORD
   S/S=SIGNED AND SEALED BY ENGINEER IN PROJECT STATE

DELEGATED DESIGNS

1. THE ITEMS IN THIS SECTION REFER TO LOADS IMPOSED BY CONTRACTOR DESIGNED SYSTEMS, SPECIFICALLY:
   A. PRE-ENGINEERED CANOPIES
   B. METAL STAIRS
   C. ARCHITECTURAL ORNAMENTATION (FLAGPOLES, BANNERS, MASTS, ETC.)
2. WHERE CONTRACTOR LOADS IMPOSED DO NOT EXCEED AND/OR CONNECTION CONDITIONS DO NOT DIFFER FROM WHAT IS INDICATED IN THE STRUCTURAL DRAWINGS, SUBMIT FOR RECORD A LETTER SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE IN WHICH THE PROJECT IS LOCATED STATING THE FOLLOWING:

   A. "THE CONTRACTOR DESIGNED SYSTEM HAS BEEN DESIGNED TO IMPOSE LOADS ON THE BASE BUILDING STRUCTURE THAT ARE WITHIN THE LOAD LIMITS AND AT THE LOCATIONS INDICATED ON THE STRUCTURAL DRAWINGS."

3. WHERE CONTRACTOR LOADS IMPOSED FOR THE FOLLOWING ITEMS EXCEED AND/OR CONNECTION CONDITIONS DIFFER FROM WHAT IS SHOWN IN THE STRUCTURAL DRAWINGS, SUBMIT FOR APPROVAL TO SER LOADS IMPOSED ON THE PRIMARY STRUCTURAL FRAME DUE TO THE DEAD, LIVE, AND WIND/SEISMIC LOADS INDICATED ON THE CONTRACT DOCUMENTS.

4. SUBMITTAL SHALL LIST THE DESIGN LOADS USED AND BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE IN WHICH THE PROJECT IS LOCATED. SUBMITTAL SHALL INCLUDE LOCATION, MAGNITUDE AND DIRECTION OF UNFACTORED IMPOSED LOADS, GRAPHICALLY REPRESENTED IN THEIR APPROPRIATE LOCATIONS ON A COPY OF THE CONTRACT DOCUMENT STRUCTURAL FRAMING PLANS OR ELEVATIONS AS APPROPRIATE. DETAIL REFERENCES IN THE CONNECTIONS APPLICABLE AT EACH LOCATION SHALL BE NOTED ON THE SUBMITTAL DRAWINGS.

5. FOR EXERIOR WALL ASSEMBLIES, THE LOADS IMPOSED SUBMITTAL SHALL BE COMPREHENSIVE INDICATING THE LOAD IMPOSED ON THE BASE BUILDING STRUCTURE AND SHALL BE THE REACTION BASED ON THE ACTUAL LOADS OF THE ENTIRE ASSEMBLY, INCLUDING BUT NOT LIMITED TO GLAZING, CLADDING, METAL STUD BACKUP, AND MULLIONS.

6. A SUBSTITUTION REQUEST MAY BE REQUIRED WHERE CONTRACTOR LOADS IMPOSED EXCEED AND/OR CONNECTION CONDITIONS DIFFER FROM THE BASIS OF DESIGN.

POST-INSTALLED ANCHORS NOTES

1. EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES AS PROVIDED BY HILTI, INC. CONTACT HILTI AT (800) 879-8000 FOR PRODUCT RELATED QUESTIONS.

   A. **ANCHORAGE TO CONCRETE**

      1. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         a. HILTI HIT-HY 200 SAFE SET SYSTEM WITH THE HILTI HIT-Z ROD PER ICC ESR-3187
         b. HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM SYSTEM WITH HAS-E THREADED ROD PER ICC ESR-3187
         c. HILTI HIT-RE 500v3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM WITH HAS-E THREADED ROD PER ICC ESR-3814
         d. HILTI HIT-RE 500v3 SAFE SET SYSTEM WITH HILTI ROUGHENING TOOL (HIT RT) WITH HAS-E THREADED ROD PER ICC ESR-3814 FOR DIAMOND CORED HOLES
      2. MEDIUM DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         a. HILTI KWIK HUS EZ AND KWIK HUS EZ-I SCREW ANCHORS SAFE SET SYSTEM WITH HOLLOW DRILL BIT AND VACUUM SYSTEM PER ICC ESR-3027
         b. HILTI KWIK BOLT-TZ EXPANSION ANCHORS SAFE SET SYSTEM WITH HOLLOW DRILL BIT AND VACUUM SYSTEM AND SI-AT-A22 WITH ADAPTIVE TORQUE PER ICC ESR-1917
         c. HILTI KWIK BOLT 3 EXPANSION ANCHOR SAFE SET SYSTEM WITH HOLLOW DRILL BIT AND VACUUM SYSTEM AND SI-AT-A22 WITH ADAPTIVE TORQUE (UNCRACKED CONCRETE ONLY) PER ICC ESR-2302
      3. HEAVY DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         a. HILTI HDA UNDERCUT ANCHORS PER ICC ESR 1546
         b. HILTI HSL-3 EXPANSION ANCHORS PER ICC ESR 1545

   B. **REBAR DOWELING INTO CONCRETE**

      1. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         a. HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187
         b. HILTI HIT-HY 500v3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3814
         c. HILTI HIT-RE 500v3 SAFE SET SYSTEM WITH HILTI ROUGHENING TOOL (HIT RT) WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3814 IN DIAMOND CORED HOLESCC

   C. **ANCHORAGE TO SOLID GROUTED MASONRY**

      1. ADHESIVE ANCHORS USE:
         a. HILTI HIT-HY 270 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM SYSTEM PER ICC ESR-4143
         b. STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR
      2. MECHANICAL ANCHORS USE:
         a. HILTI KWIK BOLT-3 EXPANSION ANCHORS WITH SI-AT-A22 WITH ADAPTIVE TORQUE PER ICC ESR 1385

   D. **ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY (NOT ALLOWED UNLESS SPECIFICALLY DETAILS IN STRUCTURAL DRAWINGS)**

      1. ADHESIVE ANCHORS USE:
         a. HILTI HIT-HY 270 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM SYSTEM PER ICC ESR-4143.
         b. STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR
         c. THE APPROPRIATE SIZE SCREEN TUBE SHALL BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATION

2. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY HILTI OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.

3. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.

4. OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING THE HILTI PROFI SYSTEM.

5. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.

6. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

7. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY HILTI FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS.

COLD-FORMED STEEL NOTES

STRUCTURAL COLD-FORMED FRAMING NOTES

1. THE DESIGN, INSTALLATION, AND CONSTRUCTION OF COLD-FORMED CARBON OR LOW-ALLOY STEEL SHALL BE IN ACCORDANCE WITH THE "STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS, AMERICAN IRON AND STEEL INSTITUTE (AISI-GENERAL) AND AISI-NASPEC.

2. ALL FRAMING MEMBERS SHALL BE FORMED FROM CORROSION-RESISTANT STEEL, CORRESPONDING TO THE REQUIREMENTS OF ASTM A 653.

3. ALL COLD FORMED FRAMING SHALL BE DESIGNED BY A REGISTERED ENGINEER IN THE STATE OF TEXAS MEETING STRUCTURAL DESIGN CRITERIA ON THIS SHEET.

4. FABRICATION AND ERECTION OF MEMBERS SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

5. SECURE ALL CONTINUOUS TRACKS TO CONCRETE FOUNDATIONS WITH (2) HILTI X-U 27 P8 TH POWDER ACTUATED FASTENERS (OR APPROVED EQUAL) AT 16" O.C. AND TO STEEL FRAMING MEMBERS WITH(2) X-U 19 P8 TH POWDER ACTUATED FASTENERS (OR APPROVED EQUAL) AT 24" O.C. UNLESS NOTED OTHERWISE.

6. VERTICAL WALL STUDS ABOVE OPENINGS SHALL BE ANCHORED TO STEEL STRUCTURE AT EACH STUD LOCATION WITH LIGHT GAGE CLIP ANGLES CAPABLE OF SUSTAINING SELF WEIGHT OF WALL AND WIND LOAD PER WIND PRESSURE DIAGRAMS. FULL HEIGHT STUDS SHALL ALLOW FOR VERTICAL DEFLECTION OF STEEL STRUCTURE.

7. WELDED CONNECTIONS SHALL BE WIRE BRUSHED AND BRUSH-COATED WITH A GALVANIZED PAINT.

8. HORIZONTAL BRIDGING/STRAP BRACING SHALL BE ATTACHED TO LOAD BEARING AND EXTERIOR WALL STUDS AT 48" O.C. MAXIMUM.

9. ALL EXTERIOR WALL SIDING AND PLYWOOD DIAPHRAGMS SHALL BE SCREWED WITH A MINIMUM #8 SELF-DRILLING, SELF TAPPING WAFER HEAD OR BUGLE HEAD SCREW AT 6" O.C. EDGE AND 12" O.C. FIELD. SCREWS SHALL BE SUFFICIENT LENGTH TO ENSURE PENETRATION INTO THE STEEL STUD BY AT LEAST THREE FULL DIAMETER THREADS.

10. FASTENERS ALONG PANEL EDGES SHALL BE PLACED NO LESS THAN 3/8" FROM PANEL EDGES AND ARE TO BE SPACED AT 6" O.C. ALONG PANEL EDGES AND AT 12" O.C. AT ALL INTERMEDIATE SUPPORTS. ALL PANEL EDGES SHALL BE FULLY BLOCKED.

SPECIAL INSPECTIONS AND TESTING

1. THE OWNER SHALL EMPLOY THE SERVICES OF ONE OR MORE SPECIAL INSPECTORS TO PROVIDE SPECIAL INSPECTIONS DURING CONSTRUCTION FOR THE FOLLOWING:
   A. SHALLOW FOUNDATIONS:
      1. INSPECT SOILS BELOW FOOTINGS FOR ADEQUATE BEARING CAPACITY AND CONSISTENCY WITH GEOTECHNICAL REPORT.
      2. INSPECT REMOVAL OF UNSUITABLE MATERIAL AND PREPARATION OF SUBGRADE PRIOR TO PLACEMENT OF CONTROLLED FILL.
   B. CONTROLLED STRUCTURAL FILL:
      1. PERFORM SIEVE TESTS (ASTM D422 & D1140) AND MODIFIED PROCTOR TESTS (ASTM D1557) ON EACH SOURCE OF FILL MATERIAL.
      2. INSPECT PLACEMENT, LIFT THICKNESS & COMPACTION OF CONTROLLED FILL.
      3. TEST DENSITY OF EACH LIFT OF FILL BY NUCLEAR METHODS (ASTM D2922).
      4. VERIFY EXTENT AND SLOPE OF FILL PLACEMENT.
   C. STRUCTURAL STEEL:
      1. REVIEW SHOP FABRICATION AND QUALITY CONTROL PROCEDURES.
      2. REVIEW CERTIFIED MILL TEST REPORTS & IDENTIFICATION MARKINGS ON HSS SHAPES.
      3. INSPECT INSTALLATION AND TIGHTENING OF HIGH-STRENGTH BOLTS. VERIFY THAT SPLINES HAVE SEPARATED FROM TENSION CONTROL BOLTS. VERIFY PROPER TIGHTENING SEQUENCE.
      4. INSPECT STEEL FRAME FOR COMPLIANCE WITH STRUCTURAL DRAWINGS, INCLUDING BRACING, MEMBER CONFIGURATIONS AND CONNECTION DETAILS.
      5. INSPECT WELDS IN ACCORDANCE WITH AWS D1.1.
   D. POST-INSTALLED ANCHOR BOLTS:
      1. PERIODIC OR CONTINUOUS INSPECTIONS PER THE REQUIREMENTS OF THE ICC-ES REPORT FOR THE PRODUCT USED.

2. THE INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
3. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:
   A. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS. THE INSPECTOR MAY NOT ALTER, MODIFY, ENLARGE OR WAIVE ANY OF THE REQUIREMENTS OF THE DOCUMENTS.
   B. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE PROFESSIONAL OF RECORD, AND THE CONTRACTOR. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, SUBMIT A COMPLETE LIST OF ALL OUTSTANDING DISCREPANCIES ON A WEEKLY BASIS TO THE OWNER, THE BUILDING OFFICIAL, AND THE PROFESSIONAL OF RECORD UNTIL ALL CORRECTIONS HAVE BEEN COMPLETED.
   C. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.
4. STRUCTURAL OBSERVATION BY THE SEOR IS NOT REQUIRED.
5. WHERE INSPECTION REQUIREMENTS DUPLICATE THE REQUIREMENTS OF SPECIFIED QUALITY ASSURANCE TESTING, DUPLICATE INSPECTIONS SHALL NOT BE REQUIRED.

REQUIRED SPECIAL INSPECTIONS	
IN ADDITION TO THE REGULAR INSPECTIONS REQUIRED BY SECTION 110 OF THE 2015 INTERNATIONAL BUILDING CODE, THE FOLLOWING ITEMS ALSO REQUIRE SPECIAL INSPECTION IN ACCORDANCE WITH SECTION 1705	
ITEM	**SECTION**
STRUCTURAL STEEL	IBC 1705.2 / AISC 360 SECTION N5
FIELD WELDING	IBC 1705.5
STRUCTURAL CONCRETE	IBC 1705.3 / ACI 318 17.8, 26.13
ANCHOR BOLTS, POST INSTALELD ANCHORS IN CONC	ACI 318 17.8
SOILS COMPLIANCE PRIOR TO FOUNDATION INSPECTION	IBC 1705.6 / PER GEOTECH REQUIREMENTS

1. THE ARCHITECT IS THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE (RDPIRC) FOR THIS PROJECT. SUBMIT ALL INSPECTION REPORTS DIRECTLY TO THE RDPIRC FOR REVIEW. INDIVIDUAL INSPECTION REPORTS SHALL INDICATE IF WORK WAS COMPLETED IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE GC FOR CORRECTION. IF NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND RDPIRC PRIOR TO COMPLETION OF THAT PHASE OF WORK.
2. IN ORDER TO COMPLY WITH THE BUILDING CODE REQUIREMENTS, THE SPECIAL INSPECTORS AND TESTING TECHNICIANS MAY NOT BE EMPLOYED BY THE GENERAL CONTRACTOR (GC), SUBCONTRACTORS OR MATERIAL SUPPLIERS. IN THE CASE OF AN OWNER / CONTRACTOR, THE BUILDING OFFICIAL SHALL BE CONSULTED.
3. THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS IDENTIFIED IN SECTION 110 OF THE IBC 2015. CONSTRUCTION SHALL REMAIN ACCESSIBLE AND EXPOSED FOR INSPECTION PURPOSES UNTIL APPROVED.
4. SPECIAL INSPECTIONS REPORT REQUIREMENTS 1704.2.4: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED 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 WORK. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON PRIOR TO THE START OF WORK BY THE APPLICANT AND THE BUILDING OFFICIAL.

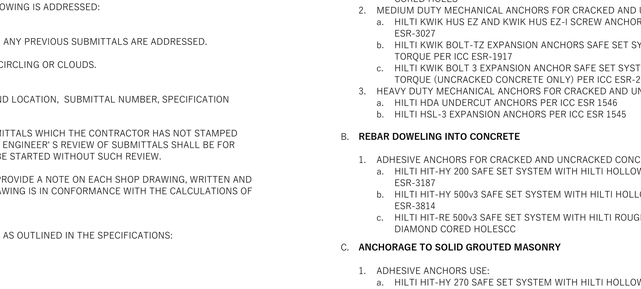
WIND LOADING DIAGRAMS

COMPONENT & CLADDING DESIGN WIND PRESSURES (PSF)			
ROOF			
ZONE	10 SF	50 SF	100 SF
1 (+)	16	16	16
2, 3 (+)	26.4	23.7	22.5
1	-28.9	-27.9	-26.4
2, 3	-48.4	-36.5	-31.3
2o	-62.0	-47.0	-41.0
WALLS			
ZONE	10 SF	50 SF	200 SF
4,5 (+)	26.4	23.7	21.4
4	-28.6	-25.9	-23.6
5	-35.2	-29.8	-25.1
PARAPET			
ZONE	10 SF	50 SF	100 SF
4P(+/-)	78.4	63	56.4
5P(+/-)	78.4	63	56.4

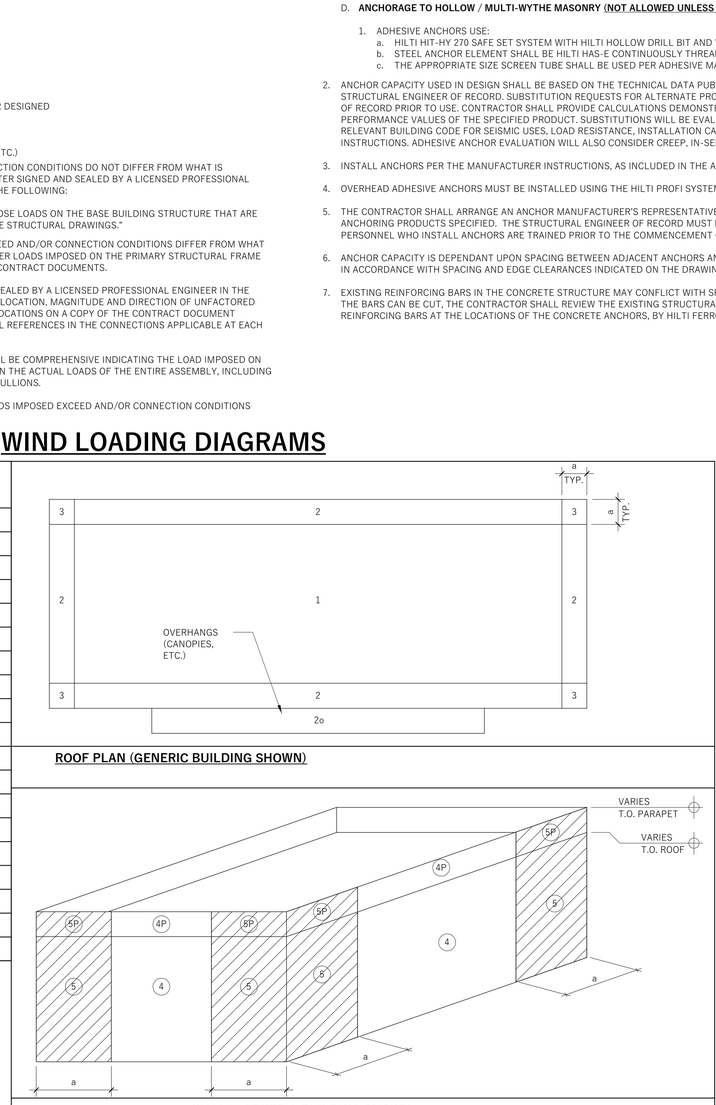
NOTES:

1. TABLE PRESSURES ARE FOR THE SQUARE FOOT (SF) TRIBUTARY AREA SHOWN. FOR OTHER TRIBUTARY AREAS, LINEARLY INTERPOLATE BETWEEN VALUES SHOWN ABOVE.
2. POSITIVE PRESSURES ACT TOWARD THE BUILDING. NEGATIVE PRESSURES ACT AWAY FROM THE BUILDING.
3. REF. DIAGRAMS FOR ZONE LOCATIONS.
4. ALL PRESSURES SHOWN ARE GROSS ULTIMATE PRESSURES.

a= 6'-3"



ROOF PLAN (GENERIC BUILDING SHOWN)



WALLS (GENERIC BUILDING SHOWN)

JCAA
4100 Wadsworth Blvd.
Wheat Ridge, CO 80033
p 303.985.3260
TX F-14436

#21134

ALIGN
AUSTIN ARCHITECTS

2

BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD BLDG 3
LEANDER, TEXAS 78641

REVISION:
2 06/20/22 REV 1

STATE OF TEXAS
NICHOLAS H. ROHR
126390
LICENSED
PROFESSIONAL ENGINEER
08/09/24

08/09/2024
100% CDS-REV05-VE

GENERAL NOTES, SCHEDULES AND DIAGRAMS

SHEET: S002

PROJECT NO:	21099
DRAWN BY:	BC
DATE:	01/28/2022
PROJECT MGR:	NHR

A

A.B.	ANCHOR BOLT
AC	ALASKA CEDAR (WOOD)
ABT	ABOUT
ABV	ABOVE
ADD'L	ADDITIONAL
ADJ.	ADJACENT
AISC	AMER. INST. OF STEEL CONSTR.
ALT.	ALTERNATE
AMP.	AMPLITUDE
AGGR.	AGGREGATE
APPROX.	APPROXIMATE(LY)
ARCH.	ARCHITECT(URE)(URAL)

B

B2B	BACK-TO-BACK
BD	BOARD
BF	BRACED FRAME
B.F.	BOUNDARY FASTENER
B.L.	BOTTOM LOWER
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
B.N.	BOUNDARY NAIL(ING)
BOT.	BOTTOM
B.O.	BOTTOM OF
B.O.C.	BOTTOM OF CONCRETE
B.O.F.	BOTTOM OF FOOTING
B.O.S.	BOTTOM OF STEEL
BRG	BEARING
BS	BOUNDARY SCREWS
BSMT	BASEMENT
B.U.	BOTTOM UPPER
BTNN	BETWEEN

C

C	CHANNEL (STEEL SHAPE)
CFS	COLD-FORMED STEEL
CIDH	CAST-IN-DRILLED HOLE
C.I.P.	CAST - IN-PLACE
C.J.	CONTROL JOINT
C.J.P.	COMPLETE JOINT PENETRATION (GROOVE WELD)
CLG	CEILING
CLR	CLEAR, CLEARANCE
C.M.U.	CONCRETE MASONRY UNIT
COL.	COLUMN
COLL.	COLLECTOR
CONC.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCT (ING)(ION)
CONT.	CONTINUOUS
CONTR.	CONTRACT(OR)
CRVD.	CURVED
C.P.	COMPLETE PENETRATION (WELD)
CST.	CONSTRUCTION
CTR	CENTER, CENTRAL
CTSK	COUNTERSINK
CWT	COUNTERWEIGHT
CVN	CHARPY V-NOTCH

D

d	PENNY HEIGHT (NAIL)
D2L	NELSON WELDED REBAR
D.B.A.	DEFORMED BAR ANCHOR
DBL	DOUBLE
DEMO.	DEMOLITION
DTL	DETAIL
DF	DOUGLAS FIR (WOOD)
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DISCONT.	DISCONTINUOUS
DN	DOWN
DO	DITTO
DP	DEEP
DSA	CA DIV. OF STATE ARCH.
DWG	DRAWING

E

(E)	EXISTING
EA.	EACH
E.F.	EACH FACE
E.G.	SUCH AS
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEVR	ELEVATOR
E.J.	EXPANSION JOINT
EMBED.	EMBEDMENT
E.N.	EDGE NAIL(ING)
E.O.	EDGE OF
E.O.S.	EDGE OF SLAB
E.P.S.	EXPANDED POLYSTYRENE
EQ.	EQUAL (EQUIVALENT)
EQ. SP.	EQUALLY SPACED
EQUIP.	EQUIPMENT
E.S.	EACH SIDE
E.W.	EACH WAY
E.W.E.F.	EACH WAY, EACH FACE
E/W	EAST/WEST
EXP.	EXPANSION
EXT.	EXTERIOR

F

FB	FLAT BAR (STEEL SHAPE)
F.D.	FLOOR DRAIN
FDN	FOUNDATION
F.F.	FAR FACE OR FIELD FASTENER
FIN.	FINISH(ED)
FLG.	FLANGE
FLR	FLOOR
F.N.	FIELD NAIL
F.O.	FACE OF
F.O.C.	FACE OF CONCRETE
F.O.S.	FACE OF STUD OR FACE OF STEEL
F.P.	FULL PENETRATION (WELD)
FPRF.	FIREPROOFING
FRMG	FRAMING
FS	FIELD SCREWS
FT	FEET OR FOOT
FTG.	FOOTING

G

ga	GAUGE
GALV.	GALVANIZED
GAR.	GARAGE
G.B.	GRADE BEAM
G.C.	GENERAL CONTRACTOR
GEN.	GENERAL
GLB	GLUED LAMINATED TIMBER BEAM
GLC	GLUED LAMINATED TIMBER COLUMN
GP	GEORGIA PACIFIC
GR.	GRADE
GYP.	GYPSUM

H

(H), HORIZ.	HORIZONTAL
H.C.T.	HOLLOW CLAY TILE
HD	HOLDOWN
H.D.G.	HOT-DIP GALVANIZED
HDPE	HIGH-DENSITY POLYETHYLENE
HDWE	HARDWARE
HDR	HEADER
HGR	HANGER
HK	HOOK
H.S.	HEADED STUD OR HIGH STRENGTH (BOLT)
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT

I

I.D.	INSIDE DIAMETER
I.E.	THAT IS, SPECIFICALLY
I.F.	INSIDE FACE
IN.	INCH
INCL.	INCLUDED
INFO.	INFORMATION
INSP.	INSPECTION
INSUL.	INSULATION
INT.	INTERIOR
IRREG.	IRREGULAR

J

JCT.	JUNCTION
JST	JOIST
JT, JNT	JOINT

K

K	KIP (1,000 POUNDS)
K.D.	KILN DRIED
KSI	KIPS PER SQUARE INCH
KSF	KIPS PER SQUARE FOOT

L

L	ANGLE (STEEL SHAPE)
LB.	POUND
LGS	LIGHT-GAUGE STEEL
L.L.B.B.	LONG LEGS BACK TO BACK
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
LMBR	LUMBER
L.S.	LONG SLOTTED (HOLE)
LSL	LAMINATED STRAND LUMBER
LSLH	LONG SLOTTED (HOLE) W/ LONG AXIS HORIZ.
LSLT.	LONG SLOTTED (HOLE)
LSLV	LONG SLOTTED (HOLE) W/ LONG AXIS VERT.
LTWT	LIGHTWEIGHT
LVL	LEVEL OR LAMINATED VENEER LUMBER
LWC	LIGHTWEIGHT CONCRETE

M

MANUF.	MANUFACTURER
MATL	MATERIAL
MAX.	MAXIMUM (NO MORE THAN; AT MOST)
M.B.	MACHINE BOLT
MC	MISCELLANEOUS CHANNEL (STEEL SHAPE)
MECH.	MECHANICAL
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MEZZ.	MEZZANINE
MF	MOMENT FRAME
MFR	MANUFACTURE(R)
M.I.	MALLEABLE IRON
MIN.	MINIMUM (NO LESS THAN; AT LEAST)
MISC.	MISCELLANEOUS
MOD.	MODIF(Y)(ICATION)
MT	MISCELLANEOUS TEE (STEEL SHAPE)
MTL	METAL

N

N	NORTH
(N)	NEW
N/A	NOT APPLICABLE
N.F.	NEAR FACE
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N&FS	NEAR & FAR SIDE
N.T.S.	NOT TO SCALE
NR	NEAR
N.S.	NEAR SIDE
N/S	NORTH/SOUTH
N.W.	NORMAL WEIGHT
NWC	NORMAL WEIGHT CONCRETE

O

O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
OG	OPEN GRAIN (REDWOOD)
O.H.	OPPOSITE HAND
OP'G	OPENING
OPNG	OPENING
OPP.	OPPOSITE
ORIG.	ORIGINAL
O.S.	OVERSIZED (HOLE)

P

P.A.F.	POWDER ACTUATED FASTENER(S)
PC, PCS	PIECE, PIECES
PCF	POUNDS PER CUBIC FOOT
PCI	POUNDS PER CUBIC INCH
P.D.	POWDER DRIVEN
P.D.F.	POWDER DRIVEN FASTENER(S)
P.E.F.	(PLYWOOD) PANEL EDGE FASTENER
P.E.N.	(PLYWOOD) PANEL EDGE NAILING
PERF.	PERFORATED
PIPE-X	EXTRA STRONG PIPE
PIPE-XX	DOUBLE EXTRA STRONG PIPE
P.J.P.	PARTIAL JOINT PENETRATION (GROOVE WELD)
PL	PLATE
P.L.	PROPERTY LINE
PLWD.	PLYWOOD
PLYW'D	PLYWOOD
P.P.	PARTIAL PENETRATION (WELD)
PREFAB.	PREFABRICATE(D)
PRELIM.	PRELIMINARY
PRESTR.	PRESTRESSED
PREV.	PREVIOUSILY)
PROJ.	PROJECT (ED) (ING) (ION)
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	POINT
P.T.	POST-TENSION(ED)(ING)

R

(R)	REUSED
RAD.	RADIUS
RB	ROUND BAR (STEEL SHAPE)
R.C.	REINFORCED CONCRETE
REINF.	REINFORC(ED)(ING)
REBAR	REINFORCING BAR
REF.	REFERENCE
REQ'D	REQUIRED
RET.	RETAINING
REV.	REVIS(E)(ION)
RF	ROOF
RFG	ROOFING
RND	ROUND
R.O.	ROUGH OPENING
RW	REDWOOD

S

SAD	REF. ARCHITECTURAL DRAWINGS
S.B.	SOLID BLOCKING
S.C.D.	REF. CIVIL DRAWINGS
SCHED.	SCHEDULE
SDS	SIMPSON STRONG-DRIVE SCREW, INSTALLED PER ICC ESR-2236
SECT.	SECTION
S.E.D.	REF. ELECTRICAL DRAWINGS
SEOR	STRUCTURAL ENGINEER OF RECORD
SEP.	SEPARATION
SFHCS	SOCKET FLAT HEAD CAP SCREW
SHT	SHEET
SHTG	SHEATHING
SIM.	SIMILAR
SJI	STEEL JOIST INSTITUTE
S.L.B.B.	SHORT LEGS BACK TO BACK
S.L.D.	REF. LANDSCAPE DRAWINGS
SLRS	SEISMIC LOAD RESISTING SYSTEM
S.M.D.	REF. MECHANICAL DRAWINGS
SMS	SHEET METAL SCREW
S.O.G.	SLAB ON GRADE
SP	SOUTHERN PINE (WOOD)
SPC.	SPAC (ES)(ING)
S.P.D.	REF. PLUMBING DRAWINGS
SPEC(S).	SPECIFICATION(S)
SQ.	SQUARE
S.S.	STAINLESS STEEL
S.S.	SHORT SLOTTED (HOLE)
SSLT.	SHORT SLOTTED (HOLE)
S.T.	SUCH THAT
STAG.	STAGGER(ED)
STAGG.	STAGGER(ED)
STD	STANDARD
STFNR.	STIFFENER
STL	STEEL
STRUC.	STRUCTURAL
SUP.	SUPPORT
SUSP.	SUSPENDED
SYM.,SYMM.	SYMMETRICAL

T

T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
T.B.D.	TO BE DETERMINED
TD	TIE DOWN
THD	THREADED
THK	THICK(NESS)
THRD	THREADED
THRU	THROUGH
T.L.	TOP LOWER
T.N.	TOE NAIL
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE ELEVATION
T.O.F.	TOP OF FOOTING
T.O.S.	TOP OF STEEL
TS	TUBE STEEL
T.U.	TOP UPPER
TYP.	TYPICAL

U

U.O.N.	UNLESS OTHERWISE NOTED
URM	UNREINFORCED MASONRY

V

(V),	VERT.VERTICAL
VOL.	VOLUME
V.I.F.	VERIFY IN FIELD
V.W.M.	VERIFY W/ MANUF.

W

W/	WITH
WD	WOOD
WF	WIDE FLANGE
W.H.	WEB HORIZONTAL
W/IN	WITH IN
WKG	WORKING
W.O.	WHERE OCCURS
W/O	WITHOUT
W.P.	WORK POINT
WPFG	WATERPROOFING
WPJ	WEAKENED PLANE JOINT
WT	WIDE-FLANGE TEE (STEEL SHAPE)
WT.	WEIGHT
W.W.F.	WELDED WIRE FABRIC

X

XS	EXTRA STRONG (PIPE)
XXS DOUBLE	EXTRA STRONG (PIPE)

SPECIAL CHARACTERS

&	AND
∠	ANGLE (MEASUREMENT)
@	AT
C	CENTER LINE
Ø	DIAMETER OR ROUND
//	PARALLEL
⊥	PERPENDICULAR
P L	PROPERTY LINE
#	POUND OR NUMBER
±	TOLERANCE

OTHER ABBREVIATIONS (PRODUCT ABBREVIATIONS):

FOR POWDER-DRIVEN FASTENERS AND CONCRETE ANCHOR ABBREVIATIONS, REF. HILTI NORTH AMERICAN PRODUCT TECHNICAL GUIDE (available at www.us.hilti.com) AND SIMPSON STRONG-TIE ANCHOR SYSTEMS CATALOG (available at www.strongtie.com).

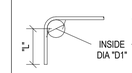
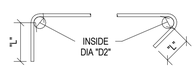
FOR LIGHT-GAUGE STEEL CONNECTOR ABBREVIATIONS, REF. STEEL NETHORK LIGHT STEEL FRAMING CONNECTION CATALOG (available at www.steelnetwork.com) AND SIMPSON STRONG-TIE COLD-FORMED STEEL CONNECTORS CATALOG (available at www.strongtie.com).

REBAR OFFSET & LAP SPLICE REQUIREMENTS

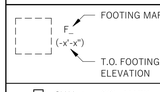
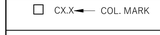
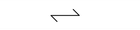
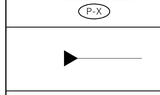
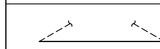
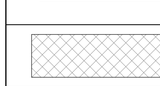
CONCRETE STRENGTH	f'c = 3000 PSI				f'c = 4000 PSI			
CLASS OF LAP SPLICE	CLASS "A"		CLASS "B"		CLASS "A"		CLASS "B"	
BAR SIZE	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	1'-10"	1'-5"	2'-4"	1'-10"	1'-7"	1'-3"	2'-1"	1'-7"
#4	2'-5"	1'-10"	3'-1"	2'-5"	2'-1"	1'-7"	2'-9"	2'-1"
#5	3'-0"	2'-4"	3'-11"	3'-0"	2'-7"	2'-0"	3'-5"	2'-7"
#6	3'-7"	2'-9"	4'-8"	3'-7"	3'-1"	2'-5"	4'-1"	3'-1"
#7	5'-3"	4'-0"	6'-9"	5'-2"	4'-6"	3'-6"	5'-11"	4'-6"
#8	6'-0"	4'-7"	7'-9"	6'-0"	5'-2"	4'-0"	6'-9"	5'-2"
#9	6'-9"	5'-2"	8'-9"	6'-9"	5'-10"	4'-6"	7'-7"	5'-10"
#10	7'-7"	5'-10"	9'-10"	7'-7"	6'-7"	5'-1"	8'-6"	6'-7"
#11	8'-5"	6'-6"	10'-11"	8'-5"	7'-3"	5'-7"	9'-5"	7'-3"

NOTES:
1. UNLESS INDICATED OTHERWISE, USE CLASS "B" LAP SPLICE LENGTHS, MULTIPLIED BY THE APPLICABLE FACTORS(S) LISTED BELOW.
2. WHERE THE CLEAR SPACING OF BARS BEING SPLICED IS LESS THAN 2 BAR DIAMETERS, INCREASE THE LAP LENGTH BY 50%.
3. WHERE THE BAR COVER IS LESS THAN OR EQUAL TO THE BAR DIAMETER, INCREASE THE LAP LENGTH BY 50%
4. A CLASS "A" SPLICE MAY BE USED ONLY WHERE NOTED ON THE DRAWINGS. WHERE DEVELOPMENT LENGTH (Ld) IS REQUIRED OR CALLED OUT ON THE DRAWINGS, USE CLASS "A" LAP SPLICE LENGTH.
5. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
6. LAP SPLICE LENGTHS IN TABLE ARE FOR NORMAL WEIGHT CONCRETE. WHERE LIGHTWEIGHT AGGREGATE CONCRETE IS USED, INCREASE LAP SPLICE LENGTH BY 30%
7. SPLICES OF HORIZONTAL REINFORCEMENT IN WALLS SHALL BE STAGGERED.
8. SPLICES OF HORIZONTAL REINFORCEMENT IN WALLS CONTAINING TWO CURTAINS OF REINFORCEMENT SHALL NOT OCCUR IN THE SAME LOCATION.

REBAR STANDARD HOOKS & BENDS

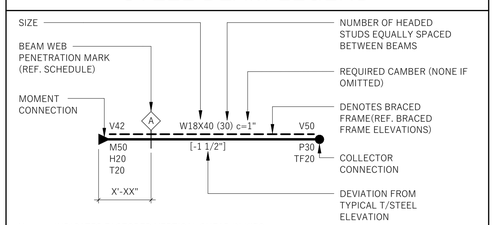
	MAIN REINFORCEMENT			STIRRUPS & TIES		
						
	90° HOOK		180° HOOK	90° HOOK		135° HOOK
BAR SIZE	90° HOOK LENGTH "L"	INSIDE DIA. "D1"	180° HOOK LENGTH "L"	90° HOOK LENGTH "L"	INSIDE DIA. "D2"	135° HOOK LENGTH "L"
#3	4 1/2"	2 1/4"	2 1/2"	3"	1 1/2"	3"
#4	6"	3"	2 1/2"	3"	2"	3"
#5	7 1/2"	3 3/4"	2 1/2"	3 3/4"	2 1/2"	3 3/4"
#6	9"	4 1/2"	3"	9"	4 1/2"	4 1/2"
#7	10 1/2"	5 1/4"	3 1/2"	10 1/2"	5 1/4"	5 1/4"
#8	1'-0"	6"	4"	1'-0"	6"	6"
#9	1'-1 1/2"	9 1/2"	4 1/2"	-	-	-
#10	1'-3 1/4"	10 3/4"	5 1/4"	-	-	-
#11	1'-5"	1'-0"	5 3/4"	-	-	-

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	SPREAD FOOTING, REF SCHEDULE ON S101
	STEEL COLUMN, REF. SCHEDULE ON S101
	SLAB OR DECK SPAN DIRECTION
	INDICATES TILT WALL REF. SHT. S101 FOR TILT WALL PLANS
	INDICATES COMPLETE PENETRATION MOMENT CONNECTIONS
	INDICATES VERTICAL BRACE ABOVE/ BELOW
	INDICATES RTU ZONE, REF. PLAN NOTE FOR ADD. LOADING INFORMATION

NOTE(S):
1. ITEMS IN LEGEND MAY NOT APPEAR ON ALL PLANS

STEEL BEAM LEGEND



V INDICATES FACTORED VERTICAL SHEAR IN KIPS
M INDICATES FACTORED END MOMENT IN KIP-FEET
H INDICATES FACTORED HORIZONTAL SHEAR FORCE IN KIPS
T INDICATES TORSIONAL MOMENT IN KIP-FEET
P INDICATES FACTORED MEMBER AXIAL FORCE IN KIPS
TF INDICATES FACTORED AXIAL FORCE TRANSFERRED THROUGH THE CONNECTION JOINT IF DIFFERENT THAN P IN KIPS

ALIGN
AUSTIN ARCHITECTS

BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD BLDG 3
LEANDER, TEXAS 78641

REVISION:
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08/09/24

08/09/2024
100% CDS-REVIDS-VE

STRUCTURAL LEGENDS AND SCHEDULES

SHEET: S003

PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR

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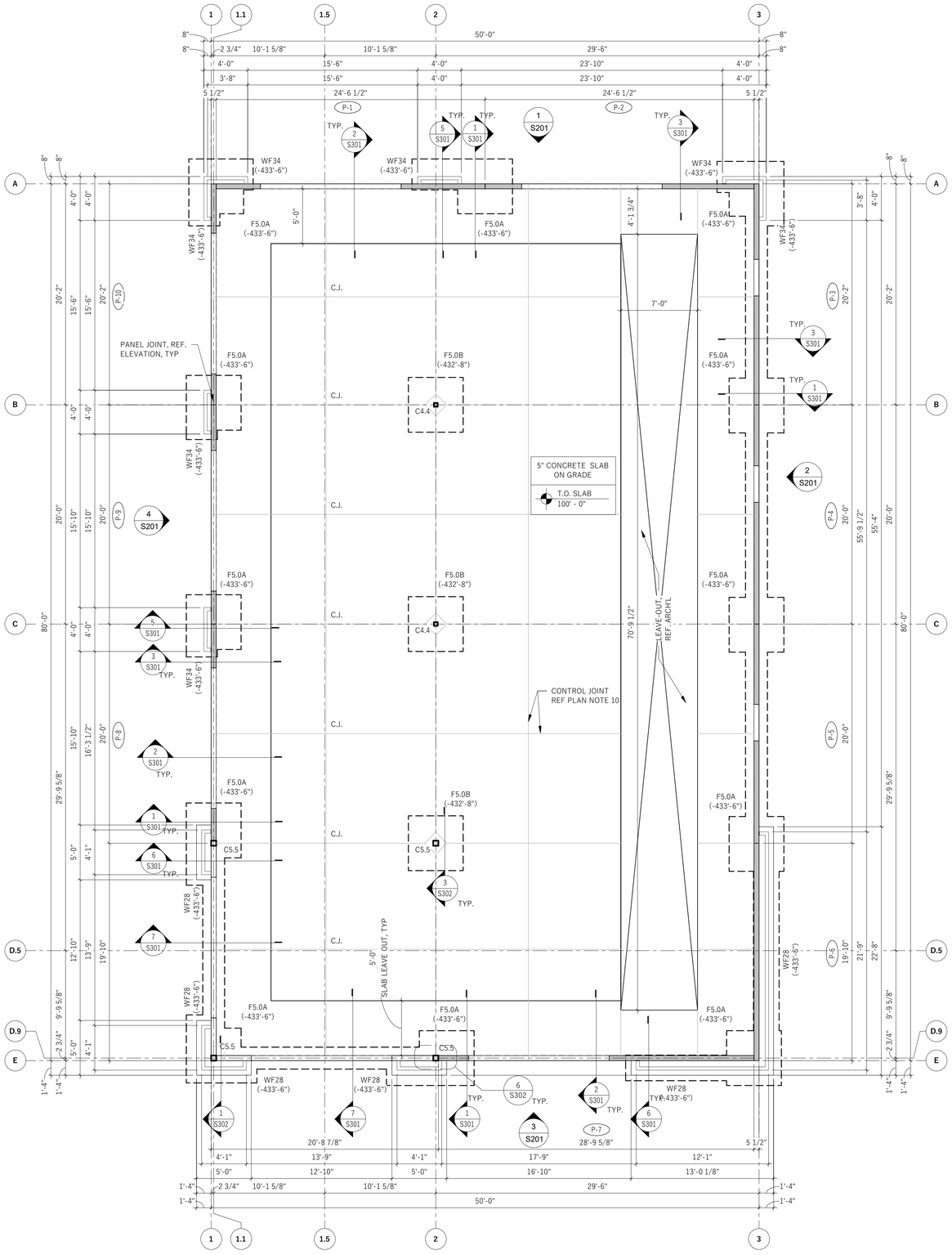

FOUNDATION PLAN

1 S101 — NORTH

3/16" = 1'-0"

SPREAD FOOTING SCHEDULE

MARK	FOOTING DIMENSIONS			REINFORCING			
	WIDTH	LENGTH	THICKNESS	BOTTOM BARS - LONG	BOTTOM BARS - SHORT	TOP BARS - LONG	TOP BARS - SHORT
F5.0A	5'-0"	5'-0"	1'-0"	(6) #5 BARS	(6) #5 BARS		
F5.0B	5'-0"	5'-0"	2'-6"	(6) #5 BARS	(6) #5 BARS	(6) #5 BARS	(6) #5 BARS

COLUMN AND BASE PLATE SCHEDULE

MARK	COLUMN SIZE	BASE PLATE						
		BASE PLATE TYPE	BASE PLATE DIMENSIONS					ANCHOR BOLTS
			L	D	A	B	t	
C4.4	HSS4X4X1/4	BP-A	10"	10"	3 1/2"	3 1/2"	3/4"	(4) 3/4" DIA. X 16" EMBEDMENT
C5.5	HSS5 1/2X 1/2X3/8	BP-A	11 1/2"	11 1/2"	4 1/4"	4 1/4"	3/4"	(4) 3/4" DIA. X 16" EMBEDMENT

WALL FOOTING SCHEDULE

MARK	WIDTH	THICKNESS	REINFORCING
WF24	2'-0"	1'-0"	(3) #5 BARS CONT. WITH #5 BARS AT 12" O.C. TRAVERSE
WF28	2'-4"	1'-0"	(3) #5 BARS CONT. WITH #5 BARS AT 12" O.C. TRAVERSE
WF34	2'-10"	1'-0"	(3) #5 BARS CONT. WITH #5 BARS AT 12" O.C. TRAVERSE

FOUNDATION SHEET NOTES

1	REF. S0 SERIES FOR GENERAL NOTES, DESIGN CRITERIA.
2	REF. S3 SERIES FOR FOUNDATION TYPICAL DETAILS.
3	DO NOT SCALE WALL LENGTH ON PLAN. REF. ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
4	REFERENCE ELEVATION - TOP OF CONCRETE SLAB ELEVATION = EL. 100'-0". SEE CIVIL FOR N.A.V.D.
5	WALL FOOTINGS (U.N.O.) = WF18, T.O. FOOTING = 98'-6"
6	SLAB-ON-GRADE SHALL BE 5" CONCRETE SLAB REINFORCED WITH #4 BARS AT 16" ON CENTER LOCATED 2" FROM TOP OF SLAB. PLACE 10 MIL VAPOR BARRIER IMMEDIATELY BELOW THE SLAB, OVER A 4 INCH (MIN) THICK BASE COURSE LAYER (REF GEOTECH) OVER THE PREPARED FILL AND SUBGRADE. REF. SHEET S001, AND THE GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION AND SLAB-ON-GRADE NOTES.
7	REF. ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL SLOPED SLABS AND SLAB DEPRESSIONS.
8	SLOPE SLAB AS REQUIRED WHILE MAINTAINING UNIFORM SLAB THICKNESS. SEE ARCH FOR SLAB SLOPES.
9	SEE APPROVED FINAL GRADING PLAN FOR GRADING INFORMATION. CONTRACTOR SHALL VERIFY THAT BOTTOM OF FOOTING ELEVATIONS MEET THE MINIMUM BEARING REQUIREMENTS GIVEN IN THE SOILS REPORT.
10	LOCATE CONTROL JOINTS AT A MAXIMUM OF 15'-0" O.C. REF. DETAIL 1/S303 AT CONTROL JOINTS OR CONSTRUCTION JOINTS AT CONTRACTOR'S OPTION. DO NOT LOCATE CONTROL JOINTS ABOVE GRADE BEAMS.
11	REFERENCE ARCHITECTURAL AND PLUMBING DRAWINGS FOR ALL CONCRETE SLAB LEAVE OUTS, FLOOR DRAIN, AND SLAB PENETRATION LOCATIONS. REFER TO 8/S303
12	VERIFY ALL OPENING DIMENSIONS AND LOCATIONS WITH ARCHITECTURAL DRAWINGS.
13	REFERENCE CIVIL DRAWINGS FOR ALL EXTERIOR SIDEWALKS, RAMPS, AND DOOR STOOPS.

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BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD BLDG 3
LEANDER, TEXAS 78641

REVISION:
2 06/20/22 REV 1

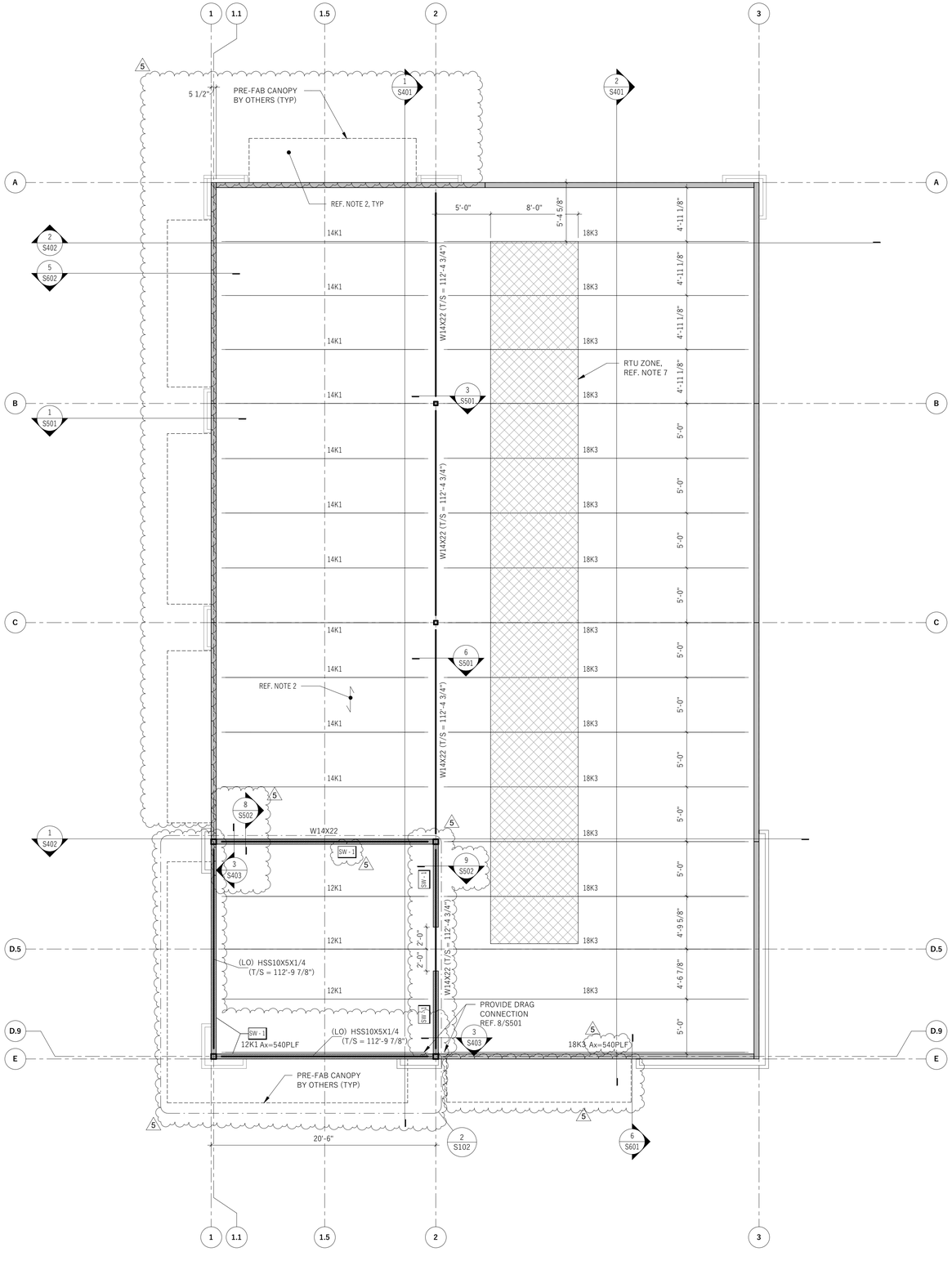
STATE OF TEXAS
NICHOLAS H. ROHR
126390
LICENSED
PROFESSIONAL ENGINEER
08/09/24

08/09/2024
100% CDS-REV05-VE

FOUNDATION PLAN

SHEET: S101

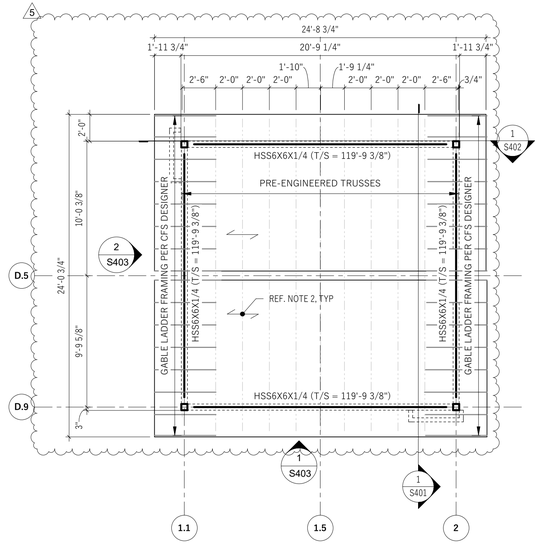
PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR



1 S102 NORTH

ROOF FRAMING PLAN

3/16" = 1'-0"



2 S102

HIGH ROOF FRAMING PLAN

3/16" = 1'-0"

5

SHEARWALL SCHEDULE - HIGH ROOF

SHEAR WALL MARK	SHEARWALL COMPONENTS			HOLDOWNS		DRAG STRUT/ TENSION TIE	SILL TO TOP PLATE BELOW
	SHEATHING	EDGE ATTACHMENT	LATERAL TRANSFER PLATE CONNECTORS	HOLDOWNS	END POST		
1	15/32" PLYWOOD	FASTENERS AT 6" O.C.	-	S/LTT20-33	(2) STUDS	-	PAF'S TO STEEL AT 8" O.C.

AT CFS DESIGNER OPTION - DESIGN FOR 276 PLF SHEAR TYPICAL IN LIEU OF SHEARWALL DESIGN

ROOF FRAMING SHEET NOTES

1. DESIGN LIVE LOAD: SEE GENERAL NOTES
2. ROOF CONSTRUCTION: VULCRAFT 1.5 B 22 DECK OVER STEEL METAL JOISTS, REF. GENERAL NOTES
3. BOTTOM OF STEEL DECK NOTED ON PLAN. REFERENCE ELEVATION = FINISHED FLOOR EL. 100'-0"
4. SEE S0 SERIES FOR GENERAL STRUCTURAL NOTES.
5. COORDINATE SCUPPER OPENINGS & TILT PANEL PARAPETS WITH ARCITECTURAL DRAWINGS
6. JOIST MANUFACTURER SHALL DESIGN BRIDGING UPLIFT PER WIND PRESSURE DIAGRAMS ON S-002.
7. AT RTU ZONE: JOIST DESIGNER TO DESIGN JOIST FOR AN ADDITIONAL 30 PSF LIVE LOAD.

5 8. AT HIGH ROOF FRAMING: WALL STUDS TO BE 600S162-33 STUDS AT 24" O.C. MINIMUM FOR LATERAL SHEAR DESIGN

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THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD BLDG 3
LEANDER, TEXAS 78641

REVISION:
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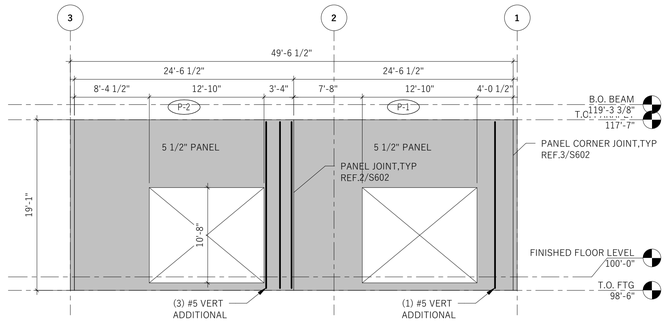
NICHOLAS H. ROHR
126390
LICENSED
PROFESSIONAL ENGINEER
08/09/24

08/09/2024
100% CDS-REV05-VE

ROOF FRAMING PLAN

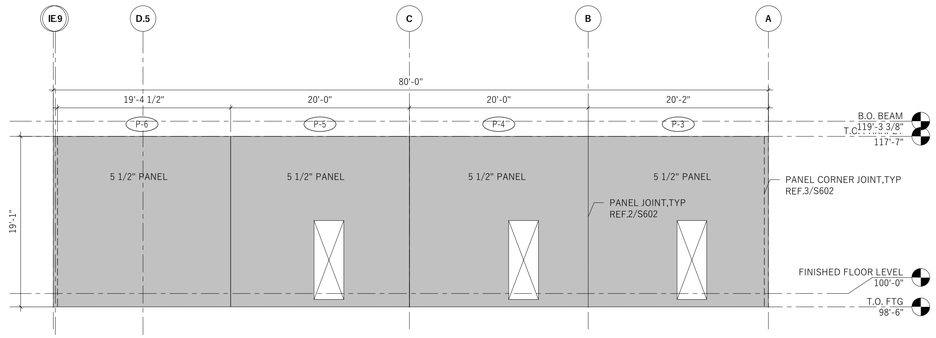
SHEET: S102

PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR



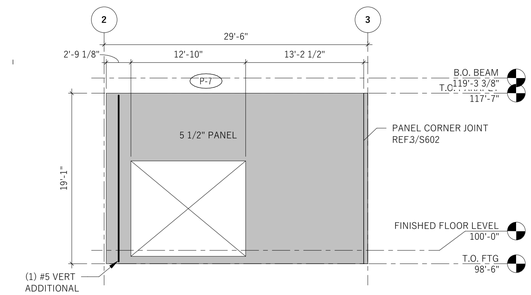
1 S201 ELEVATION AT GRIDLINE A

1/8" = 1'-0"



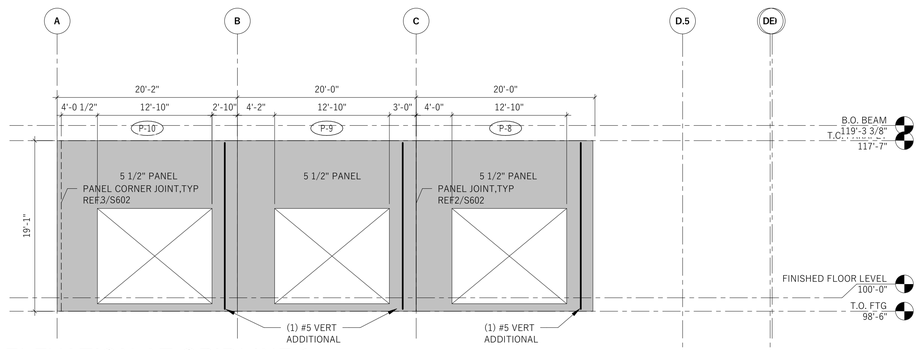
2 S201 ELEVATION AT GRIDLINE 3

1/8" = 1'-0"



3 S201 ELEVATION AT GRIDLINE E

1/8" = 1'-0"



4 S201 ELEVATION AT GRIDLINE 1

1/8" = 1'-0"

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AUSTIN ARCHITECTS

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BUILDING 3

THE SQUARE AT CRYSTAL FALLS
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TILT WALL ELEVATIONS

SHEET: S201

PROJECT NO:	21099
DRAWN BY:	BC
DATE:	01/28/2022
PROJECT MGR:	NHR

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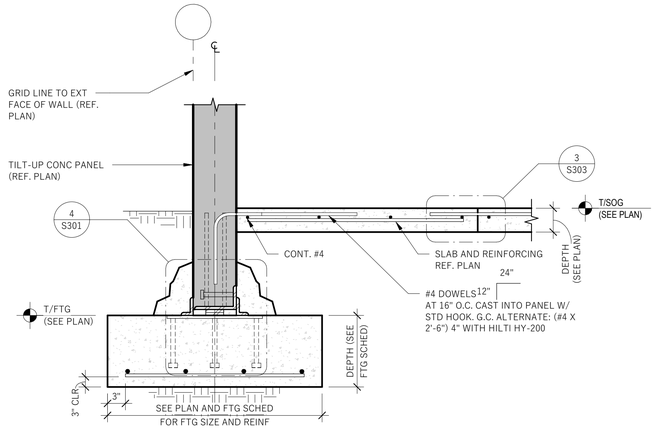
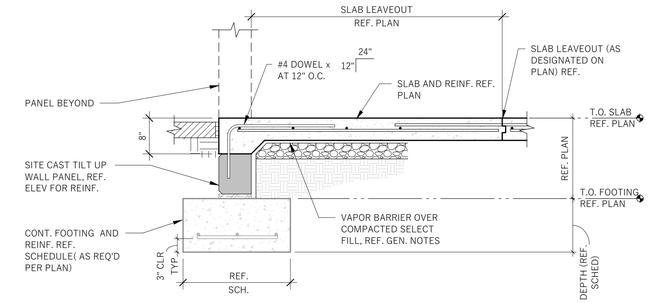


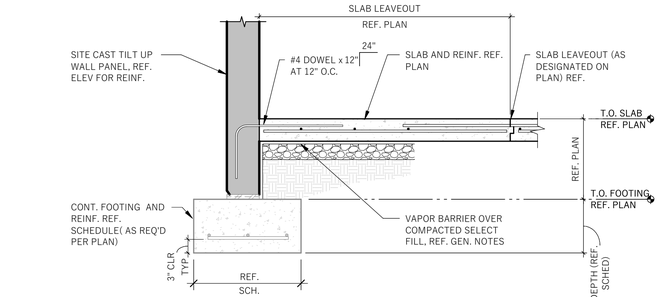
1 S301 SITE-CAST WALL TO FOOTING

1" = 1'-0"



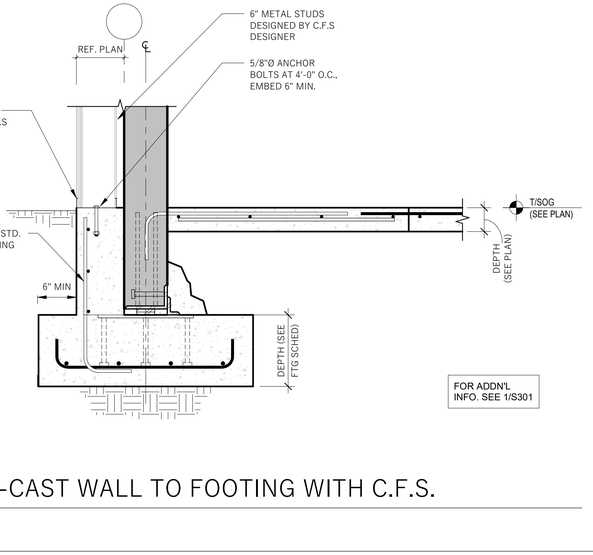
2 S301 TILT WALL PANEL AND DOOR

3/4" = 1'-0"



3 S301 SECTION AT TILT WALL PANEL SLAB LEAVOUT

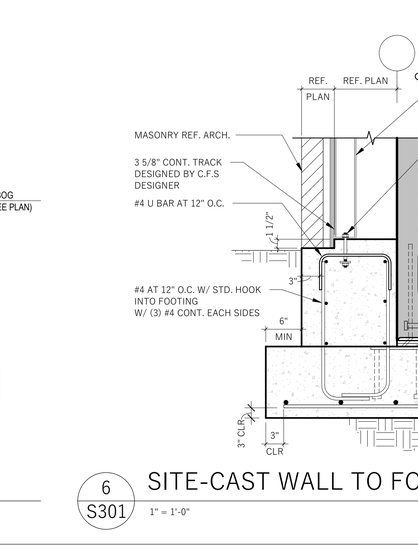
3/4" = 1'-0"



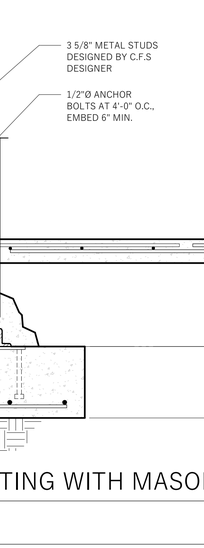
SECTION

NOTES:

1. AT LOCATION WITH METAL STUD WALL, REF. 5/S301



ELEVATION

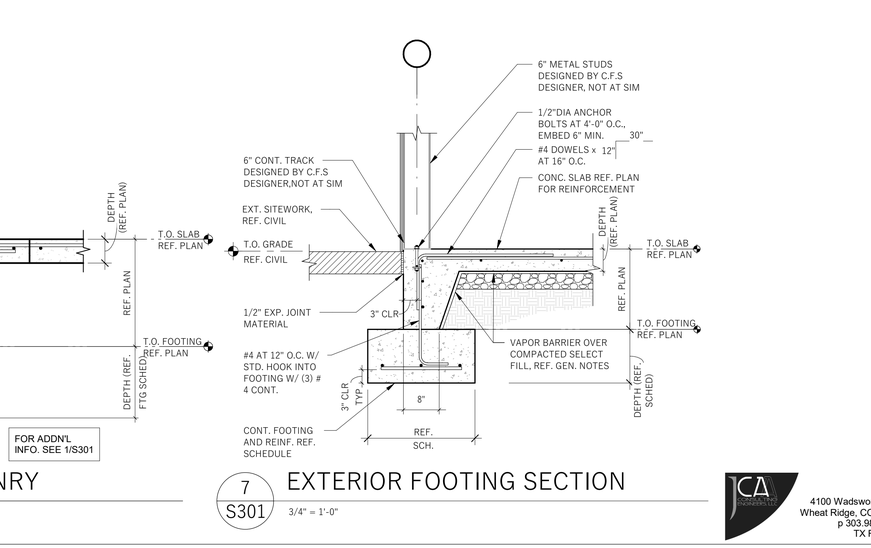


AT 5 1/2" PANEL

NOTES:

1. PROVIDE 2-1"Ø AIR RELIEF HOLES IN CENTER OF PLATE.
2. H.C.A. ARE 3/4" DIA. x 0'-8"
3. H.D. GALV. AFTER FABRICATION.

EMBED PLATE SCHED.		
LOCATION	NO. H.C.A.	PLATE SIZE (T=5 1/2" & 7 1/4")
TYPICAL	9	1/2" x 16"x 1'-4"
CORNER	9	3/4" x 22" x 1'-10"
INTERSECTION	9	3/4" x 22" x 1'-10"



TYP. PLAN

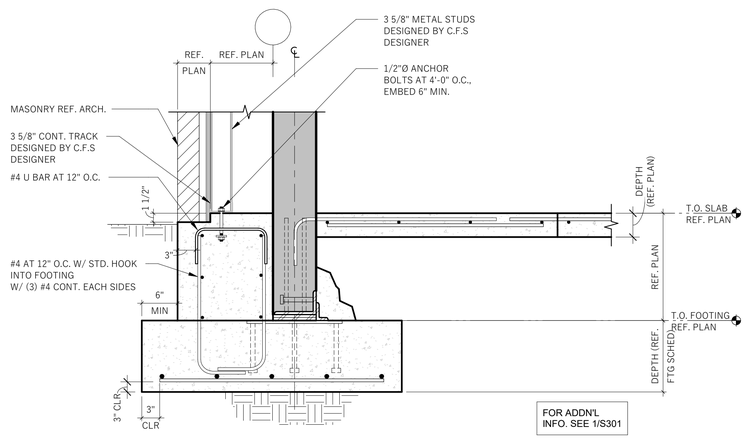
CORNER PLAN(INTERSECTION PLAN SIM)

4 S301 TYPICAL TILT-UP WALL PANEL ANCHOR DETAIL

1 1/2" = 1'-0"

5 S301 SITE-CAST WALL TO FOOTING WITH C.F.S.

1" = 1'-0"



6 S301 SITE-CAST WALL TO FOOTING WITH MASONRY

1" = 1'-0"

7 S301 EXTERIOR FOOTING SECTION

3/4" = 1'-0"

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REVISION:
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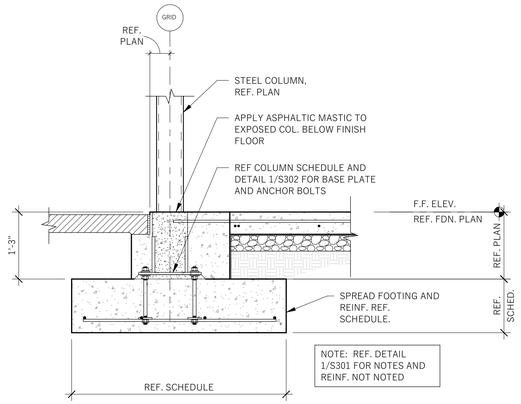
100% CDS-REV05-VE

FOUNDATION DETAILS

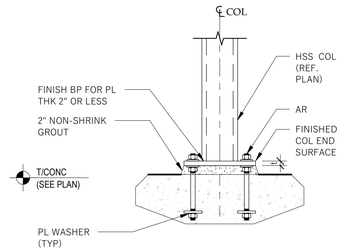
SHEET: S301

PROJECT NO:	21099
DRAWN BY:	BC
DATE:	01/28/2022
PROJECT MGR:	NHR



1 S302 TYP PERIMETER COL.

3/4" = 1'-0"



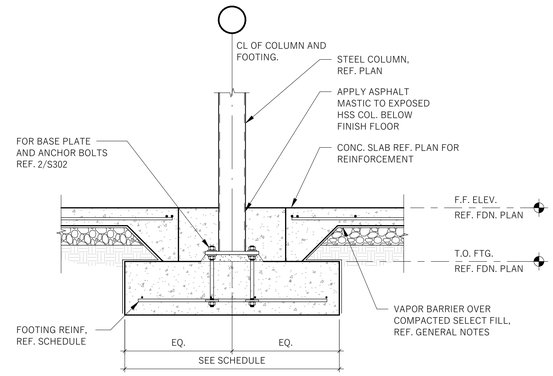
ELEVATION

NOTES:

1. REF. COL SCHED FOR BP SIZE, ORIENTATION AND THICKNESS.
2. BP THICKNESS SHOWN ON SCHED IS A MIN DIM AFTER ALL MILLING IS COMPLETED.
3. ANCHOR RODS SHALL BE 3/4" Ø W/ 1"x3"x3" PL WASHER, TYP.
4. COL STABILITY DURING ERECTION IS RESPONSIBILITY OF CONTRACTOR.
5. CONTRACTORS OPTION TO FIELD WELD COLS TO BPs FOR HEAVY BPs.

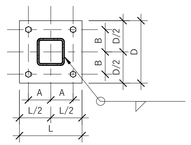
2 S302 TYP BASE PLATE DETAIL

1" = 1'-0"



3 S302 SECTION AT INTERIOR COLUMN FOOTING

3/4" = 1'-0"



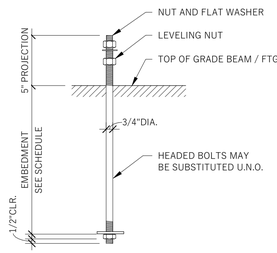
BP-A

NOTES:

1. WELD TO BE 1/16" SMALLER THAN THICKNESS OF TUBE.
2. COLUMN STABILITY DURING ERECTION IS RESPONSIBILITY OF CONTRACTOR.
3. BASE PLATE THICKNESS SHOWN ON SCHEDULE IS A MIN. DIMENSION AFTER ALL MILLING IS COMPLETED.
4. ANCHOR RODS HAVE 1"x3"x3" PLATE WASHER, TYP.

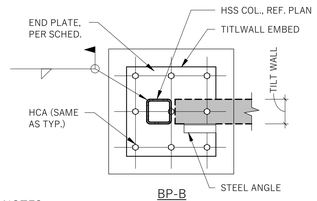
4 S302 BASE PLATE SCHEDULE

3/4" = 1'-0"



5 S302 TYPICAL ANCHOR BOLT DIAGRAM

1 1/2" = 1'-0"



BP-B

NOTES:

1. WELD TO BE 1/16" SMALLER THAN THICKNESS OF TUBE.
2. COLUMN STABILITY DURING ERECTION IS RESPONSIBILITY OF CONTRACTOR.
3. BASE PLATE THICKNESS SHOWN ON SCHEDULE IS A MIN. DIMENSION AFTER ALL MILLING IS COMPLETED.
4. ANCHOR RODS HAVE 1"x3"x3" PLATE WASHER, TYP.

6 S302 END PLATE DETAIL

3/4" = 1'-0"

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FOUNDATION DETAILS

SHEET: S302

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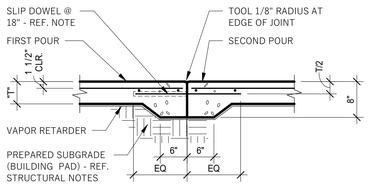
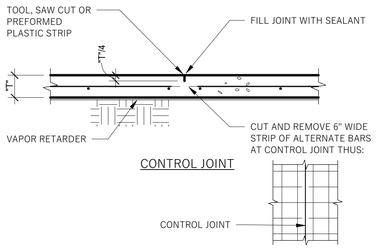
PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR

#21.134

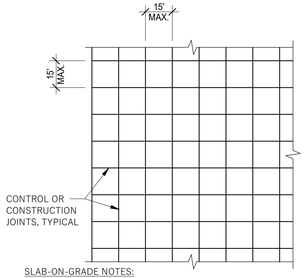
NOTE:
PROVIDE ONE OF THE FOLLOWING SLIP DOWELS:
- PNA CONSTRUCTION TECHNOLOGIES 1/4" x 4 1/2" x 4 1/2" "DIAMOND DOWEL" PLATE DOWEL SYSTEM.
- GREENSTREAK 5/8" DIA. SMOOTH x 24" "SPEED DOWEL" SYSTEM.
- 1/2" DIA. x 2'-0" A36 SMOOTH ROD.



CONSTRUCTION JOINT



CONTROL JOINT

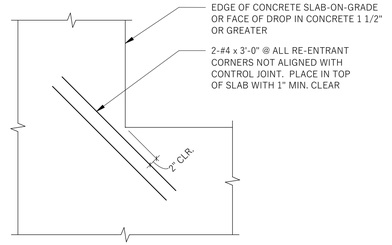


SLAB-ON-GRADE NOTES:

1. REF. PLAN FOR THICKNESS OF SLAB (T) AND REINFORCING.
2. SAWCUT JOINTS WITH IN THE TIME FRAME NOTED BELOW:
   a. 12 HOURS FOR SLABS COVERED BY FINISHES OR NON-PUBLIC SPACES.
   b. 4 HOUR FOR SLABS EXPOSED TO PUBLIC VIEW OR WHERE NOTED "SOFF-CUT" BRAND SAW SHALL BE USED.
3. IF METAL FORMS ARE USED, REMOVE THEM BEFORE PLACING ADJACENT SLAB.
4. FOR SLABS WITH THICKNESS (T) GREATER THAN 6", THICKENED EDGES ARE NOT REQUIRED AT JOINTS.
5. PROVIDE A CONSTRUCTION OR A CONTROL JOINT ON THE CENTERLINES OF COLUMNS.
6. LAP REINFORCING 38 BAR DIAMETER MINIMUM.

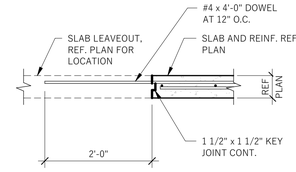
1 S303 TYPICAL SLAB-ON-GRADE DETAIL

3/4" = 1'-0"



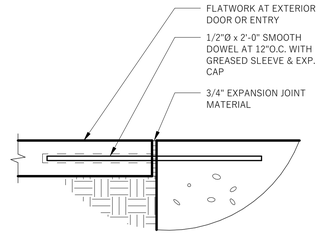
2 S303 TYPICAL RE-ENTRANT CORNER REINF. DETAIL

3/4" = 1'-0"



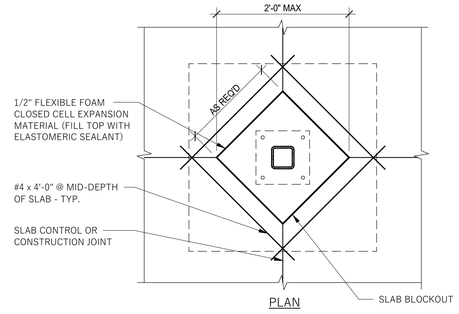
3 S303 SLAB LEAVE OUT DETAIL

3/4" = 1'-0"



4 S303 TYP FLATWORK AT EXTERIOR DOORS AND ENTRIES DETAIL

1 1/2" = 1'-0"



PLAN

5 S303 TYPICAL INTERIOR COLUMN BLOCKOUT DETAIL

3/4" = 1'-0"

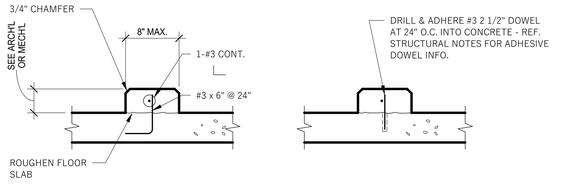
PLAN

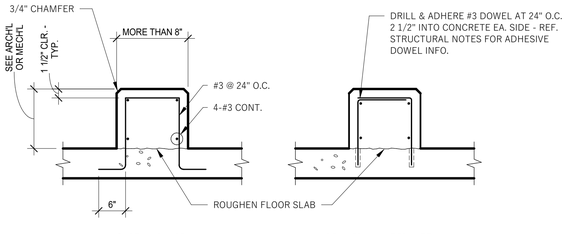
NOTES:

1. MATCH SIZE, LOCATION AND NUMBER OF HORIZONTAL BEAM AND WALL BARS, EXCEPT THAT WHERE THERE ARE MORE THAN 2 TOP OR BOTTOM BARS, ONLY THE INSIDE AND OUTSIDE BARS MUST BE MATCHED.
2. WHERE 90 DEGREE HOOKS ARE PROVIDED FOR TOP BARS CORNER BARS MAY BE OMITTED AT TOP. WHERE 90 DEGREE HOOKS ARE PROVIDED FOR BOTTOM BARS, CORNER BARS MAY BE OMITTED AT BOTTOM.

6 S303 TYPICAL CORNER BARS AT WALL OR GRADE BEAM INTERSECTION DETAIL

3/4" = 1'-0"

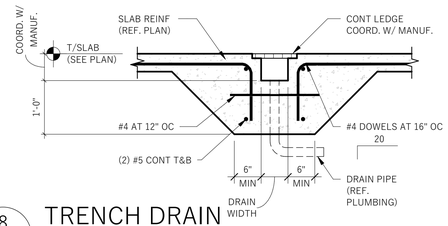




CAST-IN-PLACE DRILLED-IN ALTERNATE

7 S303 TYPICAL CONCRETE CURB DETAILS

3/4" = 1'-0"



8 S303 TRENCH DRAIN

3/4" = 1'-0"

OPENING GREATER THAN 21" DIAGONAL

OPENING 21" AND SMALLER DIAGONAL

9 S303 TYP. REINFORCING AT CONCRETE OPENINGS

3/4" = 1'-0"

10 S303 TYP. LIGHT STANDARD DETAIL

3/4" = 1'-0"

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BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD BLDG 3
LEANDER, TEXAS 78641

REVISION:
2 06/20/22 REV 1

STATE OF TEXAS
NICHOLAS H. ROHR
126390
LICENSED PROFESSIONAL ENGINEER

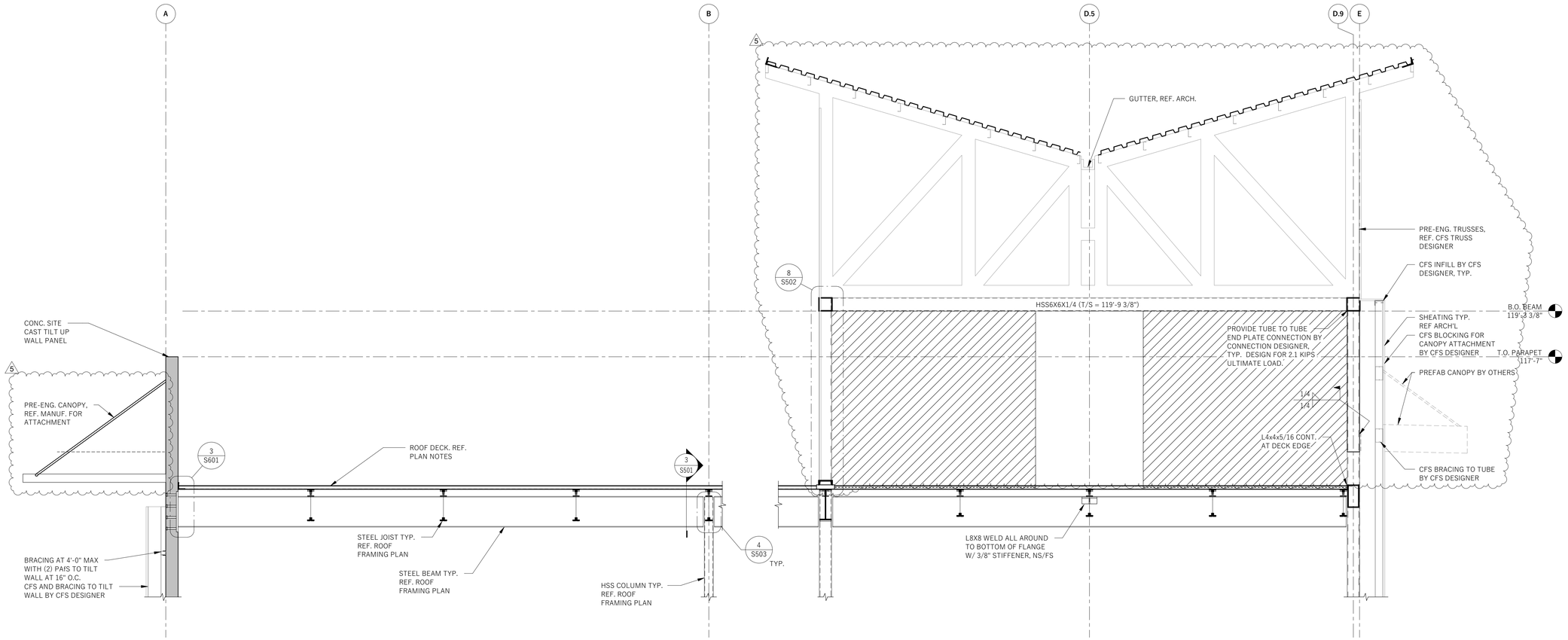
08/09/24

08/09/2024
100% CDS-REV05-VE

FOUNDATION DETAILS

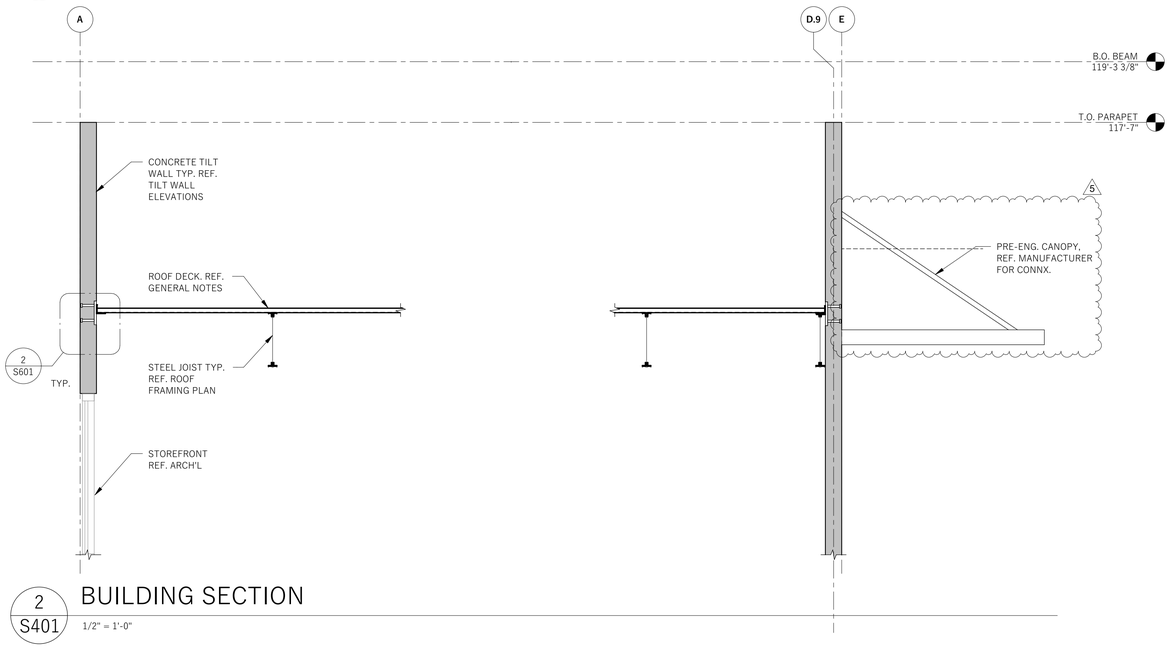
SHEET: S303

PROJECT NO:	21099
DRAWN BY:	BC
DATE:	01/28/2022
PROJECT MGR:	NHR



1 S401 BUILDING SECTION

1/2" = 1'-0"



2 S401 BUILDING SECTION

1/2" = 1'-0"

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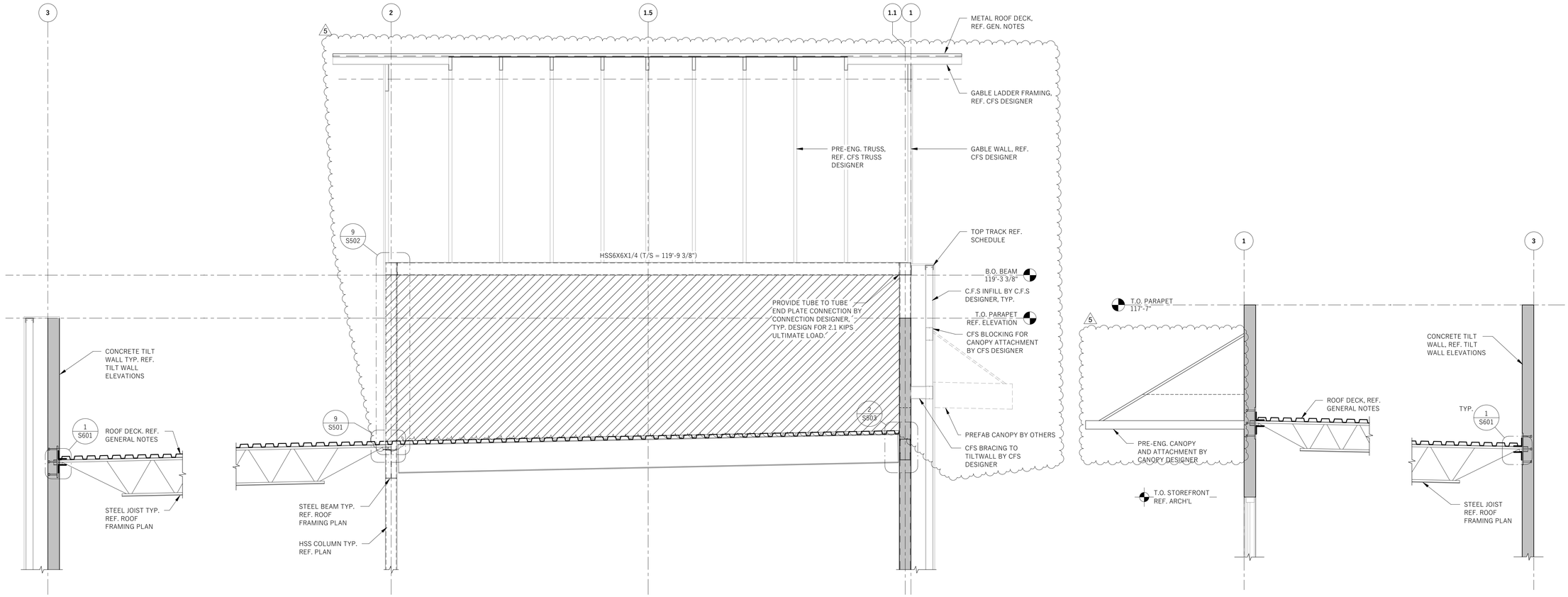
BUILDING SECTIONS

SHEET: S401

PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR



1 S402 BUILDING SECTION

1/2" = 1'-0"

2 S402 BUILDING SECTION

1/2" = 1'-0"

ALIGN
AUSTIN ARCHITECTS

BUILDING 3

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08/09/24

08/09/2024
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BUILDING SECTIONS

SHEET: S402

PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR

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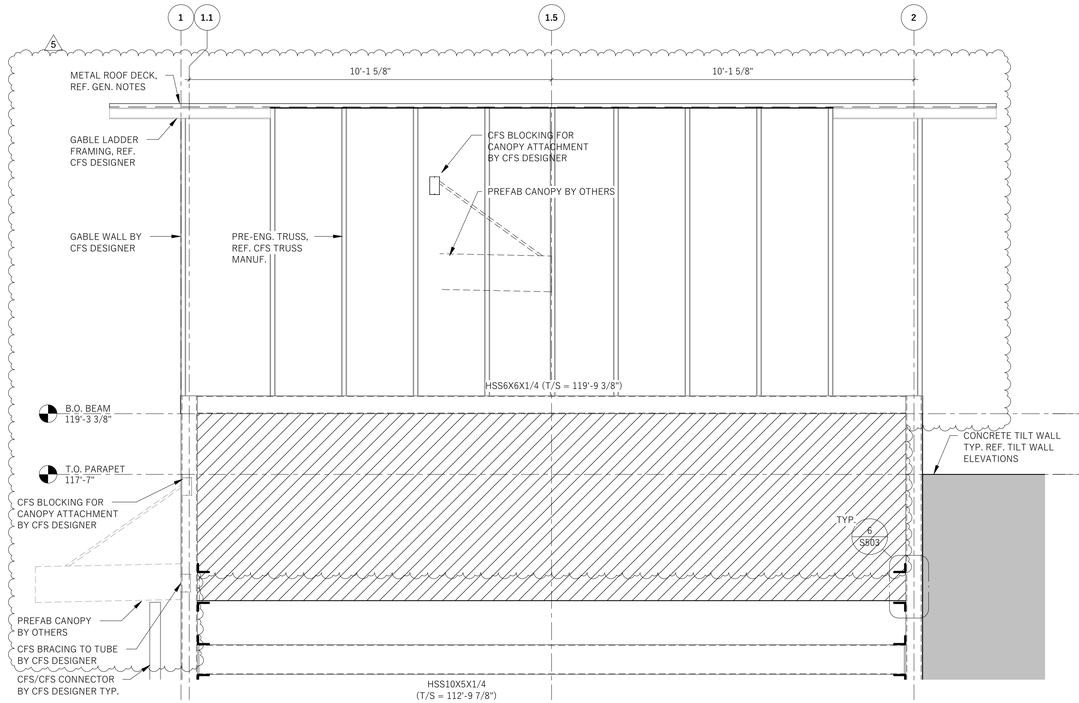
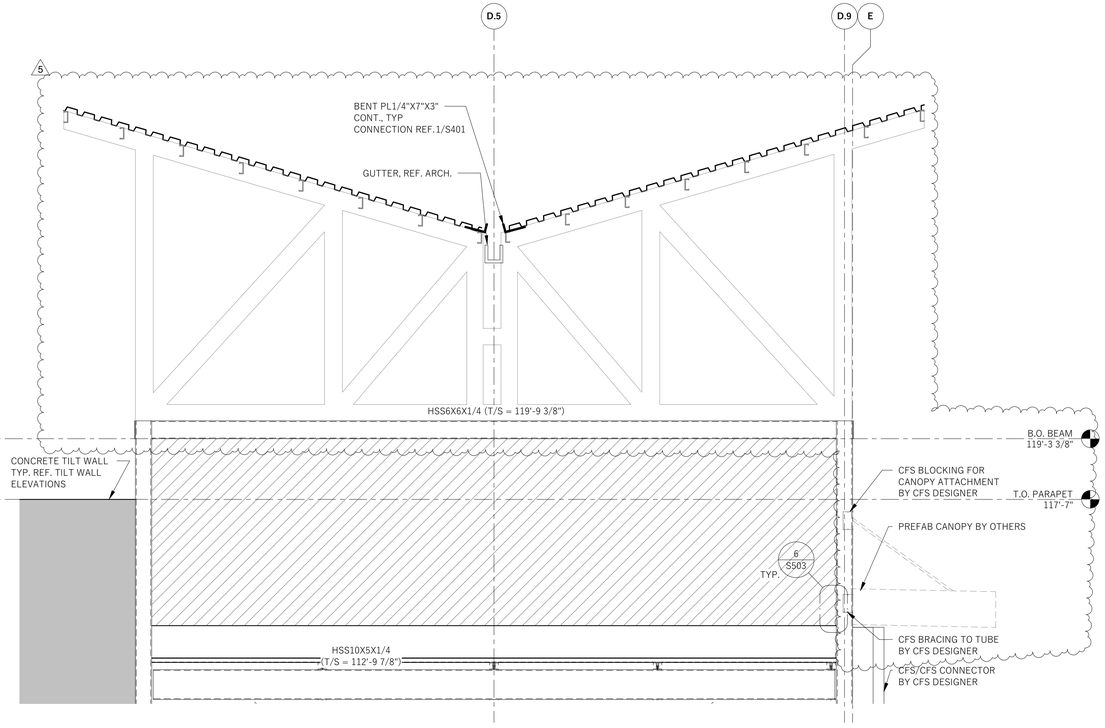


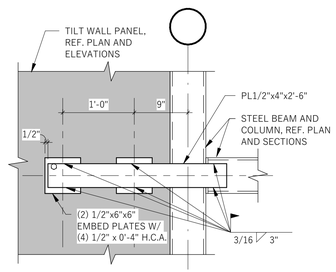
1 S403 HIGH ROOF SECTIONS

1/2" = 1'-0"



2 S403 HIGH ROOF SECTIONS

1/2" = 1'-0"



3 S403 SECTION AT DRAG CONNX

1" = 1'-0"

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HIGH ROOF SECTIONS

SHEET: S403

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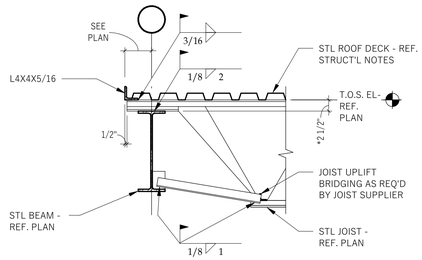
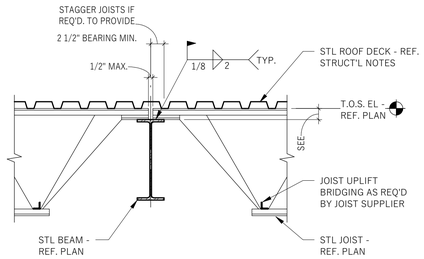


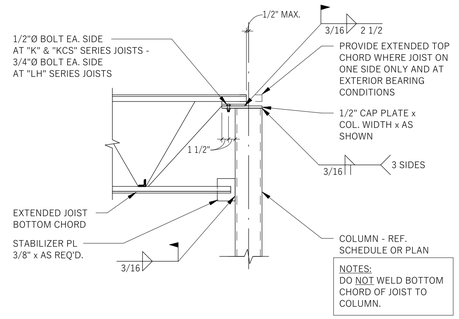
1 S501 TYPICAL KCS OR K SERIES STEEL JOIST BEARING ON PERIMETER BEAM

NO SCALE



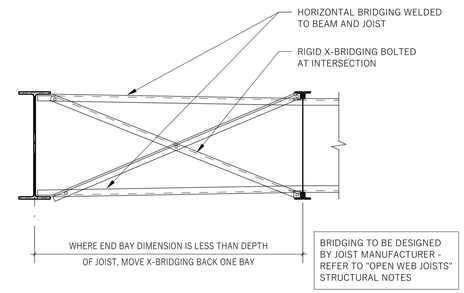
2 S501 TYPICAL KCS OR K SERIES STEEL JOIST BEARING ON INTERIOR BEAM

NO SCALE



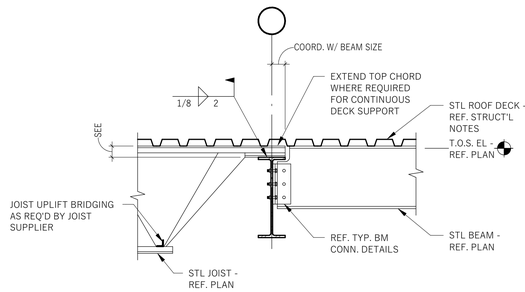
3 S501 JOIST WITH EXTENDED BOTTOM CHORD CONNECTION TO COLUMN

3/4" = 1'-0"



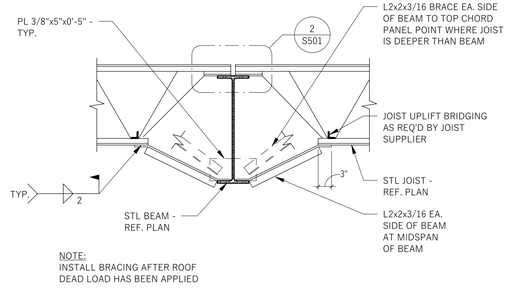
4 S501 TYP. CROSS-BRIDGING AT END BAY FOR K AND KCS SERIES JOISTS

3/4" = 1'-0"



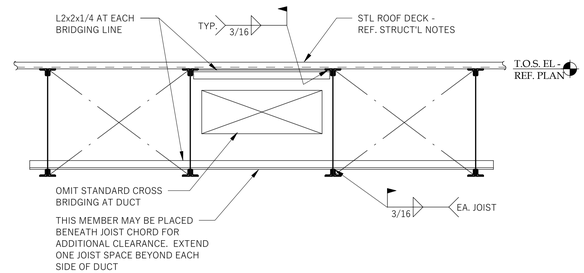
5 S501 TYPICAL EXTENDED TOP CHORD FOR DECK SUPPORT DETAIL

NO SCALE



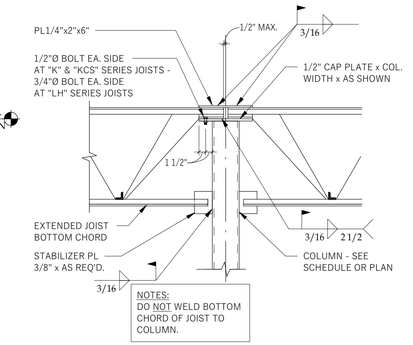
6 S501 TYPICAL JOIST CONNECTION TO BOTTOM FLANGE OF BEAM DETAIL

3/4" = 1'-0"



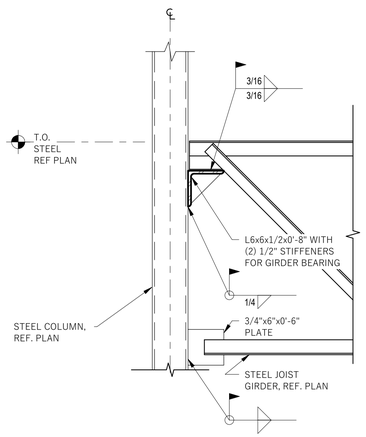
7 S501 TYPICAL DUCT OPENING AT CROSS BRIDGING DETAIL

3/4" = 1'-0"



8 S501 COLLECTOR CONNECTOR

3/4" = 1'-0"

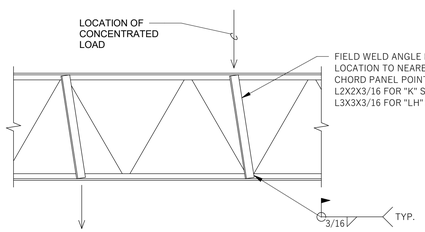


NOTE:

DO NOT WELD JOIST GIRDER BOTTOM CHORD TO PLATES

9 S501 STEEL GIRDER TO COLUMN CONNECTION

1" = 1'-0"



NOTES:

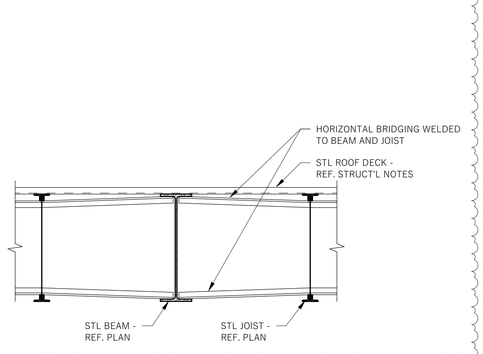
THIS DETAIL APPLIES WHEREVER A CONCENTRATED LOAD GREATER THAN 100 POUNDS OCCURS MORE THAN 4" AWAY FROM A JOIST TOP OR BOTTOM CHORD PANEL POINT. MAXIMUM LOAD TO BE APPLIED WITHOUT CONSULTATION WITH ENGINEER IS 250 POUNDS. DO NOT PLACE CONCENTRATED LOADS CLOSER THAN 4'-0" O.C.

ALL HANGERS OR ATTACHMENTS TO JOISTS SHALL BE PLACED CONCENTRIC WITH THE TOP AND BOTTOM CHORD(S) AND SHALL NOT ATTACH TO ONLY ONE ANGLE OF CHORD.

10 S501 JOIST CHORD REINFORCEMENT

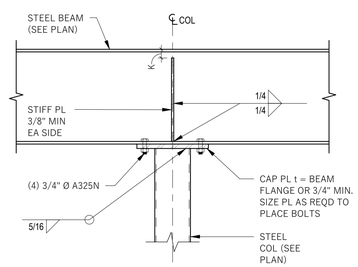
3/4" = 1'-0"

△5



11 S501 TYPICAL BEAM PARALLEL TO JOISTS

3/4" = 1'-0"



NOTES:

1. WHERE BEAM FRAMES INTO COLUMN CENTERLINE, PROVIDE BOLTED CONNECTION TO STIFFENER PLATE.

13 S501 'W' BEAM OVER HSS COLUMN

1" = 1'-0"

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LEANDER, TEXAS 78641

REVISION:
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5 08/09/24 VE

NICHOLAS H. ROHR
126390
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

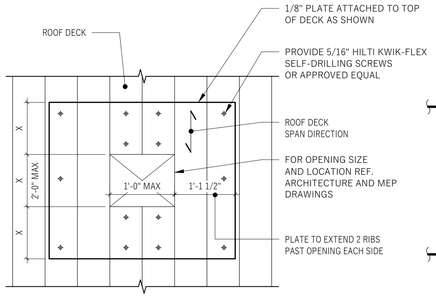
08/09/24

08/09/2024
100% CDS-REV05-VE

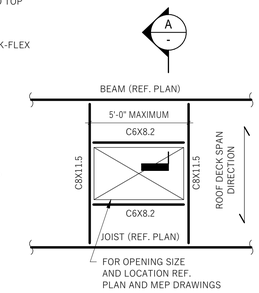
STEEL JOISTS AT FRAMING

SHEET: S501

PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR



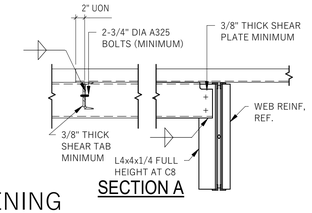
TYPE D



TYPE F

NOTES:

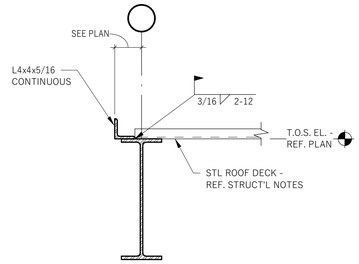
1. NO REINFORCEMENT REQUIRED IF OPENING IS 6" x 6" OR SMALLER PROVIDED ONLY ONE RIB IS INTERRUPTED
2. CLUSTERED OPENINGS WITH CLEAR SPACE LESS THAN 1'-0" SHALL BE TREATED AS ONE LARGE OPENING AND PROVIDE THE REINFORCEMENT OR CHANNEL FRAMING AS PER DETAIL ABOVE
3. ATTACH DECK TO CHANNELS TYPICAL
4. TYPE D SHALL NOT BE USED TO SUPPORT MECHANICAL EQUIPMENT
5. TYPE F FRAMING SHALL BE COORDINATED WITH EQUIPMENT SUPPORT FRAMING



SECTION A

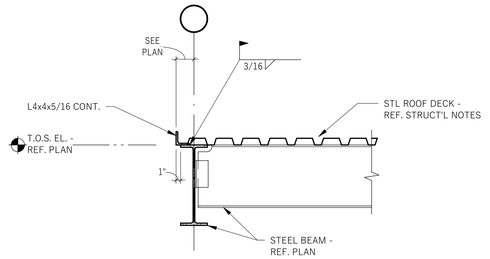
1 S502 TYPICAL ROOF DECK AT OPENING

3/4" = 1'-0"



2 S502 EXTERIOR BEAM PARALLEL TO JOISTS

3/4" = 1'-0"

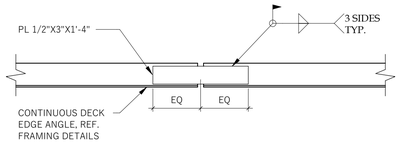


3 S502 TYPICAL ROOF EDGE ANGLE

3/4" = 1'-0"

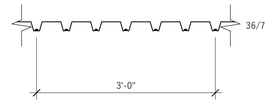
4 S502 PERIMETER GIRDER AT STL FRAMING

3/4" = 1'-0"



5 S502 TYP. DECK ANGLE SPLICE DETAIL

1" = 1'-0"



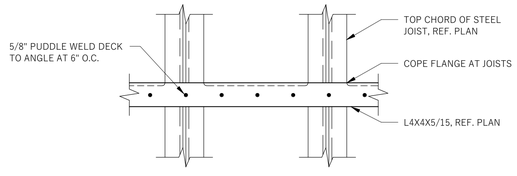
TYP. FASTNER PATTERN FOR ROOF DECK

ROOF DECK ATTACHMENT NOTES:

1. ATTACHMENT AT SUPPORTS SHALL BE 5/8" PUDDLE WELDS
2. ATTACHMENT AT SIDE LAPS SHALL BE #10 TEKS
3. ATTACHMENT AROUND OPENINGS SHALL BE WELDS AT 6" O.C.
4. ATTACHMENTS AT SIDE SUPPORTS ALONG PERIMETER SHALL BE WELDS AT 36" O.C.
5. MINIMUM SHEET LAP SHALL BE 3" TYP.
6. PROVIDE (2) SIDELAPS PER SPAN AT (3) EQUAL SPACES.

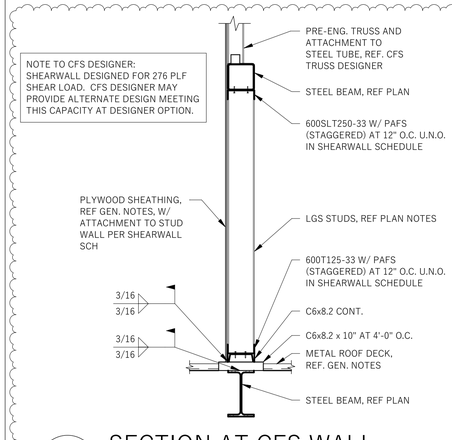
6 S502 TYP. ROOF ATTACHMENT DETAIL

1" = 1'-0"



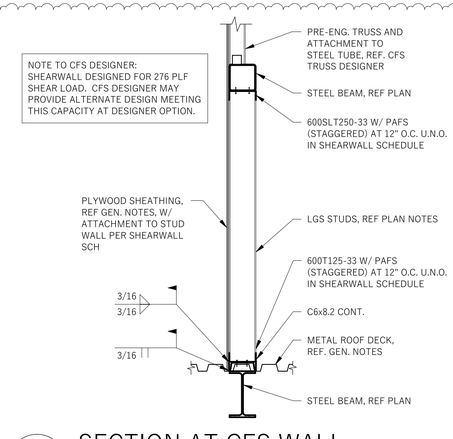
7 S502 PLAN VIEW AT COLLECTOR

1" = 1'-0"



8 S502 SECTION AT CFS WALL

3/4" = 1'-0"



9 S502 SECTION AT CFS WALL

3/4" = 1'-0"

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BUILDING 3
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LEANDER, TEXAS 78641

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STATE OF TEXAS
NICHOLAS H. ROHR
126390
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ARCHITECT
08/09/24

08/09/2024
100% CDS-REV05-VE

STEEL DECK AT JOIST FRAMING

SHEET: S502

PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR

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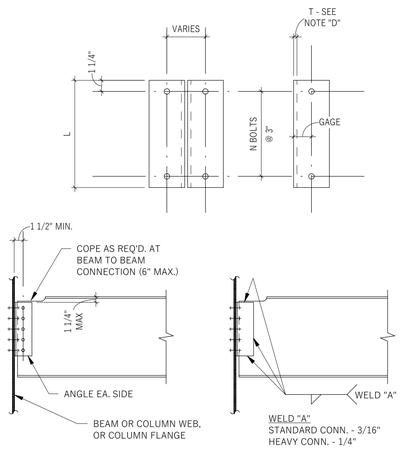


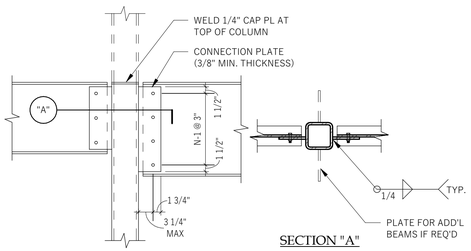
BOLTED/BOLTED BOLTED/WELDED

BEAM SIZE	STANDARD ANGLE LENGTH (L)	STANDARD NO. OF ROWS OF BOLTS (N)	STANDARD MAX. BEAM REACTION (KIPS)	HEAVY ANGLE LENGTH (L)	HEAVY NO. OF ROWS OF BOLTS (N)	HEAVY MAX. BEAM REACTION (KIPS)
W8	5 1/2"	2	17	-	-	N.A.
W10	5 1/2"	2	19	-	-	N.A.
W12	5 1/2"	2	20	8 1/2"	3	28
W14	8 1/2"	3	32	11 1/2"	4	42
W16	8 1/2"	3	35	11 1/2"	4	46
W18	11 1/2"	4	55	14 1/2"	5	68
W21	11 1/2"	4	64	17 1/2"	5	94
W24	14 1/2"	5	89	20 1/2"	7	123
W27	14 1/2"	5	89	23 1/2"	8	148
W30	17 1/2"	6	104	26 1/2"	9	167
W33	20 1/2"	7	119	29 1/2"	10	186
W36	23 1/2"	8	133	29 1/2"	10	186
W40	26 1/2"	9	147	29 1/2"	10	213
W44	29 1/2"	10	160	29 1/2"	10	213

NOTES:
1. RIGHT ANGLE CONNECTIONS SHALL BE DOUBLE ANGLE AS SCHEDULED.
2. NOTED REACTIONS ARE FOR SERVICE LOADS
3. REFER TO "STRUCTURAL STEEL CONNECTIONS" IN STRUCTURAL NOTES FOR ADD'L INFO.
4. MINIMUM CONNECTION: ANGLE THICKNESS IS 1/4" TYPICAL AND 5/16" AT W33 AND DEEPER "HEAVY" CONNECTIONS.
5. BOLTS ARE 3/4" DIA. TYP. AND 7/8" DIA. AT W40 & W44 "HEAVY CONNECTIONS". BOLTS ARE A325N.
6. BEAM CONNECTIONS ARE "STANDARD" U.N.O. ON PLAN.
7. CONTRACTOR SHALL CHECK DESIGN OF ALL BEAMS REQUIRING COPES GREATER THAN SHOWN IN DETAIL BASED ON REACTIONS SHOWN IN TABLE. CONNECTION ANGLES, BOLTS AND WELDS SHALL NOT BE LESS THAN THAT SHOWN
8. ANY REACTIONS NOTED ON PLAN WHICH EXCEED MAX. BEAM REACTIONS NOTED IN TABLE ABOVE SHALL BE DESIGNED BY GENERAL CONTRACTOR. REF. STRUCTURAL NOTES FOR ADDITIONAL INFO.

AISC TYPE 2 SIMPLE FRAMING CONNECTIONS

1 S503 — 3/4" = 1'-0"



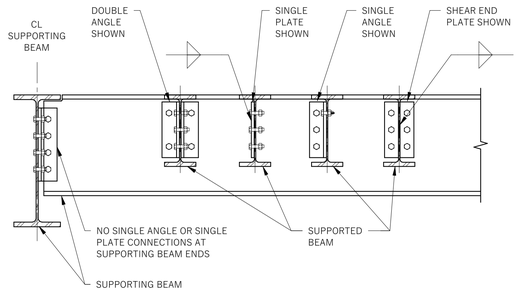
SECTION "A"

BEAM SIZE	PLATE LENGTH (L)	NO. OF BOLTS (N)	MAX BEAM REACTIONS (KIPS) 3/4" DIA	MAX BEAM REACTIONS (KIPS) 7/8" DIA
W8	6	2	21.2	25.6
W10	6	2	21.2	25.6
W12	9	3	31.8	38.4
W14	9	3	31.87	39.2
W16	12	4	42.4	52.2
W18	15	5	53	65.3
W21	18	6	63.6	78.3
W24	18	6	63.6	78.3
W27	21	7	74.2	91.3
W30	24	8	84.8	103.5
W33	27	9	95.4	115.6
W36	30	10	106	127.8
W40	33	11	116.6	139.9
W44	36	12	127.2	152.1

NOTES:
1. CONNECTIONS SHALL BE BASED ON REACTIONS SHOWN ON PLANS AND MAXIMUM BEAM REACTION IN ABOVE TABLE, U.N.O.
2. NOTED REACTIONS ARE FOR SERVICE LOADS.
3. REF. "STRUCTURAL STEEL CONNECTIONS" IN STRUCTURAL NOTES FOR ADDN'L INFO.
4. MINIMUM CONNECTION: PLATE THICKNESS IS 3/8" TYPICAL AND 7/16" AT W33 AND DEEPER "HEAVY" CONNECTIONS.
5. BOLTS ARE A325N, TYPICAL.
6. BEAM CONNECTIONS ARE "STANDARD" U.N.O. ON PLAN.
7. ANY REACTIONS NOTED ON PLAN WHICH EXCEED MAX. BEAM REACTIONS NOTED IN TABLE ABOVE SHALL BE DESIGNED BY GENERAL CONTRACTOR. REF. STRUCTURAL NOTES FOR ADDITIONAL INFO.

TYPICAL BEAM WEB TO TUBE COLUMN CONNECTION

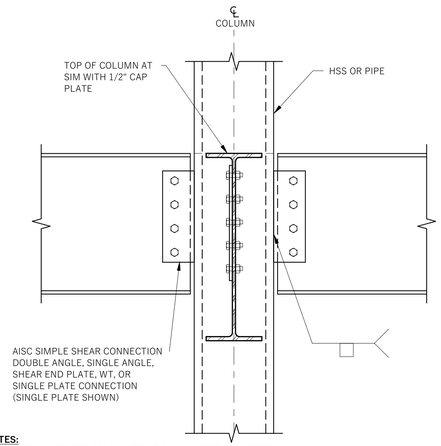
2 S503 — 3/4" = 1'-0"



NOTES:
1. SUPPORTED BEAMS PRIMARILY SUPPORT DISTRIBUTED LOADS FROM SLABS OR DECKING
2. SUPPORTING BEAMS SUPPORT SIGNIFICANT POINT LOADS FROM ONE OR MORE SUPPORTED BEAMS OR FROM COLUMNS BEING TRANSFERRED. SUPPORTING BEAMS MAY BE SUPPORTED BY COLUMNS OR BY OTHER SUPPORTING BEAMS
3. FOR AISC SIMPLE SHEAR CONNECTIONS AT SUPPORTED BEAM ENDS, DOUBLE ANGLE, SINGLE PLATE, SINGLE ANGLE, OR SHEAR END PLATE MAY BE USED UNO
4. WELDED/BOLTED OR BOLTED/BOLTED CONNECTIONS PER AISC ARE PERMITTED

TYPICAL SHEAR CONNECTION

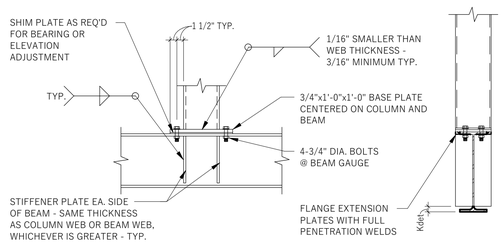
3 S503 — 3/4" = 1'-0"



NOTES:
1. CONTRACTOR'S CALCULATIONS SHALL VERIFY HSS/PIPE WALL THICKNESS IS ADEQUATE FOR CONNECTION TYPE CHOSEN PER AISC.

TYPICAL SHEAR CONNECTION

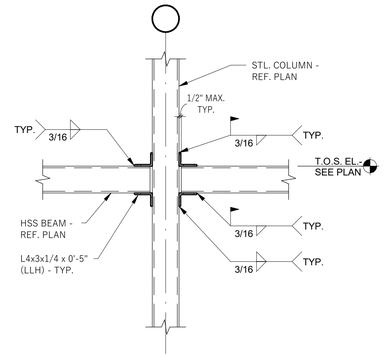
4 S503 — 1" = 1'-0"



NOTES:
1. CONNECT INTERSECTING BEAMS TO STIFFENER PLATES USING BOLTS IN SINGLE SHEAR DESIGNED FOR ECCENTRIC BEAM REACTION.
2. PROVIDE FLANGE EXTENSIONS AS REQ'D TO MATCH COLUMN BASE PLATE WIDTH.

TYPICAL COLUMN SUPPORTED ON BEAM CONNECTION DETAIL

5 S503 — 3/4" = 1'-0"



TYPICAL HSS GIRT TO COLUMN CONNECTION DETAIL

6 S503 — 3/4" = 1'-0"

ALIGN
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BUILDING 3

THE SQUARE AT CRYSTAL FALLS
1900 S BAGDAD ROAD BLDG 3
LEANDER, TEXAS 78641

REVISION:
2 06/20/22 REV 1

STATE OF TEXAS
NICHOLAS H. ROHR
126390
LICENSED
PROFESSIONAL ENGINEER
08/09/24

08/09/2024
100% CDS-REV05-VE

FLANGE CONNECTIONS

SHEET: S503

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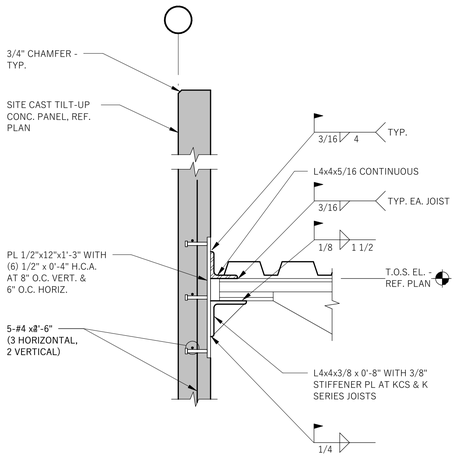
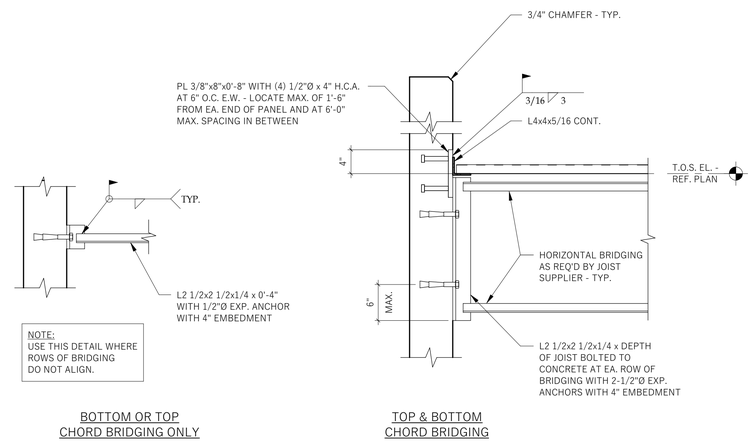
#21.134

PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR



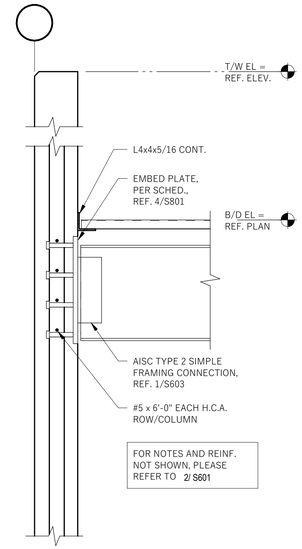
1 S601 TYPICAL JOIST SEAT DETAIL

3/4" = 1'-0"



2 S601 TYPICAL BRIDGING ANCHOR DETAIL

1" = 1'-0"



3 S601 SECTION

1" = 1'-0"

EMBED PLATE SCHEDULE - SHEAR ONLY

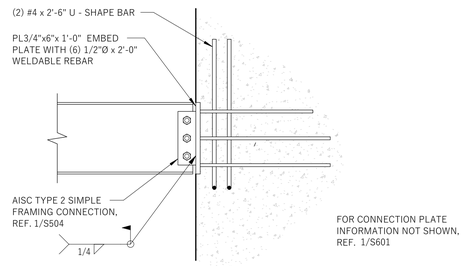
NOMINAL STEEL BEAM SIZE	MAXIMUM FACTORED VERTICAL BEAM SHEAR REACTION (KIPS)	MINIMUM CONNECTION DEPTH (IN)	EMBED PLATE SIZE t (in) X B (in) X D (in)	No STUD COLUMNS	No STUD ROWS	REMARKS
W8 - W12	33	6	3/4 X 10 X 10	2	2	
W12-W18	47	9	3/4 X 10 X 16	2	3	
W14-W24	68	12	3/4 X 12 X 22	2	4	
W18-W30	85	15	3/4 X 12 X 28	3	5	COLUMN SPACING 4 1/2" OC
W21-W36	100	18	3/4 X 14 X 32	3	5	COLUMN SPACING = 5" OC ROW SPACING = 7" OC
W24-W40	130	21	3/4 X 16 X 28	3	5	

NOTES:

1. USE SMALLEST EMBED PLATE SIZE FOR A GIVEN NOMINAL BEAM DEPTH AND WITH A SCHEDULED MAXIMUM SHEAR REACTION EQUAL TO OR GREATER THAN THE SHEAR REACTION REQUIRED ON PLAN
2. CONTRACTOR SHALL DESIGN SINGLE-PLATE GRADE, THICKNESS, BOLT QUANTITY AND TYPE (A325, A490, N OR X) TO RESIST THE SHEAR FORCE SHOWN IN TABLES OR PLANS WHILE SATISFYING GEOMETRIC REQUIREMENTS OF THE TYPICAL EMBED PLATE DETAIL AND SCHEDULE. REF. GENERAL NOTES FOR ADDITIONAL INFORMATION REGARDING THE DESIGN OF STRUCTURAL STEEL CONNECTIONS
3. EMBED PLATES SHALL CONFORM TO ASTM A572, Fy=50 ksi
4. STUDS SHALL BE 3/4" DIAMETER x 5 1/2" LONG NOMINAL (MINIMUM), 4" LONG AT 5 1/2" TILT PANEL
5. REF. TYPICAL EMBED DETAIL FOR ASSUMED CONNECTION LOCATION RELATIVE TO EMBED PLATE. REPORT ANY AS-BUILT DEVIATION FROM THE ASSUMED CONDITION TO THE SER AS FOLLOWS: HORIZONTAL DEVIATION GREATER THAN 2" VERTICAL DEVIATION GREATER THAN 1"

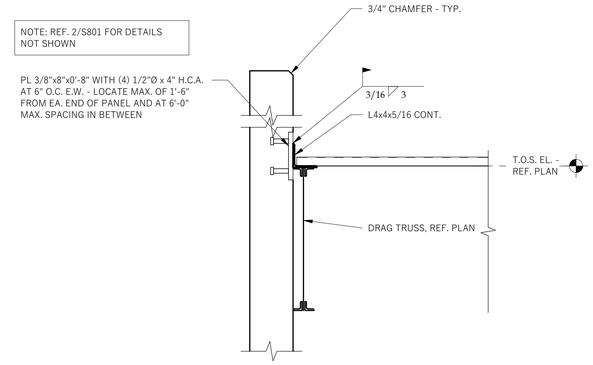
4 S601 EMBED PLATE SCHEDULE

N.T.S.



5 S601 SECTION AT PANEL END BEARING EMBED

1" = 1'-0"



6 S601 CONNECTION AT DRAG TRUSS

1" = 1'-0"

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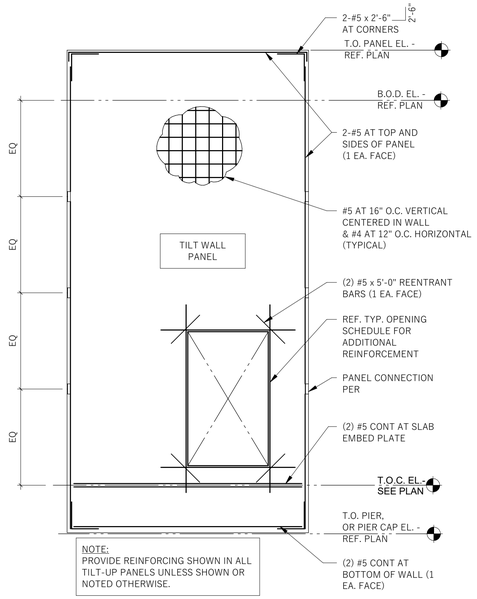
100% CDS-REV05-VE

TILT WALL DETAILS

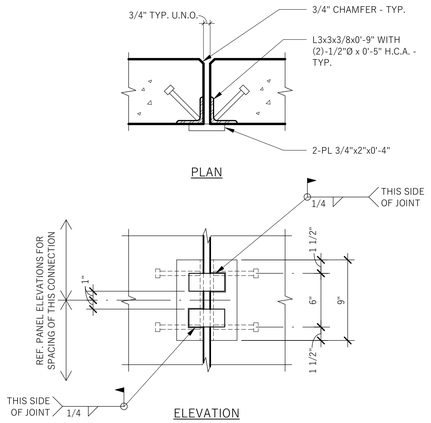
SHEET: S601

PROJECT NO: 21099
DRAWN BY: BC
DATE: 01/28/2022
PROJECT MGR: NHR



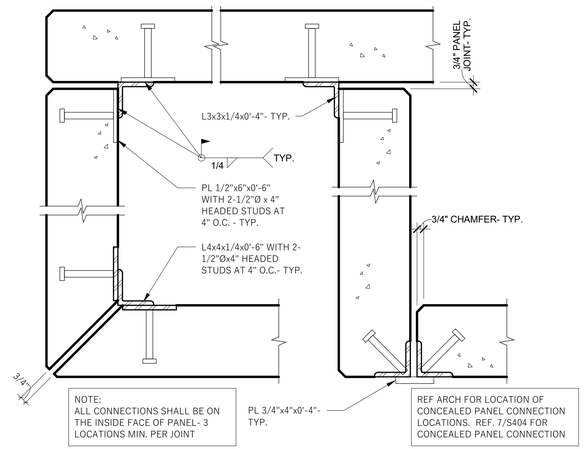
1 S602 TYPICAL PANEL REINFORCING

3/16" = 1'-0"



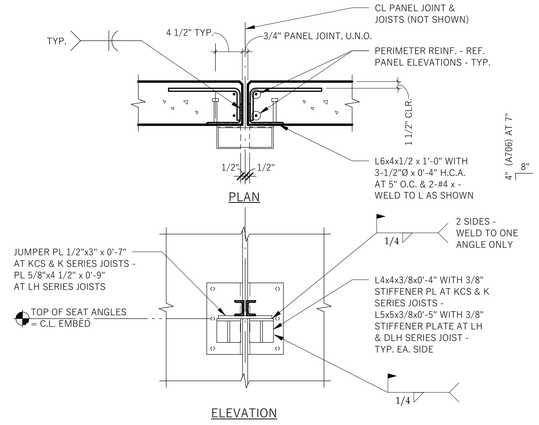
2 S602 TYPICAL TILT-UP WALL PANEL ALIGNMENT DETAIL

3/4" = 1'-0"



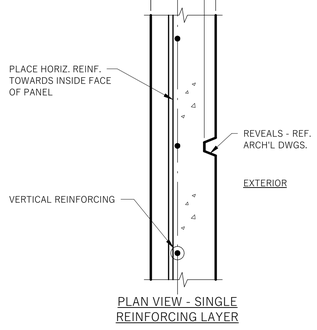
3 S602 TYPICAL PANEL TO PANEL CORNER CONNECTIONS DETAIL

1 1/2" = 1'-0"



4 S602 TYPICAL JOIST SEAT AT PANEL JOINT

3/4" = 1'-0"



5 S602 TYP. TILT-UP REINF. PLACEMENT DETAIL

3/4" = 1'-0"

TILT-UP WALL PANEL OPENING SCHEDULE

OPENING WIDTH	VERT. REINF.	HORIZ. REINF.
≤4'-0"	2-#5, 1 EA. FACE	2-#5, 1 EA. FACE
>4'-0" & <8'-0"	4-#5, 2 EA. FACE	4-#5, 2 EA. FACE
>8'-0"	6-#5, 3 EA. FACE	6-#5, 3 EA. FACE

*PROVIDE STANDARD HOOK IN VERT. REINF. IF INTERRUPTED BY OPENING ABOVE/BELOW.

6 S602 TILT WALL OPENING REINF.

3/4" = 1'-0"

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TILT WALL ADDITIONAL DETAILS

SHEET: S602

PROJECT NO: 21099
DRAWN BY: BC
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PROJECT MGR: NHR

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ELECTRICAL LEGEND

NOTE: ALL SYMBOLS SHOWN ON LEGEND ARE NOT NECESSARILY USED.

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	1X4 LINEAR FLUORESCENT FIXTURE W/ DESIGNATION		ABBREVIATIONS
	2X2 LINEAR FLUORESCENT FIXTURE W/ DESIGNATION	AFC	ABOVE FINISHED CEILING
	2X4 LINEAR FLUORESCENT FIXTURE W/ DESIGNATION	AFF	ABOVE FINISHED FLOOR
	NIGHT LIGHT FIXTURE	AFG	ABOVE FINISHED GRADE
	LINEAR FLUORESCENT STRIP OR 6" FIXTURE W/ DESIGNATION	AHJ	AUTHORITY HAVING JURISDICTION
	RECESSED DOWNLIGHT FIXTURE W/ DESIGNATION	AL	ALUMINUM
	SURFACE OR PENDANT DOWNLIGHT FIXTURE W/ DESIGNATION	BFG	BELOW FINISHED GRADE
	WALL WASH FIXTURE W/ DESIGNATION, DIRECTION INDICATED BY TRIANGLE	C	CONDUIT
	WALL MOUNT LINEAR FLUORESCENT FIXTURE W/ DESIGNATION	CKT	CIRCUIT
	WALL MOUNT FIXTURE W/ DESIGNATION	CT	CURRENT TRANSFORMER
	SPOTLIGHT	EOMH	ELECTRICALLY OPERATED, MECHANICALLY HELD
	CEILING OR WALL MOUNT EXIT SIGN (INSTALL FACE AS INDICATED BY ARROWS)	EM	EMERGENCY
	EMERGENCY BATTERY FIXTURE	EWC	ELECTRIC WATER COOLER
	CEILING FAN	(E)	EXISTING
	20A SIMPLEX RECEPTACLE AT 18" U.N.O.	ETR	EXISTING TO REMAIN
	20A DUPLEX RECEPTACLE AT 18" U.N.O.	ER	EXISTING RELOCATED
	GFCI RECEPTACLE AT 18" U.N.O. (DUPLEX / SIMPLEX)	F/A	FIRE ALARM
	20A QUADRUPLEX RECEPTACLE AT 18" U.N.O.	F/S	FIRE/SMOKE DAMPER
	20A DUPLEX RECEPTACLE 8" ABOVE COUNTER U.N.O.	G OR GND	GROUND
	20A DUPLEX RECEPTACLE SPECIAL MOUNT (FLOOR, CLG)	GEC	GROUNDING ELECTRODE CONDUCTOR
	20A ISOLATED GROUND RECEPTACLE	GF	GROUND FAULT CIRCUIT INTERRUPTER
	20A WEATHER-RESISTANT GFCI RECEPTACLE WITH WEATHERPROOF "EXTRA DUTY WHILE IN USE" COVER	IG	ISOLATED GROUND
	DEDICATED DUPLEX RECEPTACLE WITH AMP RATING NOTED	MFR	MANUFACTURER
	20A DUPLEX RECEPTACLE WITH TOP RECEPTACLE CONTROLLED VIA AUTO-ON/OFF OCCUPANCY SENSOR	N1, N3R, N__	NEMA 1, NEMA 3R, NEMA RATING (AS NOTED)
	20A COMBINATION DUAL USB AND DUPLEX RECEPTACLE		
	SPECIAL RECEPTACLE AS NOTED	NIES	NOT IN ELECTRICAL SECTION
	COMBINATION TELEPHONE/DATA (TELE-DATA) OUTLET (18" ON WALL, 8" ABOVE COUNTER, FLOOR)	NL	NIGHT LIGHT
	TELEPHONE OUTLET, DATA OUTLET	NTS	NOT TO SCALE
	TELEVISION/CABLE OUTLET, CARD READER OUTLET	OH	OVERHEAD
	J-BOX (CEILING/WALL, FLOOR)	SDE	SERVICE DISTRIBUTION ENCLOSURE
	SECURITY CAMERA	SPD	SURGE PROTECTIVE DEVICE
	CONDUIT RUN EXPOSED OR CONCEALED	TT	TELEPHONE TERMINAL
	CONDUIT RUN BELOW FLOOR OR GRADE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
	ITEM TO BE REMOVED	UG	UNDERGROUND
	SWITCHLEG	UNO	UNLESS NOTED OTHERWISE
	CIRCUIT HOMERUN, #12, THWN/THHN & QTY AS REQ'D, W/ GND, 3/4"C., U.N.O.	WP	WEATHER PROOF
	CIRCUIT HOMERUN CONTAINING 3 HOTS, NEUTRAL, & GROUND	WR	WEATHER RESISTANT
	CONDUIT STUB-UP - CAP & MARK	XFMR	TRANSFORMER
	GROUND	XP	EXPLOSION PROOF
	BUILDING STEEL GROUND	+18"	MOUNTING HEIGHT TO CENTERLINE OF DEVICE AFF OR AFG
	COLD WATER GROUND		
	CONCRETE ENCASED ELECTRODE GROUND		FIRE ALARM SYSTEM
	PANELBOARD OR LOAD CENTER	FACP	FIRE ALARM CONTROL PANEL
	TRANSFORMER	ANNUN	FIRE ALARM ANNUNCIATOR PANEL
	DISCONNECT SWITCH (NON-FUSED UNLESS NOTED OTHERWISE WITH FUSE SIZE - AF - IN DISCONNECT SWITCH CALLOUT)	F	MANUAL PULL STATION DOUBLE ACTION
	MAGNETIC MOTOR STARTER	AV	GENERAL ALARM COMBINATION HORN/STROBE (AUDIO/VISUAL) (WALL, CLG)
	COMBINATION DISCONNECT AND STARTER	V	FIRE ALARM STROBE (VISUAL DEVICE) (WALL, CLG)
	MOTOR	S	SPEAKER - CEILING MOUNTED, WALL MOUNTED
	EQUIPMENT CONNECTION		SMOKE/IONIZATION DETECTOR
10 10	OCCUPANCY SENSOR (CEILING, FLOOR) - RATING/COVERAGE, IF SHOWN, IS IN 100'S OF SQ. FT.	H	HEAT DETECTOR
P	PHOTOELECTRIC CELL	D	DUCT DETECTOR
LC	LIGHTING CONTACTOR	FS	SPRINKLER SYSTEM FLOW SWITCH
TC	TIMECLOCK	TS	SPRINKLER SYSTEM TAMPER SWITCH
LCP	LIGHTING CONTROL PANEL	RTS	REMOTE TEST SWITCH
S	LIGHT SWITCH AT 48" UNLESS NOTED		ELECTRIC DOOR HOLDER
	SUBSCRIPTS		
3	3-WAY SWITCH		
4	4-WAY SWITCH		
O	OCCUPANCY SENSOR SWITCH		
D	DIMMER SWITCH		
K	KEY-OPERATED SWITCH		
T	TIMER SWITCH		
P	SWITCH WITH PILOT LIGHT		
M	MOTOR RATED SWITCH		
V	VACANCY SWITCH (AUTO OFF, MANUAL ON)		
a	LOWER CASE LETTER AT FIXTURES AND SWITCHES (a, b, ETC.) INDICATES SWITCHING CONTROL.		

GENERAL ELECTRICAL NOTES:

1. DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS ON ARCHITECTURAL DRAWINGS AND IN FIELD PRIOR TO COMMENCEMENT OF WORK.
2. BEFORE BEGINNING EXCAVATIONS OF ANY NATURE WHATSOEVER, CONTRACTOR SHALL LOCATE ALL SERVICES AND UTILITIES OCCURRING WITHIN THE BOUNDS OF THE PROJECT. THE CONTRACTOR SHALL THEN PROCEED WITH CAUTION IN HIS WORK SO THAT NO UTILITY OR LINE SERVING AREAS THAT ARE TO REMAIN BE DAMAGED WITH A RESULTANT LOSS OF SERVICE. VERIFY THE SOURCE AND SERVICE OF EACH AND EVERY LINE ENCOUNTERED AND RECORD SERVICE, SIZE AND LOCATION ON RECORD DRAWINGS.
3. COORDINATE EACH AND EVERY INTERRUPTION OF SERVICES AND UTILITIES WITH THE OWNER AND UTILITY COMPANIES TO ENSURE MINIMUM SHUT-DOWN TIMES ARE ACCEPTABLE.
4. VERIFY EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
5. IT IS THE INTENT OF THESE DRAWINGS TO CALL FOR FINISHED WORK, I.E., FULLY ADJUSTED, TESTED, AND READY FOR OPERATION. WHERE THE WORD "PROVIDE" IS USED, IT SHALL MEAN, "FURNISH AND INSTALL COMPLETE AND READY FOR USE".
6. FOR EACH EQUIPMENT CONNECTION SHOWN, PROVIDE THE DEVICE, OUTLET, OR JUNCTION BOX REQUIRED TO CONNECT THE EQUIPMENT.
7. WHERE 120 VOLT BRANCH CIRCUITS EXCEED 57', PROVIDE MINIMUM #10 AWG CONDUCTORS FROM PANEL TO FIRST DEVICE, FIXTURE, ETC. REF. VOLTAGE DROP TABLE ON THIS SHEET FOR ADDITIONAL VOLTAGE DROP CONDITIONS.
8. NO SINGLE CONDUIT SHALL CONTAIN MORE THAN 6 CURRENT CARRYING CONDUCTORS, UNLESS NOTED OTHERWISE AND PROPERLY DERATED. HOMERUN CONDUIT SHALL NOT BE LESS THAN 3/4".
9. ALL WIRING SHALL BE IN CONDUIT. ALL CONDUIT SHALL BE 1/2" EMT MINIMUM WITH STEEL TYPE FITTINGS. 1/2" STEEL FLEXIBLE METAL CONDUIT WILL BE ALLOWED IN MAXIMUM LENGTHS OF 6'. 3/8" AND/OR NON-METALLIC FLEXIBLE CONDUIT SHALL NOT BE USED. MC-TYPE CABLE MAY BE USED FOR INTERIOR BRANCH CIRCUIT WIRING IF ALLOWED BY THE AUTHORITY HAVING JURISDICTION. UNDERGROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL (RGS) OR SCHEDULE 40 PVC WITH RGS ELLS AND RGS CONDUIT/FITTINGS WHEN EMERGING FROM GRADE, UNLESS NOTED OTHERWISE. PROVIDE CODE-SIZED GREEN GROUNDING CONDUCTOR IN ALL CONDUIT. INCREASE CONDUIT SIZE AS REQUIRED. ALL WIRING SHALL BE #12 AWG MINIMUM COPPER CONDUCTORS.
10. UNLESS OTHERWISE NOTED, CONDUIT SHALL BE CONCEALED, IF POSSIBLE, AND INSTALLED SQUARE TO BUILDING LINES.
11. ALL EMPTY RACEWAY SYSTEMS SHALL HAVE A #12 PULLWIRE OR EQUAL, AND SHALL BE IDENTIFIED AT ALL JUNCTION, PULL AND TERMINATION POINTS, USING PERMANENT METALLIC TAGS. TAG SHALL INDICATE INTENDED USE OF CONDUIT, ORIGINATION, AND TERMINATION POINTS OF EACH INDIVIDUAL CONDUIT.
12. WHERE FIXTURES CONTAINING BATTERY PACKS ARE SWITCHED (BY TOGGLE SWITCH, OCCUPANCY SENSOR, TIMECLOCK/LIGHTING CONTROL PANEL, ETC.), SUPPLY TO BATTERY PACKS SHALL BE UNSWITCHED.
13. REVIEW ARCHITECTURAL, STRUCTURAL, CIVIL, PLUMBING, AND OTHER DRAWINGS PRIOR TO BID.
14. INSTALL ALL MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ANY DEVIATIONS SHALL BE BROUGHT TO THE ARCHITECT/ENGINEER'S ATTENTION PRIOR TO INSTALLATION.
15. WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE ARCHITECT.
16. JUNCTION AND PULL BOXES OF APPROPRIATE DIMENSIONS FOR CONDUITS AND CONDUCTORS NOTED SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS AND IN ADDITION WHERE NECESSARY OR CONVENIENT FOR INSTALLING AND PULLING WIRE.
17. SPLICES IN EXTERIOR PULLBOXES SHALL BE MADE WATERPROOF USING "SCOTCHCAST" SPLICE KIT OR APPROVED EQUAL. SEAL ENDS OF CONDUITS AND DUCTS WITH "DUCTSEAL" OR APPROVED EQUAL.
18. PROTECT ALL RECEPTACLES SHOWN AS GFCI-PROTECTED IN LOCATIONS THAT ARE NOT "READILY ACCESSIBLE" (PER THE NEC) WITH GFCI-TYPE CIRCUIT BREAKERS IN LIEU OF GFCI-TYPE RECEPTACLE.
19. PROVIDE A PERMANENTLY AFFIXED LABEL TO EACH INDIVIDUAL RECEPTACLE FACE/COVER PLATE, DISCONNECTING MEANS, SWITCH COVER, ETC., INDICATING THE PANEL AND THE CIRCUIT SERVING THE DEVICE. TYPICAL FOR ALL EQUIPMENT, RECEPTACLES, LIGHTING SWITCHES, AND DISCONNECTS.
20. VERIFY EXACT LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING, AND RACEWAY SYSTEMS PRIOR TO TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION, SUPPORTS, SERVICE FEEDERS (CONDUIT AND/OR WIRE), PULLBOXES, SAWCUTTING AND PATCHING, CONCRETE/PAVING, ETC. REQUIRED. BACKFILL TRENCHES TO 90% COMPACTION AND PATCH TO MATCH EXISTING. CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS.
21. PROVIDE ALL UNDERGROUND CONDUIT SIZES 2" AND LARGER WITH LONG SWEEP ELLS. (MINIMUM 36" RADIUS.)
22. PROVIDE 4" HIGH CONCRETE EQUIPMENT PADS BENEATH.
23. FINAL CONNECTIONS TO VIBRATING EQUIPMENT SHALL BE WITH LIQUIDTIGHT FLEX AND APPROVED FITTINGS. DO NOT SECURE CONDUITS, DISCONNECTS, OR DEVICES TO DUCTWORK OR MECHANICAL EQUIPMENT.
24. ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.
25. WIRE TERMINATION PROVISIONS FOR PANELBOARDS, CIRCUIT BREAKERS, SAFETY SWITCHES, AND ALL OTHER ELECTRICAL APPARATUS SHALL BE LISTED AS SUITABLE FOR AT LEAST 75°C. (CU/AL) OR AS NOTED IN MANUFACTURER'S INSTRUCTIONS, WHICHEVER IS GREATER.
26. PROVIDE ALL PANELBOARDS WITH GROUND BUS SEPARATE FROM NEUTRAL BUS.
27. IT SHALL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT ALL EQUIPMENT DISCONNECTS ARE PROPERLY SIZED PER THE FINAL SELECTED EQUIPMENT MANUFACTURER RECOMMENDATIONS/ REQUIREMENTS AND SAID DISCONNECTS ARE PROVIDED WITH THE REQUIRED NEC WORKING CLEARANCES. TYPICAL FOR ALL EQUIPMENT DISCONNECTS.
28. DOCUMENTS CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET DOCUMENTED PERFORMANCE CRITERIA OF IECC SECTION C405 SHALL BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS FROM THE DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY PER IECC C408.3.2.

VOLTAGE DROP TABLE (20A CIRCUITS ONLY, Cu CONDUCTORS, 3% VD)

	208V, 1ø	120V, 1ø
#12 AWG	0 - 98 FT.	0 - 57 FT.
#10 AWG	99 - 157 FT.	58 - 91 FT.
#8 AWG	158 - 251 FT.	92 - 145 FT.
#6 AWG	252 - 397 FT.	146 - 229 FT.
#4 AWG	398 - 633 FT.	230 - 365 FT.

(VERIFY MINIMUM VOLTAGE DROP AND CONDUIT SIZE, PER N.E.C.)

LIGHT FIXTURE SCHEDULE

CALLOUT	LAMP	DESCRIPTION	MODEL	INPUT WATTS	VOLTS	NOTE 1
A	(1) 30W LED, 3000K	RECESSED DOWNLIGHT	LIGHTOLIER 6-R-N-Z6RDL-20-830-W-O-BK-Z10-U	30	120V 1P 2W	
AE	(1) 30W LED, 3000K	RECESSED DOWNLIGHT WITH BATT. BACKUP PACK	LIGHTOLIER 6-R-N-Z6RDL-20-830-W-O-BK-Z10-U-EM	30	120V 1P 2W	
BE	(1) 55W LED, 4000K	ARCHITECTURAL FULL CUTOFF WALL SCONCE - WET LISTED - W/ BATT. BACKUP PACK	SIGNIFY 101L-32L-700-WW-G1-3-UNV-DD-F1-BZ-EM	55	120V 1P 2W	COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECT.
C	(1) 20W LED	WALL SCONCE - WET LISTED	ECLIPSE LIGHTING SM-XL2-LED-3K-80CRI-UNV-BK-CB-OQT-D7A	20	120V 1P 2W	COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECT.
D	(1) 4.8W LED, 3500K	FULL CUTOFF WALL MOUNT	NEW STAR LIGHTING NWDEU-1-L35-UN-BK	4.8	120V 1P 2W	COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECT.
E	(1) 29W LED	WALLWASH	PATHWAY LIGHTING 4SCALBV-30-3K-E2-N30-DA	29	120V 1P 2W	
N1A	(1) 71W LED	SINGLE LAMP LED POLE	NLS LIGHTING NV-1-T3-32L-7-40K-UNV-HSS-SINGLE @ 18'	71	208V 2P 2W	
N1B	(1) 71W LED, 4000K	SINGLE LAMP LED POLE	NLS LIGHTING NV-1-T4-32L-7-40K-UNV-HSS-SINGLE @ 18'	71	208V 2P 2W	
N2A	(2) 106W LED, 4000K	2 LAMP LED POLE	NLS LIGHTING NV-1-T5-32L-1-40K-UNV-TWIN @ 18'	212	208V 2P 2W	
N2E	(2) 71W LED, 4000K	2 LAMP LED POLE	NLS LIGHTING NV-1-T4-32L-7-40K-UNV-D90@ 18'	142	208V 2P 2W	
X1	(1) 2.7W LED	EXIT WITH EMER. BATTERY BACKUP PACK	LITHONIA LRP- XX-1-XX-120/277	2.7	120V 1P 2W	COORDINATE COLOR "XX" AND BACKGROUND "XX" WITH ARCHITECT PRIOR TO ORDERING/PURCHASING.

*** NOTE TO CONTRACTOR: VERIFY ALL FIXTURE SELECTIONS WITH ARCHITECT PRIOR TO ORDERING/PURCHASING. ***

1

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BUILDING 3
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1900 S. BAGDAD ROAD, BLDG. 3
LEANDER, TEXAS 78641

2 06.20.22 - Revision 2
3 08.26.22 - City Comments

STATE OF TEXAS
AARON DENNINGTON
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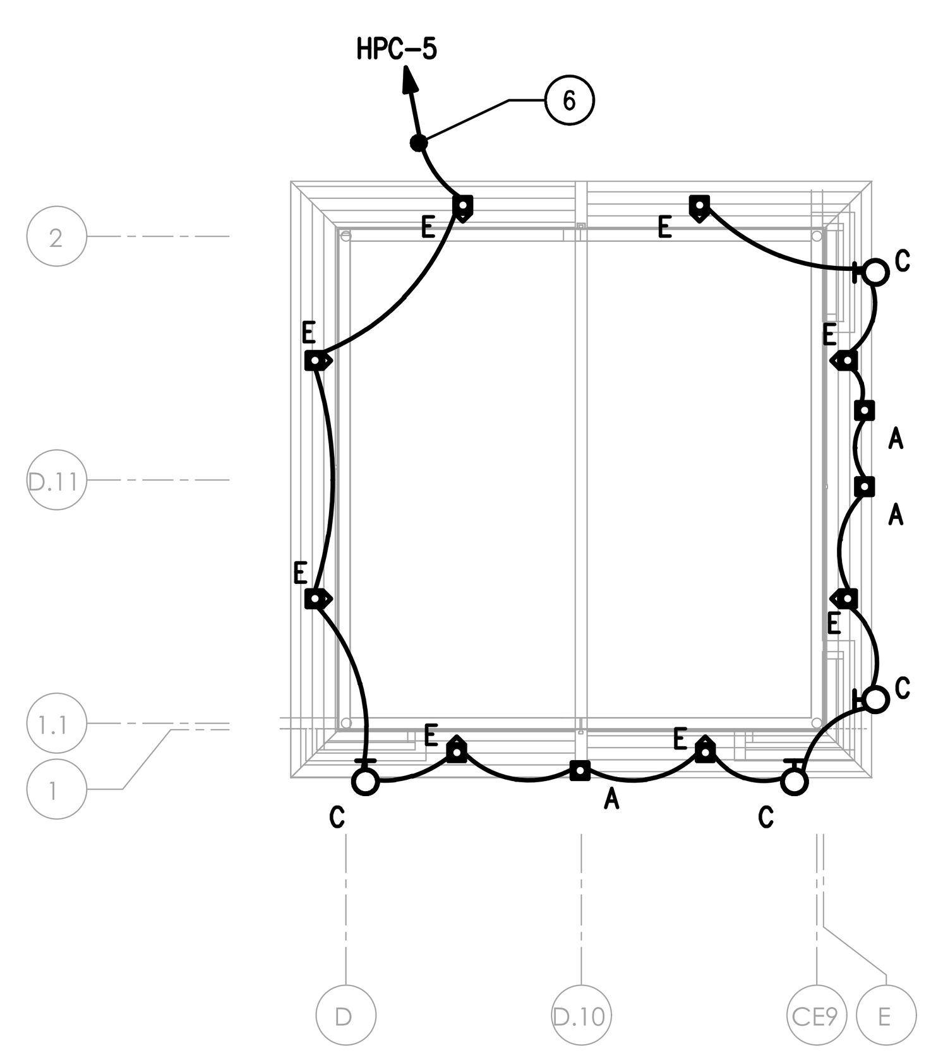
8/26/22

08.26.2022
CITY COMMENTS

ELECTRICAL LEGEND, NOTES, AND SCHEDULE

SHEET: E100

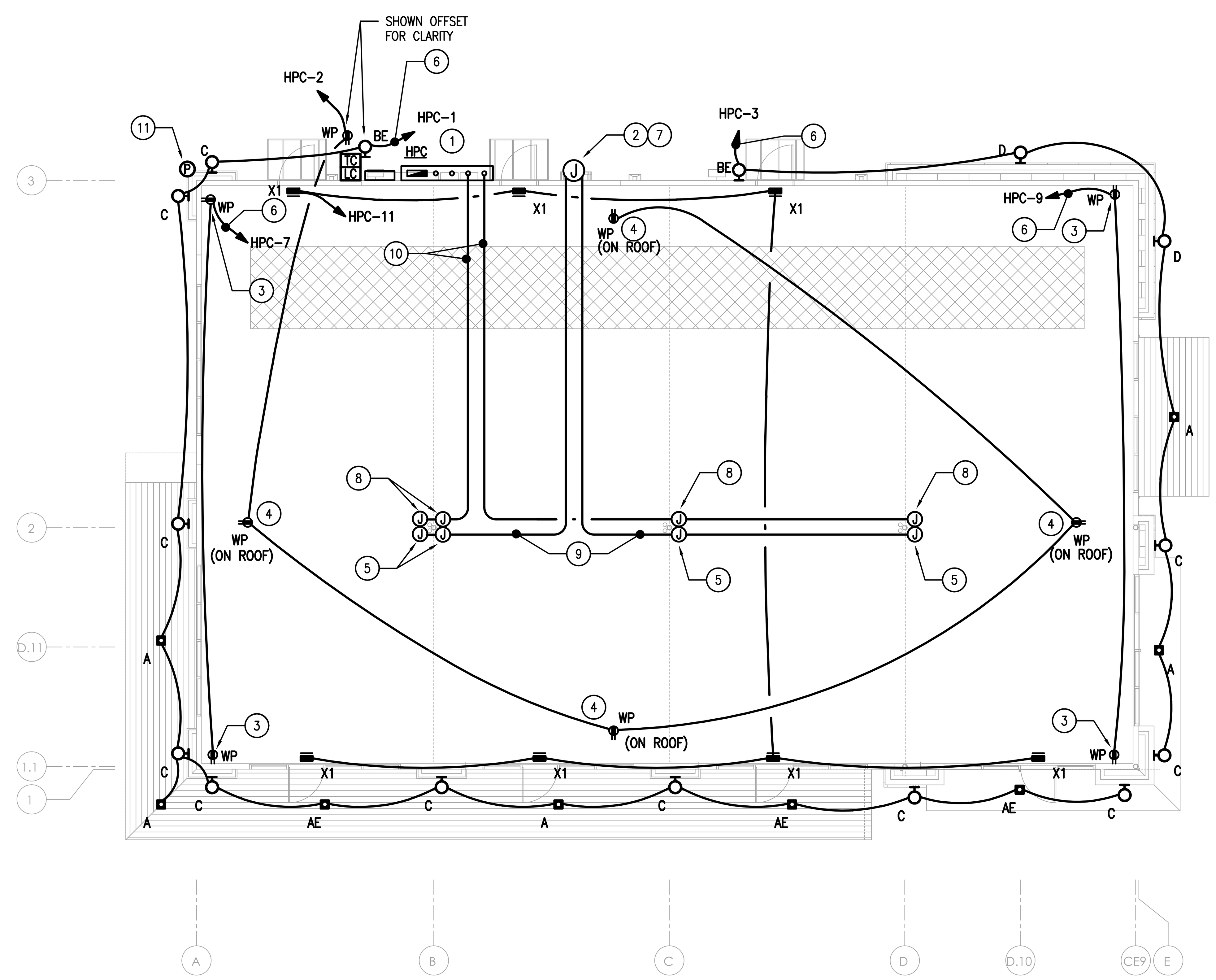
PROJECT NO: 21099
DRAWN BY:
DATE: 01.28.2022
PROJECT MGR:



TRUE NORTH PLAN NORTH 2

TOWER PLAN - LIGHTING + POWER

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



TRUE NORTH PLAN NORTH 1

FLOOR PLAN - LIGHTING + POWER

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

KEYED NOTES:

GENERAL: REFER ALSO TO GENERAL ELECTRICAL NOTES ON SHEET E100.

1. ELECTRIC SERVICE ENTRANCE LOCATION. REFER TO ELECTRICAL RISER DIAGRAM ON SHEET E300 & SITE PLAN ON SHEET EU100.
2. COORDINATE CONNECTION AND REQUIREMENTS FOR TELEPHONE SERVICE ENTRANCE WITH LOCAL TELEPHONE COMPANY. REFER TO SITE PLAN ON SHEET EU100.
3. PROVIDE 120V, 20A, GFCI/WP/WR, DUPLEX RECEPTACLE FOR HOLIDAY LIGHTS. COORDINATE EXACT LOCATION, MOUNTING HEIGHT AND REQUIREMENTS WITH ARCHITECT PRIOR TO ROUGH-IN.
4. LOCATE 20A, 120 VOLT, DUPLEX RECEPTACLE AT ROOFTOP PARAPET WALL. VERIFY EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
5. PROVIDE J-BOX AND 2" CONDUIT W/ PULL STRING FROM FUTURE TENANT SPACE BACK TO TELECOMMUNICATION SERVICE ENTRANCE.
6. TIME CLOCK CONTROLLED. REFER TO LIGHTING CONTROLS DIAGRAM ON SHEET E300 FOR FURTHER INFORMATION.
7. PROVIDE 12"X12"X18" N3R JUNCTION BOX ABOVE TELEPHONE PEDESTAL ON EXTERIOR WALL AT HEIGHT MATCHING INTERIOR BAR JOISTS. ROUTE 4" PVC CONDUIT (PAINTED WITH COLOR SPECIFIED BY ARCHITECT) W/ PULL STRING FROM TELEPHONE PEDESTAL TO J-BOX. CAULK AROUND BOX. SHOWN OFFSET FOR CLARITY.
8. PROVIDE PULL BOX AT CEILING FOR TENANT FEEDERS. ROUTE 1-2" EMPTY CONDUIT WITH PULL STRINGS TO ABOVE ELECTRICAL SERVICE GUTTER.
9. PROVIDE 2" CONDUITS WITH PULL STRINGS, (1) 2" CONDUIT FOR EACH TENANT TELECOMMUNICATION. REFER TO KEYED NOTE 5, THIS SHEET. CONTRACTOR TO RUN CONDUIT HIGH IN JOIST AND DOWN COLUMN TO EACH TENANT SPACE.
10. PROVIDE 2" CONDUIT WITH PULL STRINGS FOR EACH TENANT FEEDERS, (1) 2" CONDUIT FOR TENANT FEEDERS. REFER TO KEYED NOTE 8, THIS SHEET. CONTRACTOR TO RUN CONDUIT HIGH IN JOIST AND DOWN COLUMN TO EACH TENANT SPACE.
11. MOUNT PHOTOCELL HIGH ON WALL FACING NORTHEAST. REF. SHEET E300 FOR LIGHTING CONTROLS DIAGRAM.

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FLOOR PLAN - LIGHTING & POWER

SHEET: E200

PROJECT NO: 21099
DRAWN BY:
DATE: 01.28.2022
PROJECT MGR:

HPC

ROOM EXTERIOR BLDG 3	VOLTS 208Y/120V 3P 4W	AIC 22,000
MOUNTING SURFACE	BUS AMPS 60	MAIN BKR MLO
FED FROM UTILITY	NEUTRAL 100%	LUGS STANDARD
NOTE NEMA 3R		

	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	
LC	1	20/1	EXTERIOR LIGHTING	0.415			2	20/1	EXTERIOR RECEPTACLE	0.9			
LC	3	20/1	EXTERIOR LIGHTING		0.135		4	20/2	SITE LIGHTING		0.354		LC
LC	5	20/1	TOWER LIGHTING			0.372	6	|				0.354	
LC	7	20/1	HOLIDAY RECEPTACLE	1			8	20/1	SITE SIGNAGE	1.2			LC,*
LC	9	20/1	HOLIDAY RECEPTACLE		1		10	–/1	SPACE		0		
	11	20/1	EXIT SIGN LIGHTING			0.019	12	–/1	SPACE			0	
	13	–/1	SPACE	0			14	–/1	SPACE	0			
	15	–/1	SPACE		0		16	–/1	SPACE		0		
	17	–/1	SPACE			0	18	–/1	SPACE			0	
	19	–/1	SPACE	0			20	–/1	SPACE	0			
	21	–/1	SPACE		0		22	–/1	SPACE		0		
	23	–/1	SPACE			0	24	–/1	SPACE			0	
									TOTAL CONNECTED KVA BY PHASE	3.52	1.49	0.745	

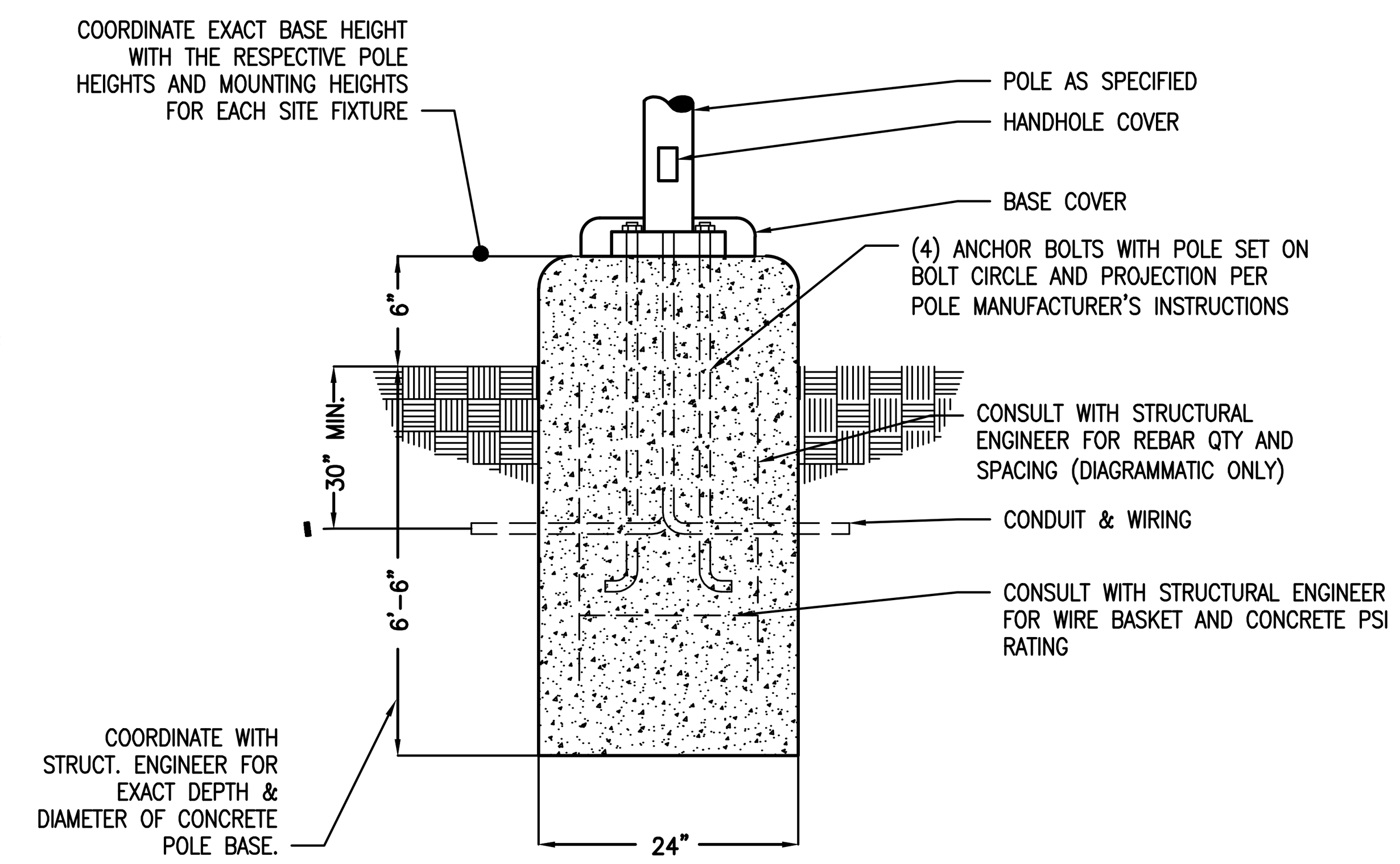
	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	1.65	2.06	(125%)	RECEPTACLES	2.9	2.9	(50%>10)
				CONTINUOUS	1.2	1.5	(125%)
				TOTAL LOAD		6.46	
				BALANCED 3-PHASE LOAD		17.9 A	

PANELBOARD FOOT NOTES:

* = PROVIDE LOCKABLE-TYPE CIRCUIT BREAKER

LC = LTG. CONTROLS ASSIGNMENT. REFER TO LTG. CTRL. SCHED. ON THIS SHEET.

DESIGNATION RANGE (ID)	GROUNDING ELECTRODE CONDUCTOR CU WIRE SIZE FOR: GROUND ROD	CONCRETE-ENCASED ELECTRODE	STRUCTURAL STEEL AND METAL WATER PIPING (IF ANY)
20G–100G	#8	#8	#8
125G–150G	#6	#6	#6
175G–200G	#6	#4	#4
225G–300G	#6	#4	#2
350G–500G	#6	#4	#1/0
600G–800G	#6	#4	#2/0
1000G+	#6	#4	#3/0
NOTES:	1. DESIGNATIONS REFER TO AMPERAGE FOLLOWED BY A "G." FOR EXAMPLE, 30G WOULD FALL WITHIN THE 20G–100G RANGE.		
	2. CONDUCTOR CONNECTED TO FIRST ELECTRODE IN SYSTEM SHALL BE SIZED ACCORDING TO THE GROUNDING ELECTRODE REQUIRING THE LARGEST CONDUCTOR. ONLY AVAILABLE GROUNDING ELECTRODES IN SYSTEM SHALL BE CONSIDERED. ALL BONDING BETWEEN REMAINING ELECTRODES SHALL BE SIZED ACCORDING TO VALUE LISTED IN TABLE.		
	3. GROUNDING ELECTRODE SYSTEMS SHALL CONSIST OF ALL AVAILABLE GROUNDING ELECTRODES.		
	4. THIS TABLE IS BASED ON ARTICLE 250.66 OF THE NEC.		



3 POLE BASE DIAGRAM

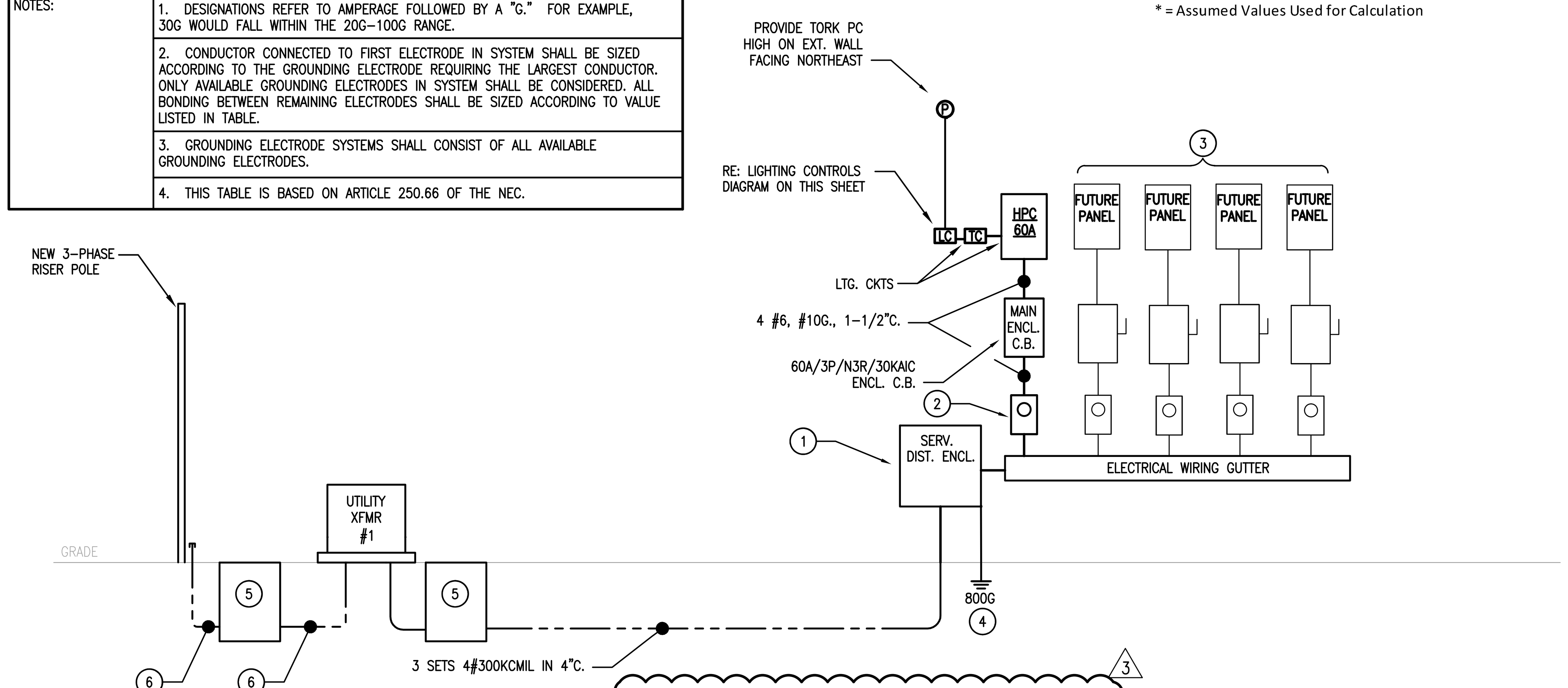
SCALE: NONE

ELECTRICAL LOAD ANALYSIS	
RETAIL BUILDING 3 LOAD DESCRIPTION 120/208V., 3ø, 4W	LOAD KVA
FUTURE TENANT LOAD – (3,200 S.F. x 50W) RETAIL =	160
FUTURE TENANT LOAD – (800 S.F. x 65W) RESTAURANT =	52
HOUSE LOADS	
LIGHTING 1.7 KVA AT 1.25% =	1.8
RECEPTACLES AT 100% =	2.9
CONTINUOUS AT 100% =	1.5
TOTAL ESTIMATED CONNECTED LOAD =	218.2
282.4 KVA / 208 / $\sqrt{3}$ = AMPS	606
BUILDING SERVICE AMPACITY	800 AMPS
BUILDING SERVICE SPARE CAPACITY	783 AMPS

THE SQUARE AT CRYSTAL FALLS BLDG 3 - SHORT CIRCUIT CALCULATIONS

Equipment Name	Feeder Length (ft)	Parallel Sets	Conduit	Wire Type	Wire Size	KVA	L-L Voltage	%Z	C-Value	Load Served (A)	Upstream I[SCA]	f-Value	Multiplier (M)	Calculated Values (A)
Utility Transformer*						500	208	1.4		1387.9			71.429	99133
SERV. DIST. ENCL.	110	3	Non-mag	Copper	#300kcmil		208		20868		99133	1.450	0.408	40455
60A ENCL. C.B.	5	1	Steel	Copper	#6		208		2425		40455	0.695	0.590	23873
HPC Panel	5	1	Steel	Copper	#6		208		2425		23873	0.410	0.709	16933

* = Assumed Values Used for Calculation



GENERAL NOTES:

GENERAL: REFER ALSO TO GENERAL ELECTRICAL NOTES ON SHEET E100.

1. UNDERGROUND INSTALLATIONS OF ELECTRICAL SERVICE SHALL COMPLY WITH THE 2014 NEC, SEC. 300.5(D).

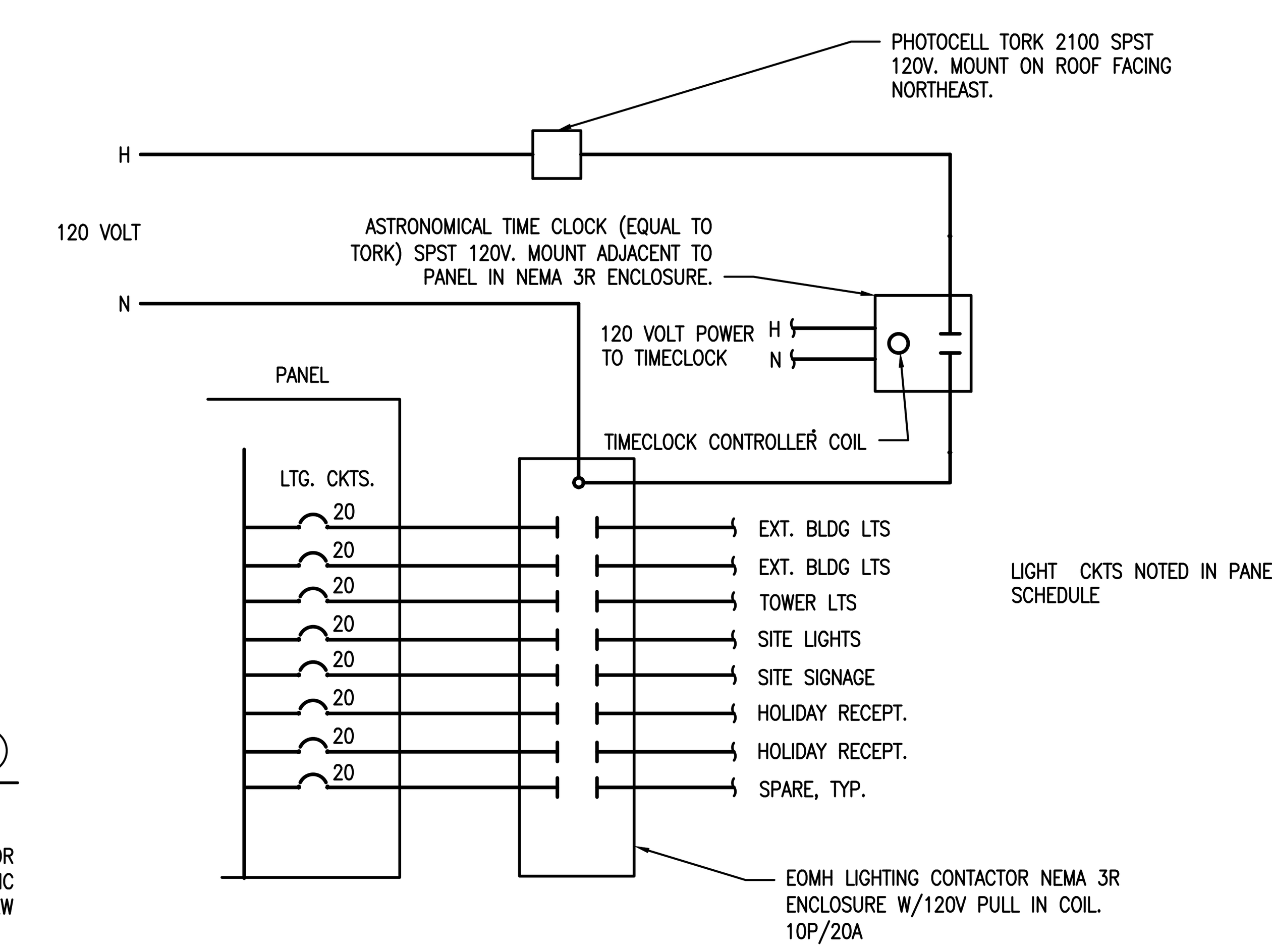
KEYED NOTES:

GENERAL: REFER ALSO TO GENERAL ELECTRICAL NOTES ON SHEET E100.

1. PROVIDE SERVICE DISTRIBUTION ENCLOSURE, RATED FOR 800A/3P/N3R/65KAIC, IN ACCORDANCE WITH LOCAL ELECTRIC COMPANY STANDARDS. PROVIDE ARC FLASH LABELING TO ALL NEW EQUIPMENT.
2. PROVIDE ELECTRICAL SERVICE METER BASE PER LOCAL ELECTRIC COMPANY REQUIREMENTS.
3. FUTURE PANEL, METER & FUSED DISCONNECT TO BE PROVIDED UNDER THE TENANT FINISH-OUT CONTRACT.
4. REFER TO GROUNDING ELECTRODE CONDUCTOR SCHEDULE ON THIS SHEET.
5. PROVIDE PRIMARY ENCLOSURE AS REQUIRED BY THE UTILITY PROVIDER.
6. CONDUIT PROVIDED BY DEVELOPER, INSTALLED PER P.E.C. SPECIFICATIONS.

1 ELECTRICAL RISER DIAGRAM

SCALE: NONE



2 LIGHTING CONTROLS DIAGRAM

SCALE: NONE

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ELECTRICAL RISER AND DIAGRAMS

SHEET: E300

PROJECT NO: 21099
DRAWN BY:
DATE: 01.28.2022
PROJECT MGR:

ELECTRICAL SPECIFICATIONS:

PART 1 – GENERAL

1.01 SCOPE OF WORK:
FURNISH AND INSTALL ALL MATERIALS AND EQUIPMENT AND PROVIDE ALL LABOR, TOOLS, TRANSPORTATION, SUPERINTENDENCE AND SERVICES REQUIRED AND NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND/OR SPECIFIED HEREIN.

ALSO INCLUDED WILL BE ALL OTHER WORK AND MISCELLANEOUS ITEMS, NOT SPECIFICALLY MENTIONED, BUT REASONABLY INFERRED FOR A COMPLETE INSTALLATION INCLUDING ALL ACCESSORIES AND APPURTENANCES REQUIRED FOR TESTING THE SYSTEM. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS THAT ALL SYSTEMS BE COMPLETE AND READY FOR OPERATION.

1.02 REGULATORY REQUIREMENTS:
ALL WORK AND MATERIALS SHALL COMPLY WITH THE LATEST RULES, CODES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

A. 2015 INTERNATIONAL BUILDING CODE
B. 2015 INTERNATIONAL FIRE CODE
C. 2015 INTERNATIONAL PLUMBING CODE
D. 2015 INTERNATIONAL FUEL GAS CODE
E. 2015 INTERNATIONAL MECHANICAL CODE
F. 2015 INTERNATIONAL ENERGY CONSERVATION CODE/ASHRAE 90.1–2013 ENERGY CODE COMPLIANCE
G. 2014 NATIONAL ELECTRIC CODE
H. LOCAL CODE ORDINANCES AND AMENDMENTS
I. NATIONAL ELECTRICAL MANUFACTURER ASSOCIATION (NEMA)
J. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
K. NATIONAL ELECTRICAL SAFETY CODE (NESC)
L. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
M. UNDERWRITERS' LABORATORIES (UL)
N. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
O. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
P. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
Q. AMERICANS WITH DISABILITIES ACT (ADA)
R. APPLICABLE UTILITY COMPANIES

1.03 LICENSE, FEES AND PERMITS:
ELECTRICAL CONTRACTOR SHALL PAY FOR ALL LICENSES, PERMITS AND INSPECTION FEES REQUIRED BY THE AUTHORITY HAVING JURISDICTION AND SHALL ARRANGE FOR ALL REQUIRED INSPECTIONS.

1.04 SAFETY AND INDEMNITY:
THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

NO ACT, SERVICE, DRAWING REVIEW OR CONSTRUCTION REVIEW BY THE OWNER, THE ENGINEERS OR THEIR CONSULTANTS, IS INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON, OR NEAR THE CONSTRUCTION SITE.

1.05 DRAWINGS AND SPECIFICATIONS:
ALL DRAWINGS AND SPECIFICATIONS SHALL BE CONSIDERED AS A WHOLE AND WORK OF THIS DIVISION SHOWN ANYWHERE THEREIN SHALL BE FURNISHED UNDER THIS DIVISION.

DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT AND WIRING. MOST DIRECT ROUTING OF CONDUITS AND WIRING IS NOT ASSURED. EXACT REQUIREMENTS SHALL BE GOVERNED BY CONDITIONS OF THE JOB. CONSULT ALL OTHER DRAWINGS IN PREPARATION OF THE BID. EXTRA LENGTHS OF WIRING OR ADDITION OF PULL OR JUNCTION BOXES, ETC. NECESSITATED BY SUCH CONDITIONS SHALL BE INCLUDED.

1.06 CONDITIONS AT SITE:
THE ELECTRICAL CONTRACTOR SHALL HAVE EXAMINED THE SITE AND FAMILIARIZED THEMSELVES WITH ALL DISCERNIBLE EXISTING CONDITIONS. NO EXTRA PAYMENT WILL BE ALLOWED FOR WORK REQUIRED BECAUSE OF THESE CONDITIONS, WHETHER SPECIFICALLY MENTIONED OR NOT.

1.07 WORKMANSHIP AND CONTRACTOR'S QUALIFICATIONS:
ONLY QUALITY WORKMANSHIP WILL BE ACCEPTED. HAPHAZARD OR POOR INSTALLATION WILL BE CAUSE FOR REJECTION OF WORK. THE CONTRACTOR SHALL BE LICENSED IN THE STATE IN WHICH THE JOB IS LOCATED.

1.08 SHOP DRAWINGS AND MATERIALS LIST:
SUBMIT TO OWNER IN A SINGLE PACKAGE SIX (6) COPIES OF COMPLETE SHOP DRAWINGS AND MATERIALS LIST, AS NOTED BELOW, FOR REVIEW WITHIN FIFTEEN (15) DAYS AFTER AWARD OF CONTRACT. SUBMITTALS REQUIRED AS FOLLOWS:

A. WIRING DEVICES: RECEPTACLES, DEVICE PLATES.
B. ENCLOSURES FOR UTILITY COMPANY METERING.
C. ENCLOSED CIRCUIT BREAKER.
D. PANELBOARDS.
E. LIGHTING FIXTURES, LAMPS AND LIGHTING CONTROL EQUIPMENT.

1.09 SUBSTITUTIONS:

ONE OR MORE MAKES OF MATERIALS OR METHODS MAY HAVE BEEN SPECIFIED TO ESTABLISH THE STANDARD OF QUALITY, WORKMANSHIP, FINISH AND DESIGN REQUIRED, BUT OTHER MATERIALS OR METHODS EQUAL IN QUALITY, WORKMANSHIP, FINISH, DESIGN, AND GUARANTEED PERFORMANCE WILL BE ACCEPTED. HOWEVER, ALL CHANGES AND SUBSTITUTIONS SHALL BE REQUIRED IN LETTER FORM AND SHALL BE ACCOMPANIED WITH A STATEMENT OF THE AMOUNT OF MONEY TO BE RETURNED TO THE CONTRACT IF THE SUBSTITUTION IS PERMITTED.

NO WORK INVOLVING MATERIALS SUBMITTED FOR SUBSTITUTION SHALL PROCEED UNTIL WRITTEN ACCEPTANCE IS RECEIVED FROM THE OWNER. THE OWNER IS THE SOLE JUDGE OF ACCEPTABILITY OF PREFERRED SUBSTITUTIONS. IF A SUBSTITUTION ITEM IS PERMITTED, AND ANY RE–DESIGN EFFORT IS THEREBY NECESSITATED, THE REQUIRED RE–DESIGN SHALL BE AT THE CONTRACTOR'S EXPENSE.

1.10 COORDINATION:

COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CORRECT ROUGH–IN AND CONNECTION FOR EQUIPMENT FURNISHED UNDER OTHER TRADES THAT REQUIRE ELECTRICAL CONNECTIONS. INFORM CONTRACTORS OF OTHER TRADES OF THE REQUIRED ACCESS TO AND CLEARANCES AROUND ELECTRICAL EQUIPMENT TO MAINTAIN SERVICE ABILITY AND CODE COMPLIANCE.

VERIFY EQUIPMENT DIMENSIONS AND REQUIREMENTS WITH PROVISIONS SPECIFIED UNDER THIS SECTION. CHECK ACTUAL JOB CONDITIONS BEFORE FABRICATING WORK. REPORT NECESSARY CHANGES IN TIME TO PREVENT NEEDLESS WORK. CHANGES OR ADDITIONS, SUBJECT TO ADDITIONAL COMPENSATION, WHICH ARE MADE WITHOUT WRITTEN AUTHORIZATION AND IN AGREED PRICE, SHALL BE AT THE CONTRACTOR'S RISK AND EXPENSE.

1.11 ROUTINGS:

ALL CONDUIT ROUTINGS, INCLUDING MC CABLE, SHALL BE PARALLEL AND PERPENDICULAR TO THE BUILDING STRUCTURE AND LINES. CONDUITS SHALL BE CONCEALED WHERE POSSIBLE UNLESS NOTED OTHERWISE. AESTHETIC APPEARANCE IS VERY IMPORTANT FOR THE WORK OF THIS PROJECT – THE CONTRACTOR WILL BE REQUIRED TO REMOVE AND REPLACE WORK THAT IS NOT NEAT AND ACCURATE. UNDERGROUND ROUTINGS, IF ANY, BETWEEN BUILDINGS MAY TAKE MOST DIRECT ROUTE.

1.12 CUTTING AND PATCHING:

ALL CUTTING AND PATCHING REQUIRED FOR WORK OF THIS DIVISION IS INCLUDED HEREIN. COORDINATION WITH GENERAL CONTRACTOR AND OTHER TRADES IS IMPERATIVE. CONTRACTOR SHALL BEAR THE RESPONSIBILITY FOR AND THE ADDED EXPENSE OF ADJUSTING FOR IMPROPER HOLES, SUPPORTS, ETC.

1.13 ACCEPTANCE DEMONSTRATION:

UPON COMPLETION OF THE WORK, AT A TIME TO BE DESIGNATED BY THE OWNER, THE CONTRACTOR SHALL DEMONSTRATE FOR THE OWNER THE OPERATION OF THE ELECTRICAL INSTALLATION, INCLUDING ANY AND ALL SPECIAL ITEMS INSTALLED BY HIM/HER OR INSTALLED UNDER THEIR SUPERVISION. PROPERLY SET AUTOMATIC TIME SWITCHES TO PERFORM SWITCHING OPERATIONS IN ACCORDANCE WITH SCHEDULES PROVIDED BY THE OWNER'S REPRESENTATIVE AND DEMONSTRATE (USING THE MANUFACTURER'S OPERATING INSTRUCTIONS) HOW TO OVERRIDE AND/OR TEST TIME SWITCHES' PROGRAMMING.

1.14 RECORD DRAWINGS, EQUIPMENT DATA:

MAINTAIN ONE SET OF CLEAN WORKING DRAWINGS AT THE JOB SITE AND ENTER DAILY SUCH "AS–BUILTS" INFORMATION AS FEEDER AND SERVICE ROUTES, PULL BOX LOCATIONS AND CHANGES IN LAYOUT OR ARRANGEMENT WHICH OCCUR DURING CONSTRUCTION. DELIVER COMPLETED DRAWINGS TO THE OWNER.

DELIVER TO THE OWNER'S REPRESENTATIVE THREE COPIES OF DATA SHEETS OR OTHER CURRENT MANUFACTURERS' PUBLICATIONS FOR EACH ITEM OF ELECTRICAL EQUIPMENT FURNISHED FOR THE PROJECT INCLUDING AT LEAST THESE DATA:

A. TECHNICAL DESCRIPTION AND REPLACEABLE PARTS LIST.
B. PHYSICAL DESCRIPTION AND INSTALLATION INSTRUCTIONS.
C. USER'S MANUAL AND OPERATING INSTRUCTIONS.
D. MANUFACTURER'S WARRANTY.

1.15 CLEAN–UP:

RID THE PREMISES OF SCRAP MATERIALS, TRASH AND DEBRIS BOTH DURING CONSTRUCTION AND AT COMPLETION OF THE PROJECT. LEAVE THE BUILDING AND SURROUNDING AREA IN A CLEAN AND ORDERLY CONDITION.

1.16 TEMPORARY SERVICES:

PROVIDE ADEQUATE AND SAFE TEMPORARY ELECTRICAL POWER AND LIGHTING THROUGHOUT THE CONSTRUCTION AND FINISHING OF THE PREMISES FOR BENEFICIAL OCCUPANCY. IN ADDITION TO SPECIAL OR UNUSUAL REQUIREMENTS, PROVIDE AT LEAST THESE ITEMS:

A. SIX 20–AMP CIRCUITS FOR CONSTRUCTION POWER TOOLS. PROVIDE GFI TEMPORARY CIRCUITS WITH COVERPLATES TO MEET OSHA REQUIREMENTS.

B. FLOOD LIGHTING AND TASK LIGHTING FOR PAINTING AND OTHER FINISH WORK. WHEN PERMANENT ELECTRICAL SERVICE IS OPERABLE, DISCONNECT AND REMOVE FROM THE PREMISES THE MATERIALS AND EQUIPMENT USED FOR TEMPORARY POWER AND LIGHTING, AND RESTORE MODIFICATIONS AND REPAIR DAMAGE CAUSED BY THE INSTALLATION, USE OR REMOVAL OF TEMPORARY SERVICE PROVISIONS.

1.17 WARRANTY:

THE CONTRACTOR SHALL UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE AND WILL REPAIR OR REPLACE ANY DEFECTIVE WORK PROMPTLY AND WITHOUT CHARGE AND RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE MATERIALS AND WORKMANSHIP.

PART 2 – PRODUCTS

2.01 MATERIAL APPROVAL:

ALL MATERIALS MUST BE NEW AND BEAR UNDERWRITER'S LABORATORIES LABEL. MATERIALS THAT ARE NOT COVERED BY UL TESTING STANDARDS SHALL BE TESTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY OR A GOVERNMENTAL AGENCY.

MATERIAL NOT IN ACCORDANCE WITH THESE SPECIFICATIONS MAY BE REJECTED EITHER BEFORE OR AFTER INSTALLATION.

2.02 CONDUITS AND OTHER RACEWAYS:

A. RIGID STEEL: HOT–DIPPED GALVANIZED.

B. INTERMEDIATE METAL CONDUIT (IMC): HOT–DIPPED GALVANIZED.

C. ELECTRICAL METALLIC TUBING (EMT): ELECTRO–GALVANIZED.

D. WIREWAY: CODE GAUGE STEEL, WITH KNOCKOUTS AND HINGED COVER, CORROSION RESISTANT, GRAY BAKED ENAMEL FINISH.

E. PROVIDE FITTINGS AND ACCESSORIES APPROVED FOR THE PURPOSE EQUAL IN ALL RESPECTS TO THE CONDUIT OR RACEWAY. EMT CONNECTORS AND COUPLINGS SHALL BE STEEL SETSCREW TYPE INDOORS AND STEEL COMPRESSION TYPE IN WET LOCATIONS AND OUTDOORS.

2.03 WIRES AND CABLES:

A. FOR POWER AND LIGHTING SYSTEM 600V OR LESS:

1. CONDUCTOR: MINIMUM SIZE #12 AWG.

a. #12 AND #10 AWG SOLID COPPER.
b. #8 AWG AND LARGER SHALL BE STRANDED COPPER FOR BRANCH CIRCUITS FOR SERVICE AND FEEDERS.

2. INSULATION TYPE:

a. #12 TO #1 AWG: THWN FOR WET OR UNDERGROUND AND THHN FOR DRY LOCATIONS.
b. #1/0 THROUGH #4/0 AWG: XHHW (55 MILS).
c. #250 KCMIL AND LARGER: XHHW (65 MILS).
d. GROUNDING WIRE: TW.

B. FOR SIGNAL AND COMMUNICATIONS CIRCUIT:

1. CONDUCTORS FOR GENERAL USE SHALL BE STRANDED COPPER CONDUCTOR, #16 AWG MINIMUM, WITH THWN INSULATION FOR UNDERGROUND OR WET LOCATIONS AND THHN INSULATION FOR DRY LOCATIONS.

C. ACCEPTABLE PRODUCTS: GENERAL ELECTRIC, ANACONDA, OKONITE, PARANITE OR TRIANGLE PRODUCTS CONFORMING OR EXCEEDING APPLICABLE IPCEA STANDARDS.

2.04 OUTLET BOXES, JUNCTION AND PULL BOXES:

A. OUTLET BOXES: 4" SQUARE X 1–1/2" DEEP (OR LARGER) GALVANIZED SHEET STEEL KO–TYPE WITH PLASTER RING AND COVER FOR GENERAL INTERIOR USE AND CAST METAL TYPE FS OR FD WITH MATCHING SCREW COVERS FOR EXTERIOR AND EXPOSED INTERIOR LOCATIONS (GASKETED IN DAMP OR WET LOCATIONS).

B. JUNCTION BOXES SHALL BE SAME AS OUTLET BOXES UP TO 42 CU. IN. AND CODE–GAUGE STEEL IN LARGER SIZES WITH SURFACE OR FLUSH–TYPE SCREW–MOUNTED TRIM COVERS, BOTH BOXES AND COVERS INHIBITOR–PRIMED AND PAINTED INSIDE OUT.

C. PULL BOXES SHALL BE SAME AS JUNCTION BOXES UNLESS INDICATED OTHERWISE ON THE DRAWINGS, WITH COVERS.

D. ALL BOXES AND ASSOCIATED COMPONENTS SHALL BE STEEL CITY 663 SERIES, WITH P60–3B COVERPLATE OR EQUAL.

2.05 WIRING DEVICES AND PLATES SHALL BE HUBBELL, ARROW HART, LEVITON, GE OR P&S WITH HUBBELL NUMBERS USED TO SPECIFY TYPE USED.

A. STANDARD DESIGN:

1. RECEPTACLE DEVICES SHALL BE AS SPECIFIED BY ARCHITECT.

2. WALL PLATES SHALL BE AS SPECIFIED BY ARCHITECT.

3. RECEPTACLES SHALL BE GROUNDING TYPE #5362 (HUBBELL NUMBER).

2.06 CONDUIT HANGERS:

FOR INDIVIDUAL CONDUIT RUNS NOT DIRECTLY FASTENED TO THE STRUCTURE, USE ROD HANGERS MANUFACTURED BY CADDY, UNISTRUT, OR POWERSTRUT. FOR MULTIPLE CONDUIT RUNS, USE UNISTRUT OR POWERSTRUT TRAPEZE TYPE CONDUIT SUPPORT DESIGNED FOR MAXIMUM DEFLECTION NOT GREATER THAN 1/8".

2.07 WIRE CONNECTORS:

FOR WIRE SIZES #8 AWG AND SMALLER: INSULATED PRESSURE TYPE (WITH LIVE SPRING) RATED 105 DEGREES C., 600V. FOR BUILDING WIRING AND 1000V IN SIGNS OR FIXTURES: SCOTCHLOK OR IDEAL. FOR WIRE SIZE #6 AWG AND LARGER: T & B OR EQUIVALENT COMPRESSION TYPE WITH 3M #33+ OR PLYMOUTH "SLIPKNOT GRAY" TAPE INSULATION.

2.08 PANELBOARDS:

A. CONSTRUCTION: CABINETS SHALL BE OF CODE GAUGE, GALVANIZED STEEL, SURFACE OR FLUSH MOUNTED AS INDICATED. DOORS SHALL BE OF COLD–ROLLED STEEL WITH CONCEALED HINGES AND FLUSH CATCH AND LOCK. ALL PANELS SHALL BE KEYED ALIKE. PANELS LOCATED ADJACENT TO EACH OTHER SHALL HAVE IDENTICALLY SIZED ENCLOSURE AND TRIMS. MINIMUM PANEL WIDTH SHALL BE 20". FINISH EXPOSED PART WITH ONE COAT OF PRIMER AND ONE COAT OF LIGHT GRAY ENAMEL SUITABLE FOR OVERPAINTING IN FIELD IF DESIRED.

B. BUS BARS: PROVIDE GROUND BLOCK WITH FULL COMPLEMENT OF TERMINALS IN ADDITION TO INSULATED NEUTRAL BUS. FUTURE BREAKER SPACES SHALL HAVE COMPLETE PROVISION INCLUDING BUSSES AND CONNECTING HARDWARE.

C. MANUFACTURERS: PANELBOARDS SHALL BE GENERAL ELECTRIC, SQUARE D, EATON, OR SIEMENS–ITE.

D. CIRCUIT BREAKERS: SHALL BE QUICK–MAKE, QUICK–BREAK, MOLDED CASE TYPE:

1. 120/208–240 VOLT PANELS: SHALL BE BOLT–ON TYPE WITH MINIMUM SYMMETRICAL INTERRUPTING CAPACITY AS SHOWN ON THE PLANS.

2. ALL BREAKERS MUST BE FULLY RATED. SERIES RATING NOT ALLOWED.

3. PROVIDE MULTI–POLE UNITS WITH COMMON TRIP ELEMENT.

E. IDENTIFICATION: PROVIDE SCREWED–ON (NO ADHESIVES) BAKELITE OR PHOTO–ETCHED METALLIC NAMEPLATE IDENTIFICATION ON OUTSIDE OF EACH PANEL SHOWING PANEL DESIGNATION, VOLTAGE, AND PHASE IN MINIMUM 1/4" HIGH LETTERS. EACH PANEL SHALL CONTAIN A METAL–FRAMED CIRCUIT DIRECTORY INSIDE COVER, WITH PLASTIC PROTECTOR.

F. COMPLETE SHOP DRAWINGS ARE REQUIRED. SEE ARTICLE 1.08.

2.09 INDIVIDUALLY MOUNTED MOTOR CONTROLLERS:

A. STARTERS FOR FRACTIONAL HORSEPOWER 120V MOTORS SHALL BE MANUAL TYPE UNLESS SHOWN OTHERWISE, EQUIPPED WITH BUILT–IN OVERLOAD PROTECTION.

B. ACCEPTABLE MANUFACTURERS: GENERAL ELECTRIC, EATON, SIEMENS, SQUARE D, AND ALLEN BRADLEY.

2.10 MISCELLANEOUS MATERIALS:

A. SAFETY SWITCHES: HEAVY DUTY TYPE, 600V, HORSEPOWER RATED FOR MOTORS, FUSED OR NON–FUSED AS REQUIRED. MOUNT IN ENCLOSURE WITH NEMA RATING AS REQUIRED FOR THE SPECIFIC APPLICATION. GENERAL ELECTRIC, SQUARE D, EATON OR SIEMENS–ITS.

B. TIME CLOCK: TORK #DGLC, OR ACCEPTED SUBSTITUTE.

C. PHOTOCELLS: TORK EPC1, OR ACCEPTED SUBSTITUTE.

D. CONTACTORS/RELAYS: AS MANUFACTURED BY ASCO, OR ACCEPTED SUBSTITUTE, MECHANICALLY HELD WITH RELAYS AS REQUIRED TO OPERATE ON TWO WIRE CONTROL CIRCUITS.

2.11 LIGHTING:

A. LIGHTING TO BE PROVIDED BY THE ELECTRICAL CONTRACTOR AS INDICATED ON THE DRAWINGS. SUBCONTRACTORS TO INSTALL ALL FIXTURES COMPLETE, INCLUDING LAMPS AND BALLASTS, READY FOR SERVICE.

B. SUPPORTS: PROPER SUPPORTS AND MOUNTING ACCESSORIES, SUCH AS HANGERS, STEMS, YOKES, PLASTER FRAMES, ETC. SHALL BE PROVIDED AS REQUIRED BY THE TYPE OF CEILING INSTALLED. FIXTURES SHALL HANG PLUMB REGARDLESS OF CEILING SLOPE.

C. FIXTURE DESIGNATION: FIXTURE TYPES ARE DESIGNATED ON DRAWINGS. FOR EXACT FIXTURE COUNT AND LOCATION, REFER TO REFLECTED CEILING PLAN.

PART 3 – EXECUTION

3.01 GENERAL:

A. ELECTRIC SYSTEM LAYOUTS INDICATED ON THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT. GOVERN EXACT ROUTING OF CABLE AND WIRING AND THE LOCATIONS OF OUTLETS BY THE STRUCTURE AND EQUIPMENT SERVED. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS.

B. CONSULT ALL OTHER DRAWINGS, VERIFY SCALES AND REPORT ANY DIMENSIONAL DISCREPANCIES OR OTHER CONFLICTS WITH THE ARCHITECT BEFORE SUBMITTING BID.

C. ALL HOME RUNS TO PANELBOARDS ARE INDICATED AS STARTING FROM THE OUTLET NEAREST THE PANEL AND CONTINUING IN THE GENERAL DIRECTION OF THAT PANEL. CONTINUE SUCH CIRCUITS TO THE PANEL AS THOUGH THE ROUTES WERE COMPLETELY INDICATED. TERMINATE HOMERUNS OF SIGNAL, ALARM, AND COMMUNICATION SYSTEMS IN A SIMILAR MANNER.

D. AVOID CUTTING AND BORING HOLES THROUGH STRUCTURE OR STRUCTURAL MEMBERS WHEREVER POSSIBLE. OBTAIN PRIOR APPROVAL OF OWNER AND CONFORM TO ALL STRUCTURAL REQUIREMENTS WHEN CUTTING OR BORING THE STRUCTURE IS NECESSARY AND PERMITTED.

E. FURNISH AND INSTALL ALL NECESSARY HARDWARE, HANGERS, BLOCKING, BRACKETS, BRACING, RUNNERS, ETC. REQUIRED FOR EQUIPMENT SPECIFIED UNDER THIS SECTION.

F. PROVIDE NECESSARY BACKING REQUIRED TO INSURE RIGID MOUNTING OF OUTLET BOXES.

3.02 WIRING METHODS:

A. NO "ROMEX" OR ARMORED CABLE WIRING IS PERMITTED – ALL ELECTRICAL WIRING MUST BE IN CONDUIT.

B. CONDUIT SHALL BE RIGID STEEL, IMC, EMT, METAL CLAD (MC) CABLE, OR SCHEDULE 40 PVC AS FOLLOWS:

1. ABOVE GROUND: USE RIGID STEEL, IMC, MC, OR EMT. MC CABLE SHALL BE INSTALLED ONLY WHERE PERMITTED BY CODE AND THE AUTHORITY HAVING JURISDICTION.

a. WET LOCATIONS: RIGID STEEL OR IMC ONLY.
b. LOCATIONS SUBJECT TO MECHANICAL DEFORMATION: RIGID STEEL OR IMC ONLY.
c. DRY INTERIOR LOCATIONS FOR BRANCH CIRCUIT WIRING AND NOT SUBJECT TO MECHANICAL DEFORMATION: EMT, IMC, MC, OR RIGID STEEL CONDUIT.
d. DRY INTERIOR LOCATIONS FOR OTHER THAN BRANCH CIRCUIT WIRING AND NOT SUBJECT TO MECHANICAL DEFORMATION: EMT, IMC, OR RIGID STEEL CONDUIT.

2. UNDERGROUND: USE RIGID STEEL OR SCHEDULE 40 PVC WITH RIGID STEEL ELLS AND RIGID STEEL CONDUIT/FITTINGS WHEN EMERGING FROM GRADE, UNLESS NOTED OTHERWISE.

C. USE FLEXIBLE CONDUITS IN THE FOLLOWING APPLICATIONS (MAX 6–FT):

1. RECESSED LIGHTING FIXTURES.

2. AT BUILDING JOINTS.

3. AT WET LOCATIONS, FLEXIBLE CONDUIT SHALL BE LIQUIDTIGHT TYPE.

D. LIGHT FIXTURES INSTALLED IN GYP BOARD CEILINGS MAY BE WIRED FROM FIXTURE TO FIXTURE USING MC CABLE UNLESS PROHIBITED BY THE AHJ. VERIFY THAT LIGHT FIXTURES ARE PROVIDED WITH JUNCTION BOXES APPROVED FOR THIS PURPOSE. MC TYPE CABLE TO MEET ANSI/NFPA 70 REQUIREMENTS. CABLE ARMOR TO BE INTERLOCKED STEEL METAL TAPE. MC TYPE CABLE MANUFACTURED BY AFC CABLE SYSTEMS, PIRELLI CABLE CORPORATION AND SOUTHWIRE COMPANY ARE APPROVED. MC CABLE SHALL NOT BE USED TO WIRE LIGHT FIXTURES INSTALLED IN EXPOSED CEILINGS FROM FIXTURE TO FIXTURE (6–FT LIGHT FIXTURE WHIPS ARE PERMITTED).

E. ALL WIRING SHALL BE IN CONDUIT.

F. ALL CONDUIT AND MC CABLE SHALL BE SUPPORTED AS REQUIRED BY THE NEC.

3.03 INSTALLATION OF CONDUITS:

A. GENERAL:

1. RUN ALL CONDUIT CONCEALED, IF POSSIBLE, UNLESS NOTED OTHERWISE ON THE PLANS.

2. RUN ALL CONDUIT PARALLEL TO OR AT RIGHT ANGLES TO CENTER LINES OF COLUMNS AND BEAMS.

3. CONDUITS ABOVE CEILINGS SHALL NOT OBSTRUCT REMOVAL OF CEILING TILES, LIGHTING FIXTURES, AIR DIFFUSERS, ETC.

4. CONDUITS SHALL NOT CROSS ANY DUCT SHAFT OR AREA DESIGNATED AS FUTURE DUCT SHAFT HORIZONTALLY. CONDUIT RISERS, WHEN ALLOWED IN DUCT SHAFT, MUST BE COORDINATED WITH MECHANICAL WORK TO AVOID ANY CONFLICT.

5. INSTALL NO MORE THAN THE EQUIVALENT OF THREE 90–DEGREE BENDS IN ANY CONDUIT RUN EXCEPT FOR COMMUNICATIONS CONDUITS, FOR WHICH ONLY TWO BENDS ARE ALLOWED. PROVIDE J–BOXES AS NEEDED WHERE MORE BENDS ARE NEEDED.

B. CONDUIT SUPPORTS:

1. SUPPORT CONDUITS WITH UNDERWRITER'S LABORATORIES LISTED STEEL CONDUIT SUPPORTS AT INTERVALS REQUIRED BY THE NATIONAL ELECTRIC CODE. WIRES OR SHEET METAL STRIPS ARE NOT ACCEPTABLE FOR CONDUIT SUPPORT. USE CONDUIT HANGERS FOR ALL CONDUITS NOT DIRECTLY FASTENED TO STRUCTURE AND FOR ALL MULTIPLE CONDUIT RUNS. DO NOT ATTACH ANY CONDUIT TO MECHANICAL DUCTS OR PIPES.

2. AN NFPA 251 TESTED AND APPROVED CEILING SYSTEM CAN BE USED TO SUPPORT BRANCH CIRCUIT CABLING WHERE APPROVED BY THE AHJ.

C. CONDUIT PENETRATION:

1. PENETRATING FIRE RATED FLOOR OR WALL: INSTALL CONDUIT IN CONDUIT SLEEVE OR FRAMED OPENING. SEAL PENETRATION WITH FIRE RETARDANT SEALANT.

2. PENETRATING EXTERIOR WALL: AVOID PENETRATING EXTERIOR WALL WHERE POSSIBLE. WHERE PENETRATIONS ARE NECESSARY, BUILDING WEATHERPROOF INTEGRITY MUST BE PRESERVED. CONDUITS PENETRATING THROUGH ROOF SHALL HAVE ROOF FLASHING WITH CAULK TYPE COUNTERFLASHING SLEEVE.

3. PENETRATING NON–FIRE RATED DRY WALL: CONDUIT SLEEVES ARE NOT REQUIRED. PENETRATIONS MUST BE SEALED WITH PLASTER PRIOR TO PAINTING. PENETRATIONS MADE AFTER WALL FINISH IS APPLIED MUST BE AS SMALL AS POSSIBLE AND PROVIDED WITH ESCUTCHEONS, ONE ON EACH SIDE OF WALL.

4. PENETRATING SUSPENDED CEILING: CUT HOLE AS SMALL AS POSSIBLE TO PERMIT CONDUIT PENETRATION. PROVIDE ESCUTCHEON FOR EACH CONDUIT BELOW CEILING.

3.04 CONNECTIONS TO EQUIPMENT:

A. GENERAL:

1. FURNISH AND INSTALL REQUIRED POWER SUPPLY CONDUIT AND WIRING TO ALL EQUIPMENT. SEE BELOW FOR OTHER WIRING REQUIRED.

2. FURNISH AND INSTALL A DISCONNECT SWITCH IMMEDIATELY AHEAD OF AND ADJACENT TO EACH MAGNETIC MOTOR STARTER OR APPLIANCE UNLESS THE MOTOR APPLIANCE IS LOCATED ADJACENT AND WITHIN SIGHT OF THE SERVING PANELBOARD, CIRCUIT BREAKER OR SWITCH. VERIFY ALL EQUIPMENT NAMEPLATE CURRENT RATINGS PRIOR TO INSTALLATION.

3. INSTALL ALL ROUGH–IN WORK FOR EQUIPMENT FROM APPROVED SHOP DRAWINGS TO SUIT THE SPECIFIC REQUIREMENTS OF THE EQUIPMENT.

4. FURNISH AND INSTALL MANUAL THERMAL PROTECTION FOR ALL MOTORS NOT INTEGRALLY EQUIPPED WITH THERMAL PROTECTION.

5. FURNISH 120 VOLT POWER TO EACH CONTROL PANEL AND TIME SWITCH REQUIRING A SOURCE OF POWER TO OPERATE.

3.05 INSTALLATION OF CONDUCTORS:

A. PULL NO WIRE INTO ANY PORTION OF THE CONDUIT SYSTEM UNTIL ALL CONSTRUCTION WORK WHICH MIGHT DAMAGE THE WIRE HAS BEEN COMPLETED.

B. INSTALL ALL WIRE CONTINUOUS FROM OUTLET TO OUTLET OR TERMINAL TO TERMINAL. SPLICES IN CABLES WHEN REQUIRED SHALL BE MADE IN HAND HOLES, PULL BOXES OR JUNCTION BOXES. MAKE BRANCH CIRCUIT SPLICES IN OUTLET BOXES WITH 8" OF CORRECTLY COLOR–CODED TAILS LEFT IN THE BOX.

C. SPLICES IN WIRES AND CABLES SHALL BE MADE UTILIZING MATERIALS AND METHODS DESCRIBED HEREIN BEFORE.

D. MAKE ALL GROUND, NEUTRAL AND LINE CONNECTIONS TO RECEPTACLE AND WIRING DEVICE TERMINALS AS RECOMMENDED BY MANUFACTURER.

E. PROVIDE BRADY WIRE MARKERS WHERE NUMBER OF CONDUCTORS IN A BOX EXCEEDS FOUR.

3.06 WIRE COLOR CODE:

COLOR CODING SHALL BE CONTINUOUS FOR WIRE #12 THROUGH #10 AWG. PHASE CONDUCTORS #8 AND LARGER AND CONDUCTORS OF ANY SIZE IN CABLE ASSEMBLIES MAY HAVE COLORED PHASING TAPE AT TERMINATIONS. COLOR CODE WIRES AS FOLLOWS:

VOLTAGE	PHASE A	PHASE B	PHASE C	NEUTRAL	GND
120/208V	RED	BLACK	BLUE	WHITE	GREEN

3.07 IDENTIFICATION:

A. PROVIDE NAMEPLATES FOR PANELBOARDS, AND ALL SIMILAR DEVICES. NAMEPLATES SHALL BE SCREWED (NO ADHESIVES) ENGRAVED BAKELITE OR PHOTO–ETCHED METALLIC NAMEPLATE IDENTIFICATION SHOWING PANEL DESIGNATION, VOLTAGE AND PHASE IN MINIMUM 1/4" HIGH LETTERS.

B. EACH PANELBOARD SHALL CONTAIN A METAL–FRAMED CIRCUIT DIRECTORY INSIDE COVER, WITH PLASTIC PROTECTOR.

C. PANELBOARD SCHEDULE: AFTER COMPLETION OF WORK, PROVIDE TYPEWRITTEN UPDATED PANELBOARD SCHEDULES FOR ALL PANELBOARDS. INCLUDE ROOM/EQUIPMENT DESIGNATIONS TO IDENTIFY ROOM/EQUIPMENT SERVED BY CIRCUIT.

3.08 GROUNDING:

A. ELECTRICAL SERVICE ALTERNATING CURRENT SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250–3 TO 250–26, INCLUSIVE.

B. GROUND NON–CURRENT CARRYING METAL PARTS OF ELECTRICAL ENCLOSURES, FRAMES OR CONDUCTOR RACEWAYS TO PROVIDE A LOW IMPEDANCE PATH FOR LINE–TO–GROUND FAULT CURRENT AND TO BOND ALL NON–CURRENT CARRYING METAL PARTS TOGETHER. PROVIDE GROUND CONDUCTOR IN EACH RACEWAY SYSTEM, WHETHER GROUND WIRE IS SPECIFICALLY LISTED OR NOT. EQUIPMENT GROUND CONDUCTOR SHALL BE ELECTRICALLY AND MECHANICALLY CONTINUOUS FROM THE ELECTRICAL CIRCUIT SOURCE TO THE EQUIPMENT TO BE GROUNDED. SIZE GROUND CONDUCTORS PER NEC ARTICLE 250.122 UNLESS LARGER CONDUCTORS ARE SHOWN ON DRAWINGS.

C. GROUNDING CONDUCTORS SHALL BE IDENTIFIED WITH GREEN INSULATION. WHERE GREEN INSULATION IS NOT AVAILABLE ON LARGER SIZES, BLACK INSULATION SHALL BE USED AND SUITABLY IDENTIFIED WITH GREEN TAPE AT EACH JUNCTION BOX OR DEVICE ENCLOSURE.

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BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S. BAGDAD ROAD, BLDG. 3
LEANDER, TEXAS 78641

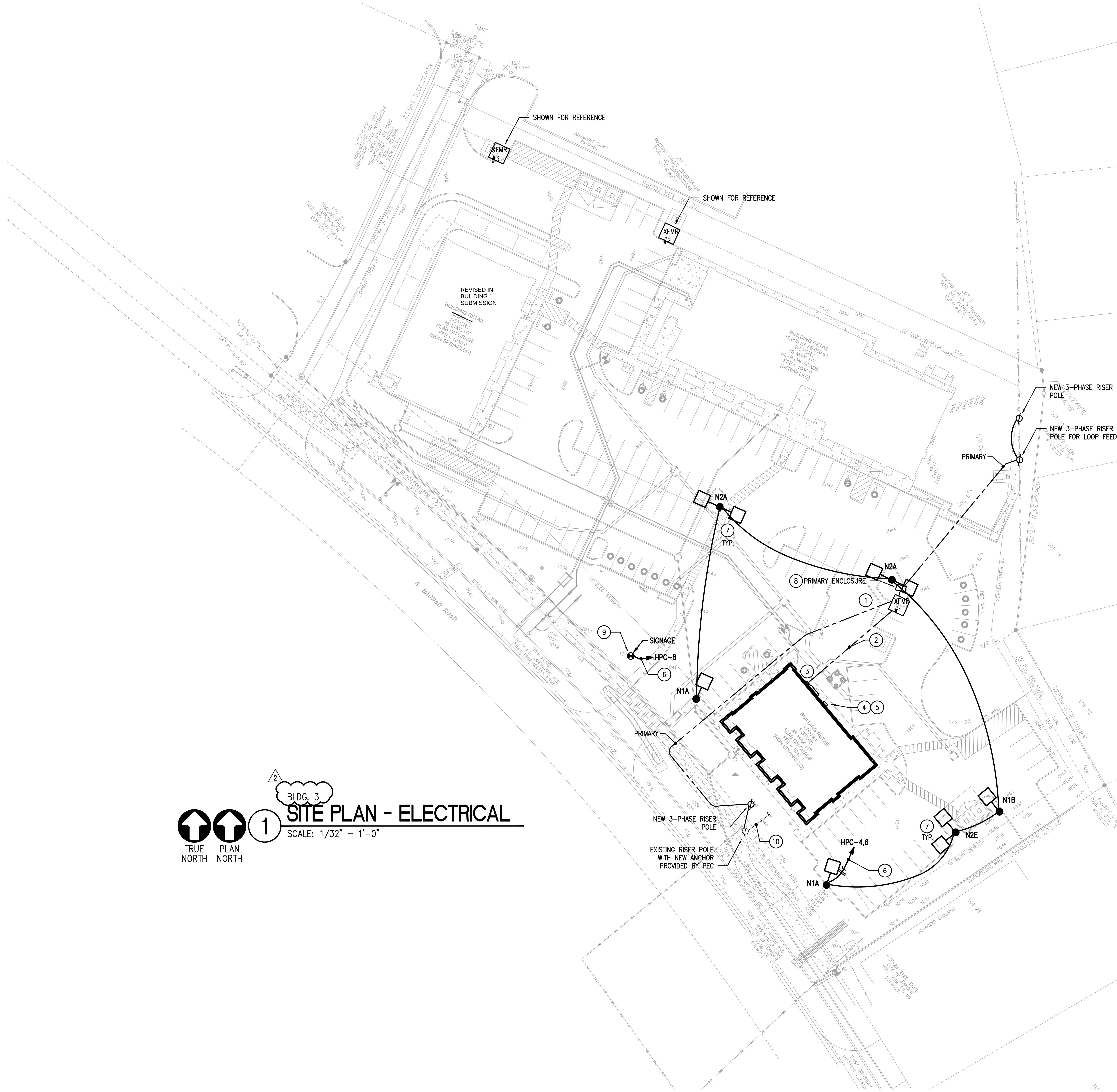
2 06.20.22 - Revision 2
3 08.26.22 - City Comments

STATE OF TEXAS
AARON DENNINGTON
111364
LICENSED PROFESSIONAL ENGINEER
8/26/22

08.26.2022
CITY COMMENTS
ELECTRICAL SPECIFICATIONS

SHEET: E400

PROJECT NO: 21099
DRAWN BY:
DATE: 01.28.2022
PROJECT MGR:



BLDG. 3

1 SITE PLAN - ELECTRICAL

SCALE: 1/32" = 1'-0"

TRUE NORTH PLAN NORTH

SHEET NOTES:

GENERAL: REFER ALSO TO GENERAL ELECTRICAL NOTES ON SHEET E100.

1. COORDINATE EXACT ELECTRICAL CONNECTION (TRENCHING/ROUTING, TRANSFORMER MOUNTING, CLEARANCES, CONCRETE PAD, ETC.) REQUIREMENTS WITH LOCAL ELECTRIC UTILITY PRIOR TO ANY SITE WORK.
2. VERIFY THE EXACT TELECOM CONDUIT ROUTING, QUANTITY, SIZES, AND TERMINATION REQUIREMENTS WITH THE LOCAL SERVING TELECOM UTILITIES.
3. FOR 120V AND 208V CIRCUITS EXCEEDING 57-FEET FROM THE SERVING PANEL, INCREASE WIRE SIZES AS NECESSARY TO ACCOUNT FOR VOLTAGE DROP. REFERENCE VOLTAGE DROP TABLE ON SHEET E100.

KEYED NOTES:

GENERAL: REFER ALSO TO GENERAL ELECTRICAL NOTES ON SHEET E100.

1. CONTRACTOR SHALL COORDINATE WITH PEC FOR CONNECTION TO NEW POWER POLE AND EXACT LOCATION OF NEW PAD MOUNT TRANSFORMER.
2. UNDERGROUND SECONDARY ELECTRIC PER PEC REQUIREMENTS.
3. ELECTRIC SERVICE ENTRANCE LOCATION. REFER TO ELECTRICAL RISER DIAGRAM ON DRAWING E300.
4. COORDINATE TERMINATION/CONNECTION REQUIREMENTS FOR TELEPHONE & CATV AT SERVICE ENTRANCE WITH SERVING UTILITY COMPANY.
5. DATA/TELECOMM CONDUITS TO BE QTY (2)2"C AND QTY (2)1"C EACH WITH PULL STRINGS, IN COMMON TRENCH WITH ELECTRICAL SECONDARY CONDUITS. INSTALLATION SHALL ADHERE TO PEC UTILITY SHARED TRENCH CRITERIA. THE COMM CONDUITS ARE SHOWN FOR PRICING PURPOSES ONLY AND SHALL BE COORDINATED WITH THE DATA/COMM UTILITY PROVIDER AND OWNER PRIOR TO BEGINNING WORK. QUANTITY OF CONDUITS, SIZES, ROUTING, AND PULL BOX LOCATIONS ARE TO BE FULLY COORDINATED PRIOR TO PURCHASE OF ANY MATERIALS OR BEGINNING OF ANY DIRT WORK.
6. ROUTE CIRCUIT VIA LIGHTING TIMECLOCK / CONTACTOR AS SHOWN ON SHEET E300.
7. REFER TO "POLE BASE DIAGRAM" ON SHEET E300. TYPICAL FOR ALL POLE SITE LIGHTING, U.N.O.
8. PROVIDE PRIMARY ENCLOSURE FOR PRIMARY RUN TO TRANSFORMERS #2 AND #3 AS REQUIRED, PER PEC SPECIFICATIONS. TRANSFORMERS #2 AND #3 ARE ASSUMED BUILT TO SERVE BUILDING "1" AND "2" UNDER A SEPARATE PERMIT. (2)
9. COORDINATE EXACT LOCATION OF SITE SIGN AND MOUNTING REQUIREMENTS WITH ARCHITECT PRIOR TO STARTING WORK.
10. OVERHEAD LINE TO BE REMOVED BY PEC.

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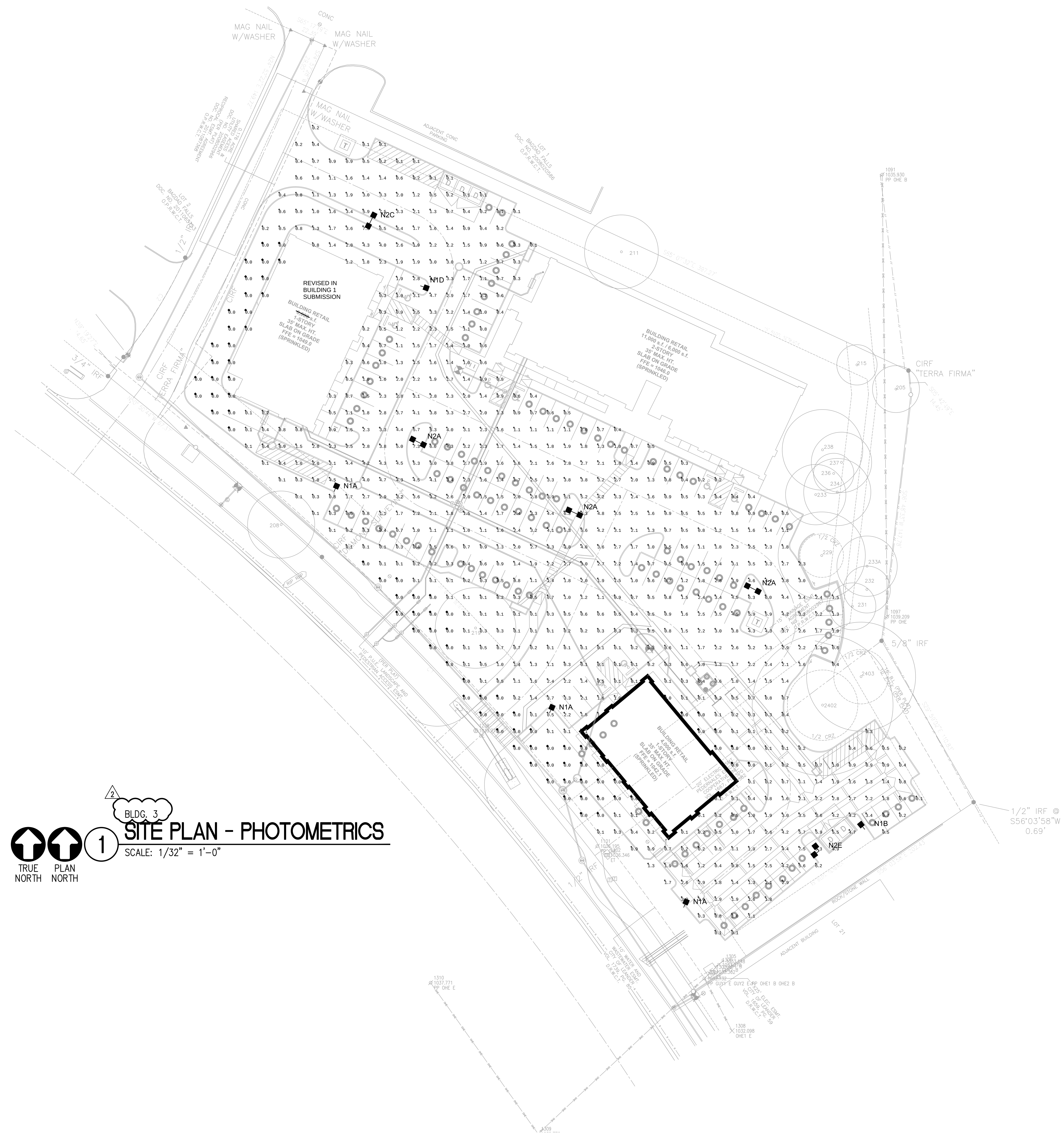
8/26/22

08.26.2022
CITY COMMENTS

SITE PLAN - ELECTRICAL

SHEET: EU100

PROJECT NO: 21099
DRAWN BY:
DATE: 01.28.2022
PROJECT MGR:



2 BLDG. 3

1 SITE PLAN - PHOTOMETRICS

SCALE: 1/32" = 1'-0"

TRUE NORTH PLAN NORTH

CORNERSTONE ARCHITECTS

7000 BEE CAVES RD. SUITE 200 AUSTIN TX 78746 512.329.0007

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PROFESSIONAL ENGINEER
6/20/22

06.20.2022
REVISION 2

SITE PLAN - PHOTOMETRICS

SHEET: EU200

PROJECT NO: 21099
DRAWN BY:
DATE: 01.28.2022
PROJECT MGR:

DRAWN BY:	CHECKED BY:
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DRAWING ABBREVIATIONS AND SYMBOLS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
ABV	ABOVE	REF	REFERENCE
CO	CLEANOUT	RD	ROOF DRAIN
CW	COLD WATER		
EXT FCO	EXTERIOR FLOOR CLEANOUT	SAN	SANITARY SEWER
		S/S	STAINLESS STEEL
		TYP	TYPICAL
FCO	FLOOR CLEAN OUT	V	SANITARY VENT
FF	FINISH FLOOR	VTR	VENT THROUGH ROOF
G	NATURAL GAS	W/O	
		WCO	WALL CLEAN OUT
HPG	HIGH PRESSURE NATURAL GAS	WHA	WATER HAMMER ARRESTOR

GENERAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
(1)	NOTE BY SYMBOL DESIGNATION		CONTINUATION OF SYSTEM OR LINE

NOTES:
1. ALL ABBREVIATIONS AND SYMBOLS ARE NOT NECESSARILY USED.
2. ALL MATERIALS, LABOR, COORDINATION, AND SUPERVISION IS BY CONTRACTOR UNLESS SPECIFICALLY NOTED "BY OWNER" OR "NIC". CONTRACTOR SHALL COORDINATE AND INSTALL EQUIPMENT WHEN NOTED "OWNER FURNISHED".
3. SYMBOLS USED, BUT NOT ON THE LEGEND ARE NOTED ON THE PLAN.

PLUMBING SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SANITARY SEWER	FCO	FLOOR CLEANOUT
	PLUMBING VENT	WCO	WALL CLEANOUT
SD	STORM DRAIN	EXT FCO	EXTERIOR FLOOR CLEANOUT
	DOMESTIC COLD WATER	DBL EXT FCO	DOUBLE TWO-WAY EXTERIOR FLOOR CLEANOUT
	DOMESTIC HOT WATER		ELBOW TURNING DOWN
G	GAS LINE		ELBOW TURNING UP
	DIRECTION OF FLOW		CAPPED PIPE
	BALL VALVE		CONCENTRIC PIPE REDUCER/INCREASER
	UNION		ECCENTRIC PIPE REDUCER/INCREASER
P 1	SANITARY WASTE OR VENT STACK WASTE OR VENT NO.		PIPE SLEEVE
	GATE VALVE WITH C.I. VALVE BOX	SLOPE	DIRECTION OF SLOPE (DNWARD)
	STRAINER W/ BLOWDOWN GATE VALVE		UNION
WH	WALL HYDRANT		
RD	ROOF DRAIN		
VTR	VENT THRU ROOF		

PIPING SCHEDULE

SYMBOL	SERVICE	PIPE MATERIAL	TYPE JOINT	FITTINGS	TEST
———	SANITARY WASTE STORM DRAIN PIPING	SCHEDULE 40 DWV PVC	SOLVENT WELD (PER MANUFACTURER'S RECOMMENDATIONS)	SCHEDULE 40 DWV PVC	10 ft. FOR 6-HOURS
— — — —	SANITARY VENT	SCHEDULE 40 DWV PVC	SOLVENT WELD (PER MANUFACTURER'S RECOMMENDATIONS)	SCHEDULE 40 DWV PVC	10 ft. FOR 6-HOURS
—— — ——	DOMESTIC WATER AND ABOVE GROUND HVAC CONDENSATE DRAIN	TYPE 'L' HARD DRAWN COPPER (TYPE 'K' FOR UNDERGROUND)	SWEAT WITH LEAD FREE SOLDER, SILVER SOLDER FOR UNDERGROUND	WROUGHT COPPER (CONTINUOUS NO JOINTS UNDER- FLOOR SLAB)	150 ft. FOR 24 HOURS

PLUMBING FIXTURE SCHEDULE

CONNECTION SIZE					
W.	V.	C.W.	H.W.	ITEM	DESCRIPTION
–	–	3/4"	–	WH-1 NON-FREEZE WATER HYDRANT	WATTS #HY-330-K-3 VACUUM BREAKER, 3/4" NPT OUTLET AND 'T' HANDLE. DEPTH AS REQUIRED FOR WALL THICKNESS.
AS NOTED ON PLANS				WALL CLEANOUT: (WCO)	MIFAB No. C1400-R6-36, STAINLESS STEEL ROUND WALL CLEANOUT ACCESS COVER.
AS NOTED ON PLANS				CLEANOUT: (CO) (FCO)	MIFAB No. C1000 SERIES, STAINLESS STEEL ROUND FLOOR CLEANOUT ACCESS COVER. HEAVY DUTY TOP, TAPER THREAD BRONZE PLUG, NICKLE BRONZE TOP
AS NOTED ON PLANS				WATER HAMMER ARRESTORS (WHA)	WATER HAMMER ARRESTORS MIFAB WHB-SERIES STAINLESS STEEL BELOWS TYPE

NERAL PLUMBING NOTES:

NOTES APPLY TO ALL SHEETS)
TO SHEETS FOR ANY ADDITIONAL GENERAL NOTES)

OR TO CHANGE LOCATION OF NEW PIPING, AS SHOWN, TO MEET FIELD S.

OR SHALL NOT SCALE DRAWINGS.

OR SHALL LAYOUT HIS WORK FROM ACTUAL FIELD MEASUREMENTS AND MENSIONS OF EQUIPMENT INSTALLED, ALL PIPING AND EQUIPMENT OF ES SHALL BE PROPERLY COORDINATED AND SET TO MAINTAIN REQUIRED ES. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL LOCATIONS O APPROVAL OF ARCHITECT.

ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL WALLS, S, CEILING HEIGHTS, AND EQUIPMENT.

PIPING CONCEALED, HIDDEN FROM VIEW AND AS HIGH AS POSSIBLE ILING LEVELS.

BID SUBMITTAL THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH URAL DRAWINGS. CONTRACTOR SHALL REFER TO ARCHITECTURAL TO VERIFY FLOOR PLAN SCALE OF MECHANICAL DRAWINGS PRIOR TO ITATIVE TAKE – OFF OF MATERIAL.

ALL DOMESTIC WATER SUPPLY (HOT AND COLD) PIPING WITH 1-INCH THICK S PIPE INSULATION. FIBERGLASS PIPE INSULATION SHALL HAVE AN ALL SERVICE SJ) WITH SELF-SEALING LAPS (OWENS CORNING SSL-11 OR EQUAL). ALL PIPING N USED ON THE PROJECT SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING SMOKE DEVELOPED RATING NOT EXCEEDING 50 AS DETERMINED BY TEST ES ASTM E 84 NFPA 225 AND U.L. 723. THESE RATINGS MUST BE AS TESTED ON OSITE OF INSULATION JACKET OR FACING AND ADHESIVE. COMPONENTS SUCH AS MASTIC AND CEMENTS SHALL MEET THE SAME INDIVIDUAL RATINGS AS THE REQUIREMENTS.

ISULATION AT HANGERS AND SUPPORTS WITH A SHIELD OF GALVANIZED METAL NOT LESS THAN 4-INCHS ON EITHER SIDE OF THE SUPPORT BEARING AREA AT LEASE HALF OF THE PIPE CIRCUMFERENCE.

VORK IN ACCORDANCE WITH APPLICABLE STATUES, ORDINANCES, CODES, AND NS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION. OBTAIN AND PAY FOR TS AND INSPECTIONS.

PLUMBING SPECIFICATIONS

PART I GENERAL

1. MATERIALS AND INSTALLATION SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES AND REQUIREMENTS.
2. OBTAIN AND PAY FOR ALL REQUIRED PERMITS, INSPECTION FEES, TAPPING FEES, CONNECTION CHARGES, AND UTILITY COMPANY SERVICE CHARGES.
3. INSTALLATION SHALL BE DONE IN A NEAT AND WORKABLE MANNER.
4. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED FOR EXACT SIZES OR LOCATIONS. THEY ARE NOT INTENDED TO DISCLOSE ABSOLUTE OR UNCONDITIONAL KNOWLEDGE OF ACTUAL FIELD CONDITIONS.

PART 2 – PRODUCTS

1. ALL DOMESTIC WATER PIPING INSIDE THE BUILDING ABOVE SLAB SHALL BE TYPE 'L' HARD DRAWN COPPER (TYPE 'K' FOR UNDERGROUND) WITH WROUGHT COPPER FITTINGS, SWEAT WITH LEAD FREE SOLDER.
2. ALL CONDENSATE PIPING ON THE ROOF SHALL BE TYPE 'M' COPPER. OR PVC WHERE ALLOWED BY CODE
3. DOMESTIC WATER AND CONDENSATE DRAIN PIPING BELOW SLAB AND OUTSIDE SHALL BE TYPE "K" SOFT SEAMLESS. NO JOINTS SHALL BE ALLOWED BELOW SLAB. ALL SLAB PENETRATIONS SHALL BE SLEEVED TO PROTECT PIPING FROM CORROSION BY CONCRETE.
4. COPPER PIPE FITTINGS SHALL BE WROUGHT COPPER SWEEP PATTERN FITTINGS, SOLDERED USING 95-5 LEAD-FREE SOLDER OR BRAZED WITH SIL-FOS.
5. ALL SANITARY WASTE, VENT AND STORM DRAINAGE PIPING INSIDE AND EXTENDING 30" OUTSIDE THE BUILDING SHALL BE SCHEDULE 40 PVC DWV EQUIVALENT TO CHARLOTTE PIPE AND MEET ASTM D-2665. EXTERIOR PVC PIPING 30" FROM BUILDING SHALL BE TYPE SDR-26 AND ASTM D-3034.
6. JOINTS FOR PVC PIPING SHALL BE SOLVENT WELD TYPE INSIDE AND UNDERSLAB TO A POINT 30" OUTSIDE THE BUILDING AND NEOPRENE PUSH-ON TYPE JOINTS BEYOND OUTSIDE 30" FROM THE BUILDING.
7. INSULATE AND HEAT TRACE ALL DOMESTIC HOT AND COLD WATER PIPING LOCATED IN AREAS SUBJECT TO FREEZING. INSULATION SHALL BE 1" THICK FIBERGLASS AS MANUFACTURED BY MANVILLE, OWENS-CORNING, OR KNAUF.
8. ALL NATURAL GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL WITH SCREWED OR WELDED FITTINGS AND GASKET TYPE UNIONS AND FLANGES. 2" AND SMALLER – SCREWED, 2 1/4" AND LARGER WELDED
9. ALL UNDERGROUND NATURAL GAS PIPING SHALL BE POLYETHYLENE (PE-2306) WITH HEAT FUSION JOINTS

PART 3 – EXECUTION

1. EXCAVATION, BACKFILLING AND TRENCH WORK SHALL BE DONE IN ACCORDANCE WITH O.S.H.A. AND EXISTING SAFETY STANDARDS.
   A. PROVIDE SHORING AND CLEANING NECESSARY TO KEEP TRENCHES IN GOOD WORKING CONDITION, INCLUDING PUMPING OUT WATER.
   B. IN MOSTLY ROCK MATERIAL, TRENCHES SHALL BE EXCAVATED TO AT LEAST 6" BELOW THE ELEVATION OF THE BOTTOM OF THE PIPES. AFTER EXCAVATION, TRENCH SHALL THEN BE FILLED TO THE PROPER ELEVATION WITH CRUSHED LIMESTONE. GRAVEL SHALL BE SCOOPED OUT UNDER PIPE BELLS SO THE PIPE RESTS FIRMLY ON THE TRENCH BOTTOM.
   C. IN MOSTLY EARTH OR SAND MATERIAL, THE LAST 6" OF EXCAVATION SHALL BE DONE BY HAND. TRENCH BOTTOM SHALL BE SCOOPED OUT AT PIPE BELLS SO THE PIPE RESTS FIRMLY ON THE TRENCH BOTTOM.
   D. BACKFILLING AND TAMPING SHALL BE CAREFULLY DONE BY HAND SIMULTANEOUSLY ALONG BOTH SIDES OF THE PIPE USING ROCK FREE EARTH, CRUSHED STONE OR SAND UNTIL THE PIPE IS COVERED TO A DEPTH OF AT LEAST 12". THE REST OF THE FILL-UP TO THE TOPSOIL LAYER MAY BE GRAVEL OR ROCK FREE EARTH. ACCEPTABLE SOIL MATERIALS FOR BACK FILL AND FILL SHALL BE FREE OF CLAY, ROCK OR GRAVEL LARGER THAN 2" IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS AND OTHER DELETERIOUS MATTER HAVING A PLASTICITY INDEX LESS THAN 30. BACKFILL SHALL BE DONE IN LAYERS OF NOT MORE THAN 8" AND EACH LAYER SHALL BE COMPACTED. THE LAST 12" OF BACKFILL SHALL BE ROCK FREE TOPSOIL.
   E. SURFACE SHALL BE RESTORED TO ITS ORIGINAL CONDITION.
2. PRESSURE REDUCING VALVE SHALL BE SET AT 70 PSI MAXIMUM. PRESSURE RELIEF VALVE SHALL BE SET AT 80 PSI MAXIMUM.
3. EXPOSED HOT AND COLD WATER TRIM IN FINISHED AREAS SHALL BE CHROME FINISHED.
4. ALL HORIZONTAL AND VERTICAL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL CODE RECOMMENDATIONS. SUPPORTS SHALL SECURELY HOLD PIPING, PREVENT VIBRATION, COMPENSATE FOR ALL STATIC AND OPERATIONAL CONDITIONS OF THE VARIOUS SYSTEMS AND SHALL NOT BE SUBJECT TO ELECTROLYTIC ACTION. SHOCK ABSORBERS SERVICING FIXTURES WITH FLUSH VALVES SHALL BE SECURELY ANCHORED IN THEIR VERTICAL POSITION. ACCEPTABLE METHODS OF SUPPORT WILL BE THE SUMMER SYSTEM, POSIFIX, STAKFIX, PIPEFIX, HOLDRITE OR CHANNEL.
5. PROVIDE J.R. SMITH OR APPROVED EQUAL SHOCK ABSORBERS #5005 THRU 5050 SIZE AS RECOMMENDED BY MANUFACTURER INSTALLED ON HOT AND COLD WATER BRANCH LINES CONTAINING SINGLE LEVER FAUCETS, FLUSH VALVES OR EQUIPMENT WITH QUICK CLOSING VALVES BETWEEN THE LAST TWO FIXTURES AS SHOWN ON THE CONTRACT DRAWINGS.
6. SANITARY WASTE LINES SHALL BE UNIFORMLY GRADED TO ELEVATIONS SHOWN. IF NO ELEVATIONS ARE GIVEN, SEWERS SHALL BE PITCHED NOT LESS THAN 1/4" PER FOOT FOR ALL PIPING 2-1/2" IN DIAMETER AND SMALLER AND 1/8" PER FOOT FOR ALL PIPING 3" IN DIAMETER AND LARGER.
7. SUPPORT HORIZONTAL PIPING AS FOLLOWS:

NOMINAL PIPE SIZE (IN.)	MAXIMUM DISTANCE BETWEEN SUPPORT (FT.)	MINIMUM HANGER DIAMETER (IN.)
1/2	6	
3/4 TO 1-1/2	6	3/8
2 TO 2-1/2	10	3/8
3 TO 6	12	1/2

8. HANGERS FOR PIPING GREATER THAN 1" SHALL PASS OVER THE INSULATION. PROVIDE SADDLES FOR INSULATED PIPING.
9. INSULATION SHALL BE APPLIED WITH JOINTS TIGHTLY BUTTED. OPEN CRACKS, VOIDS AND DEPRESSIONS SHALL BE FILLED WITH HYDRAULIC SETTING CEMENT. LAPPING MATCHING THE FINISH SHALL BE PASTED NEATLY OVER JOINTS.
10. FITTINGS AND VALVES SHALL BE INSULATED WITH THE SAME TYPE INSULATION AS THE PIPING OR WITH HYDRAULIC SETTING CEMENT, BUILT-UP TO THE SAME THICKNESS AS LINES. COVER SHALL BE SAME AS ADJACENT PIPING OR PVC PREFORMED JACKET.
11. PROVIDE AND INSTALL A CUT-OFF VALVE, UNION AND FULL SIZE DIRT LEG AT CONNECTION TO EACH GAS-FIRED PIECE OF EQUIPMENT.
12. THE SYSTEM TESTS DESCRIBED HEREIN ARE MINIMUM REQUIREMENTS. HOWEVER, ADDITIONAL TESTS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION SHALL ALSO BE PERFORMED.
13. DOMESTIC WATER PIPING SHALL BE TESTED HYDROSTATICALLY AT 85 PSI. IN ADDITION PIPING SHALL BE TESTED IN ACCORDANCE WITH APPLICABLE CODE REQUIREMENTS.
14. THE DOMESTIC WATER SYSTEM SHALL BE FLUSHED OUT PROGRESSIVELY BY OPENING OUTLETS AND FLOWING WATER UNTIL IT RUNS CLEAR. AFTER PIPE CLEANING IS COMPLETED, THE STRAINERS SHALL BE REMOVED, CLEANED, AND REPLACED. THEN THE ENTIRE DOMESTIC WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION.
15. THE SANITARY WASTE SYSTEM SHALL BE FLUSHED OUT PROGRESSIVELY WITH FLOWING WATER UNTIL IT RUNS CLEAR.
16. THE ENTIRE SANITARY WASTE SYSTEM SHALL BE TESTED AGAINST A HEAD PRESSURE OF 10', FOR 6 HOURS WITHOUT LEAKAGE.

CITY OF LEANDER PLUMBING PLAN CHECKING NOTES

1. NEW WATER METER RECEIPT (FROM CITY OF LEANDER TAP SALES OFFICE) WILL BE PROVIDED BY THE OWNER AND THE CIVIL ENGINEER. THESE DRAWINGS DO NOT INCLUDE WATER SUPPLY PIPING BEYOND 5'-0" FROM THE BUILDING. SITE UTILITY ITEMS SUCH AS WATER METERS ARE THE RESPONSIBILITY OF THE CIVIL ENGINEER.
2. APPROVED CITY OF LEANDER WATER AND WASTE WATER DEPT. UTILITY PLOT PLANS SHOWING THE NEW WATER METER WILL BE PROVIDED BY THE OWNER AND THE CIVIL ENGINEER THESE PLUMBING DRAWINGS DO NOT INCLUDE WATER SUPPLY PIPING BEYOND 5'-0" FROM THE BUILDING. SITE UTILITY ITEMS SUCH AS WATER METERS ARE THE RESPONSIBILITY OF THE CIVIL ENGINEER.

NOTE:

1. ROUTE ALL PIPING HIDDEN FROM VIEW AS HIGH AS POSSIBLE ABV. CLG.
2. COORDINATE ROUTING OF ALL PIPING WITH ALL OTHER TRADES. OFFSET PIPING AS NECESSARY.
3. UNLESS OTHERWISE NOTED, ALL PIPING SHOWN SHALL BE ROUTED ABV. CLG.
4. REFERENCE PLUMBING RISER DIAGRAMS FOR ADDITIONAL SIZES, WHA SIZES AND LOCATIONS, AND ADDITIONAL INFO.

GENERAL NOTE:

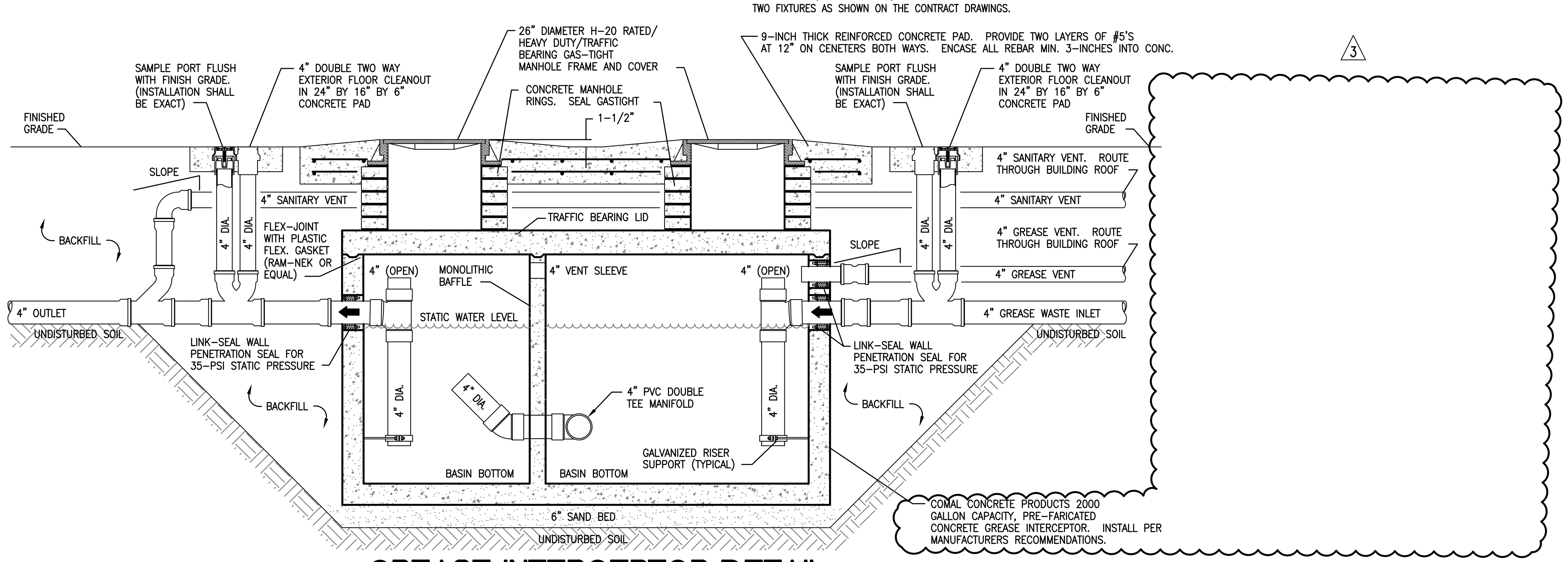
(THIS NOTE APPLIES TO ALL SHEETS)

ALL MATERIALS, FIXTURES AND DEVICES SHALL CONFORM TO APPROVED APPLICABLE STANDARDS

GENERAL NOTE:

(THIS NOTE APPLIES TO ALL SHEETS)

ALL PLUMBING SHALL BE IN ACCORDANCE WITH CITY OF LEANDER PLUMBING CODES



1 **GREASE INTERCEPTOR DETAIL**

SCALE: NOT TO SCALE

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ET	SL

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BUILDING 3
THE SQUARE AT CRYSTAL FALLS
1900 S. BAGDAD ROAD, BLDG. 3
LEANDER, TEXAS 78641

2 06.20.22 - Revision 2
3 08.26.22 - City Comments

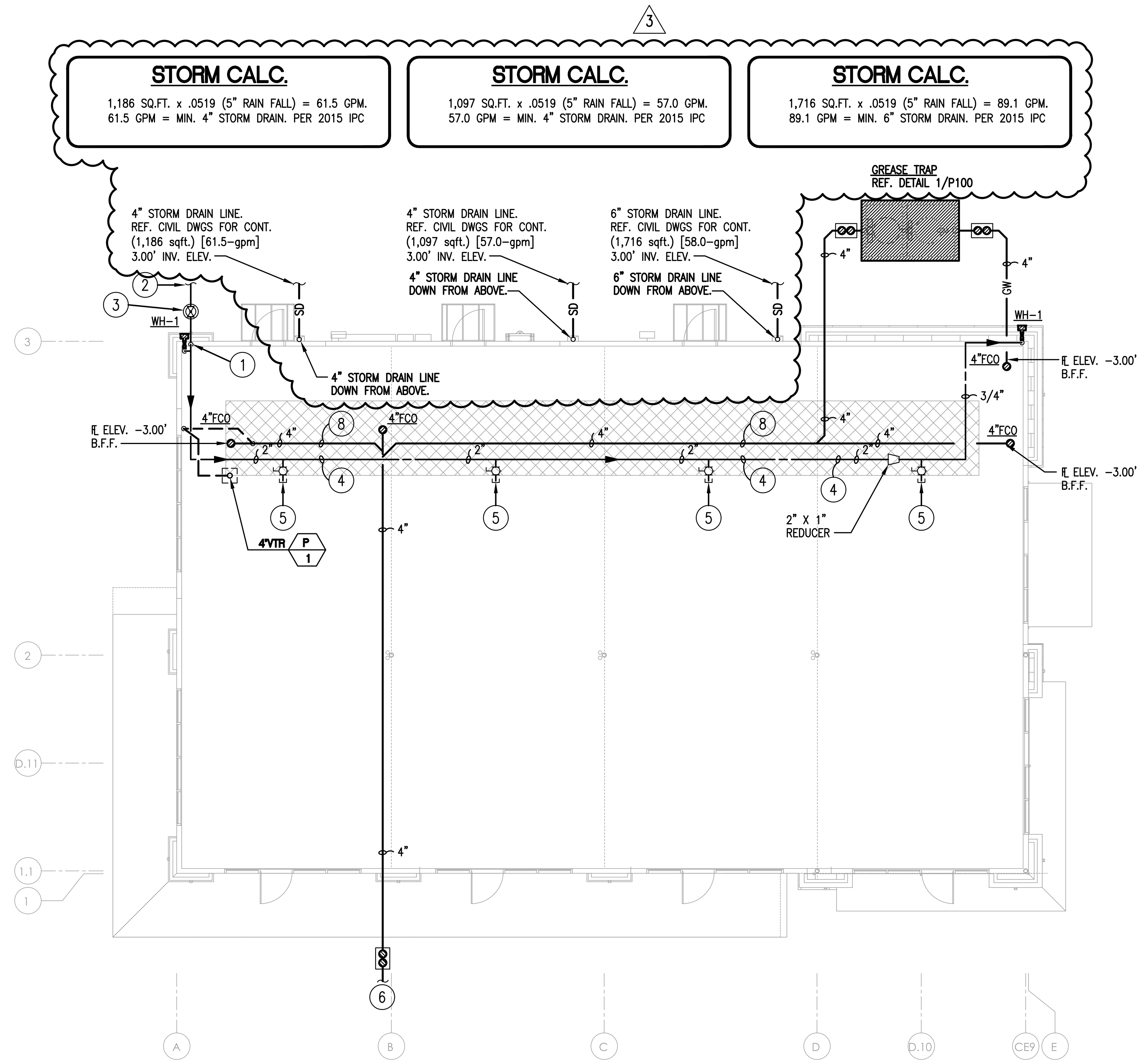
STATE OF TEXAS
R. ROSS ALEMAN
98427
LICENSED PROFESSIONAL ENGINEER
8/26/22

08.26.2022
CITY COMMENTS

PLUMBING LEGEND, NOTES, AND SCHEDULE

SHEET: P100

PROJECT NO: 21099
DRAWN BY:
DATE: 01.28.2022
PROJECT MGR:



FLOOR PLAN - PLUMBING

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

TRUE NORTH PLAN NORTH

PLUMBING GENERAL NOTES:

1. INSULATE ALL WATER SUPPLY AND ABOVEGROUND VENT PIPING WITH 1-INCH THICK FIBERGLASS PIPE INSULATION. FIBERGLASS PIPE INSULATION SHALL HAVE AN ALL SERVICE JACKET (ASJ) WITH SELF-SEALING LAPS (OWENS CORNING SSL-11 OR EQUAL). ALL PIPING INSULATION USED ON THE PROJECT SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AN A SMOKE DEVELOPED RATING NOT EXCEEDING 50 AS DETERMINED BY TEST PROCEDURES ASTM E 84 NFPA 225 AND U.L. 723. THESE RATINGS SHALL BE AS TESTED ON THE COMPOSITE OF INSULATION JACKET OR FACING AND ADHESIVE. COMPONENTS SUCH AS ADHESIVES MASTIC AND CEMENTS SHALL MEET THE SAME INDIVIDUAL RATINGS AS THE MINIMUM REQUIREMENTS.
2. SUPPORT INSULATED PIPE AT HANGERS AND SUPPORTS WITH A SHIELD OF GALVANIZED METAL EXTENDING NOT LESS THAN 4-INCHES ON EITHER SIDE OF THE SUPPORT BEARING AREA COVERING AT LEASE HALF OF THE PIPE CIRCUMFERENCE.
3. PERFORM WORK IN ACCORDANCE WITH APPLICABLE STATUES, ORDINANCES, CODES, AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION. OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS.
4. ROUTE ALL ABOVEGROUND HORIZONTAL PIPING CONCEALED, HIDDEN FROM VIEW AND AS HIGH AS POSSIBLE IN ROOF JOIST SPACE (WATER AND VENT PIPING).

PLUMBING KEYED NOTES:

(1) 2" COLD WATER SUPPLY LINE UP FROM UNDERFLOOR. RISE WITH 1-1/2" LINE UP AS HIGH AS POSSIBLE A.F.F.

(2) 2" COLD WATER SUPPLY LINE. REF. CIVIL DWGS. FOR CONT.

(3) 2" GATE VALVE IN CAST IRON VALVE BOX.

(4) COLD WATER MAIN. ROUTE IN JOIST SPACE. DIRECTLY OVER SANITARY SEWER. LINE SHOWN OFFSET FOR CLARITY.

(5) VALVE AND CAP 1" BRANCH LINE FOR FUTURE CONNECTION (IN JOIST SPACE).

(6) 4" SANITARY SEWER LINE. REF. CIVIL DWGS FOR CONT. FLOW LINE = -4.75' B.F.F.

(7) NOT USED

(8) SLOPE BUILDING DRAIN AT 1/8" PER FOOT TYP.

(9) 4" VENT UP FROM UNDERFLOOR PROVIDE 4" WALL CLEANOUT ON VERTICAL.

(10) 6" FIRE SUPPLY LINE. REF. CIVIL DWGS FOR CONT.

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2 06.20.22 - Revision 2
3 08.26.22 - City Comments

STATE OF TEXAS
R. ROSS ALEMAN
98427
LICENSED PROFESSIONAL ENGINEER
8/26/22

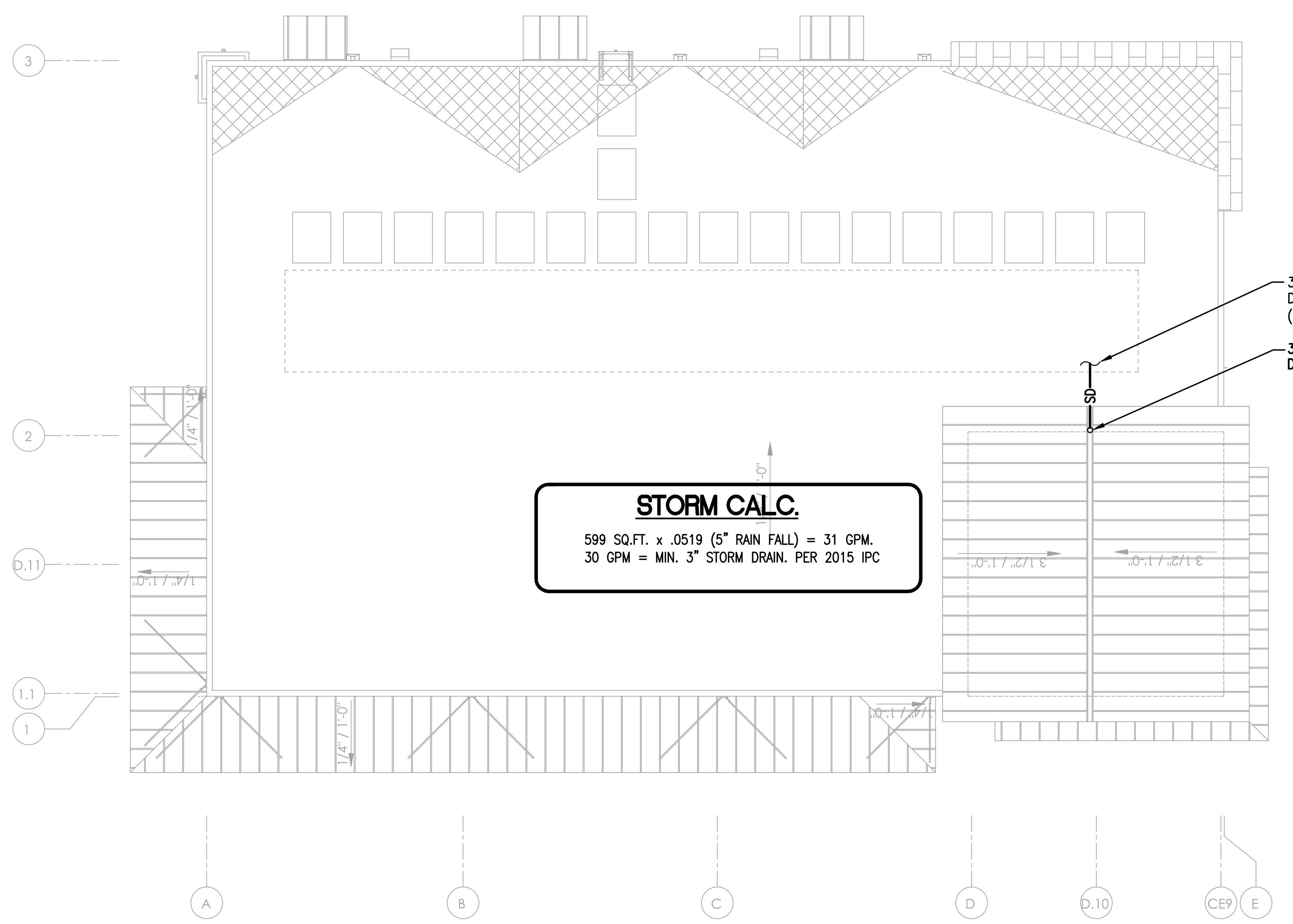
08.26.2022
CITY COMMENTS

FLOOR PLAN - PLUMBING

SHEET: P200

PROJECT NO: 21099
DRAWN BY:
DATE: 01.28.2022
PROJECT MGR:

City of Leander, Texas
Building Inspections Department
Reviewed for code compliance.
Released for construction with the below conditions:
This release plans in no way excludes items that may be found during field inspections and are required to be corrected/completed in order to comply with applicable codes and ordinances.



GENERAL NOTE:

(THIS NOTE APPLIES TO ALL SHEETS)

ALL MATERIALS, FIXTURES AND DEVICES SHALL CONFORM TO APPROVED APPLICABLE STANDARDS

PLUMBING GENERAL NOTES:

1. INSULATE ALL WATER SUPPLY AND ABOVEGROUND VENT PIPING WITH 1-INCH THICK FIBERGLASS PIPE INSULATION. FIBERGLASS PIPE INSULATION SHALL HAVE AN ALL SERVICE JACKET (ASJ) WITH SELF-SEALING LAPS (OWENS CORNING SSL-11 OR EQUAL). ALL PIPING INSULATION USED ON THE PROJECT SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AN A SMOKE DEVELOPED RATING NOT EXCEEDING 50 AS DETERMINED BY TEST PROCEDURES ASTM E 84 NFPA 225 AND U.L. 723. THESE RATINGS SHALL BE AS TESTED ON THE COMPOSITE OF INSULATION JACKET OR FACING AND ADHESIVE. COMPONENTS SUCH AS ADHESIVES MASTIC AND CEMENTS SHALL MEET THE SAME INDIVIDUAL RATINGS AS THE MINIMUM REQUIREMENTS.
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3. PERFORM WORK IN ACCORDANCE WITH APPLICABLE STATUES, ORDINANCES, CODES, AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION. OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS.
4. ROUTE ALL ABOVEGROUND HORIZONTAL PIPING CONCEALED, HIDDEN FROM VIEW AND AS HIGH AS POSSIBLE IN ROOF JOIST SPACE (WATER AND VENT PIPING).

TRUE NORTH PLAN NORTH

1 ROOF PLAN - PLUMBING

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

DRAWN BY:	CHECKED BY:
ET	SL

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LEANDER, TEXAS 78641

2 06.20.22 - Revision 2
3 08.26.22 - City Comments

STATE OF TEXAS
R. ROSS ALEMAN
98427
LICENSED
PROFESSIONAL ENGINEER
8/26/22

3 08.26.2022 CITY COMMENTS

ROOF PLAN - PLUMBING

SHEET: P201

PROJECT NO: 21099
DRAWN BY:
DATE: 01.28.2022
PROJECT MGR:

GENERAL NOTE:

(THIS NOTE APPLIES TO ALL SHEETS)

ALL MATERIALS, FIXTURES AND DEVICES SHALL CONFORM TO APPROVED APPLICABLE STANDARDS

PLUMBING GENERAL NOTES:

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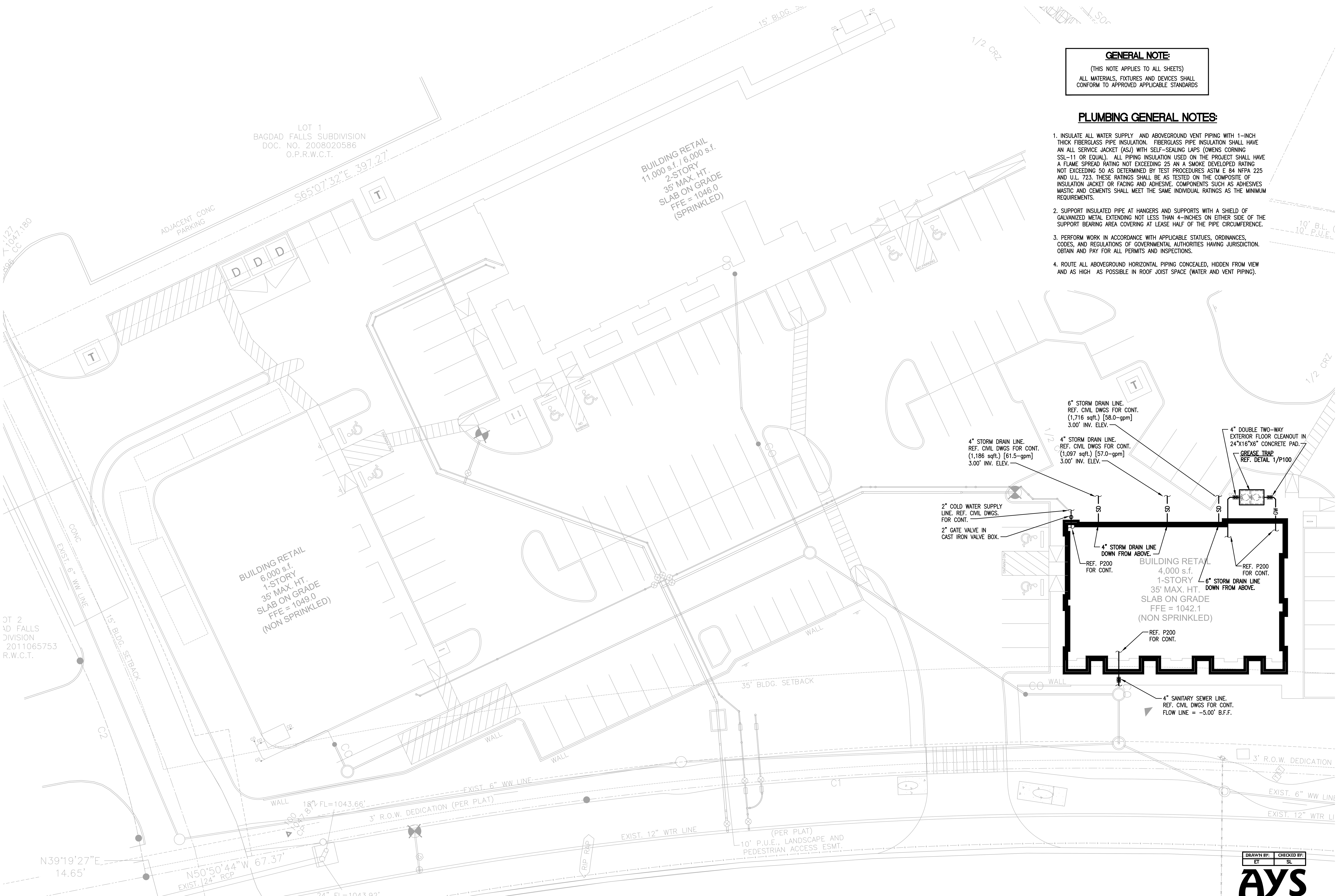

1 SITE PLAN - PLUMBING
SCALE: 1/16" = 1'-0"

TRUE NORTH PLAN NORTH

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ET	SL

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R. ROSS ALEMAN
98427
LICENSED PROFESSIONAL ENGINEER
8/26/22

3 08.26.2022 CITY COMMENTS

SITE PLAN - PLUMBING

SHEET: P202

PROJECT NO: 21099
DRAWN BY:
DATE: 01.28.2022
PROJECT MGR: