ATTACHMENT A

This attachment is hereby made a part of the contract documents to the same extent as though it were originally included therein. This attachment shall take precedence over the original drawings and specifications where its provisions apply.

Description:

Item 1.1 Geotechnical Report
Refer to attached Geotechnical engineering report prepared by Intertek PSI, dated May 30, 2025. Soil data and recommendations listed should be referenced for bid preparation.

Item 1.2 Annotations
A list of general notes has been included for the project, refer to revised sheet A1.1. Keynotes have been added and/or revised to clarify the project scope, refer to attached revised sheets A2.1, A2.2, A2.3, A2.4, & A3.1.

Item 1.3 Construction Signage
Additional construction signage has been added to the project at the owner's direction, refer to attached revised sheet A1.1.

Item 1.4 Arts Crafts Storage Door
Door A128 to the Arts & Crafts storage closet has been revised to an out-swing double door with 180° hinges. Refer to updated door schedule A1.4.

Item 1.5 Monument Sign
Details for the monument signage have been revised to correctly illustrate the required structural foundation / supports. Refer to attached revised sheets A2.4 & S3.13.

Item 1.6 Health Screening
The Millwork in health screening has been revised to eliminate the countertop surface above the refrigerator. Refer to attached revised sheet A7.2.

Item 1.7 Areaway Security
At the owner's direction, hinges and a steel angle with padlock hasp have been added to the front (2) areaways to secure crawlspace access. (30 Areaways at the back of the facility within the fenced yard are to be equipped with (2) saddle clips each. Refer to attached revised sheets A3.2 & S2.2.

Item 1.8 Access hatch
The access hatch provided in the warming kitchen has changed orientation to allow for better access to the specified grease interceptor, refer to attached revised sheet A1.3.

Item 1.9 AESS
AESS requirements and AESS category matrix have been added to the project, refer to attached revised sheets S1.3, S5.11, & S5.13.

Item 1.10 Slab Rebar
The slab rebar spacing has been updated to improve crack control for polished concrete slabs, refer to attached revised sheet S3.7.

Item 1.11 Additional elevation
An additional Elevation has been provided to show bottom of grade beam and bottom of brick, refer to attached revised sheet S3.1.

BEATY PALMER ARCHITECTS

KENWOOD COMMUNITY & SENIOR CENTER

ATTACHEMENT A

Date of Issuance
03.04.26

Architect Project No.
24-04

Owner
City of San Antonio
100 W. Houston St., 15th floor
San Antonio, TX 78205

From Architect
Beaty Palmer Architects
110 Broadway Suite 600
San Antonio, Texas, 78206

Attachments
Geotechnical Report

Arch: A1.1, A1.3, A2.1, A2.2, A2.3, A2.4, A3.2, & A7.2.

Structural: S1.3, S2.2, S2.3, S3.3, S3.5, S3.7, S3.8, S3.11, S3.12, S3.13, S3.14, S4.1, S5.9, S5.10, S5.11, S5.13, S5.14, & S6.1.

Technology: Spec 271500, T000, T101, T102, T601

Issued By

03.04.26

Cory W. Hawkins
Beaty Palmer Architects, Inc.

ATTACHMENT A

Item 1.12 Stoop
Stoops have been added to doors opening onto the sidewalk, refer to attached revised sheet S2.2.

Item 1.13 Slab Opening revisions
The slab opening sizes and locations have been revised, refer to attached revised concrete foundation and associated details.

Item 1.14 EOS
EOS for the mezzanine has been updated, refer to attached revised sheet S2.3.

Item 1.15 Pier Details
Additional notes have been added to clarify drilled pier details, and the casing requirement was removed. Refer to attached revised pier details.

Item 1.16 Additional requirements
A requirement has been added to ensure the pan removal hatch is not located within polished concrete areas, refer to attached revised sheet S3.8.

Item 1.17 Concrete revisions
At the South Entrance, the structural topping has been replaced with sidewalk concrete, refer to attached revised concrete sections & details.

Item 1.18 Concrete Revisions
The roughened concrete has been replaced with a bond breaker to improve crack control, refer to attached revised sheet S3.11 & S3.12

Item 1.19 Embed Plate
The stub column has been replaced with an embed plate for improved constructability. Refer to attached revised concrete sections & details.

Item 1.20 Plumbing
Adjustments have been made to the domestic water line and sanitary line, refer to attached revised sheets P1.1, P1.2, P1.3, & P4.1.

Item 1.21 IT Project Manual / Spec Revisions for Panduit
Refer to attached updated IT specifications and IT coversheet for additional information.

Item 1.22 IT device relocation
Refer to attached updated IT coversheet and revised drawing sheets T101, T102, and T601 for updated device locations and security details.

Project Name: Kenwood Senior & Community Center
Client: City of San Antonio
NOTICE TO PROPOSERS:

A. This Addendum shall be considered part of the contract documents for the above-mentioned project as though it had been issued at the same time and incorporated integrally therewith. Where provisions of the following supplementary data differ from those of the original contract documents, this Addendum shall govern and take precedence.
B. Proposers are hereby notified that they shall make any necessary adjustments in their estimate on account of this Addendum. It will be construed that each Proposer's proposal is submitted with full knowledge of all modifications and supplemental data specified therein. Acknowledge receipt of this addendum in the space provided on the proposal form. Failure to do so may subject Proposer to disqualification.

REFERENCE IS MADE TO THE DRAWINGS AND THE PROJECT MANUAL AS NOTED:

PROJECT MANUAL:

No 1, Tech. Item 1: To the Project Manual, 271500, 2.3.C.7
REVISE manufacture from; Panduit - CFPL2SY, CFPL4SY, or CFPL6S-2GY to Panduit - Grey – Coordinate exact color with owner.

DRAWINGS:

No 1, Tech. Item 2: Sheet# T101 – TECHNOLOGY – LEVEL ONE
DELETE 1 ceiling mounted camera from Room# 101,

No 1, Tech. Item 3: Sheet# T101 – TECHNOLOGY – LEVEL ONE
ADD 1 Wall-Mounted Motion Detector to Room# 114

No 1, Tech. Item 4: Sheet# T101 – TECHNOLOGY – LEVEL ONE
DELETE 3 Multi-Imager Cameras from Room# 115
DELETE 1 Wall-Mounted Motion Detector from Room# 115
ADD 2 Ceiling-Mounted Multi-Imager Cameras to Room# 115
ADD 1 Ceiling -Mounted Motion Detector to Room# 115
ADD 2 Network drop locations (4 cables) to Room# 115

No 1, Tech. Item 5: Sheet# T101 – TECHNOLOGY – LEVEL ONE
RELOCATE 1 Multi-Imager Cameras in Room# 123.

No 1, Tech. Item 6: **DELETE** Sheet# T102 – TECHNOLOGY – LEVEL ONE CEILING PLAN

No 1, Tech. Item 7: Sheet# T601 – T601 – TECHNOLOGY – SECURITY DETAILS
Revise Detail # 2

ATTACHMENTS:

ADDENDUM #1 –271500 COMMUNICATIONS HORIZONTAL CABLING SPECFICATIONS
ADDENDUM #1 – REVISED DRAWINGS

END OF TECHNOLOGY ADDENDUM

ARIAS & ASSOCIATES
Geotechnical • Environmental • Testing

July 10, 2012
Arias Job No. 2012-359

Mr. Jaime Camero, Jr.
City of San Antonio
Capital Improvements Management Services (CIMS) - Vertical Division
P. O. Box 839966
San Antonio, Texas 78283-3996

Re: Geotechnical Engineering Study
Addition to Kenwood Community Center
305 Dora Street
San Antonio, Texas

Dear Mr. Camero:

The results of our Geotechnical Engineering Study for the above referenced project are presented in this report. Our findings and recommendations should be incorporated into the design and construction documents for the planned upgrades to the Kenwood Community Center.

We recommend that the foundation construction be tested and observed by one of our representatives in accordance with the report recommendations. In addition, we can also contribute to the success of the project by performing the construction observation and materials testing services during construction.

Thank you for the opportunity to be of service to you.

Sincerely,
ARIAS & ASSOCIATES INC
TBPE Registration No. F-32

STATE OF TEXAS
RENE P. GONZALES
86259
LICENSED
PROFESSIONAL ENGINEER
7/10/12

Rene P. Gonzales, P.E.
Geotechnical Engineer

Dexter Bacon, P.E.
Senior Vice President

cc: 1 – to above

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Page Number

INTRODUCTION

This report presents the results of the Geotechnical Engineering Study for the proposed upgrades and modifications to the Kenwood Community Center located at 305 Dora Street. This study was performed in general accordance with the scope of services presented in Arias Proposal No. 2012-359, dated May 24, 2012. Our services were provided as part of Arias & Associates 2011 Material Testing Contract No. 4600011539 and was authorized through Contract Task Order TO-011 Kenwood Community Center Modifications dated June 5, 2012.

SCOPE OF SERVICES

The purpose of this engineering study was to establish foundation engineering properties of the subsurface soil and groundwater conditions present at the site. The scope of the study is sufficient to provide geotechnical engineering criteria for use by design engineers in preparing the foundation design for the project. Environmental studies, slope stability, or global stability analyses of retaining walls were beyond our scope of services for this project.

PROJECT AND SITE DESCRIPTION

The project site is located at 305 Dora Street in San Antonio, Texas. A Vicinity Map is included in Appendix A. The existing building consists of a single story structure supported on a slab-on-grade foundation. The community center includes a slab-supported addition located on the east end of the building. The original building has a stone masonry exterior veneer and appears to have undergone differential foundation movements that have resulting in cracking in the exterior stone veneer.

The building includes an exterior concrete patio at the rear of the building that is located adjacent to a covered porch area. The concrete patio slab has experienced excessive differential movements that have resulted in downward movements and severe cracking of the slab. The patio slab includes a perimeter architectural stone wall that is also showing signs of differential foundation movements.

Information provided to us indicates that the existing patio slab will be demolished. Preliminary plans are to provide a new conditioned-space addition that will be partially located on old covered porch area and partially over the new building addition.

FIELD SITE INVESTIGATION

Two (2) soil borings were drilled at the site to review the existing soil conditions beneath the existing foundation. Borings B-1 and B-2 were drilled in the patio area through the existing concrete slab foundation. Photographs taken at the time of our site visit are included in

Appendix B. The borings were drilled at the approximate location shown on the Boring Location Plan presented in Appendix C.

GeoTest Services was subcontracted to drill and sample the borings. The slab was prepared by coring a hole through the slab using an electric coring machine. The borings were then advanced to depths of about 12 feet by GeoTest using their portable hydraulic sampling rig. The sampling machine was anchored to the slab and used to continuously push thin-walled sampling tubes to recover undisturbed soil samples.

Field representative visually logged each recovered sample and placed a portion of the recovered sampled into a plastic bag for transport to our laboratory. Penetrometer readings recorded for thin-walled tube samples that remained intact also are shown on the soil boring logs.

LABORATORY TESTS

Laboratory testing was performed on select samples to determine the soil water content. Atterberg Limits, and percent passing the #200 sieve were also done to assist in classifying the soils. The laboratory results are reported in the attached boring logs. Two free swell tests were also provided on the near-surface fat clays to evaluate the shrink/swell potential of the site soils. The results of the free swell tests are provided later in this report. The laboratory testing and final classification of the subsurface materials was done in accordance with the specifications and definitions listed in the Appendix of this report.

Sample Disposal Remaining subsurface samples recovered from this exploration will be routinely discarded following submittal of this report.

SUBSURFACE CONDITIONS

Geology

The earth materials underlying the project site have been regionally mapped as clays of the Pecan Gap Formation. The Pecan Gap consists of hard bluish-gray calcareous clay shale and very hard bluish-gray marl in the unweathered subsurface which weathers to a tan gray buff color. Intermittent harder and softer seams and layers, as well as bentonitic zones, are common to the formation. The material was deposited in a shallow marine environment and is fossiliferous. The Pecan Gap soils are described geologically as chalk and chalky marl, and very light yellow to yellowish brown in color. The near-surface clays of the Pecan Gap typically, but not always, consists of a highly-plastic (expansive) clay.

Existing Foundation Slab and Sub-Slab Fill

The reinforcing steel was located using an electronic R-meter. The R-meter readings indicated that the foundation slab contained reinforcing steel on about 6-in centers, each way. The concrete slab was typically 8 to 8½ inches thick. A 1½ inch void was observed at

the Boring B-2 location, while no void was observed beneath the slab at the other cored location.

The laboratory compression test performed on the recovered concrete cores indicated compressive strengths ranging from 5,750 to 5,140 psi. Notes of the observations are included on the boring logs.

About 10 to 15 inches of granular fill was observed directly beneath the slab. The fill consisted of gravelly clay at the Boring B-1 location and clayey gravel at the B-2 location. The material had measured liquid limits of 24 to 37, plastic limits of 14, and plasticity index (PI) values of 10 to 23.

Site Stratigraphy and Engineering Properties

The soil borings encountered a clay fill material directly beneath the slab and base material. The clays extended to about 4 to 5 feet below the top of the foundation slab and were underlain by highly-plastic (CH) clays that extended to the boring completion depth of 12 feet. The laboratory test results and the Unified Soils Classification System descriptions for each stratum encountered in the soil borings have been summarized in Table 1.

Table 1: Generalized Soil Conditions

Depth (ft)	Material Description	PI range	-200 range	PP range
Concrete Slab and Base 0 to (1.5-2)	*8" to 8 ½" Concrete Slab over 10" to 15" of Clayey Gravel and Gravelly Clay Base Fill*	10-23	17-55	--
Stratum I (1.5-2) to (4-5)	*FILL: CLAY (CH), light tan and brown, very stiff to hard, with sand and gravel*	50	63	3.5 to 4.5+
Stratum II (4-5) to 9	*Dark Brown, CLAY (CH), hard*	59-67	--	4.5+
Stratum III 9 to 12	*Tan and gray CLAY (CL), hard to very hard*	62-63	99	4.5+

Where: ***Depth –*** *Stratum depth (ft.) from existing ground surface at the time of geotechnical study.*
PI – *Plasticity Index*
-200 *– Percent material passing a Standard No. 200 Sieve*
PP – *Pocket Penetrometer value, tsf*

Comments Regarding Fill – The 4 to 5 feet of fill observed in the soil borings contained varying amounts of sand and gravel. Visual observations of the fill indicated that the fill includes open void spaces. The observations made during drilling and the performance of the existing slab suggests that the compaction of the existing fill varies considerably across the site. Based on our observations, data collected as part of our field exploration, and without proper documentation of fill construction, there are risks that additional zones of variable soils could exist within the fill. The conditions could adversely impact the proposed construction. The recommendations provided in this report with regard to proof rolling and compacting the subgrade will help to reduce these risks. However, these risks cannot be reduced unless the existing fill is completely removed, moisture-conditioned, and placed back in compaction-controlled lifts.

Free Swell Test Results – The plasticity characteristics of the soils suggest that the clay soils at the site have a very high potential to shrink and swell due to fluctuations in moisture content. We provided free swell tests to further evaluate the shrink/swell potential of the site soils. In a free swell test the samples are provided a free source of water and the amount of vertical swell is measured. The percent swell values measured from representative samples recovered from the site are presented below:

Table 2: Free Swell Test Results

Boring	Depth	PI	% swell	Moisture content, %,	
				begin	end
1	5 – 6	62	3.1	20	25
2	7 - 8	67	6.3	19	25

The observed swell values ranged from about 3.1 percent to 6.3 percent swelling by volume. In general, the swell tests indicated the site soils are currently in a dry condition. This would suggest the soils are currently in low state of swell and have the potential for result in high amounts of swelling movements if exposed to excess soil moisture.

Groundwater

A dry soil sampling method was used to obtain the soil samples at the project site. No free groundwater was observed in the borings at the time of our study. Groundwater levels will often change significantly over time and should be verified immediately prior to construction. Water levels in open boreholes may require several hours to several days to stabilize depending on the permeability of the soils.

Groundwater levels at this site may differ during construction because fluctuations in groundwater levels can result from seasonal conditions, rainfall, drought, or temperature effects. Pockets or seams of gravels, sands, silts or open fractures and joints can store and

transmit “perched” groundwater flow or seepage. The sandy and gravelly fill soils encountered at this site can transmit subsurface water.

Variations

Soil conditions may vary between the sample boring locations. Transition boundaries or contacts noted on the boring logs to separate soil types are approximate. Actual contacts may be gradual and vary at different locations. *If conditions encountered during construction indicate more variation than established as a result of this study, we should be contacted to* evaluate *the significance of the changed conditions relative to our recommendations.*

IBC SITE CLASS DETERMINATION

Site classification according to the International Building Code (2009) is based on the soil profile encountered to 100-foot depth. The stratigraphy at the site location was explored to a 12-foot depth. The soils encountered in the borings were extrapolated to also be present from between 12 and 100-foot depths.

On the basis of the site class definitions included in Table 1613.5.2 and 1613.5.5 of the 2009 Code and the encountered generalized stratigraphy, we characterize the site as Site Class D, a stiff soil profile.

Seismic design coefficients were determined using the on-line software, Seismic Hazard Curves and Uniform Response Spectra, version 5.1.0, dated February 10, 2011. (http://earthquake.usgs.gov/research/hazmaps/design/download.php). Analyses were performed considering the 2009 International Building Code and the 2003 NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures. Input included 78212 zip code and Site Class D. Seismic design parameters for the site were the same for both analyses and are summarized in the following table.

Table 3: Seismic Design Parameters

Site Classification	F_a	F_v	S_s	S_1
D	1.6	2.4	0.107g	0.03g

Where: Fa = Site coefficient
Fv = Site coefficient
Ss = Mapped spectral response acceleration for short periods
S1 = Mapped spectral response acceleration for a 1-second period

MOISTURE VARIATIONS AND ESTIMATED SHRINK/SWELL MOVEMENT

Structural damage can be caused by volume changes in clay soils. Clays can shrink when they lose water and swell (grow in volume) when they gain water. The potential of expansive clays to shrink and swell is typically related to the Plasticity Index (PI). Clays with a higher PI generally have a greater potential for soil volume changes due to moisture content variations.

The expansive soils found at this site are capable of swelling and shrinking in volume dependent on potentially changing soil water content conditions during or after construction. The term swelling soils implies not only the tendency to increase in volume when water is available, but also to decrease in volume or shrink if water is removed.

Several methods exist to evaluate swell potential of expansive clay soils. We have estimated potential heave for this site utilizing the TXDOT method (Tex 124-E) as described in the following paragraphs. The Tex 124-E method provides an estimate of potential vertical rise (PVR) using the liquid limits, plasticity indices, and existing water contents for soils in the seasonally active zone. At this site the natural moisture contents would be expected to fluctuate in the upper 15 feet.

The PVR estimate based on the plasticity of the soils at this site was estimated to be about **5 *to 7 inches***. A 1-inch PVR is generally acceptable for the design of grade-supported foundations in South Texas. *Given the existing site improvements, we should be contacted if soil conditions are encountered which differ from those shown on the attached boring logs in order to assess the* impact *on our site improvement recommendations.*

Arias also estimated the potential swell movements based on the results of our swell tests provided on recovered soil samples. Our estimated heave values based on the results of the swell tests indicated a potential heave on the order of **4 inches**.

Estimated PVR values are based upon assumed typical changes in soil moisture content from a dry to a wet condition; however, soil movements in the field depend on the actual changes in moisture content. Thus, actual soil movements could be less than that calculated if little soil moisture variations occur or the actual movement could exceed the estimated values if actual soil moisture content changes exceed the PVR methods assumed dry and wet limits. This condition is often a result of extended droughts, flooding, “perched” groundwater infiltration, poor surface drainage, and/or leaking irrigation lines or plumbing.

FOUNDATION DESIGN CONSIDERATIONS

A shallow foundation type consisting of a slab-on-grade is a common alternate approach for small to moderate size buildings. When founded within expansive soils, subgrade improvement is recommended in order to reduce potential soil and foundation movement to a magnitude acceptable to the owner and design team. Some aesthetic distress is normally acceptable to the owner and design team with this foundation alternative.

As previously noted in this report, expansive clays shrink when they lose water and swell or grow in volume when they gain water content. Change in soil moisture is the single most important factor affecting the shrinking and swelling of clays. Therefore, soils having a high Plasticity Index and located in an area that the soil moisture varies considerably from drought to wet seasons will typically experience the highest magnitude of foundation movement.

Surface and subsurface drainage and the presence of trees and/or other large vegetation can also affect foundation performance significantly.

Structures constructed during dry periods on expansive soils generally experience the greatest amount of foundation movement. This is a result of water gaining access under the foundation. Water access under the foundation can occur from various sources including subsurface "perched" groundwater infiltration, poor surface drainage, leaking irrigation or plumbing lines, and/or climate change. Often movement of a foundation placed on highly expansive clay will be minimal provided the soil moisture content remains stable over time.

Discussion of Observed Foundation Movements in Patio Slab

As described earlier, the observed differential movements observed in the patio slab are consistent with foundations supported on fills that were not been properly compacted at the time of placement. Visual observations suggested the ongoing differential movements are primarily downward, resulting in cosmetic cracking and/or distortions to the patio slab.

We recommend the undocumented fills be excavated and removed from the foundation areas and be replaced with a compaction-controlled fill. The removed onsite soils, if free and clean of debris and deleterious material, could be considered for reuse as generally fill to construct slopes in the areas away from the planned foundations. The existing sub-slab granular base material may be considered for re-use in the foundation pad construction provided it meets the select fill criteria outlined in this report. Based on our soil borings and observations at the site, excavation/replacement depths to remove uncontrolled fills could be on the order of 4 to 5 feet.

Demolition of Existing Concrete Slab

The existing flatwork will be removed to allow for the new construction. Since the planned addition will be situated over portions of the existing flatwork, the existing site conditions and other potentially buried structures will need to be considered. It would be prudent to review as-built drawings and/or conduct field test excavations to determine the locations of existing buried foundations and structures in relation to the proposed construction.

Care should be taken not to undermine the slab foundation of the existing community center during the excavation for the new slab foundation. For excavations greater than one (1) foot we recommend that the side of the excavation immediately adjacent to the existing slab be sloped downward from the existing foundation at a maximum 1H:2V incline.

Former utilities can provide an avenue for water to migrate beneath the proposed building and paving and result in expansive soil-related movement. As a result, bedding, piping, and backfill associated with existing utilities should be removed. Excavations used to remove the utilities will require backfilling using clayey backfill placed in moisture conditioned, compaction controlled lifts.

Additional Comments Regarding Proposed Site Improvements

We anticipate that the planned demolition and reconstruction will be limited to the patio area. We understand that the preliminary plans are to provide a building addition to create a new conditioned-space for the community center. The new room addition will be partially located over the existing covered porch and partially located over the new foundation slab.

The covered porch area appears to be part of the foundation of the existing building and appears to be separate from the patio slab. Our recommended site improvements to rework the poorly compacted fills will be limited to the patio area. It is very likely that the fill conditions observed in our soil borings extend to areas beneath the covered porch patio.

Our recommendations to remove the uncontrolled fills will require excavations that will likely expose the footings beneath the covered porch area. We recommend that the soil support conditions beneath the footings be reviewed at the time of construction to review the foundation bearing conditions. It may be prudent to provide foundation underpinning or other structural foundation improvements if voids or unsupported foundation conditions are observed at the time of construction. We are providing preliminary design values for the consideration of helical anchor piers for potential use, if needed.

FOUNDATION RECOMMENDATIONS

We understand that preliminary plans are to demolish the existing patio and to provide a new foundation system to support the new building addition. The project will provide a new conditioned-space building that will be partially located on the existing covered porch area and partially over a new grade-supported slab.

We are providing our recommendations to assist if the design of the new foundation slab. We are also providing preliminary design values that may be considered for use to provide additional support to the existing foundations, should they be required.

Stiffened Slab-on-Grade Foundations

A slab-on-grade foundation is generally used to support relatively light structures upon expansive soils where soil conditions are relatively uniform, and where uplift and settlement can be tolerated. The intent of a slab-on-grade foundation is to allow the structure and foundation to move up and down freely with soil movements while providing sufficient stiffness to limit differential movements within the superstructure to an acceptable magnitude.

The required site preparation recommendations for the building pad to improve the PVR to an acceptable magnitude are provided in the CONSTRUCTION CRITERIA section of this report.

A grade-supported slab foundation may be used to support the planned structure provided they are designed specifically for the improved site conditions. The beams should be

embedded at least 24 inches below lowest adjacent finished grade and bear in properly compacted select fill material. The allowable bearing pressure for grade beams is ***2,200 psf,*** while thickened beam sections can support concentrated loads based on an allowable bearing pressure of ***2,500 psf.*** This includes a factor of safety of 3.0 against bearing failure.

Grade beams based at the recommended depth and founded within the compacted select fill, can be designed for an allowable soil bearing capacity provided above. The grade beams should be a minimum of 10 inches wide for shear resistance.

The exterior grade beams of the planned building addition should not be supported on a sloping topography. If the planned site grading does not allow the grade beams to be located at least 6 feet from the top of planned slopes, we recommend that the depth of the grade beams be extended to penetrate through the site fills. A deepened grade beam will allow the foundation loads to be transmitted to a greater depth and will reduce the potential for movements associated with a sloping topography.

We recommend that at least a 10 mil vapor retarder be used under the slab. The vapor retarder should conform to ASTM E1745, Class C or better and shall have a maximum water vapor permeance of 0.044 perms when tested in accordance with ASTM E96. A 10 mil Stego Wrap by Stego Industries LLC or other similar products meeting these requirements would be acceptable.

There are various design methods for use by the structural engineer to select the grade beams depths and beam spacings for the project. We are providing design parameters for two design methods commonly used in South Texas. The foundation may be designed using the Building Research Board No. 33 (BRAB Report) as a guideline. Alternatively, the foundation may be designed based on the Design of Slab-On-Ground Foundations published by the Wire Reinforcement Institute, Inc. (Aug., 1981). Provided in the following tables are design criteria for both methods.

Table 4: BRAB & WRI Design Criteria**

	BRAB	WRI
Climatic Rating (Cw)	17	17
Effective Plasticity Index	45	45
Support Index (C)	0.65	--
Soil/Climatic Rating Factor (1-C)	--	0.35
Unconfined Compressive Strength (tsf)	1.2	--

Assumes site is properly prepared as outlined in the Construction Criteria section of this report to include the removal and replacement of 4 feet of the existing soils.

Arias is providing our recommended design values for the Structural Engineer's consideration and possible use. Arias recommends the final design methodology for the planned foundations be selected by the project Structural Engineer based on his knowledge and experience with similar foundation conditions.

Helical Pile Foundation Design Parameters

As described, we are recommending that the planned reconstruction of the patio slab include removing and replacing the uncontrolled fills observed in our soil borings. Based on our observations it is very likely that the fills extend beneath the covered patio area and it will not be practical to improve the foundation conditions beneath the existing building.

It may be necessary to 'underpin' the existing foundations in the area of the covered porch once to fills are removed. We have reviewed the potential use of helical anchor foundations to support existing foundations exposed by the planned building modifications. Helical anchor foundations installed to a minimum depth of 20 feet may be considered for use on this project. The final size of the helical anchors should be sized to support the anticipated foundation loads. If used, we recommend that the helical foundations be properly designed by the project structural engineer to support the anticipated design loads. The design should include an analysis of the existing foundations to confirm the suitability of the planned underpinning methods.

It has been our experience that the axial capacity for the planned foundations can be determined by the helical pile specialty contractor based on their review of the soil conditions described in our boring logs. Our recommended soil strength parameters for use in the design of helical piles are provided below:

Table 5: Recommended Soil Strength Design Parameters

Depth from Boring Grade, ft	Material Type	γ_e	C_u	ϕ
0 – 10	Brown FAT CLAY (CH)	120	1,200	0
10 – 30	Tan and Gray FAT CLAY (CH)	120	3,500	0

Our recommended minimum bearing depth was selected to install the planned helical anchors below the zone of seasonal moisture fluctuations. It has been our experience that the capacity of the helical piers is sometimes provided as a function of the torque required to install the anchors into the soils. Very hard soil conditions were encountered near the proposed tip elevations. The contractor should review the soil conditions to confirm that the minimum bearing depths can be achieved to adequately resist the potential shrink/swell movements that may occur at this site. In addition, the planned pile foundations should be adequately designed to resist anticipated lateral loading.

Retaining Wall Structures

As described later in the report, we recommend that the planned site grading be reviewed to confirm that the site slopes can be properly designed and graded to improve long-term stability for the planned foundations. If the site layout does not allow for suitable setback distances to allow for the construction of the slopes, it may be necessary to incorporate retaining walls or foundation walls into the project design.

We are providing at-rest and active earth pressure coefficients for various backfill types adjacent to retaining walls that may be used for the design of structural retaining walls. At-rest earth pressures are recommended in cases where little wall yield is expected (walls which are fixed at the top). Active earth pressures may be utilized in cases where the walls can exhibit a small amount of horizontal movement at the top (such as cantilevered retaining walls). A clean, granular type backfill is recommended for use behind the walls having less than 5% material passing the #200 sieve.

Table 6: Retaining Wall Design Parameters

Backfill Type	Estimated Total Unit Weight (psf)	Lateral Earth Pressure Coefficients			
		At Rest (Ko)	EFP*	Active (Ka)	EFP*
Crushed Limestone	135	0.45	61	0.30	40
Clean Sand	120	0.50	60	0.35	42
Clean Gravel	120	0.45	54	0.30	36

*** EFP is equivalent fluid pressure for a triangular distribution of lateral earth pressure on the wall.**

The above values do not include a hydrostatic or ground level surcharge component. The effect of surcharge loads, where applicable, should be incorporated into wall pressure diagrams by adding a pressure component equal to the applicable lateral earth pressure coefficient times the surcharge load to the full height of the wall.

The compactive effort should be controlled during backfill operations. Overcompaction can produce lateral earth pressures in excess of at-rest magnitudes. Compaction levels adjacent to below-grade walls should be maintained between 95 and 98 percent of standard Proctor (ASTM D698) maximum dry density. The final 12 inches of backfill should preferably consist of cohesive soil. This will help to reduce percolation of surface water into the backfill.

For retaining walls bearing on natural subgrade or properly compacted fill, an ultimate sliding friction coefficient of 0.35 should be used. A maximum allowable footing bearing capacity of 2,000 psf should be considered for walls placed on properly compacted subgrade. All retaining walls should be checked against failure due to overturning, sliding, and overall slope stability. This type of global analysis can only be performed once the dimensions of the wall are known. As such, a detailed global stability analysis was beyond our scope of services for this project.

Wall drains are recommended for collection and removal of surface water percolation or transient subsurface water that may otherwise gather behind the wall. Proper wall drainage will help to prevent buildup of hydrostatic pressures on the walls.

CONSTRUCTION CRITERIA FOR PROPOSED SITE DEVELOPMENT

This section provides Construction Criteria for Building Pad Construction and General Sitework Considerations.

Building Pad Recommendations

As described, the plasticity characteristics suggest the site soils have a PVR of about 5 to 7 inches. The results of the swell tests indicate that the site soils may swell on the order of 4 inches. A common site improvement method to reduce the shrink/swell movements consists of removing a portion of the active site clays and replacing them with an inert structural fill. Using the results of our shrink/swell estimates, we estimate that about 8 to 10 feet of removal and replacement will be required to reduce the site PVR to about 1 inch. However, it is our opinion that a foundation pad on the order of 10-feet will not be economical to support the planned addition.

Previous information provided by the CoSA suggests that the existing kitchen building addition located on the east end of the community center is supported on 30-inches of select structural fill. As described, the planned building addition appears to be performing favorably and does not appear to be undergoing significant foundation distress related to shrink/swell movements.

Our site preparation recommendations have been prepared to remove and replace the existing fill soils to improve the support conditions and reduce the potential for the type of the movements that are currently occurring. Based on the observed performance of the existing building foundation it is our opinion that removing the poorly compacted fills and replacing them with a select structural fill will provide an improved foundation support condition. Because of the potential for future movements, we recommend that our recommended design measures to control moisture fluctuations (i.e. improved site drainage, relocating roof drains, deepened grade beams, etc.) be strictly adhered to.

The following pad recommendations are being provided with the understanding that CoSA is willing to accept a risk for potential shrink/swell movements of the grade supported interior foundation slab.

Table 7: Building Pad Preparation for 1" PVR – Undercut & Replace Method

Stripping Depth	Minimum of 6 inches or as needed to remove vegetation before undercut excavation
Undercut Depth	As required to remove ALL fill soils observed in our soil borings
Select Fill Depth	At least 4 feet (estimated from soil borings)
Undercut Extent	5' beyond perimeter of building
Subgrade Preparation at Base of Excavation	**Soil at Base** Scarify, moisture condition, and compact soils to 6 inches below excavation.
Pumping/Rutting Areas Discovered During Proofrolling	Remove to firmer materials and replace with compacted general or select fill under direction of geotechnical engineer representative
Select Fill Type	Pit Run – Liquid Limit <40%, PI 7-20, max. 4" maximum particle size *or* TxDOT Item 247, Type A or B, Grade 1 or 2 Crushed Limestone Material*
Material Placed between Undercut Subgrade Elevation and Bottom of Select Fill	Compacted Reconditioned General Fill (Any soil free of organics, debris and other deleterious materials with max particle size of 4")
Maximum Loose Lift Thickness	9" for General Fill and Select Fill

General Site Earthwork Recommendations

If fill is needed to raise site grade outside of the building pad area and pavement area, general fill obtained from on-site excavations may be used. Requirements for compacted general fill are outlined in the following table.

Table 8: Site Work (Non Structural/General) Fill Requirements

Stripping Depth	6 inch minimum or as needed to remove vegetation
Non Structural/General Fill Type	On-site material free of roots, debris and other deleterious material with a maximum particle size of 4 inches
Maximum Non Structural/General Fill Loose Lift Thickness	9 inches

Positive drainage is very important to reducing soil volume changes that can detrimentally affect the performance of the planned development. Proper attention to surface and subsurface drainage details during the design and construction phase of development can prevent many potential soil shrink-swell related problems during and following the completion of the project.

Design Measures to Control Surface Run-Off & Mitigate Landscaping Effects

Although subgrade modification through excavation and replacement is recommended to reduce potential shrink/swell related foundation movements, the design and construction of a grade-supported floor should also include the following elements to maintain a stable soil moisture content:

- Roof drainage should be controlled by gutters and carried well away from the structure. The ground surface adjacent to the building perimeter should be sloped a minimum of 5% grade away from the building for 10 feet to result in positive surface flow or drainage away from the building perimeter.
- Roof drainage from the adjacent building(s) should be directed well away from the new building.
- Hose bibs, sprinkler heads, and other external water connections should be placed well away from the foundation perimeter such that surface leakage cannot readily infiltrate into the subsurface or compacted fills placed under the proposed foundations and slabs.
- Utility bedding should not include gravel within 4 feet of the perimeter of the foundation. Compacted clay or flowable fill bedding materials should be used in lieu of permeable bedding materials between 2 feet inside the building to a distance of 4 feet beyond the exterior of the building edge to reduce the potential for water to infiltrate within utility bedding and backfill material.
- Paved areas around the structure are helpful in maintaining equilibrium within the soil water content. If possible, pavements should be located immediately adjacent to the building.
- Site work excavations should be protected and backfilled without delay to reduce changes in the natural moisture regime.

Doweled Connection of New Addition to the Existing Building

We understand that the foundation associated with the new addition will be located immediately adjacent to the foundation of the existing building. Some differential movements should be expected between the two foundations.

Poor drainage and/or ponding water around the new foundations could result in differential movements between the existing building and the planned addition on the order of 1 inch. A rigid connection between the two slabs will result in distress and associated cracking in the foundations.

Based on our understanding of the planned building use, differential movements between the existing and new structures may create potential tripping hazards. We recommend, therefore, that the Structural Engineer include design details (such as a flexible/doweled

connection) to allow for differential movements where the planned addition will abut against the existing structure.

Reuse of Existing Site Materials

As previously discussed in this report, the existing patio slab will be removed to allow for the new construction. Existing building pad material can be considered for reuse as select fill beneath the new building provided that it meets the select fill criteria provided herein.

The existing concrete and base material, may be used as general fill in non-structural areas, provided the materials are pulverized and thoroughly blended with onsite soil and result in a 2-inch maximum particle size.

Site Grading Considerations

Based on the soils encountered in our study, we recommend that potential slopes constructed using the on-site high plasticity site soils be no steeper than 3H:1V. Milder of 4H:1V slopes may be desirable for maintenance/mowing purposes. Slopes constructed using clays soils can experience shallow sloughing events as a result of changing weather conditions that result in cycles of wetting and drying. Some maintenance should be planned for throughout the life of the slopes.

As described in the *Foundation Recommendations* section, we recommend that the planned foundations be located at least 6 feet away from the top of the planned slopes. Foundation loads supported too close to the top of the slopes will provide surcharge loading onto the fill slopes and will provide a potential for soil related movements.

The site grading provided at the time of the original building construction included about 4 to 6 feet of filling in the area of the existing patio. The existing slopes appear to include slope reinforcement improvements to provide slopes that appear to be steeper than 3H:1V. Based on our cursory observations made at the time of our field study, the steepened slopes appear to have contributed to some of the downward foundation movements observed in the patio slab. We recommend that the project designers review the planned site grading to provide improved support conditions for the planned building addition. If space does not allow for properly designed side slopes, we recommend that properly designed and constructed retaining walls be incorporation into the design of the project.

Flatwork Considerations

Minor differential movements between the planned structure and abutting sidewalks should be expected if the flatwork is supported on similar building pad conditions. Flatwork supported on the unimproved, natural site conditions will result in foundation movements of the magnitudes reported in the PVR section. We recommend that the flatwork and the buildings be designed to include details that permit foundation movements without resulting

in vertical separations and without distressing either element. Control joints should be included that include steel reinforcing to prevent vertical shear, but to allow bending.

The flatwork and abutting sidewalks should be designed and constructed to allow for positive drainage away from the building foundation with a minimum 2 percent slope. We recommend extending the foundation pad beneath the full width of any planned adjacent sidewalks.

ADDITIONAL DESIGN & CONSTRUCTION CONSIDERATIONS

Utilities

Utilities which go through the slab and beams should be designed with some flexibility to allow free movement in the lines as a result of potential soil shrinkage or swelling.

Slab Bearing Partition Walls & Flooring

Slab bearing partition walls and brittle floor tiles are susceptible to various degrees of cracking due to potential slab and foundation movements. Accordingly, the potential foundation movements cited earlier should be accounted for in the overall design.

Control and Construction Joints

Concrete, mortar, grout, and concrete or clay masonry units as well as numerous other construction materials shrink and swell upon a loss or gain of moisture in much the same manner as expansive soils. Accordingly, material volume changes or potential foundation movements can cause wall or slab cracking to occur. In general, however, unsightly cracking can normally be eliminated by controlling crack locations and making them inconspicuous so that they do not detract from the appearance of the building. Crack control should typically be implemented in the overall building design by the implementation of control or contraction joints in the structure at proper intervals.

CONSTRUCTION CRITERIA

Site Preparation

Strip away existing topsoil, grass, organics, and deleterious debris as needed and dispose outside of the building and pavement areas. Undercut to the required depth and extent as noted in the table shown in the main report. Additional excavation may be required to accommodate the required select fill thickness. Additional excavation may also be necessary due to encountering deleterious materials such as concrete or undesirable soft and wet subgrade conditions. The site representative of the geotechnical engineer should observe undercutting operations. Unless passing density reports are provided for a specific area, existing fill soils found during the excavation should be considered as uncertified and removed to suitable natural soils.

After the surface materials are removed, proof rolling of the exposed surface with a heavily loaded dump truck or pneumatic tired roller should be performed. Any areas which excessively yield or pump under the wheel loading should be undercut to the depth specified by the geotechnical engineer's representative and replaced with compacted select fill to existing grade as specified. The voids in undercut areas can be backfilled and compacted with on-site general fill materials. The backfill should be placed and compacted in accordance with the General Fill requirements in Table 4 in Section I.

At least one density test should be conducted per 5,000 square feet of building pad per lift of prepared fill and subgrade or a minimum of three density tests should be taken per lift within the building pad area.

Drainage

Good positive drainage during and after construction is very important to reduce expansive soil volume changes that can detrimentally affect the performance of the planned development. Proper attention to surface and subsurface drainage details during the design and construction phase of development can prevent many potential soil shrink-swell related problems during and following the completion of the project.

Two of the existing downspouts from the roof gutter system drain directly adjacent to the existing patio slab. The excess water from the roof drains have likely contributed to the soil related movements observed in the patio slab. We recommend that the site drainage be reviewed and corrected as part of the upgrades. Water from the roof drainage should be directed away from the planned foundations and not allowed to pond adjacent to the new foundations.

Earthwork and Foundation Acceptance

Exposure to the environment may weaken the soils at the foundation bearing level if the excavation remains open for long periods of time. Therefore, it is recommended that all foundation excavations be extended to final grade and constructed as soon as possible in order to reduce potential damage to the bearing soils. If bearing soils are exposed to severe drying or wetting, the unsuitable soil must be re-conditioned or removed as appropriate and replaced with compacted fill, prior to concreting. The foundation bearing level should be free of loose soil, ponded water or debris and should be observed prior to concreting by the geotechnical engineer or his representative.

Foundation concrete should not be placed on soils that have been disturbed by rainfall or seepage. If the bearing soils are softened by surface water intrusion during exposure or by desiccation, the unsuitable soils must be removed from the foundation excavation and replaced with compacted select fill prior to placement of concrete.

Subgrade preparation and fill placement operations should be monitored by the soil engineer or his representative. As a guideline, at least one in-place density test should be performed for each 5,000 sq. ft. of compacted surface per lift or a minimum of three tests per lift. Any areas not meeting the required compaction should be recompacted and retested until compliance is met.

Trench Excavations

Excavations should comply with OSHA Standard 29CFR, Part 1926, Subpart P and all State of Texas and local requirements. Trenches 20 feet deep or greater require that the protective system be designed by a registered professional engineer. A trench is defined as a narrow excavation in relation to its depth. In general, the depth is greater than the width, but the bottom width of the trench is not greater than 15 feet. Trenches greater than 5 feet in depth require a protective system such as trench shields, trench shoring, or sloping back the excavation side slopes.

The Contractor's "Competent Person" shall perform daily inspections of the trench to verify that the trench is properly constructed and that surcharge and vibratory loads are not excessive, that excavation spoils are sufficiently away from the edge of the trench, proper ingress and egress into the trench is provided and all other items are performed as outlined in these OSHA regulations. It is especially important for the inspector to observe the effects of changed weather conditions, surcharge loadings, and cuts into adjacent backfills of existing utilities. The flow of water into the base and sides of the excavation and the presence of any surface slope cracks should also be carefully monitored by the Trench Safety Engineer.

Although the geotechnical report provides an indication of soil types to be anticipated, actual soil and groundwater conditions will vary along the trench route. The "Competent Person" must evaluate the soils and groundwater in the trench excavation at the time of construction to verify that proper sloping or shoring measures are performed.

Appendix B to the regulations has sloping and benching requirements for short-term trench exposure for various soil types up to the maximum allowable 20-foot depth requirement.

Quality Control

As Geotechnical Engineer of record, we should be engaged to observe and evaluate the foundation installation to determine that the actual bearing materials are consistent with those encountered during the field exploration and to monitor the pier installation process. It is also important that we be given the opportunity to review the design and construction documents. The purpose of this review is to check to see if our recommendations are properly interpreted into the project plans and specifications.

GENERAL COMMENTS

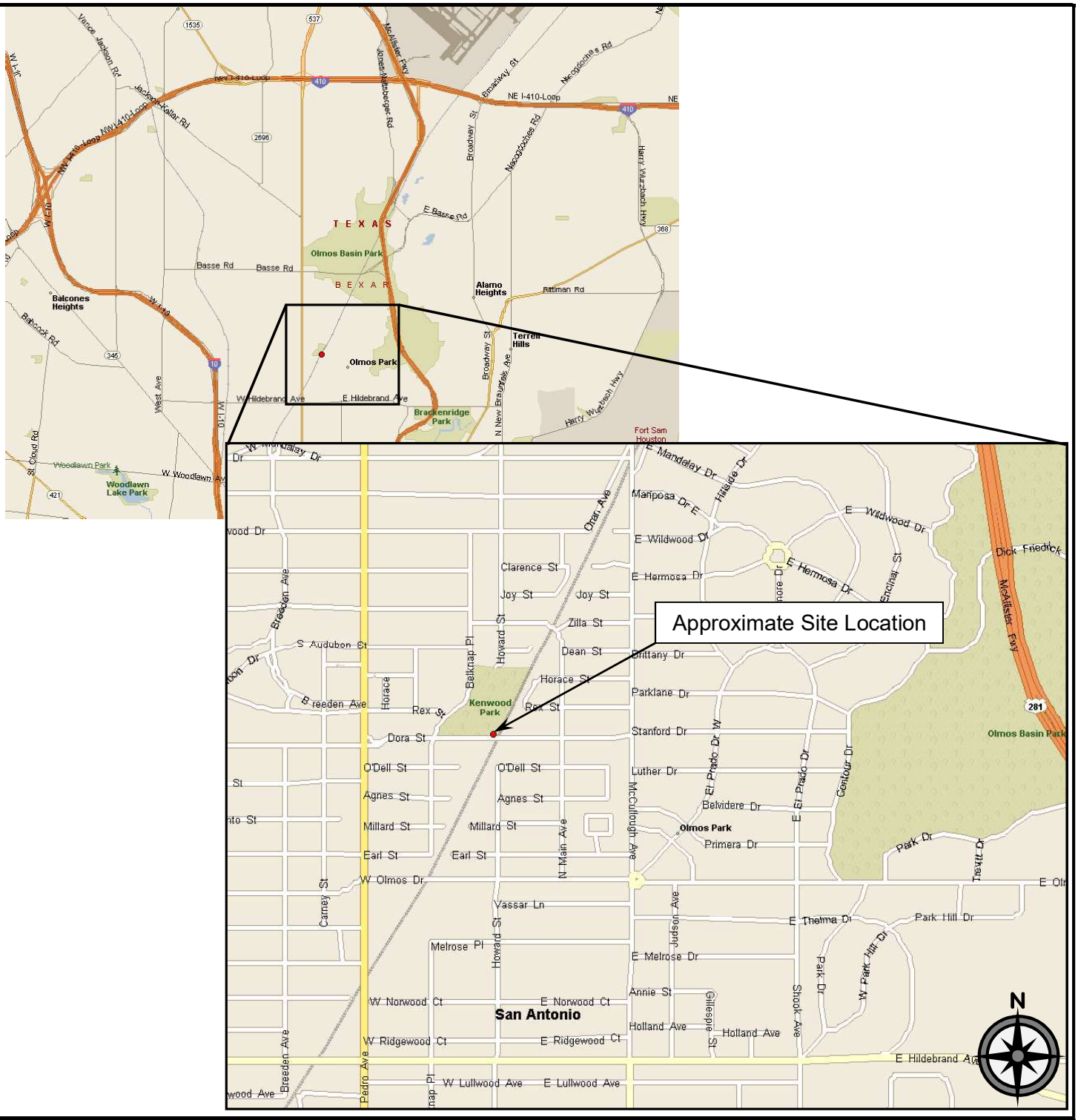
This report was prepared for this project exclusively for the use by the City of San Antonio and their design team. If the repair plans change relative to layout, size or anticipated loads, or if different subsurface conditions are encountered, we should be informed and retained to ascertain the impact of these changes on our recommendations. We cannot be responsible for the potential impact of these changes if we are not informed.

The soils to be penetrated by foundation excavations may vary significantly across the site. Our soil classification is based solely on the materials encountered in the soil borings. The contractor should verify that similar conditions exist throughout the proposed area of excavation. If different subsurface conditions are encountered at the time of construction, we recommend that Arias be contacted immediately to evaluate the conditions encountered.

Please note that while the scope of this report is to provide foundation recommendations for the planned underpinning activities, the success of the remedial actions is predicated on identifying the reason(s) for the loss of soil support beneath the existing slab-on-grade foundations and implementing corrective measures. This should be accomplished before further structural improvements are made.

This report has been prepared in accordance with generally accepted geotechnical engineering practice with a degree of care and skill ordinarily exercised by reputable geotechnical engineers practicing in this area.

APPENDIX A: SITE VICINITY MAP



ARIAS & ASSOCIATES, INC.
Geotechnical • Environmental • Testing
TBPE Registration No. F-32
142 Chula Vista
San Antonio, Texas 78232
Office: (210) 308-5884 Fax: (210) 308-5886

VICINITY MAP

Proposed Addition to Kenwood Community Center
305 Dora Street
San Antonio, Texas

Date: July 10, 2012	Job No.: 2012-359
Drawn By: TAS	Checked By: RPG
Approved By: SAH	Scale: N.T.S.

Figure 1

APPENDIX B: SITE PHOTOS

Photo 1: View of Existing Conditions

Photo 2: View of Existing Side Slopes

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SITE PHOTOS

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305 Dora Street
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Drawn By: TAS	Checked By: RPG
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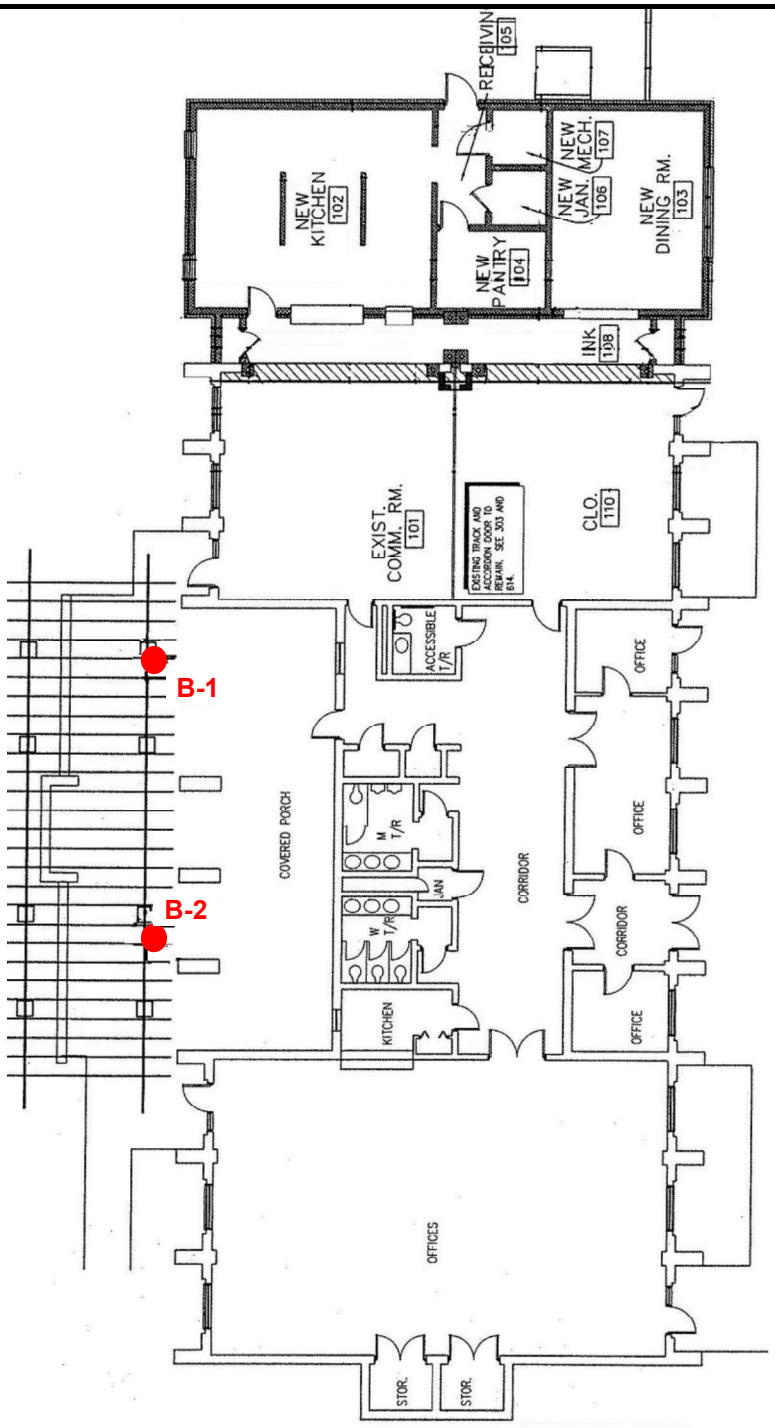
Appendix B

APPENDIX C: BORING LOCATION PLAN AND BORING LOGS



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BORING LOCATION PLAN

Proposed Addition to Kenwood Community Center
305 Dora Street
San Antonio, Texas

REVISIONS:		
No.:	Date:	Description:

Date: July 10, 2012	Job No.: 2012-359
Drawn By: TAS	Checked By: RPG
Approved By: SAH	Scale: N.T.S.

Figure 2

Boring Log No. B-1

Project: **Addition to Kenwood Community Center**
305 Dora
San Antonio, Texas

Sampling Date: 6/15/12

Location: See Boring Location Plan

Backfill: Cuttings

Soil Description	Depth (ft)	SN	WC	PL	LL	PI	PP	-200
8" Concrete core		CC						
10" FILL: Tan gravelly clay (CL) with sand		T	9					
FILL: CLAY (CH), dark brown and tan, with gravel, hard	2	T	10	14	37	23		55
		T	13				4.5+	
-sandy below 3'	4	T	15	16	66	50	4.5+	63
CLAY (CH), dark brown, hard		T	23				3.50	
	6	T	20	17	79	62	4	
		T	19				4.5+	
	8	T	19				4.5+	
		T	17	18	77	59	4.5+	
CLAY (CH), tan, hard	10	T	17				4.5+	
		T	20				4.5+	
	12	T	20	18	81	63	4.5+	

Borehole terminated at 12 feet

Notes:
1) R-meter readings suggesting the slab contains wire-mesh reinforcement.
2) Laboratory compression test performed on recovered concrete core indicated strength of 5,140 psi.

Groundwater Data:
During drilling: Not encountered

Field Drilling Data:
Logged By: GeoTest Services
Driller: GeoTest Services
Equipment: Limited access Geoprobe

Nomenclature Used on Boring Log

[] Concrete Core (CC) ■ Thin-walled tube (T)

WC = Water Content (%) -200 = % Passing #200 Sieve
PL = Plastic Limit
LL = Liquid Limit
PI = Plasticity Index
PP = Pocket Penetrometer (tsf)

2012-359.GPJ 7/5/12 (BORING LOG SA10-01.ARIASSA10-01.GDT.LIBRARY2012.GLB)

Arias & Associates, Inc.

Job No.: 2012-359

Boring Log No. B-2

Project: **Addition to Kenwood Community Center**
305 Dora
San Antonio, Texas

Sampling Date: 6/15/12

Location: See Boring Location Plan

Backfill: Cuttings

Soil Description	Depth (ft)	SN	WC	PL	LL	PI	PP	-200
8.5" Concrete slab over 1.5" Void		CC						
15" FILL: Tan clayey gravel (GC) with sand		T	8					
		T	7	14	24	10		17
	2	T						
FILL: CLAY (CH), tan and brown, hard, with gravel		T	12				4.5+	
		T	14				4.5+	
	4	T	20				4.5+	
CLAY (CH), dark brown, hard		T	22	21	84	63	4.5+	
	6	T	20				4.5+	
		T	19	20	87	67	4.5+	
	8	T	16				4.5+	
CLAY (CH), tan, hard		T	16				4.5+	
	10	T	19	17	79	62	4.5+	99
		T	20				4.5+	
	12							

Borehole terminated at 12 feet

Notes:
1) R-meter readings suggesting the slab contains wire-mesh reinforcement.
2) Laboratory compression test performed on recovered concrete core indicated strength of 5,750 psi.

Groundwater Data:
During drilling: Not encountered

Field Drilling Data:
Logged By: GeoTest Services
Driller: GeoTest Services
Equipment: Limited access Geoprobe

Nomenclature Used on Boring Log

Concrete Core (CC) Thin-walled tube (T)

WC = Water Content (%)
PL = Plastic Limit
LL = Liquid Limit
PI = Plasticity Index
PP = Pocket Penetrometer (tsf)
-200 = % Passing #200 Sieve

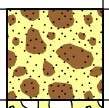
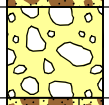
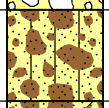
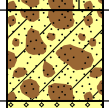
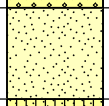
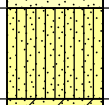
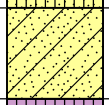
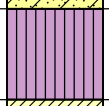
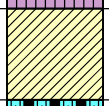
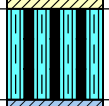
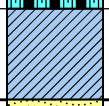
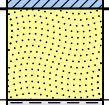
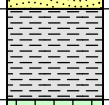
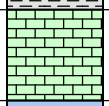
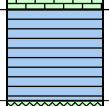
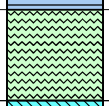
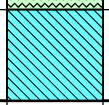
2012-359.GPJ 7/5/12 (BORING LOG SA10-01.ARIASSA10-01.GDT.LIBRARY2012.GLB)

Arias & Associates, Inc.

Job No.: 2012-359

APPENDIX D: KEY TO CLASSIFICATION SYMBOLS

KEY TO CLASSIFICATION SYMBOLS USED ON BORING LOGS

MAJOR DIVISIONS			GROUP SYMBOLS		DESCRIPTIONS
COARSE-GRAINED SOILS (More Than Half of Material LARGER Than No. 200 Sieve size)	GRAVELS (More Than Half of Coarse Fraction is LARGER Than No. 4 Sieve Size)	Clean Gravels (Little or no Fines)	GW		Well-Graded Gravels, Gravel-Sand Mixtures, Little or no Fines
			GP		Poorly-Graded Gravels, Gravel-Sand Mixtures, Little or no Fines
		Gravels With Fines (Appreciable Amount of Fines)	GM		Silty Gravels, Gravel-Sand-Silt Mixtures
			GC		Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS (More Than Half of Coarse Fraction is SMALLER Than No. 4 Sieve Size)	Clean Sands (Little or no Fines)	SW		Well-Graded Sands, Gravelly Sands, Little or no Fines
			SP		Poorly-Graded Sands, Gravelly Sands, Little or no Fines
		Sands With Fines (Appreciable Amount of Fines)	SM		Silty Sands, Sand-Silt Mixtures
			SC		Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS (More Than Half of Material is SMALLER Than No. 200 Sieve Size)	SILTS & CLAYS	Liquid Limit Less Than 50	ML		Inorganic Silts & Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands or Clayey Silts with Slight Plasticity
			CL		Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays
	SILTS & CLAYS	Liquid Limit Greater Than 50	MH		Inorganic Silts, Micaceous or Diatomaceous Fine Sand or Silty Soils, Elastic Silts
			CH		Inorganic Clays of High Plasticity, Fat Clays
FORMATIONAL MATERIALS	SANDSTONE				Massive Sandstones, Sandstones with Gravel Clasts
	MARLSTONE				Indurated Argillaceous Limestones
	LIMESTONE				Massive or Weakly Bedded Limestones
	CLAYSTONE				Mudstone or Massive Claystones
	CHALK				Massive or Poorly Bedded Chalk Deposits
	MARINE CLAYS				Cretaceous Clay Deposits
	GROUNDWATER			▼	Indicates Final Observed Groundwater Level
				▽	Indicates Initial Observed Groundwater Location

Arias & Associates, Inc.

APPENDIX E: LABORATORY AND FIELD TEST PROCEDURES

FIELD AND LABORATORY EXPLORATION

The field exploration program included drilling at selected locations within the site and intermittently sampling the encountered materials. The boreholes were drilled using either single flight auger (ASTM D 1452) or hollow-stem auger (ASTM D 6151). Samples of encountered materials were obtained using a split-barrel sampler while performing the Standard Penetration Test (ASTM D 1586), using a thin-walled tube sampler (ASTM D 1587), or by taking material from the auger as it was advanced (ASTM D 1452). The sample depth interval and type of sampler used is included on the soil boring log. Arias' field representative visually logged each recovered sample and placed a portion of the recovered sampled into a plastic bag for transport to our laboratory.

SPT N values and blow counts for those intervals where the sampler could not be advanced for the required 18-inch penetration are shown on the soil boring log. If the test was terminated during the 6-inch seating interval or after 10 hammer blows were applied used and no advancement of the sampler was noted, the log denotes this condition as blow count during seating penetration. Penetrometer readings recorded for thin-walled tube samples that remained intact also are shown on the soil boring log.

Arias performed soil mechanics laboratory tests on selected samples to aid in soil classification and to determine engineering properties. Tests commonly used in geotechnical exploration, the method used to perform the test, and the column designation on the boring log where data are reported are summarized as follows:

Test Name	Test Method	Log Designation
Water (moisture) content of soil and rock by mass	ASTM D 2216	WC
Liquid limit, plastic limit, and plasticity index of soils	ASTM D 4318	PL, LL, PI
Amount of material in soils finer than the No. 200 sieve	ASTM D 1140	-200

The laboratory results are reported on the soil boring logs.

APPENDIX F: ASFE INFORMATION – GEOTECHNICAL REPORT

Important Information about Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.

ASFE
THE BEST PEOPLE ON EARTH

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

IIGER06085.0MRP

MEETING MEMORANDUM

FACILITY: Kenwood Community Center

DATE/TIME: February 17, 2012; 2:00 PM

ATTENDEES:

Department of Community Initiatives (DCI)
Eric Teague
City of San Antonio (CIMS)
Jaime Camero
Debra J. Dockery, Architect P.C. (DJD)
Debra Dockery
Paul Kniestedt

AGENDA: Scoping Meeting for an Assessment and Recommendations for Project Budgeting – Fee Proposal Phase

DISCUSSION:

DCI desires an assessment of needed repairs at Kenwood Community Center and a prioritized and itemized opinion of probable project cost to budget for the identified repairs.

DJD will need to include structural and geotechnical investigations to determine extent of foundation and wall/roof repairs. Since proposals from outside consultants are necessary, it will take about 2 weeks to prepare a proposal to submit to CIMS.

Following is a list of the items noted or identified at this meeting. It is requested that DCI or CIMS notify DJD as soon as possible if any desired elements are not listed below.

<u>Exterior and Structure</u>
Investigate north patio foundation problems and recommend repair scope
Investigate roof to wall separations and wall cracks and recommend repair scope
Investigate erosion of grading and recommend repair scope
Investigate south entry area flat work and recommend repair scope.
Re-paint all exterior

ATTACHMENT 6

Additional Space
Possible enclosure of north patio for offices

Building East Side Repairs
Enclose upper area of case management wall. Relocate telecom conduit and j-box. Enclosure may require hvac revisions
Replace hollow core door at computer room
New VCT flooring, rubber base and painting throughout case management area (east side of building)
Replace acoustical fabric panels on upper walls at case management area. (Check rigid sound board acoustical material used on St. Mary's Learning Center)

Building West Side Repairs
New VCT flooring, rubber base and painting throughout
Replace acoustical fabric panels on upper walls
Note wet stains and holes in ceiling. Review cause / include repairs

Kitchenette
Remove stove and vent-a-hood
Provide new base and upper cabinets, new sink and new solid surface counter tops. All cabinets to have doors and drawers – no open shelving on this side.
Replace serving counter surface and provide cabinet with open shelves underneath serving counter (Existing rolling counter shutter to remain)
Remove and infill window opening to patio
Provide new flooring, base and painting

Lobby
Remodel Mens and Womens restroom for accessibility, but do not diminish existing fixture count
Replace floor and wall tile, repaint, provide new lavatory counter, provide new toilet compartments and toilet accessories
Remove fabric panels on upper walls of lobby and replace with new acoustical panels
Paint lobby walls. Consider floor tile replacement (or at least repairs)

End of Meeting

The above does not purport to represent the entirety of all dialogue or discussion. Some dialogue or viewpoints may have been inadvertently omitted. Corrections and comments are requested to be submitted within 10 days, or these notes shall be understood to cover the salient points discussed.

Respectfully submitted,

Debra J. Dockery, Architects, P.C.

Distribution List: Attendees

CONSTRUCTION DRAWINGS ORGANIZATION

A. ARCHITECTURAL DRAWINGS ORGANIZATION: ARCHITECTURAL DRAWINGS OCCUR FIRST IN THE DOCUMENTS PACKAGE AND ARE ORGANIZED INTO SECTIONS, GENERALLY ACCORDING TO THE PARTICULAR ASPECT OF WORK ON THE PROJECT. EACH SECTION IS NUMBERED SEQUENTIALLY, AS FOLLOWS:

A1. GENERAL INFORMATION
A2. SITE
A3. FLOOR PLAN/S
A4. CEILINGS, FLOOR FINISHES
A5. ROOF
A6. EXTERIOR ELEVATIONS
A7. INTERIOR ELEVATIONS, CABINETWORK
A8. SECTIONS, DETAILS
A9. ADDITIONAL INFORMATION / ANCILLARY CONSTRUCTION

REFER TO THE INDEX OF DRAWINGS FOR SPECIFIC ORGANIZATION DETAILS FOR THIS SET OF DOCUMENTS.

B. CONSULTANT DRAWINGS ORGANIZATION: DRAWINGS PREPARED BY SEPARATE CONSULTANTS OCCUR AFTER THE ARCHITECTURAL DRAWINGS IN THE FOLLOWING SEQUENCE, IF AND AS APPLICABLE:

C. CIVIL
S. STRUCTURAL
M. MECHANICAL
E. ELECTRICAL
P. PLUMBING
L. LANDSCAPE
LI. LANDSCAPE IRRIGATION

REFER TO EACH INDIVIDUAL CONSULTANT'S DOCUMENT PACKAGE FOR INFORMATION REGARDING THE INTERNAL ORGANIZATION, KEYING AND SYMBOL SYSTEMS FOR EACH CONSULTANT'S DOCUMENTS.

C. ARCHITECTURAL DRAWINGS SHEET NUMBERING: ARCHITECTURAL DRAWINGS ARE NUMBERED IN THE LOWER RIGHT HAND CORNER OF EACH SHEET, FIRST BY SECTION, THEN BY SHEET NUMBER WITHIN THE SECTION:

A2.5 (INDICATES THE 5TH SHEET IN SECTION A2).

D. ARCHITECTURAL DRAWING NUMBERING: ARCHITECTURAL DRAWINGS ARE NUMBERED SEQUENTIALLY (1.2.3, ETC.) ON EACH SHEET WITHIN THE SECTION:

3 EAST ELEVATION
1/4" = 1'-0"
0' 2' 4' 8'
(INDICATES THE 3RD DRAWING ON THIS SHEET).

E. ARCHITECTURAL DRAWING KEYS: ARCHITECTURAL DRAWINGS ARE KEYED BY NUMBER AND SHEET, AS FOLLOWS:
2/A3.4 (INDICATES THE 2ND DRAWING ON SHEET A3.4.)
THE FOLLOWING KEYING SYMBOLS MAY BE USED:

2/A3.4
THIS SYMBOL IS A KEY TO AN ELEVATION DRAWING. THE ARROW POINTS IN THE DIRECTION OF THE VIEW FOR THE ELEVATION.

2/ A3.4
THIS SYMBOL IS A KEY TO A SECTION TAKEN ALONG THE STRAIGHT LINE OF THE SYMBOL. THE ARROW POINTS IN THE DIRECTION OF THE VIEW FOR THE SYMBOL.

2/A3.4
THIS SYMBOL IS A KEY TO A DETAIL OF THE AREA WITHIN THE CALLOUT.

F. ARCHITECTURAL GRADE ELEVATION SYMBOLS: TWO GRADE ELEVATION SYMBOLS MAY BE UTILIZED ON ARCHITECTURAL DRAWINGS.

100'-0"
THIS SYMBOL DENOTES AN EXISTING SPOT ELEVATION TO REMAIN.

100'-0"
THIS SYMBOL DENOTES AN EXISTING SPOT ELEVATION THAT WILL CHANGE WITH NEW CONSTRUCTION.

100'-0"
THIS SYMBOL INDICATES A NEW SPOT ELEVATION.

G. ARCHITECTURAL "NORTH ARROW" SYMBOLS: TWO NORTH ARROW SYMBOLS MAY BE UTILIZED ON ARCHITECTURAL DRAWINGS.

true north
THIS SYMBOL DENOTES "TRUE" (MAGNETIC) NORTH

north
THIS SYMBOL DENOTES "PROJECT" NORTH, THE ARROW POINTS IN THE DIRECTION CLOSEST TO TRUE NORTH THAT IS PARALLEL/PERPENDICULAR TO THE BUILDING/PROJECT.

H. ARCHITECTURAL ROOM KEYS: INDIVIDUAL SPACES IN THE FLOOR PLAN/S ARE KEYED SEQUENTIALLY ON THE PLAN DRAWING/S, FIRST BY FLOOR, THEN BY ROOM NUMBER, AS IN THE EXAMPLE BELOW:

ROOM NAME
X x Y
150 SF

I. ARCHITECTURAL DOOR KEYS: DOORS ARE KEYED ON THE FLOOR PLANS WITH A PREFIX "D" FOLLOWED BY THE ADJOINING ROOM NUMBER. IF MULTIPLE DOORS OCCUR IN A SINGLE ROOM, EACH ADDITIONAL DOOR KEY CONTAINS AN ALPHABETICAL SUFFIX (A, B, C, ETC.) AFTER THE ROOM NUMBER, AS IN THE EXAMPLE BELOW:

D101

J. ARCHITECTURAL GLAZING/WINDOW KEYS: WINDOWS/GLAZING ARE KEYED BY TYPE ON THE FLOOR PLANS WITH A PRE-FIX "W" FOLLOWED BY A NUMERICAL SUFFIX (1, 2, 3, ETC.), AS IN THE EXAMPLE BELOW:

W4

K. ARCHITECTURAL PARTITION KEYS: PARTITIONS ARE KEYED BY TYPE ON THE FLOOR PLANS ALPHABETICALLY (A, B, C, ETC.), AS IN THE EXAMPLE BELOW:

B1

L. ARCHITECTURAL ROOM FINISH KEY: ROOM FINISH KEY REFERS TO FINISHES DESCRIBED IN THE ROOM FINISH LEGEND AND COLOR LEGEND, AS IN THE EXAMPLE BELOW:

FINISH NORTH WALL — FIN. N
FINISH WEST WALL — FIN. W | BASE | FLOOR | FIN. E — FINISH EAST WALL
FIN. S — FINISH SOUTH WALL

M. ARCHITECTURAL NOTES: THREE TYPES OF NOTATION MAY BE UTILIZED ON ARCHITECTURAL DRAWINGS. GENERAL NOTES DESCRIBE GENERAL INFORMATION REGARDING THE PROJECT WORK RELATED TO THE DRAWINGS OF A PARTICULAR SHEET. GENERAL NOTES ARE LABELED ALPHABETICALLY (A, B, C, ETC.) ON EACH SHEET.
KEYNOTES DESCRIBE SPECIFIC ITEMS ON THE DRAWINGS OF A PARTICULAR SHEET. KEYNOTES ARE LISTED NUMERICALLY (1, 2, 3, ETC.) IN A COLUMN AND CORRESPOND TO KEYED SYMBOLS ON THE APPROPRIATE DRAWING OF A PARTICULAR SHEET, AS IN THE EXAMPLE BELOW. KEYNOTE NUMBERING IS SPECIFIC TO EACH SHEET; A GIVEN KEYNOTE NUMBER MAY OR MAY NOT REFERENCE THE SAME ITEM ON DIFFERENT SHEETS.

4

DRAWING NOTES DESCRIBE SPECIFIC ITEMS ON A SPECIFIC DRAWING, AS IN THE EXAMPLE BELOW, AND MAY BE UTILIZED IN COMBINATION WITH OR IN LIEU OF KEYNOTES.

PLASTIC LAMINATE

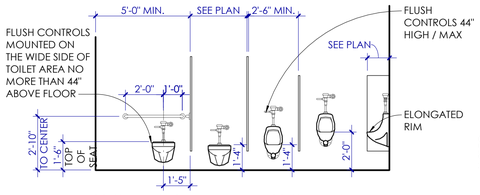
COLOR LEGEND NOTE REFERS TO SPECIFICATIONS DESCRIBED IN THE COLOR LEGEND, AS IN THE EXAMPLE BELOW, AND MAY BE UTILIZED IN COMBINATION WITH OR IN LIEU OF KEYNOTES.

P-1

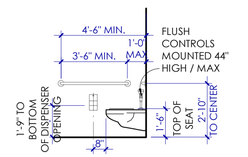
N. DIMENSIONS:
1. PLAN DIMENSIONS ARE TO FACE OF WALL FINISH OR FACE OF MASONRY, UNLESS SPECIFICALLY NOTED OTHERWISE.
2. SECTION/DETAIL/CABINETWORK DIMENSIONS ARE ACTUAL FINISH DIMENSIONS, UNLESS SPECIFICALLY NOTED OTHERWISE.
3. INTERIOR ELEVATION DIMENSIONS ARE NOMINAL AND ASSUME A LEVEL FLOOR CONDITION. RUN ALL HORIZONTAL REVEALS AND TRIM LEVEL AND ALL VERTICAL REVEALS PLUMB.

ACCESSIBILITY STANDARDS

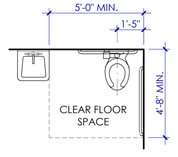
ALL ASPECTS OF THIS PROJECT SHALL COMPLY WITH THE TEXAS ACCESSIBILITY STANDARDS OF THE ELIMINATION OF ARCHITECTURAL BARRIERS TEXAS GOVERNMENT CODE, CHAPTER 469, ADMINISTERED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION EFFECTIVE MARCH 15, 2012, INCLUDING BUT NOT LIMITED TO THE FOLLOWING



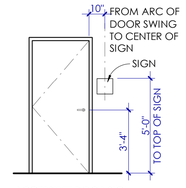
ACCESSIBLE W.C. STANDARD W.C. | ACCESSIBLE URINAL | STANDARD URINAL



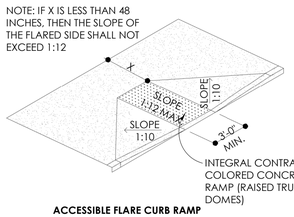
ACCESSIBLE W.C.



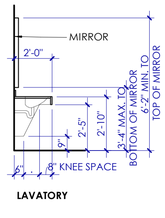
ACCESSIBLE TOILET ROOM



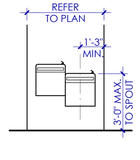
ACCESSIBLE DOOR SIGN



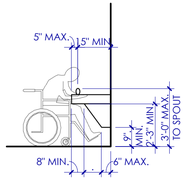
ACCESSIBLE FLARE CURB RAMP



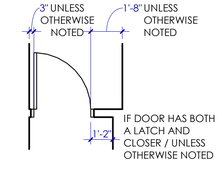
LAVATORY



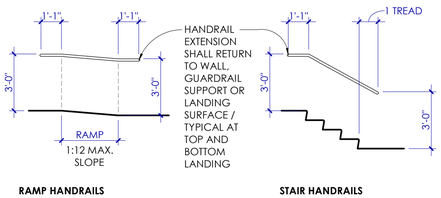
ACCESSIBLE DRINKING FOUNTAIN



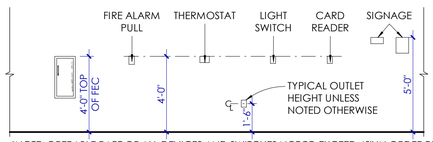
ACCESSIBLE SPOUT HEIGHT AND KNEE CLEARANCE FOR DRINKING FOUNTAIN



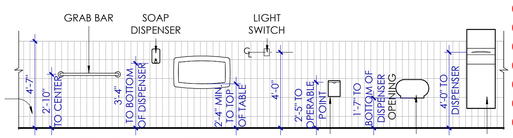
MINIMUM DOOR CLEARANCES



RAMP HANDRAILS | STAIR HANDRAILS



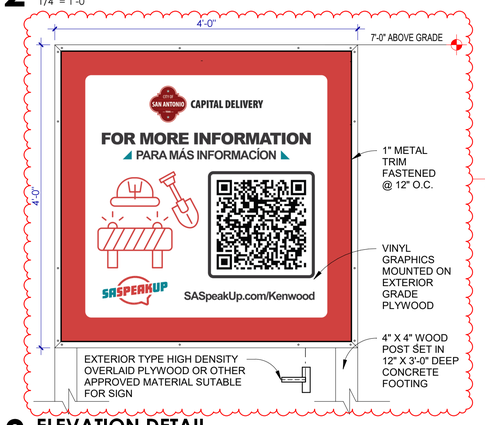
*NOTE: OPERABLE PART OF ALL DEVICES AND SWITCHES NOT TO EXCEED 48" IN ORDER TO COMPLY WITH TAS REQUIREMENTS



DEVICES / ACCESSORIES AT WAINSCOT | SANITARY NAPKIN DISPOSAL | TISSUE PAPER DISPENSER | PAPER TOWEL DISPENSER

2 DEVICE HEIGHT DIAGRAM

1/4" = 1'-0"



3 ELEVATION DETAIL

1" = 1'-0" CONSTRUCTION SIGNAGE

ACCESSIBILITY STANDARDS GENERAL NOTES

1. ALL EXPOSED PIPES AND SURFACES MUST BE INSULATED
2. ALL DOOR HARDWARE & LAVATORY FAUCETS MUST BE LEVERS / NO ROUND KNOBS
3. ALL HANDRAILS, GRAB BARS, AND TUB OR SHOWER SEATS MUST HOLD 250 LBS
4. ALL DOOR CLOSERS SHALL BE ADJUSTED TO A MINIMUM OF 5 SECONDS
5. ALL DOOR OPENING FORCE FOR INTERIOR DOORS SHALL BE ADHUSTED TO 5 LBS MAX.

GENERAL NOTES

A. THIS PROJECT CONSISTS OF A NEW 8,000 SF COMMUNITY CENTER AND ASSOCIATED SITE IMPROVEMENTS.

B. NFPA SPRINKLER SYSTEMS AND FIRE SAFETY SYSTEMS SHALL BE DESIGN-BUILD, WITH REQUIRED PERMITTING DOCUMENTATION, ENGINEERED DESIGN, AND CONSTRUCTION DOCUMENTS BY THE CONTRACTOR OR THE GENERAL CONTRACTOR'S SUB-CONTRACTOR(S) IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES.

C. THE MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK WITH THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF TRADE WORK. ANY DISCREPANCY BETWEEN THE ARCHITECT'S AND MEP DRAWINGS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION FOR CLARIFICATION PRIOR TO INSTALLATION OF SAID WORK.

D. THE CONTRACTOR SHALL PERFORM ALL WORK, AND SUPPLY ALL MATERIALS AND EQUIPMENT IN FULL ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, AND LAWS OF THE CITY OF SAN ANTONIO, TEXAS, AND AS REQUIRED FOR THE FULL AND COMPLETE CONSTRUCTION AS SPECIFIED IN THE CONTRACT DOCUMENTS. UNLESS OTHERWISE AGREED UPON, THE CONTRACTOR IS RESPONSIBLE FOR SECURING ALL BUILDING PERMITS AS REQUIRED FOR WORK THE CONTRACTOR IS TO PERFORM AND WILL RETAIN AND PAY FOR ALL REQUIRED INSPECTIONS DURING THE COURSE OF THE WORK.

E. INSPECTIONS, APPROVALS, AND TESTS BY THE AUTHORITIES AND AHJ SHALL BE ARRANGED AND PAID FOR BY THE CONTRACTOR AS NECESSARY TO OBTAIN COMPLETE AND FINAL ACCEPTANCE OF THE WORK AND CERTIFICATE OF OCCUPANCY.

F. THE CONTRACTOR SHALL CONFINE OPERATIONS AT THE SITE TO AREAS PERMITTED BY LAWS, ORDINANCES, PERMITS, AND THE CONTRACT DOCUMENTS AND SHALL NOT UNREASONABLY ENCUMBER THE SITE WITH ANY MATERIAL OR EQUIPMENT. ANY DAMAGE TO THE NEW OR EXISTING CONSTRUCTION CAUSED BY THE CONTRACTOR'S NEGLIGENCE OR INADEQUATE PROTECTIVE / SECURITY MEASURES DURING CONSTRUCTION ARE TO BE CORRECTED AT CONTRACTOR'S EXPENSE.

G. BY EXECUTING THE CONTRACT, THE CONTRACTOR CONFIRMS THAT HE/SHE HAS VISITED THE SITE, HAS FAMILIARIZED THEMSELVES WITH THE LOCAL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED, AND HAS CORRELATED THEIR OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL REPORT IMMEDIATELY TO THE ARCHITECT ANY ERROR, INCONSISTENCY, OR OMISSION HE/SHE MAY DISCOVER.

H. ANY DISCREPANCIES FOUND IN THE PLANS, DIMENSIONS, EXISTING CONDITIONS, OR ANY APPARENT ERROR IN CLASSIFYING OR SPECIFYING A PRODUCT OR ITS USE SHALL BE COMMUNICATED TO THE ARCHITECT PRIOR TO COMMENCEMENT OF WORK. ADDENDA WILL BE ISSUED AS NECESSARY AND WILL BECOME PART OF THE CONTRACT DOCUMENTS. FOR THOSE DISCREPANCIES NOT BROUGHT TO THE ATTENTION OF THE ARCHITECT, IT WILL BE ASSUMED THAT THE CONTRACTOR HAS BID THE MORE EXPENSIVE METHOD OF CONSTRUCTION.

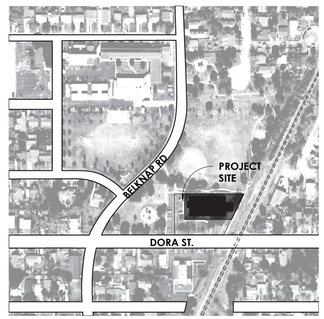
I. THE TENANT/OWNER IS RESPONSIBLE FOR THE COORDINATION AND INSTALLATION OF TELEPHONE, STRUCTURED DATA CABLING, AND SECURITY RELATED SYSTEMS AS APPLICABLE. IT IS RECOMMENDED THAT THE OWNER COORDINATE THESE SYSTEMS WITH THE CONTRACTOR FOR INCLUSION IN THE PERMIT SET AND AS REQUIRED TO COORDINATE WITH SCHEDULE TO ACHIEVE THE DESIRED SUBSTANTIAL COMPLETION DATE AND ULTIMATE OCCUPANCY BY THE TENANT.

J. SHOP DRAWINGS/SUBMITTALS/SAMPLES ARE TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL BEFORE PROCEEDING WITH ALL ITEMS WHICH REQUIRE FABRICATION. PROVIDE ARCHITECT WITH A LIST OF ALL ITEMS TO BE SUBMITTED PRIOR TO BEGINNING CONSTRUCTION.

K. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS AND/OR SIZES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASURING EXISTING CONDITIONS PRIOR TO BEGINNING OF WORK, AND PERIODICALLY DURING PROGRESS OF WORK TO VERIFY ALL CRITICAL DIMENSIONS. ANY DEVIATIONS FROM DIMENSIONS INDICATED ON THE DRAWINGS ARE TO BE APPROVED BY ARCHITECT PRIOR TO CONSTRUCTION.

L. COMBUSTIBLE MATERIALS, INCLUDING THOSE CONCEALED WITHIN PARTITIONS AND CEILINGS, PERMITTED IN TYPE I AND TYPE II CONSTRUCTION SHALL BE INSTALLED IN ACCORDANCE WITH THE ALLOWANCES OF IBC SECTION 603, PER THE CURRENT VERSION ADOPTED BY THE AHJ.

VICINITY MAP



INDEX OF DRAWINGS

GENERAL NOTES

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1 Addendum 01 02.02.26

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KENWOOD SENIOR & COMMUNITY CENTER

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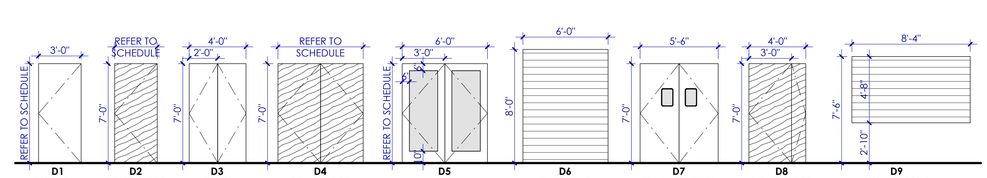
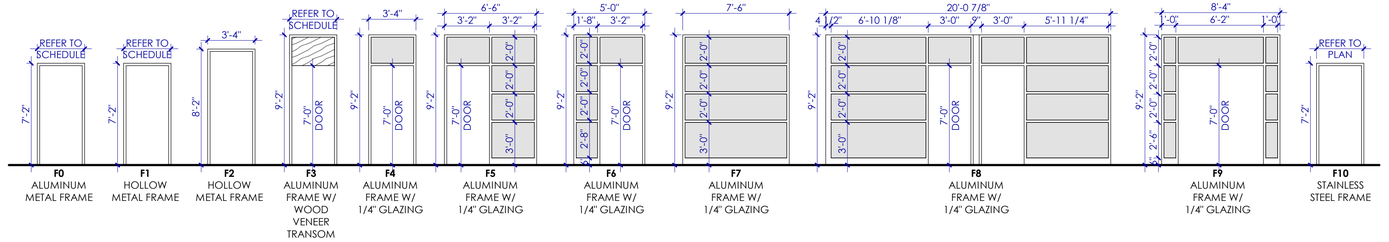
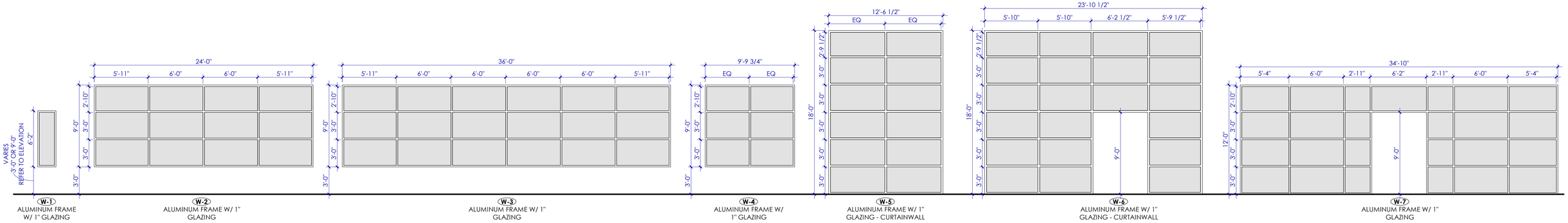
BEATY PALMER ARCHITECTS

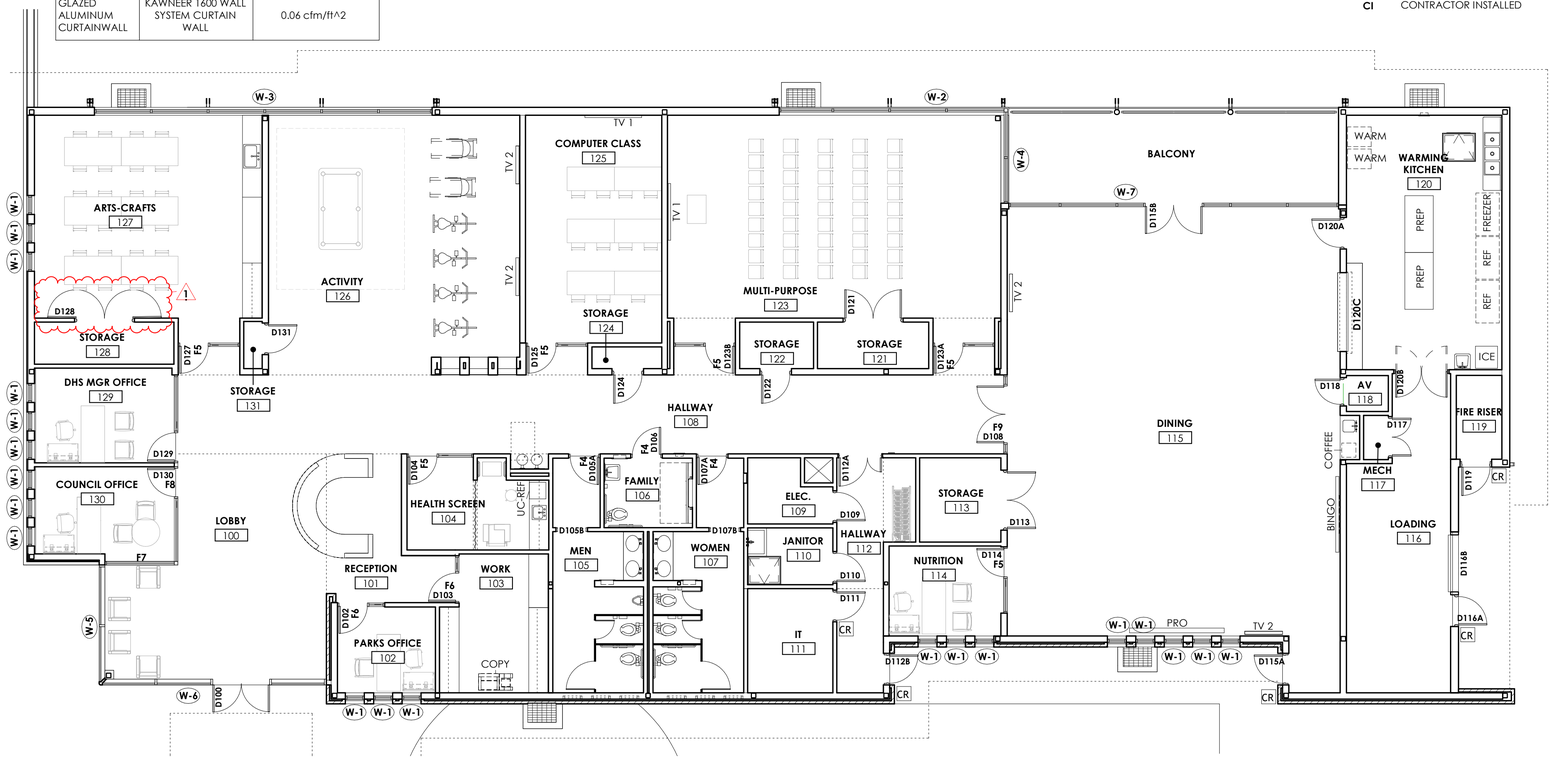






AIR LEAKAGE RATE FOR FENESTRATION

TYPE	PRODUCT	AIR LEAKAGE RATE
ALUMINUM FRAMED STOREFRONTS	KAWNEER TRIFAB VERSAGLAZE 451 FRAMING SYSTEM	0.06 cfm/ft^2
GLAZED ALUMINUM CURTAINWALL	KAWNEER 1600 WALL SYSTEM CURTAIN WALL	0.06 cfm/ft^2



1 **EQUIPMENT FLOOR PLAN**
1/8" = 1'-0"
north
0' 4' 8' 16'

*** RESPONSIBILITY**
XX / XX
PROVIDED BY / INSTALLED BY

OP OWNER PROVIDED
CP CONTRACTOR PROVIDED
OI OWNER INSTALLED
CI CONTRACTOR INSTALLED

EQUIPMENT SCHEDULE

COUNT	MARK	TYPE	CONNECTIONS	RESPONSIBILITY	MODEL / COMMENTS
1	BINGO	BINGO BOARD	ELEC / DATA	OP / CI	ENVOY / LOCAL DATA CONNECTION TO BINGO CONSOLE
1	COFFEE	COFFEE MACHINE	ELEC	OP / OI	
1	COPY	COPIER MACHINE	ELEC / DATA	OP / OI	
1	FREEZER	FREEZER	ELEC	OP / OI	FREEZER TO BE ON EMERGENCY POWER
1	ICE	ICE MACHINE	ELEC / WATER / DRAIN	CP / CI	SCOTSMAN PRODIGY CU1526SA-1 / PROVIDE WATER FILTER ASSEMBLY
2	PREP	PREP TABLES	-	CP / CI	REGENCY SPEC LINE 36"X72" 14 GA, COMMERCIAL WORK TABLE WITH UNDERSHELF
1	PRO	PROJECTOR	ELEC / DATA	CP / CI	SEE ELECTRICAL / TECH
2	REF	REFRIGERATOR	ELEC / WATER	OP / OI	REFRIGERATORS TO HAVE DEDICATED OUTLETS / REFER TO ELECTRICAL
2	TV 1	TELEVISION	ELEC / DATA	CP / CI	SEE ELECTRICAL / TECH
4	TV 2	TELEVISION 2	ELEC / DATA	CP / CI	SEE ELECTRICAL / TECH
1	UC-REF	UNDER COUNTER REFRIGERATOR	ELEC / WATER	OP / OI	COORDINATE WITH OWNER PRIOR TO MILLWORK INSTALLATION
2	WARM	WARMER	ELEC	OP / CI	

DOOR SCHEDULE

MARK	WIDTH	HEIGHT	TRANSOM	FUNCTION	TYPE	FRAME	HARDWARE	REMARKS
D100	6' - 0"	9' - 0"		ENTRY	D5	W-6	AC714A	PAIR OF 3'-0" DOORS / WAVE TO ACCESS
D102	3' - 0"	7' - 0"		OFFICE	D2	F6	103	
D103	3' - 0"	7' - 0"		PASSAGE	D2	F6	401	
D104	3' - 0"	7' - 0"		OFFICE	D2	F5	103	
D105A	3' - 0"	7' - 0"		PUSH / PULL	D2	F4	801	
D105B	3' - 0"	7' - 0"		-	-	F0	-	CASED OPENING
D106	3' - 0"	7' - 0"		PRIVACY	D2	F4	341	
D107A	3' - 0"	7' - 0"		PUSH / PULL	D2	F4	801	
D107B	3' - 0"	7' - 0"		-	-	F0	-	CASED OPENING
D108	6' - 0"	7' - 0"		PASSAGE	D5	F9	A800C	PAIR OF 3'-0" DOORS / WAVE TO ACCESS
D109	3' - 0"	7' - 0"		STORAGE	D1	F1	201C	
D110	3' - 0"	7' - 0"		STORAGE	D1	F1	203S	
D111	3' - 0"	7' - 0"		STORAGE	D1	F1	CRIT	ACCESS CONTROL
D112A	4' - 6"	7' - 0"		PASSAGE	D8	F0	730-2	
D112B	3' - 0"	7' - 0"		ENTRY	D1	F1	C715A	ACCESS CONTROL
D113	6' - 0"	9' - 0"	2'-0"	STORAGE	D4	F3	212ST	HEIGHT INCLUDES 2'-0" TRANSOM / DOOR HEIGHT 7'-0"
D114	3' - 0"	7' - 0"		OFFICE	D2	F5	103	
D115A	3' - 0"	7' - 0"		ENTRY	D1	F1	C715A	ACCESS CONTROL
D115B	6' - 0"	9' - 0"		ENTRY	D5	W-7	5141T	PAIR OF 3'-0" DOORS / OVERHEAD IN-LIN MOUNTED AUTOMATIC DOOR OPERATOR SW200i
D116A	3' - 0"	8' - 0"		ENTRY	D1	F2	C715	ACCESS CONTROL
D116B	6' - 0"	8' - 0"		-	D6	-	001	OVERHEAD ROLLING DOOR
D117	4' - 0"	7' - 0"		STORAGE	D3	F1	212S	PAIR OF 2'-0" DOORS
D118	2' - 8"	9' - 0"	2'-0"	STORAGE	D2	F3	201C	HEIGHT INCLUDES 2'-0" TRANSOM / DOOR HEIGHT 7'-0"
D119	3' - 0"	7' - 0"		STORAGE	D1	F1	205	
D120A	3' - 0"	9' - 0"	2'-0"	PASSAGE	D2	F3	401T	HEIGHT INCLUDES 2'-0" TRANSOM / DOOR HEIGHT 7'-0"
D120B	5' - 6"	7' - 0"		-	D7	F1	002	DOUBLE SWING
D120C	8' - 0"	4' - 8"		-	D9	-	001	COUNTERTOP COILING DOOR / POWER REQUIRED
D121	6' - 0"	9' - 0"	2'-0"	STORAGE	D4	F3	212ST	HEIGHT INCLUDES 2'-0" TRANSOM / DOOR HEIGHT 7'-0"
D122	3' - 0"	7' - 0"		STORAGE	D2	F0	201C	
D123A	3' - 0"	7' - 0"		CLASSROOM	D2	F5	701	
D123B	3' - 0"	7' - 0"		CLASSROOM	D2	F5	701	
D124	3' - 0"	7' - 0"		STORAGE	D2	F0	201C	
D125	3' - 0"	7' - 0"		CLASSROOM	D2	F5	501	
D127	3' - 0"	7' - 0"		CLASSROOM	D2	F5	501	
D128	6' - 0"	9' - 0"	2'-0"	STORAGE	D4	F3	212ST	180DG HINGES
D129	3' - 0"	7' - 0"		OFFICE	D2	F8	103	
D130	3' - 0"	7' - 0"		OFFICE	D2	F8	103	
D131	3' - 0"	7' - 0"		STORAGE	D2	F0	201C	

DOOR WINDOW & EQUIPMENT SCHEDULES

architect

REGISTERED ARCHITECT CORY W. HAWKINS 20466 STATE OF TEXAS
02.06.26

revisions
1 Addendum 01 02.02.26

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BEATY PALMER ARCHITECTS

GENERAL NOTES

A. SELECTIVE DEMOLITION DRAWINGS ARE DIAGRAMMATIC AND ILLUSTRATE ONLY THE GENERAL SCOPE OF WORK TO BE DEMOLISHED AND DO NOT INDICATE EVERY DETAIL OF EXISTING CONSTRUCTION OR VEGETATION. CONTRACTOR SHALL FILED VERIFY EXISTING CONDITIONS AND EXTENTS OF WORK REQUIRED FOR SELECTIVE DEMOLITION AND NEW CONSTRUCTION.

B. BY BIDDING THE PROJECT, THE CONTRACTOR HAS MADE THEMSELVES FAMILIAR WITH ALL ASPECTS OF THE PROJECT SITE AND CONSTRAINTS AND HAVE MADE NECESSARY PROVISIONS FOR THE GENERAL REQUIREMENTS OF THE PROJECT.

C. CAREFULLY PROTECT EXISTING CONSTRUCTION AND BUILT FEATURES TO REMAIN DURING ALL PHASES OF DEMOLITION ACTIVITY. REPAIR OR REPLACE ANY EXISTING CONSTRUCTION OR NATURAL FEATURE TO REMAIN WHICH IS DAMAGED AS A RESULT OF DEMOLITION ACTIVITIES.

D. REPAIR EXISTING CONDITIONS TO REMAIN AS REQUIRED BY ANY DAMAGE CAUSED BY DEMOLITION OR NEW CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.

E. VERIFY DEPOSITION OF EXISTING CONSTRUCTION TO BE REMOVED. ANY ITEMS DESIRED TO BE RETAINED BY THE OWNER SHALL BE STORED ON SITE AT LOCATION SELECTED BY OWNERS' REPRESENTATIVE. ITEMS NOT RETAINED BY THE OWNER SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.

F. AT OWNER'S DIRECTION, ALL ORGANIC MATERIAL REMOVED FROM THE PROJECT SITE IS TO BE DISPOSED OF AT A BRUSH COLLECTION SITE. A HAUL TICKET / RECEIPT WILL BE REQUIRED TO CONFIRM OWNER'S REQUEST HAS BEEN SATISFIED.

G. IT IS THE OWNER'S PREFERENCE THAT ALL DEMOLITION DEBRIS THAT IS DEEMED AS RECYCLABLE MATERIAL BE RECYCLED.

H. PREPARATION FOR REMOVAL AND DISMANTLING: EXAMINE CONSTRUCTION TO BE REMOVED OR DISMANTLED TO DETERMINE BEST METHODS TO SAFELY AND EFFECTIVELY PERFORM REMOVAL AND DISMANTLING WORK. EXAMINE ADJACENT WORK TO DETERMINE WHAT PROTECTIVE MEASURES WILL BE NECESSARY. MAKE EXPLORATIONS, PROBES, AND INQUIRIES AS NECESSARY TO DETERMINE SCOPE OF WORK.

I. SITE INFORMATION INCLUDING REQUIREMENTS FOR NEW CONSTRUCTION CONDITIONS IS INCLUDED IN ARCHITECTURAL, CIVIL, MEP, LANDSCAPE, & IRRIGATION DOCUMENTS. CAREFULLY COORDINATE REQUIREMENTS FOR BOTH INTERIM AND COMPLETED CONSTRUCTION CONDITIONS.

J. PATCH AND REPAIR EXISTING ADJACENT CONSTRUCTION AND NATURAL FEATURES ADJOINING DEMOLISHED AND OR NEW WORK. RESTORED PORTIONS OF EXISTING FEATURES TO REMAIN SHALL BE COMMENSURATE TO EXISTING CONDITION(S).

K. BEFORE ANY CLEARING, DEMOLITION, OR CONSTRUCTION ACTIVITY IS COMMENCED, CONTRACTOR SHALL INSTALL CONSTRUCTION LIMIT FENCING AND TREE PROTECTION FENCING.

L. UPON INITIAL CLEARING OF SITE, CONTRACTOR SHALL STAKE THE ENTIRE FOOTPRINT AND EDGE OF PAVEMENT FOR ALL VEHICULAR ROADWAYS AND PARKING AREAS FOR REVIEW BY OWNER'S REPRESENTATIVE AND ARCHITECT. ARCHITECT MAY RECOMMEND MINOR ADJUSTMENTS TO SITE LAYOUT AS MAY BE REQUIRED TO FACILITATE PROJECT FUNCTIONALITY, AESTHETICS, AND OR TO MINIMIZE DISTURBANCE OF NATURAL SITE ELEMENTS AT NO ADDITIONAL COST TO THE OWNER.

M. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH EXISTING SITE CONDITIONS TO PROVIDE ADEQUATE PRICING FOR BUILDING PAD PREPARATION PER THE GEOTECHNICAL REPORT BY INTERTEK PSI DATED MAY 30, 2025.

N. THE SITE INCLUDES EXISTING UTILITY SERVICES INCLUDING BUT NOT LIMITED TO ELECTRICAL, STORM DRAINAGE, WATER, AND SEWER. CONTRACTOR IS REQUIRED TO FIELD VERIFY AND LOCATE ALL UTILITIES WITHIN THE PROJECT SITE AND SHALL PROTECT SUCH SERVICES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

KEYNOTES

1 EXISTING ASPHALT PAVEMENT TO BE REMOVED
2 EXISTING CONCRETE SIDEWALK TO BE REMOVED
3 EXISTING CONCRETE RAMP AND ASSOCIATED RAILING TO BE REMOVED
4 PORTION OF EXISTING PEDESTRIAN WALKWAY TO BE REMOVED
5 EXISTING CONCRETE CURB TO BE REMOVED
6 PORTION OF EXISTING ASPHALT DRIVE TO BE REMOVED
7 EXISTING ADA CURB RAMP TO BE REMOVED
8 EXISTING ACCESSIBLE PARKING SIGNS TO BE REMOVED
9 EXISTING COMMUNITY CENTER SIGNAGE / REMOVE AND RETURN TO OWNER
10 EXISTING NO PARKING SIGNAGE / REFER TO CIVIL
11 REMOVE EXISTING PRECAST CAR STOPS AND ASSOCIATED ANCHORS
12 EXISTING TREE TO BE REMOVED
13 REMOVE EXISTING ACCESSIBLE PARKING SPACE STRIPING
14 EXISTING POWER POLE TO REMAIN
15 REMOVE EXISTING PARKING STALL STRIPING / PREP FOR NEW APPLICATION
16 EXISTING TREE(S) TO REMAIN / PROTECT
17 EXISTING PARK MONUMENT SIGN TO REAMIN / PROTECT
18 EXISTING CONCRETE SIDEWAY APPROACH TO BE REMOVED
19 EXISTING ASPHALT PAVEMENT TO BE RECONSTRUCTED / REFER TO CIVIL
20 EXISTING ASPHALT PACEMENT TO BE MILLED & OVERLAYED / REFER TO CIVIL

LEGEND

- TREE PROTECTION
- —T— TEMPORARY FENCE
- SELECTIVE DEMOLITION
- SELECTIVE DEMOLITION

BELKNAP PL

DORA ST

20' BLDG. SETBACK LINE

P.P

25' GAS-ELEC. - SAN. SWR. WATER MAIN EASEMENT

north

1 SITE PLAN
1/16" = 1'-0" SELECTIVE DEMOLITION
0' 8' 16' 32'

DEMO SITE PLAN

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CORY W. HAWKINS 20466 REGISTERED ARCHITECT STATE OF TEXAS
02.06.26

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BEATY PALMER ARCHITECTS

PARKING CALCULATIONS

UDC SECTION 35-256 **TABLE 526-3A**

VEHICULAR PARKING SPACES

PERMITTED USE	MINIMUM	MAXIMUM
RECREATION FACILITY (PUBLIC OR PRIVATE)	1 PER 600 SF GFA 8,880 SF / 600 SF *14.48 SPACES*	1 PER 500 SF GFA 8,880 SF /500 SF *17.76 SPACES*

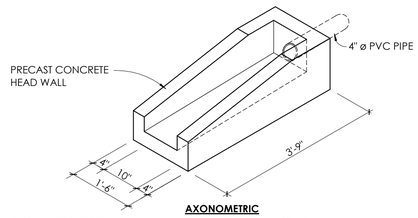
15 PARKING SPACES PROVIDED

BICYCLE PARKING SPACES

Bicycle spaces shall, at a minimum, equal ten (10) percent of the number of the minimum required vehicle spaces required for a given use, but no more than twenty four (24) shall be required.

14.48 x 10% = *1.48 SPACES*

2 PARKING SPACES PROVIDED



AXONOMETRIC

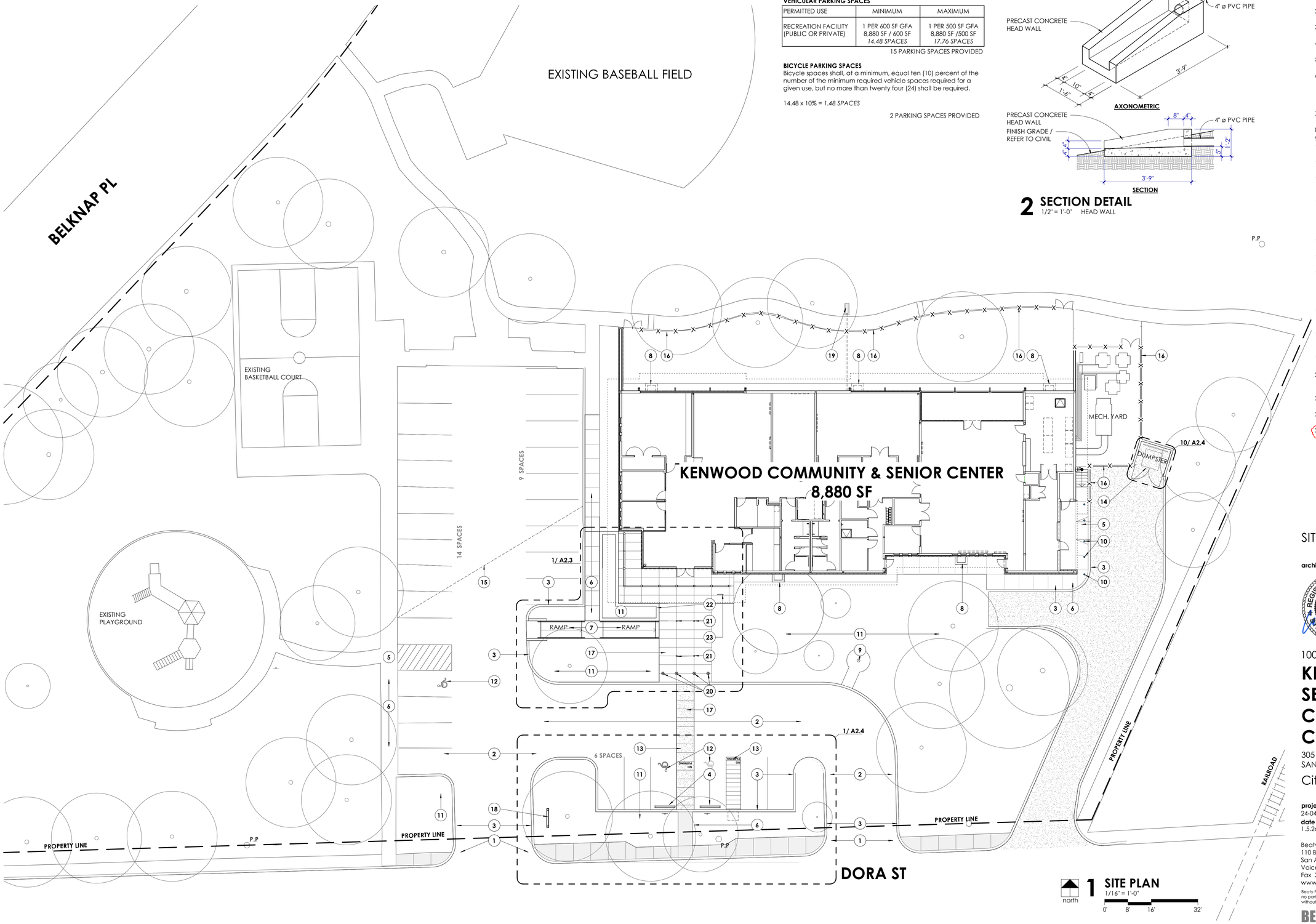
SECTION

2 SECTION DETAIL

1/2" = 1'-0" HEAD WALL

KEYNOTES

1 REINFORCED CONCRETE DRIVEWAY / APPROACH / REFER TO CIVIL
2 REINFORCED CONCRETE PAVING / REFER TO CIVIL / TYPICAL
3 REINFORCED CONCRETE CURB / REFER TO CIVIL / TYPICAL
4 REINFORCED CONCRETE WHEELSTOP / TYPICAL
5 REINFORCED CONCRETE CURB RAMP / REFER TO CIVIL
6 REINFORCED CONCRETE SIDEWALK WITH TOOLED CONTROL JOINTS AS INDICATED / EXPANSION JOINTS AT 20'-0" O.C. MAX / SLOPE 2% MAX AWAY FROM BUILDING / BROOM FINISH / REFER TO CIVIL /TYPICAL
7 REINFORCED CONCRETE RAMP / TAS COMPLIANT / REFER TO STRUCTURAL
8 AREA WAY / REFER TO DETAILS ON SHEET A3.2
9 FLAG POLE LOCATION
10 STEEL BOLLARD / HOT DIPPED GALVANIZED STEEL / REFER TO DETAIL 14/A2.4
11 LANDSCAPE AREA / REFER TO LANDSCAPE / TYP.
12 ACCESSIBLE PARKING SPACE TO COMPLY WITH TAS 2012 REQUIREMENTS / TYPICAL ADJ. TO 5'-0" STRIPED LOADING AREAS
13 PAINT ON PARKING SURFACE "NO PARKING" IN UPPER CASE LETTERS ON ADA PARKING ACCESSIBLE AISLES / 12" MINIMUM LETTER HEIGHT AND 2" MINIMUM STROKE WIDTH / COORDINATE WITH ADA PARKING SIGNAGE
14 DUMPSTER ENCLOSURE WITH GATE / REFER TO DETAILS ON SHEET A2.4
15 DASHED LINE INDICATES EXTENT OF NEW ASPHALT AREA / REFER TO CIVIL
16 NEW WELDED WIRE FENCE / 6'-0" HEIGHT / BLACK FINISH / INSTALLED ALONG REAR PROPERTY LINE / PROVIDE POST FOOTINGS AT MINIMUM 3'-0" DEEP, 12" DIAMETER, 3,000psi CONCRETE
17 REINFORCED CONCRETE PAVING WITH TOOLED JOINTS 3'-0" O.C. / REFER TO CIVIL / TYPICAL
18 NEW FREE STANDING MONUMENT SIGN AND ASSOCIATED SIGNAGE / REFER TO SHEET A2.4 FOR ADDITIONAL INFORMATION
19 PRECAST CONCRETE HEADWALL / REER TO DETAIL ON SHEET A2.2
20 STEEL BOLLARD WITH LIGHT / GALVANIZED FINISH / REFER TO DETAIL 13/A2.4 / REFER TO ELECTRICAL
21 STEEL COLUMN / PAINT / REFER TO STRUCTURAL
22 BRICK VENEER CMU PLANTER / REFER TO DETAIL ON SHEET A2.3
23 BIKE RACK / REFER TO DETAIL 5/A2.3



1 SITE PLAN

1/16" = 1'-0"

0' 8' 16' 32'

SITE PLAN

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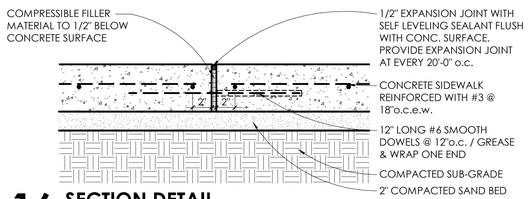
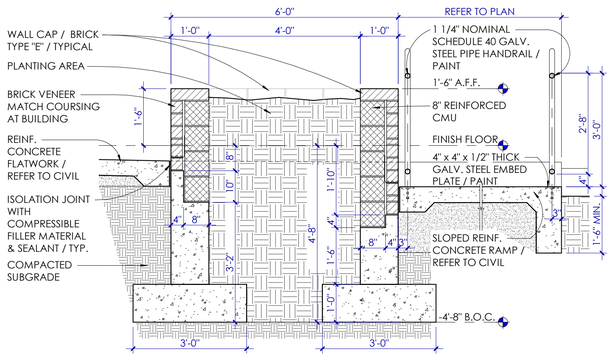
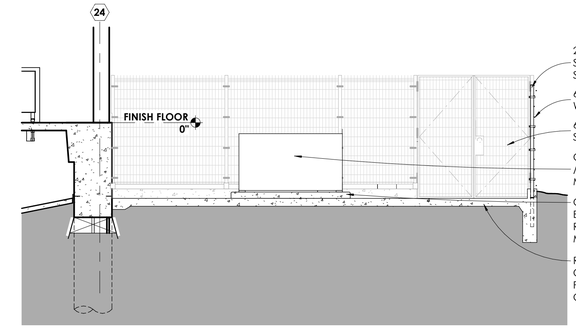


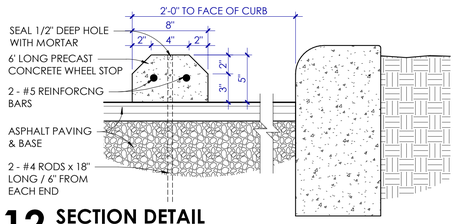
16 SECTION DETAIL
1 1/2" = 1'-0" EXPANSION JOINT



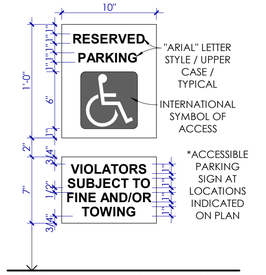
13 SECTION
1/2" = 1'-0" PLANTER



15 SECTION DETAIL
1/4" = 1'-0" MECHANICAL YARD

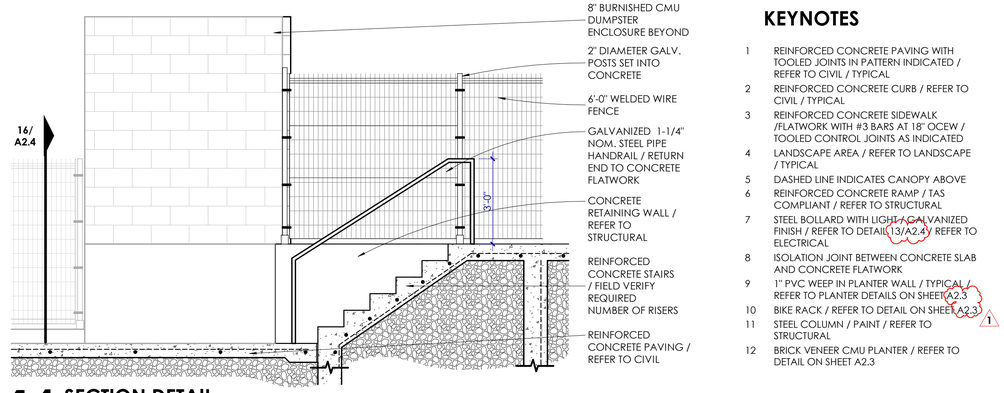


12 SECTION DETAIL
1 1/2" = 1'-0" CONCRETE WHEEL STOP



NOTE: PAINT "NO PARKING" IN UPPER CASE LETTERS ON ADJACENT ACCESSIBLE AISLES / 12" MINIMUM LETTER HEIGHT AND 2" MINIMUM STROKE WIDTH

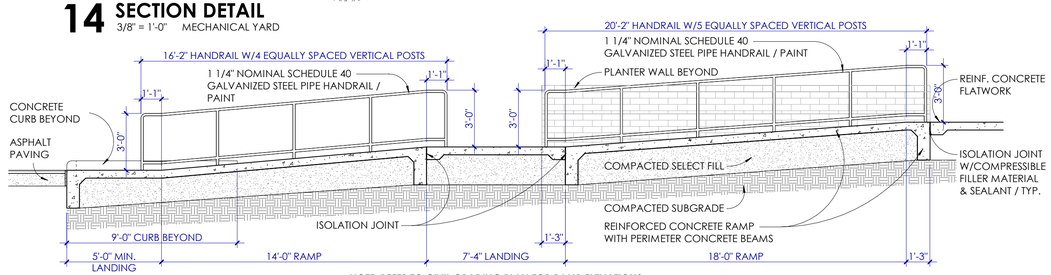
11 ENLARGED GRAPHIC
1 1/2" = 1'-0" ACCESSIBLE PARKING



14 SECTION DETAIL
3/8" = 1'-0" MECHANICAL YARD

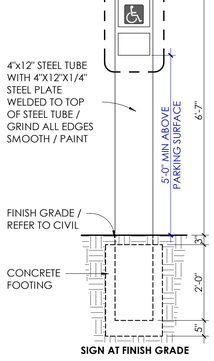
KEYNOTES

1. REINFORCED CONCRETE PAVING WITH TOOLED JOINTS IN PATTERN INDICATED / REFER TO CIVIL / TYPICAL
2. REINFORCED CONCRETE CURB / REFER TO CIVIL / TYPICAL
3. REINFORCED CONCRETE SIDEWALK /FLATWORK WITH #3 BARS AT 18" OCEW / TOOLED CONTROL JOINTS AS INDICATED
4. LANDSCAPE AREA / REFER TO LANDSCAPE / TYPICAL
5. DASHED LINE INDICATES CANOPY ABOVE
6. REINFORCED CONCRETE RAMP / TAS COMPLIANT / REFER TO STRUCTURAL
7. STEEL BOLLARD WITH LIGHT / GALVANIZED FINISH / REFER TO DETAIL 13/A2.4 / REFER TO ELECTRICAL
8. ISOLATION JOINT BETWEEN CONCRETE SLAB AND CONCRETE FLATWORK
9. 1" PVC WEEP IN PLANTER WALL / TYPICAL / REFER TO PLANTER DETAILS ON SHEET A2.3
10. BIKE RACK / REFER TO DETAIL ON SHEET A2.3
11. STEEL COLUMN / PAINT / REFER TO STRUCTURAL
12. BRICK VENEER CMU PLANTER / REFER TO DETAIL ON SHEET A2.3

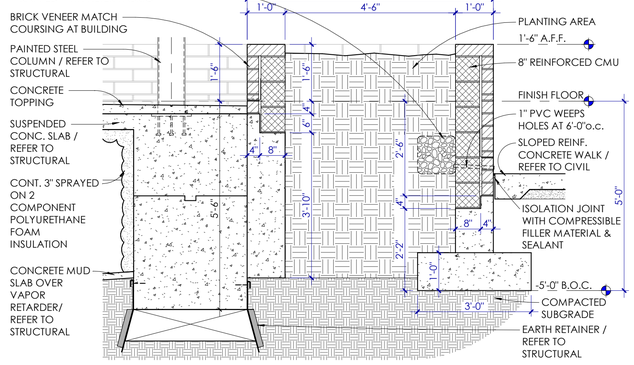


NOTE: REFER TO CIVIL GRADING PLAN FOR RAMP ELEVATIONS

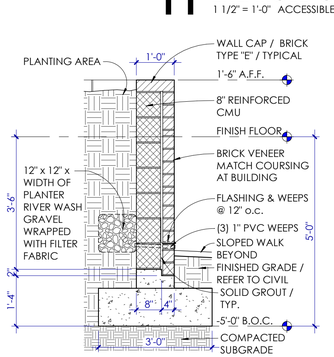
10 SECTION
1/4" = 1'-0" RAMP



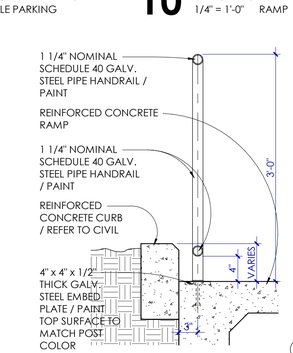
9 ELEVATION / SECTION
1/2" = 1'-0" ACCESSIBLE PARKING



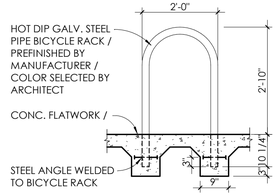
8 SECTION
1/2" = 1'-0" PLANTER



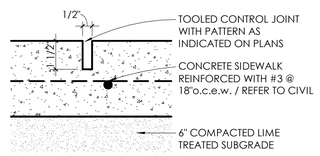
7 SECTION
1/2" = 1'-0" PLANTER



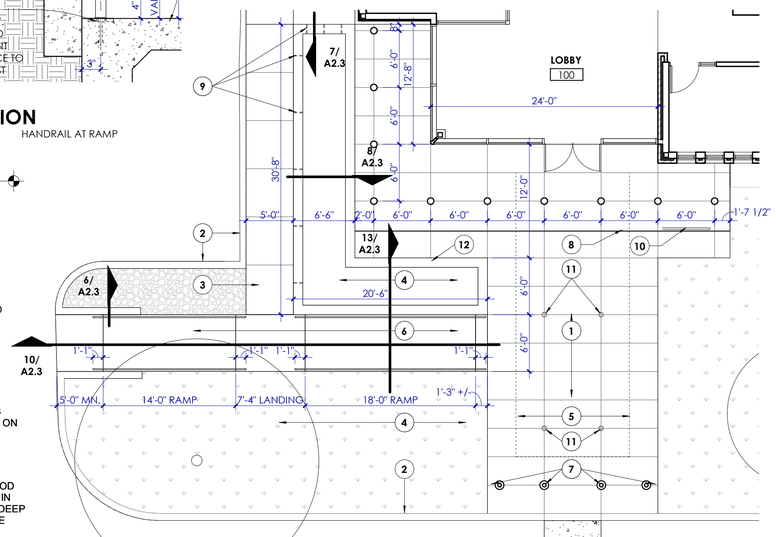
6 SECTION
1" = 1'-0" HANDRAIL AT RAMP



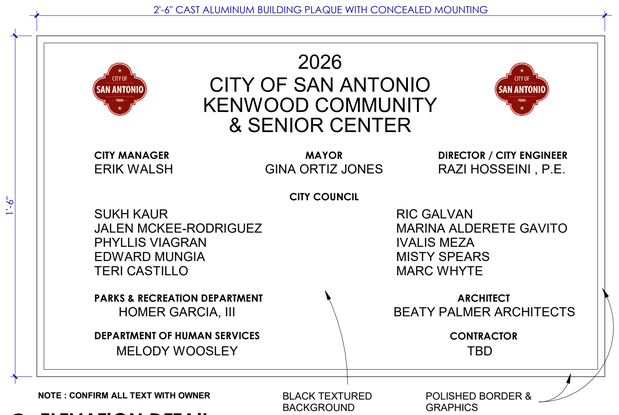
5 ELEVATION / SECTION
1/2" = 1'-0" BICYCLE RACK



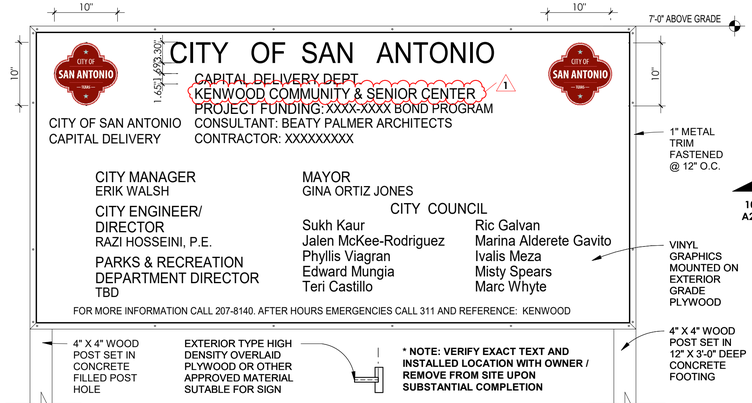
4 SECTION DETAIL
3" = 1'-0" CONTROL JOINT



1 PARTIAL SITE PLAN
1/8" = 1'-0" RAMP AT ENTRY
0' 4' 8' 16'



3 ELEVATION DETAIL
3" = 1'-0" BUILDING PLAQUE



*** NOTE: VERIFY EXACT TEXT AND INSTALLED LOCATION WITH OWNER / REMOVE FROM SITE UPON SUBSTANTIAL COMPLETION**

2 ELEVATION DETAIL
1" = 1'-0" CONSTRUCTION SIGNAGE

PARTIAL SITE PLAN & DETAILS

architect

REGISTERED ARCHITECT CORY W. HAWKINS 20466 STATE OF TEXAS
02.06.26

revisions

1 Addendum 01 02.02.26

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A2.3

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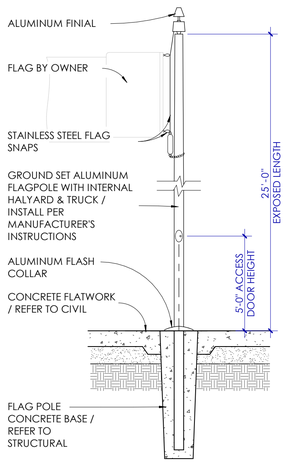
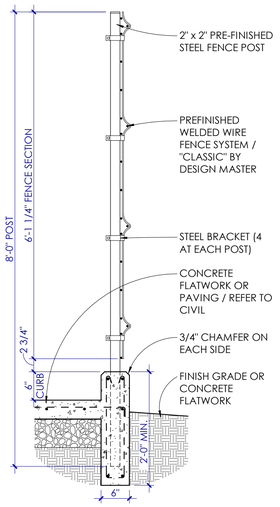
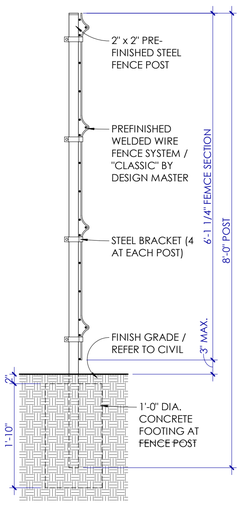


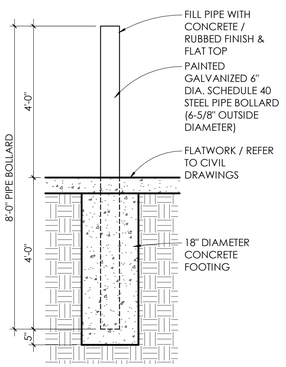
17 SECTION DETAIL
1/4" = 1'-0" TYP. FLAGPOLE ELEVATION



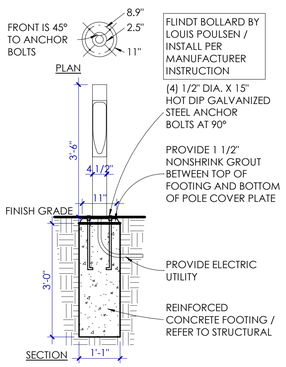
16 SECTION DETAIL
3/4" = 1'-0" WELDED WIRE FENCE SYSTEM



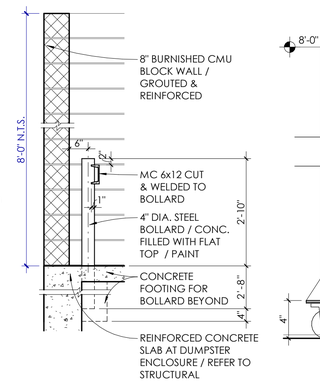
15 SECTION DETAIL
3/4" = 1'-0" WWF SYSTEM @ GRADE



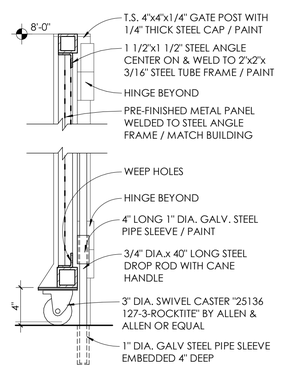
14 SITE DETAIL
1/2" = 1'-0" BOLLARD DETAIL @ LOADING



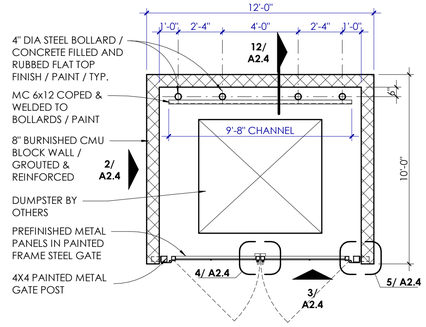
13 DETAIL
1/2" = 1'-0" BOLLARD LIGHT



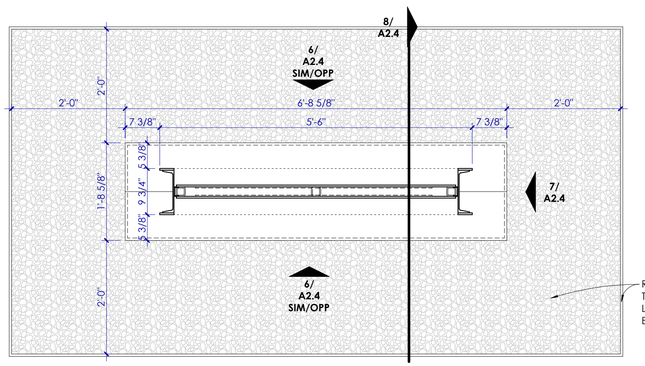
12 SECTION
1/2" = 1'-0" BOLLARD AT DUMPSTER



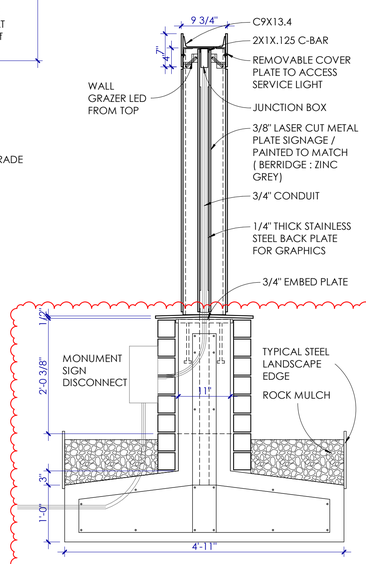
11 SECTION DETAIL
1 1/2" = 1'-0" DUMPSTER ENCLOSURE GATE



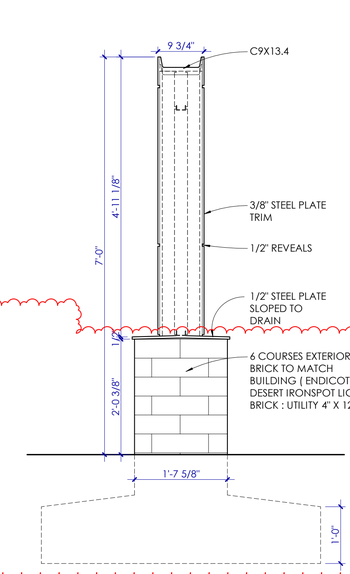
10 PARTIAL SITE PLAN
1/4" = 1'-0" DUMPSTER ENCLOSURE



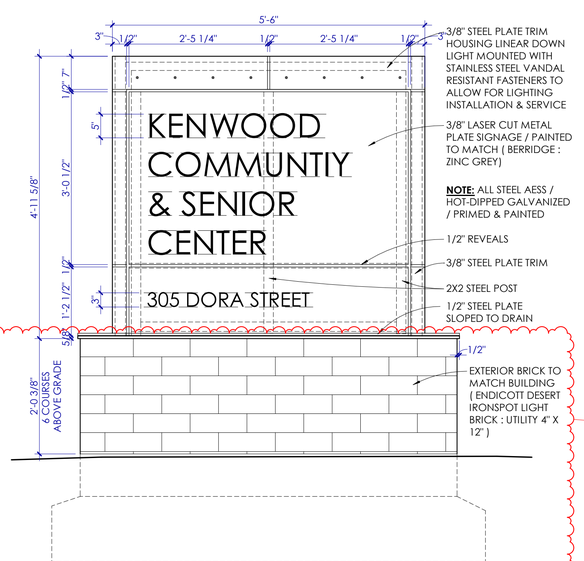
9 PLAN DETAIL
3/4" = 1'-0" MONUMENT SIGN



8 SECTION DETAIL
3/4" = 1'-0" MONUMENT SIGN



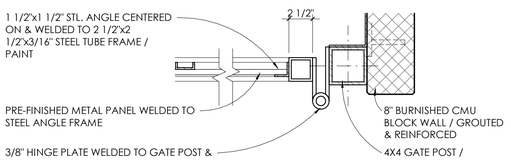
7 EXTERIOR ELEVATION
3/4" = 1'-0" MONUMENT SIGN



6 EXTERIOR ELEVATION
3/4" = 1'-0" MONUMENT SIGN

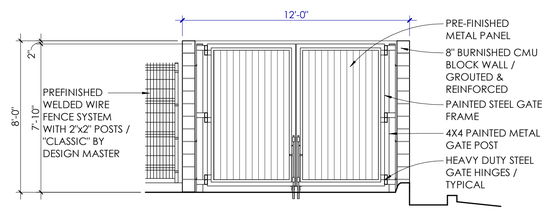
KEYNOTES

1 REINFORCED CONCRETE PAVING WITH TOOLED JOINTS IN PATTERN INDICATED / REFER TO CIVIL / TYPICAL
2 REINFORCED CONCRETE CURB / REFER TO CIVIL / TYPICAL
3 REINFORCED CONCRETE WHEELSTOP / TYPICAL
4 PAINT ON PARKING SURFACE "NO PARKING" IN UPPER CASE LETTERS ON ADA PARKING ACCESSIBLE AISLES / 12" MINIMUM LETTER HEIGHT AND 2" MINIMUM STROKE WIDTH / COORDINATE WITH ADA PARKING SIGNAGE
5 WHITE PARKING STRIPING / TYPICAL
6 ACCESSIBLE PARKING SPACE TO COMPLY WITH TAS 2012 REQUIREMENTS / ADJ. TO 6'-0" STRIPED LOADING AREA
7 ACCESSIBLE PARKING SIGNAGE / REFER TO DETAILS / TYPICAL AT ACCESSIBLE PARKING SPACES
8 FUTURE ELECTRICAL VEHICLE CHARGING STATIONS WITH 5'-0" STRIPED AISLE ADJACENT / PROVIDE CONDUIT AS REQUIRED / REFER TO ELECTRICAL
9 REINFORCED CONCRETE SIDEWALK /FLATWORK WITH #3 BARS AT 18" OCEW / TOOLED CONTROL JOINTS AS INDICATED
10 LANDSCAPE AREA / REFER TO LANDSCAPE / TYPICAL
11 NEW FREE STANDING MONUMENT SIGN AND ASSOCIATED SIGNAGE / REFER TO SHEET A2.4 FOR ADDITIONAL INFORMATION 1/A2.4

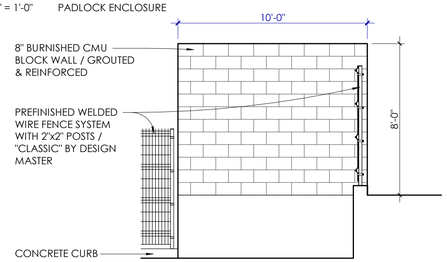


5 PLAN DETAIL
1 1/2" = 1'-0" DUMPSTER ENCLOSURE GATE

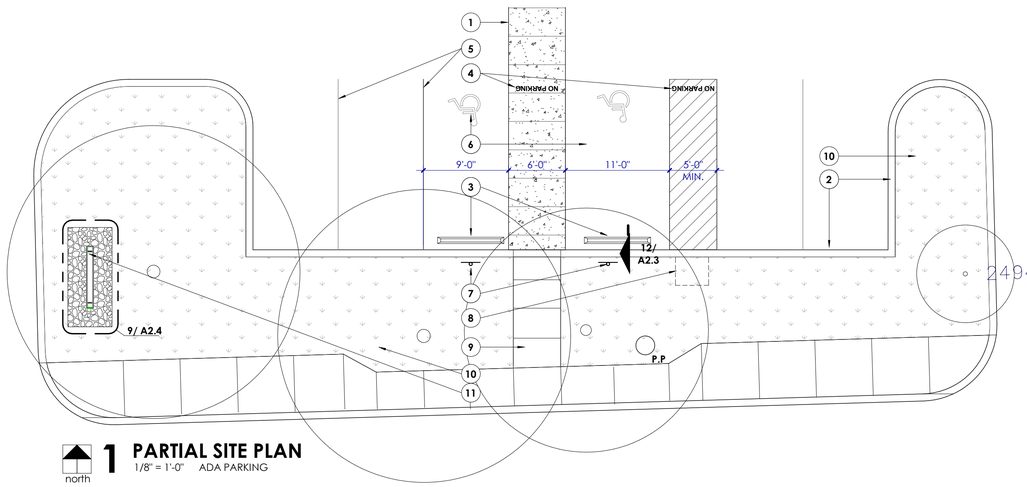
4 PLAN DETAIL
3" = 1'-0" PADLOCK ENCLOSURE



3 EXTERIOR ELEVATION
1/4" = 1'-0" DUMPSTER ENCLOSURE



2 EXTERIOR ELEVATION
1/4" = 1'-0" DUMPSTER ENCLOSURE



1 PARTIAL SITE PLAN
1/8" = 1'-0" ADA PARKING

PARTIAL SITE PLANS & DETAILS

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revisions
1 Addendum 01 02.02.26

REGISTERED ARCHITECT CORY W. HAWKINS 20466 STATE OF TEXAS
02.06.26

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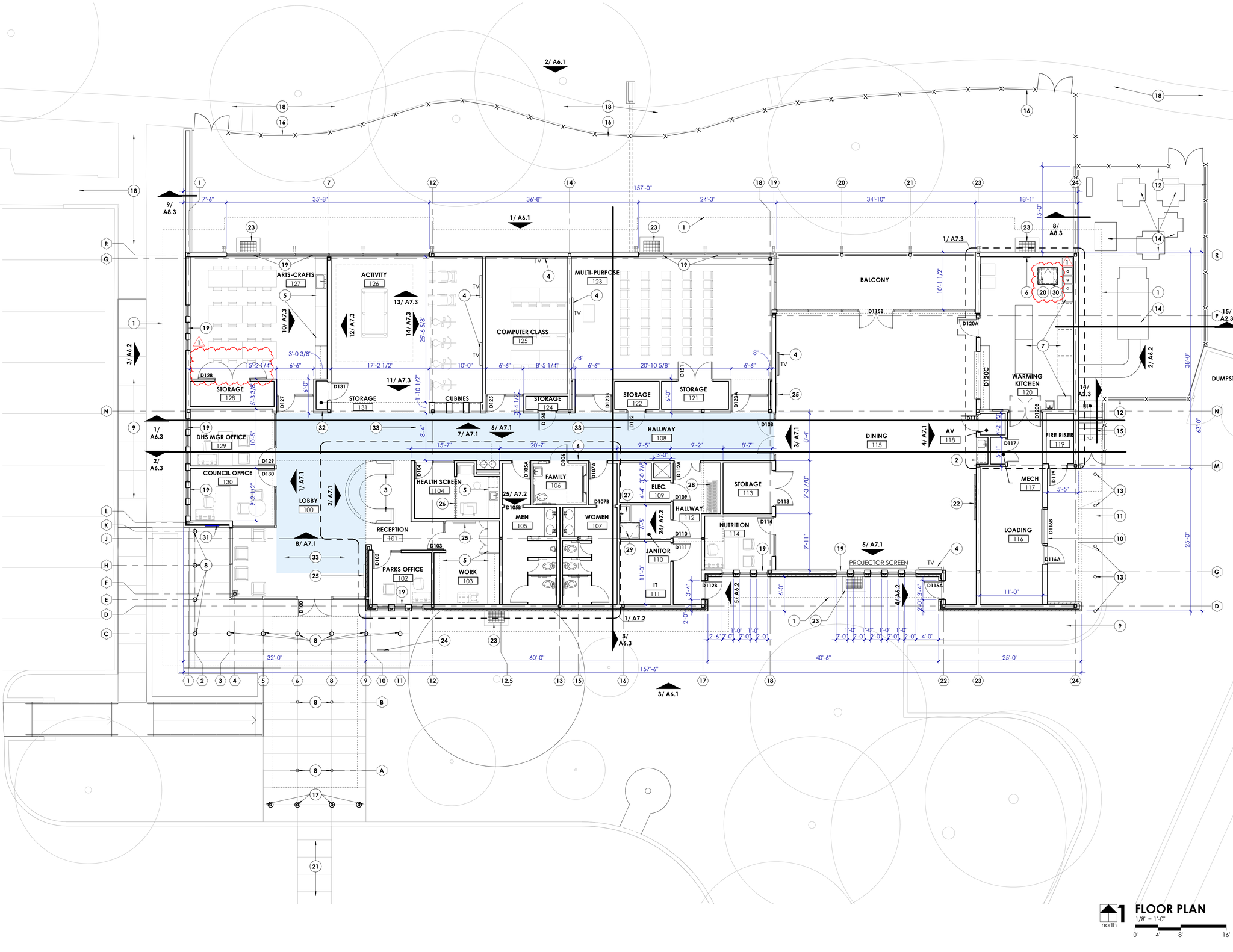

KEYNOTES

1 DOTTED LINE INDICATES ROOF LINE ABOVE / REFER TO SHEET A5.1 FOR DETAILED ROOF LAYOUT.
2 PLASTIC LAMINATE MILLWORK & QUARTZ COUNTERTOP / REFER TO FINISH PLAN
3 WOOD VENEER & QUARTZ CUSTOM MILLWORK / PROVIDE SECURE LOCK FEATURE / REFER TO DETAILS ON A7.2
4 DIGITAL DISPLAY LOCATION WITH 32" X 32" X 3/4" FRT PLYWOOD BLOCKING / 72" HIGH POWER AND DATA ROUGH IN PER ELECTRICAL DRAWINGS
5 PLASTIC LAMINATE MILLWORK & QUARTZ COUNTERTOP WITH SECURITY LOCK FEATURE / REFER TO FINISH PLAN
6 STAINLESS STEEL SEMI-RECESSED FIRE EXTINGUISHER CABINET AND FIRE EXTINGUISHER REFER TO DETAIL 13/A7.4
7 KITCHEN EQUIPMENT / REFER TO EQUIPMENT SCHEDULE / COORDINATE MEP REQUIREMENTS / REFER TO MEP
8 PAINTED STEEL COLUMN / REFER TO STRUCTURAL
9 REINFORCED CONCRETE SIDEWALK /FLATWORK WITH #3 BARS AT 18" OCEW / TOOLED CONTROL JOINTS AS INDICATED
10 DROP IN SLAB AT OVERHEAD DOORS / SLOPE AWAY FROM BUILDING / TYPICAL
11 REINFORCED CONCRETE CURB RAMP / REFER TO CIVIL
12 MECHANICAL EQUIPMENT YARD SCREENING / WELDED WIRE FENCE / 6'-0" HEIGHT / BLACK FINISH
13 STEEL BOLLARD / HOT DIPPED GALVANIZED STEEL / REFER TO DETAIL 14/A2.4
14 MECHANICAL EQUIPMENT / REFER TO MEP
15 REINFORCED CONCRETE STAIR / COORDINATE WITH CIVIL GRADES FOR AMOUNT OF RISERS REQUIRED
16 NEW WELDED WIRE FENCE / 6'-0" HEIGHT / BLACK FINISH / INSTALLED ALONG REAR PROPERTY LINE / PROVIDE POST FOOTINGS AT MINIMUM 3'-0" DEEP, 12" DIAMETER, 3,000psi CONCRETE
17 STEEL BOLLARD WITH LIGHT / GALVANIZED FINISH / REFER TO DETAIL 13/A2.4 / REFER TO ELECTRICAL
18 EXISTING CONCRETE SIDEWALK TO REMAIN / PROTECT
19 PROVIDE AND INSTALL ROLLER WINDOW SHADE AS SPECIFIED
20 GREASE INTERCEPTOR / REFER TO PLUMBING & STRUCTURAL DRAWINGS
21 REINFORCED CONCRETE PAVING WITH TOOLED JOINTS AS INDICATED / REFER TO CIVIL / TYPICAL
22 BINGO BOARD LOCATION / POWER AND DATA ROUGH IN PER ELECTRICAL DRAWINGS
23 AREA WAY / REFER TO DETAILS ON SHEET A3.2. (2) SADDLE CLIPS EACH FOR (3) REAR LOCATIONS, HINGES AND PADLOCK HASP FOR (2) FRONT LOCATIONS
24 BIKE RACK / REFER TO DETAIL ON SHEET A2.3
25 GLASS ENCASED BULLETIN BOARD WITH SECURE LOCK FEATURE
26 PROVIDE AND INSTALL PRIVACY CURTAIN, CURTAIN TRACK, & ALL ASSOCIATED HARDWARE / CONSTRUCTION SPECIALTIES TRADITIONAL 74" HIGH CURTAIN AND NARROWLINE TRACK
27 MOP SINK WITH A 24" HIGH SPLASH GUARD ON TWO SIDES WITH A 6" OVERHANG / REFER TO PLUMBING
28 LAPEYERE ALTERNATING TREAD DEVICE / POWDER COAT CARBON STEEL
29 30"x36" K-3 BILCO ALUMINUM FLOOR ACCESS HATCH WITH FIXED VERTICAL LADDER
30 30"x36" K-3 BILCO ALUMINUM FLOOR ACCESS HATCH / COORDINATE WITH GREASE INTERCEPTOR / REFER TO DETAIL
31 CAST ALUMINUM BUILDING PLAQUE / REFER TO DETAIL 3/A2.3
32 RECESSED FIRE ANNUNCIATOR DEVICE / REFER TO ELECTRICAL
33 HATCHED REGION INDICATES APPROXIMATE LOCATION OF FLOOR INLAY TERRAZO PUBLIC ART INSTALLATION / ADDITIONAL INSTRUCTION TO BE PROVIDED BY OWNER AFTER ARTIST SELECTION

1 north **FLOOR PLAN**
1/8" = 1'-0"
0' 4' 8' 16'

FLOOR PLAN

architect

REGISTERED ARCHITECT CORY W. HAWKINS 20466 STATE OF TEXAS
02.06.26

revisions

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sheet number

A3.1

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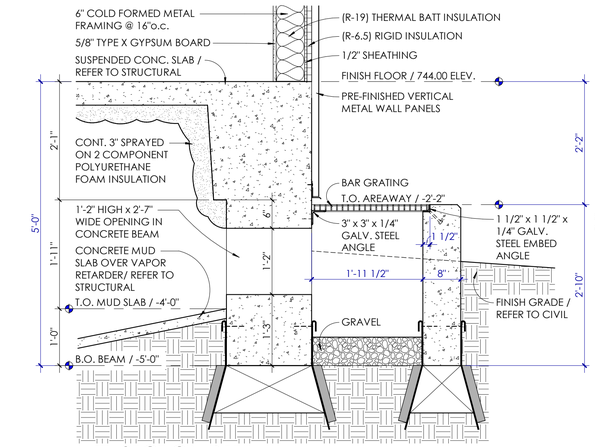
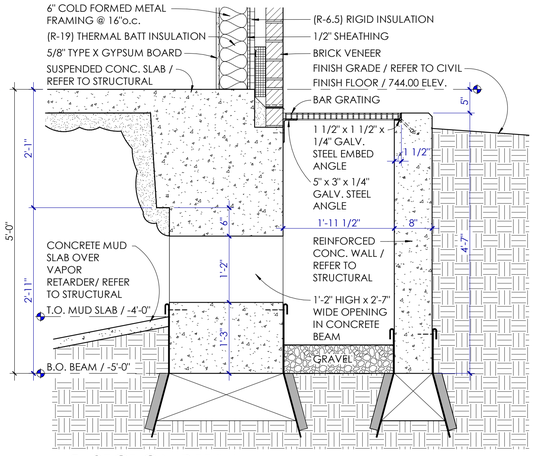
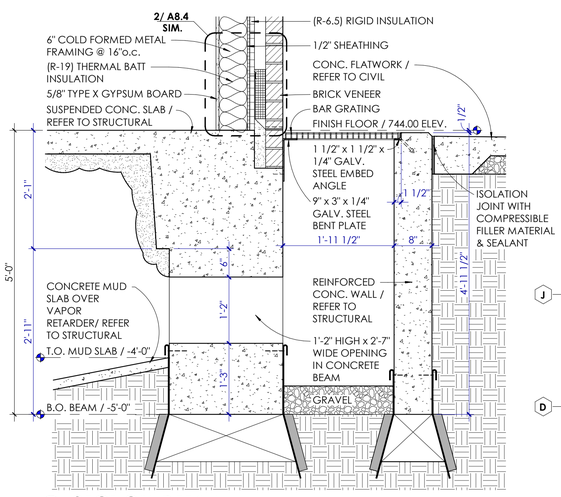


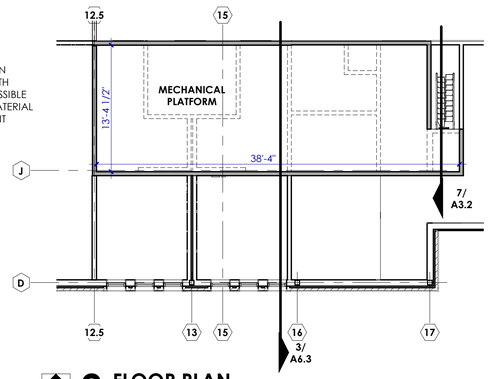
5 SECTION DETAIL
3/4" = 1'-0" AREAWAY ON NORTHSIDE OF BUILDING



4 SECTION DETAIL
3/4" = 1'-0" AREAWAY ON SOUTH SIDE OF BUILDING



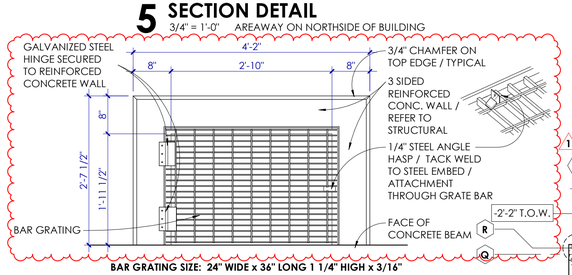
3 SECTION DETAIL
3/4" = 1'-0" AREAWAY ON SOUTH SIDE OF BUILDING



north
2 FLOOR PLAN
1/8" = 1'-0" MECHANICAL PLATFORM
0' 4' 8' 16'

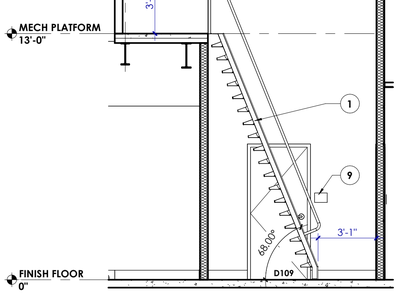
KEYNOTES

1. LAPEYERE ALTERNATING TREAD DEVICE / POWDER COAT CARBON STEEL
2. FLOOR ACCESS HATCH AND GREASE TRAP ABOVE
3. DRAIN PIPE BELOW / DAYLIGHT PIPE AT 737.0 +/- / REFER TO SITE PLAN FOR CONTINUATION
4. DRAIN INLET -5'8" BELOW FINISH FLOOR (738.34')
5. CHASE OPENING ABOVE
6. 2" CONCRETE MUD SLAB OVER VAPOR RETARDER / REFER TO STRUCTURAL
7. FLOOR HATCH ABOVE
8. AREA WAY / (2) SADDLE CLIPS EACH FOR OF (3) REAR LOCATIONS, HINGES AND PADLOCK HASP FOR (2) FRONT LOCATIONS
9. ROOM ID SIGNAGE / REFER TO SIGNAGE SCHEDULE

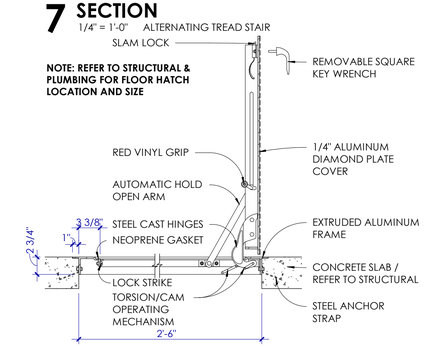


BAR GRATING SIZE: 24" WIDE x 36" LONG 1 1/4" HIGH x 3/16" THICK GALVANIZED 19W4 BAR GRATE

6 PLAN DETAIL / TOP VIEW
3/4" = 1'-0" AREAWAY

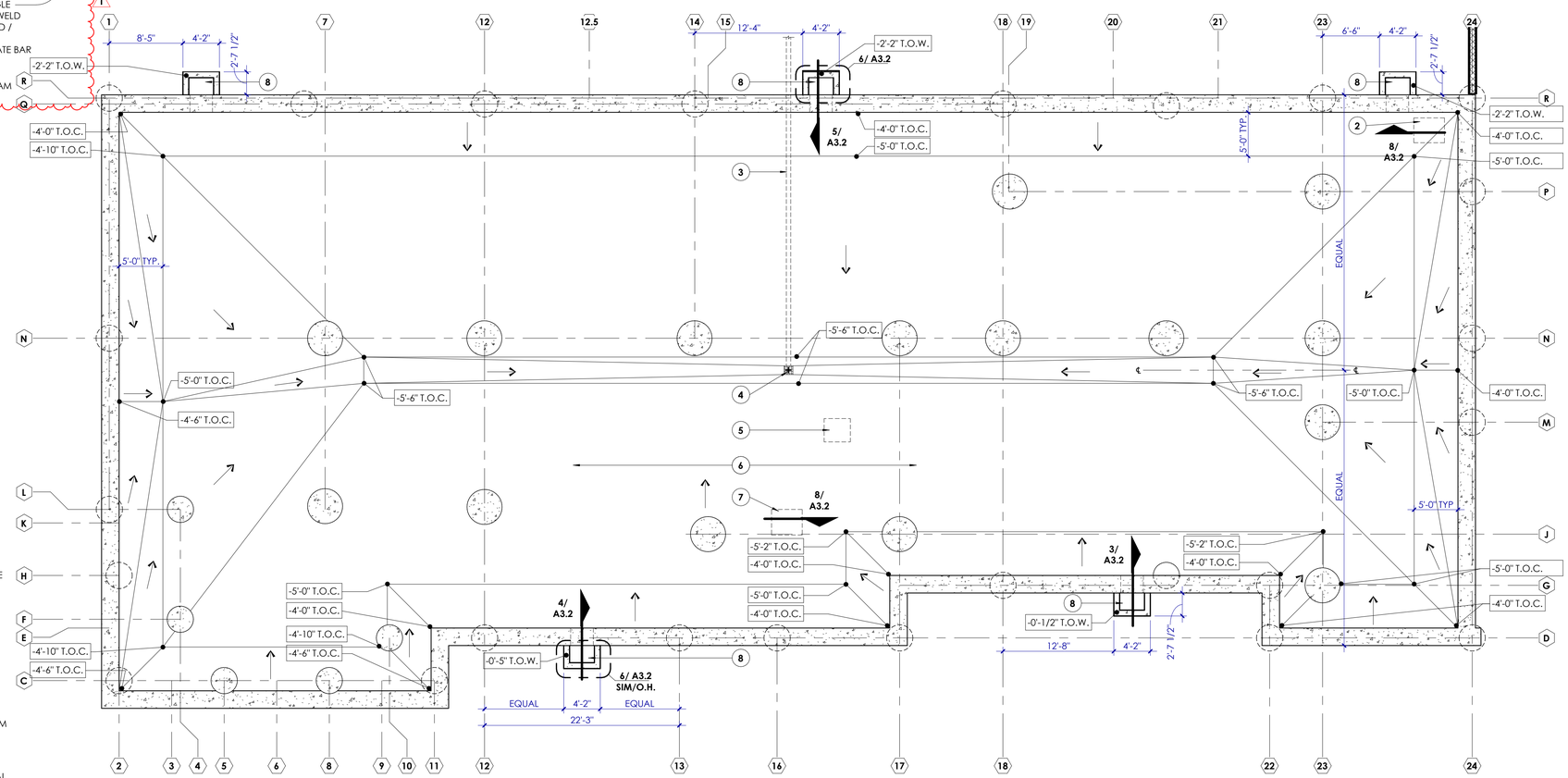


7 SECTION
1/4" = 1'-0" ALTERNATING TREAD STAIR



NOTE: REFER TO STRUCTURAL & PLUMBING FOR FLOOR HATCH LOCATION AND SIZE

8 SECTION DETAIL
1" = 1'-0" ALUMINUM FLOOR HATCH



north
1 UNDERFLOOR PLAN
1/8" = 1'-0"
0' 4' 8' 16'

UNDERFLOOR & MEZZANINE PLANS

architect

revisions
1 Addendum 01 02.02.26

100% CONSTRUCTION DOCUMENTS

KENWOOD SENIOR & COMMUNITY CENTER

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City Of San Antonio

project number
24-04
date
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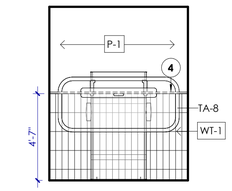
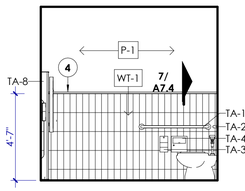
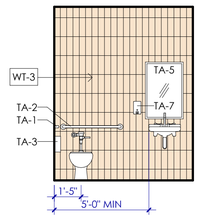
BEATY PALMER ARCHITECTS



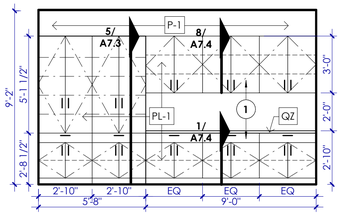
22 EAST ELEVATION
1/4" = 1'-0" FAMILY 107



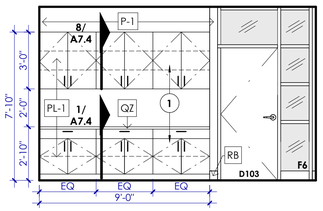
21 SOUTH ELEVATION
1/4" = 1'-0" FAMILY 107



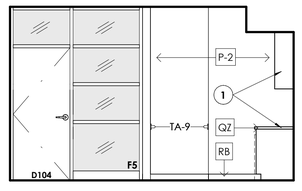
20 WEST ELEVATION
1/4" = 1'-0" FAMILY 107



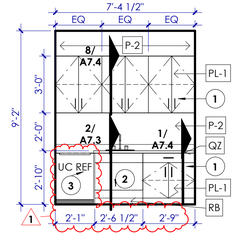
19 EAST ELEVATION
1/4" = 1'-0" WORK 104



18 WEST ELEVATION
1/4" = 1'-0" WORK 104



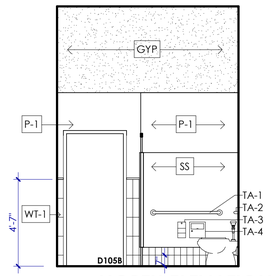
17 NORTH ELEVATION
1/4" = 1'-0" HEALTH SCREENING 105



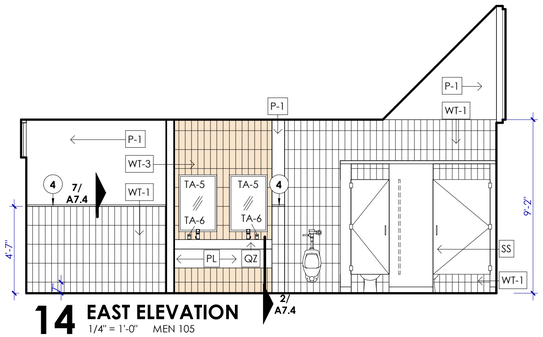
16 EAST ELEVATION
1/4" = 1'-0" HEALTH SCREENING 105

KEYNOTES

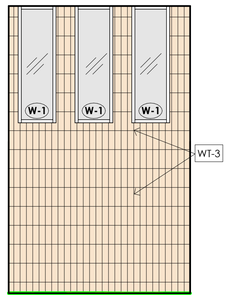
1. PLASTIC LAMINATE MILLWORK & QUARTZ COUNTERTOP WITH SECURITY LOCK FEATURE / PROVIDE KEYING SCHEDULE PRIOR TO FABRICATION / REFER TO FINISH PLAN
2. TAS COMPLIANT PLASTIC LAMINATE SKIRT
3. GC TO PROVIDE REQUIRED CONNECTION(S) AS SPECIFIED IN THE EQUIPMENT SCHEDULE
4. SCHLUTER TRIM ABOVE WAINSCOT WALL TILE / REFER TO DETAIL 7/A7.4
5. PROVIDE AND INSTALL PRIVACY CURTAIN, CURTAIN TRACK, & ALL ASSOCIATED HARDWARE / CONSTRUCTION SPECIALTIES TRADITIONAL 74" HIGH CURTAIN AND NARROWLINE TRACK
6. GLASS ENCASED BULLETIN BOARD WITH SECURE LOCK FEATURE
7. MOP SINK WITH A 24" HIGH SPLASH GUARD ON TWO SIDES & A 6" OVERHANG / REFER TO PLUMBING
8. 30"x36" K-3 BILCO ALUMINUM FLOOR ACCESS HATCH / COORDINATE WITH GREASE INTERCEPTOR / REFER TO DETAIL



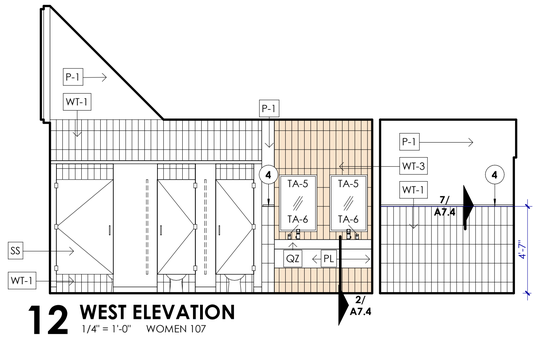
15 NORTH ELEVATION
1/4" = 1'-0" MEN 106



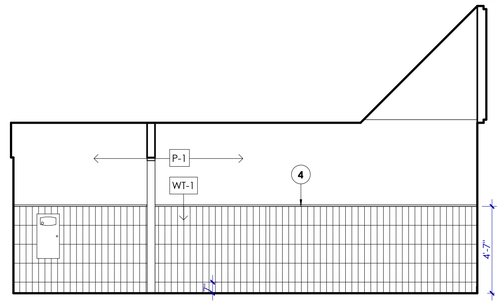
14 EAST ELEVATION
1/4" = 1'-0" MEN 105



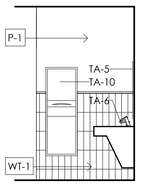
13 SOUTH ELEVATION
1/4" = 1'-0" MEN 105



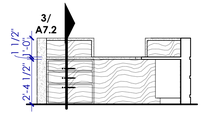
12 WEST ELEVATION
1/4" = 1'-0" WOMEN 107



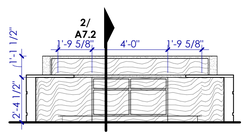
11 EAST ELEVATION
1/4" = 1'-0" WOMENS 107



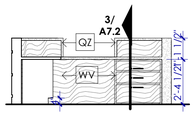
23 SOUTH ELEVATION
1/4" = 1'-0" WOMEN 107



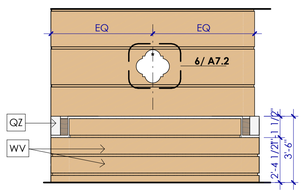
10 PARTIAL SOUTH ELEVATION
1/4" = 1'-0" RECEPTION 101



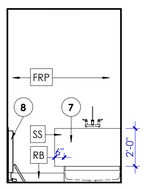
9 PARTIAL WEST ELEVATION
1/4" = 1'-0" RECEPTION 101



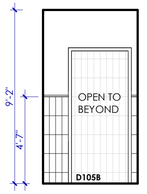
8 PARTIAL NORTH ELEVATION
1/4" = 1'-0" RECEPTION 101



7 PARTIAL EAST ELEVATION
1/4" = 1'-0" RECEPTION 101



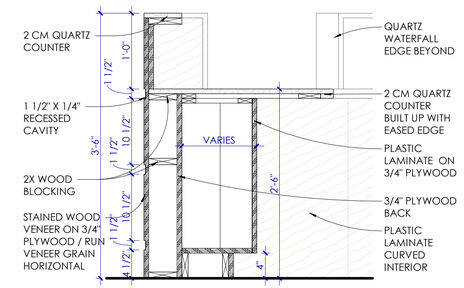
24 WEST ELEVATION
1/4" = 1'-0" JANITOR



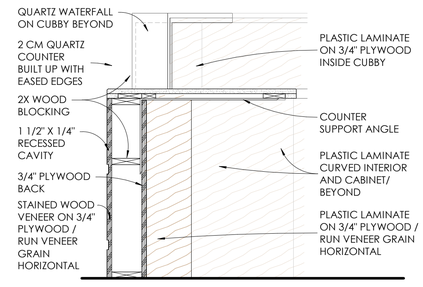
25 SOUTH ELEVATION
1/4" = 1'-0" MENS 105

TOILET ACCESSORIES SCHEDULE

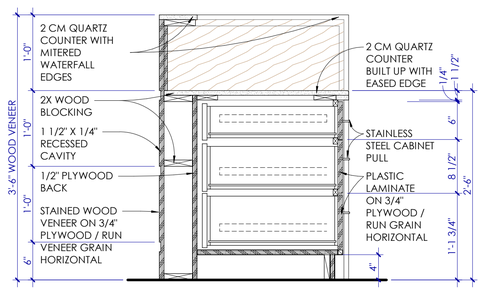
MARK	DESCRIPTION	MANUFACTURER	MODEL	REMARKS
1	42" GRAB BAR	Bradley	832	
2	36" GRAB BAR	Bradley	832	
3	TOILET PAPER DISPENSER	Bradley	5402	Stainless Steel Finish
4	SANITARY WASTE DISPOSAL	Bradley	4A10	Stainless Steel Finish
5	MIRROR	Bradley	780	24" x 36"
6	DECK MOUNTED SOAP DISPENSER	Bradley	Verge Zen Series 6-3700	polished chrome finish
7	SOAP DISPENSER	Bradley	6A03-11	Stainless Steel Finish
8	UNIVERSAL CHANGING TABLE	Bradley	9989-000000	
9	18" GRAB BAR	Bradley	832	
10	PAPER TOWEL DISPENSER	Bradley	2017	Recessed / Stainless Steel Finish
11	WASTE RECEPTACLE	Bradley	3257	Recessed / Stainless Steel Finish
12	PAPER TOWEL DISPENSER	Bradley	2027	Recessed / Stainless Steel Finish



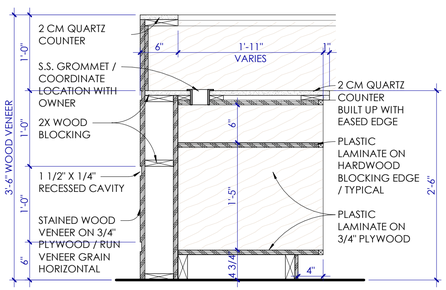
5 MILLWORK SECTION
1" = 1'-0" RECEPTION DESK



4 MILLWORK SECTION
1" = 1'-0" RECEPTION DESK

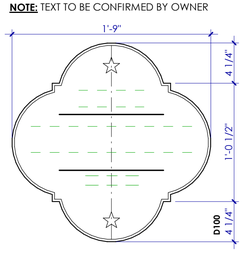


3 MILLWORK SECTION
1" = 1'-0" RECEPTION DESK

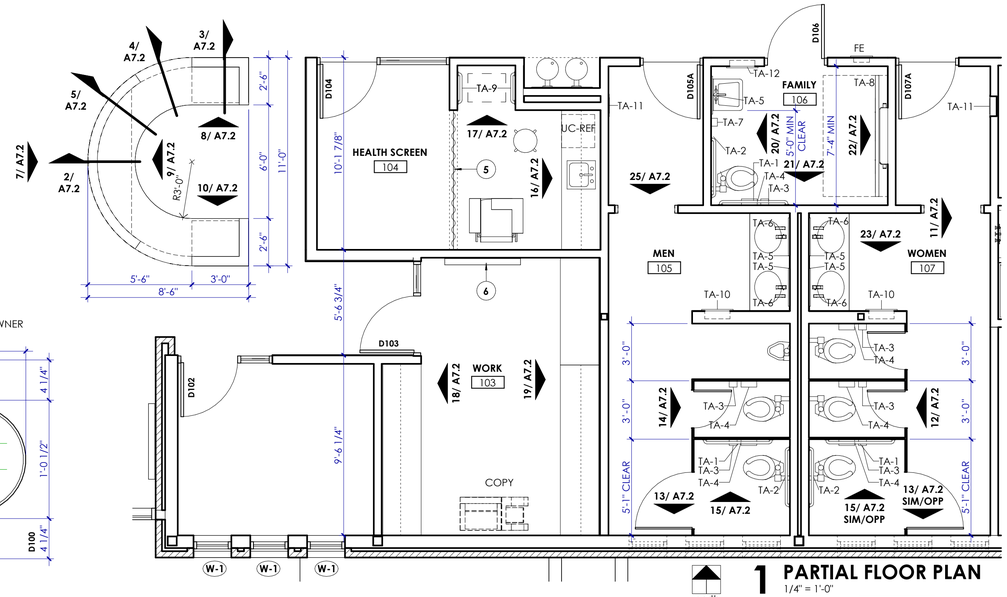


2 MILLWORK RECEPTION DESK
1" = 1'-0" RECEPTION DESK

NOTE: TEXT TO BE CONFIRMED BY OWNER



6 EMBLEM DETAIL
1 1/2" = 1'-0" RECEPTION DESK



1 PARTIAL FLOOR PLAN
1/4" = 1'-0"

north

0' 2' 4' 8'

PARTIAL FLOOR PLANS & INTERIOR ELEVATIONS

architect

revisions

1 Addendum 01 02.02.26

100% CONSTRUCTION DOCUMENTS

KENWOOD SENIOR & COMMUNITY CENTER

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BEATY PALMER ARCHITECTS

TYPICAL STRUCTURAL ABBREVIATIONS

ALL ABBREVIATIONS SHOWN ARE NOT NECESSARILY USED

A

ABOVE FINISH FLOOR	AFF
ADDITIONAL	ADDN'L
ADJACENT	ADJ.
AGGREGATE	AGGR.
ADHESIVE	ADH.
ALTERNATE	ALT.
ANCHOR BOLT	A.B.
AND	&
ANGLE	L
APPROVED	APPD.
APPROXIMATE	APPROX.
ARCHITECT	ARCH.
ARCHITECTURAL	ARCH'L.
ARCH'L. FINISH SURFACE	A.F.S.
AT	@
AIR CONDITIONER	A/C
AIR HANDLING UNIT	AHU
ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	AESS

B

BACK FACE	B.F.
BACK TO BACK	B. TO B.
BASEMENT	BSMT.
BASE PLATE	BP.
BEAM	BM.
BEARING	BRG.
BELOW FINISH FLOOR	BFF
BETWEEN	BTWN.
BEVEL (ED)	BEV ('D)
BLOCK	BLK.
BLOCKING	BLKG.
BLOCK-OUT	B.O.
BOTTOM	BOT
BOTTOM OF __	B.O. __
BOTTOM OF ANGLE	B.O.A.
BOTTOM OF CONCRETE	B.O.C.
BOTTOM OF STEEL	B.O.S.
BRACE	BRA.
BRACKET	BRKT.
BRACING	BRCG.
BRICK LEDGE ELEVATION	B.L.E.
BRIDGING	BRDG.
BUILDING	BLDG.
BUILDING LINE	B.L.

C

CANTILEVER	CANT.
CAST IRON	C.I.
CAST-IN-PLACE	C.I.P.
CEILING	CLG.
CENTER	CTR.
CENTER LINE	CL
CENTER OF GRAVITY	C.G.
CENTER TO CENTER	C. TO C.
CHAMFER	CHFR.
CHANNEL	C
CLEAR OR CLEARANCE	CLR.
COLUMN	COL.
COMPONENTS AND CLADDING	C&C
COMPRESSION	C OR COMP.
CONCRETE	CONC.
CONCRETE MASONRY UNIT	CMU
CONNECTION (S)	CONN(S).
CONTINUOUS	CONT.
CONTRACTOR	CONTR.
CONTROL JOINT	CT.J.
CONSTRUCTION	CONST.
CONSTRUCTION JOINT	C.J.
CORNER	COR.
COVER	COV.
CROSS BRACING	XBRCG

D

DETAIL	DET.
DEAD LOAD	DL
DEFORMED BAR ANCHOR	D.B.A.
DIAGONAL	DIAG.
DIAMETER	DIA.
DIAPHRAGM	DIAPH.
DIMENSION(S)	DIM(S).
DOVETAIL	DVTL.
DOWNSPOUT	DS.
DRAWING(S)	DWG(S).
DOUBLE	DBL.
DOWEL(S)	DWL(S).

E

EACH	EA.
EACH FACE	E.F.
EACH WAY	E.W.
EDGE ANGLE OFFSET	E.A.O.
EDGE OF SLAB	E.O.S.
ELECTRICAL	ELEC.
ELEVATION	EL.
ELEVATOR	ELEV.
EMBEDMENT/EMBEDDED	EMBED.
ENGINEER	ENGR.
ENTRANCE	ENT.
EQUAL	EQ.
EQUALLY SPACED	E.S.
EQUIPMENT	EQUIP.
EQUIVALENT	EQUIV.
EXPANSION	EXP.
EXPANSION JOINT	E.J.
EXISTING	EXIST.
EXTERIOR	EXT.
EXTRA STRONG	X-STR.

F

FACE TO FACE	F. TO F.
FABRICATOR	FABR.
FAR SIDE	F.S.
FIELD VERIFY	(F.V.)
FINISH(ED)	FIN.
FIREPROOF(ING)	FP.
FLANGE	FLG.
FLOOR	FL.
FLOOR DRAIN	F.D.
FOUNDATION	FDN.
FOOTING	FTG.

G

GAGE OR GAUGE	GA.
GALVANIZED	GALV.
GALVANIZED IRON	G.I.
GALVANIZED STEEL	G.S.
GENERAL	GEN.
GENERAL CONTRACTOR	G.C.
GRIDLINE	GL.
GOVERNMENT	GOVT.
GRADE	GR.
GRADE BEAM	GR. BM.
GRATING	GRTG.

H

HEADED STUDS	H.S.
HEIGHT	HT.
HIGH POINT	H.P.
HOIST	HST.
HOLLOW STRUCTURAL SHAPE	HSS
HORIZONTAL	HORIZ.
HOOK	HK.
HOT-DIPPED GALVANIZED	HDG

I

INFORMATION	INFO.
INSIDE DIAMETER	I.D.
INSIDE FACE	I.F.
INTERIOR	INT.
INTERMEDIATE	INTERM.

J

JOINT(S)	JT(S).
JOIST(S)	JST(S).

K

KIPS (1000 LBS)	k
KIP PER LINEAR FOOT	KLF
KIP PER SQUARE FOOT	KSF

L

LIGHTWEIGHT CONCRETE	LWC
LIVE LOAD	LL
LONGITUDINAL	LONG.
LONG	LG
LONG LENGTH BACK TO BACK	LLBB
LONG LEG HORIZONTAL	LLH
LONG LEG VERTICAL	LLV
LONG-SLOTTED HOLE PARALLEL	LSLP
LONG-SLOTTED HOLE TRANSVERSE	LSLT
LONG SIDE HORIZONTAL	LSH
LONG SIDE VERTICAL	LSV
LOW POINT	L.P.

M

MANUFACTURE(R)	MFR.
MASONRY	MAS.
MASONRY CONTROL JOINT	M.C.J.
MASONRY OPENING	M.O.
MATERIAL	MAT.
MARK	MK.
MAXIMUM	MAX.
MECHANICAL	MECH.
METAL	MTL.
MEZZANINE	MEZZ.
MIDDLE	MID.
MINIMUM	MIN.
MISCELLANEOUS	MISC.
MOMENT	M
MOMENT CONNECTION(S)	M.C. OR

N

NEAR FACE	N.F.
NEAR SIDE	N.S.
NOMINAL	NOM.
NON-SHRINK	N.S.
NORMAL WEIGHT CONCRETE	NWC
NOT IN CONTRACT	N.I.C.
NOT TO SCALE	N.T.S.
NUMBER	NO. OR #

O

ON CENTER	O.C.
OPENING(S)	OPNG(S).
OPPOSITE	OPP.
OPPOSITE HAND	O.H.
OUTSIDE FACE	O.F.
OUTSIDE DIAMETER	O.D.
OUTSTANDING	OSTG.
OVERHANG	OVH.
OVERSIDED HOLE	OVS.

P

PAN	P
PARALLEL	PAR.
PARTITION	PARTN.
PEDESTAL	PED.
PENETRATION	PEN.
PERPENDICULAR	PERP.
PIECE	PC.
PILASTER	PIL.
PLATE	PL.
POINT	PT.
POUNDS PER SQUARE FOOT	P.S.F.
POUNDS PER SQUARE INCH	P.S.I.
PRECAST CONCRETE PRE-ENGINEERED	P/C
BUILDING MANUFACTURER PRE-ENGINEERED	PEBM
METAL BUILDING	PEMB
PREFABRICATED	PREFAB.
PRELIMINARY	PRELIM.
PROJECTION	PROJ.

R

RADIUS	R
REINFORCED CONCRETE PIPE	RCP
REINFORCE(ING) (ED) (MENT)	REINF.
REFERENCE	REF.
REMAINDER	REM. OR R
REQUIRE	REQ.
REQUIRED	REQ'D.
RETENTION SYSTEM	RET. SYS.
RISER	RIS.
ROOF	RF.
ROOF DRAIN	R.D.
ROOF OPENING	RF. OPNG.
ROOFTOP UNIT	RTU
ROOM	RM.
ROUND	RND.

S

SCHEDULE(D)	SCHED.
SECTION	SECT.
SHEAR	V
SHEET	SHT.
SHORT LEG BACK TO BACK	SLBB
SHORT-SLOTTED HOLE PARALLEL	SSLP
SHORT-SLOTTED HOLE TRANSVERSE	SSLT
SIDEWALK	SW.
SIMILAR	SIM.
SLAB-ON-GRADE	S.O.G.
SLIP-CRITICAL	SC
SPACE	SPA.
SPECIFICATION(S)	SPEC(S)
SPECIFIED	SPEC'D.
SQUARE FOOT (FEET)	S.F.
STANDARD	STD.
STEEL	STL.
STIFFENER	STIFF.
STRAIGHT	STR.
STIRRUPS	STIR.
STRUCTURE	STRUCT.
STRUCTURAL	STRUCT'L.
SYMMETRICAL	SYM.
SUBCONTRACTOR	SUBCONTR.
SUPPORT(S)	SUPT(S).

T

TAPERED BEAM	T.B.
TEMPERATURE	TEMP.
TENSION	T
TERRAZZO	TERR.
THICK	THK.
TONGUE & GROOVE	T & G
TOP AND BOTTOM	T & B
TOP OF __	T.O. __
TOP OF CONCRETE	T.O.C.
TOP OF BEAM	T.O.B.
TOP OF FOOTING	T.O.F.
TOP OF MASONRY	T.O.M.
TOP OF PIER	T.O.P.
TOP OF PIER CAP	T.O.P.C.
TOP OF RETAINING WALL	T.R.W.
TOP OF STEEL	T.O.S.
TOP OF STRUCTURAL CONCRETE	T.O.S.C.
TOP OF WALL	T.O.W.
TRANSVERSE	TRANS.
TREAD	TR.
TUBE STEEL	TS
TYPICAL	TYP

U

UNLESS NOTED OTHERWISE	U.N.O.

V

VENEER	VNR.
VERTICAL	VERT.

W

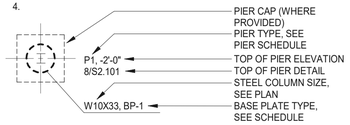
WATERSTOP	WS.
WATERPROOFING	WPFG.
WELDED WIRE MESH	W.W.M.
WIND BRACE	WB
WIND LOAD	W.L.
WINDOW	WDW.
WITH	W/
WORK POINT	W.P.
WOOD	WD.
WROUGHT IRON	W.I.

TYPICAL PLAN NOTES:

1. DATUM ELEVATION, 0'-0" = 744.00' MEAN SEA LEVEL ELEVATION.
   - SEE PLANS FOR TOP OF STRUCTURAL CONCRETE (T.O.S.C.) ELEVATION.
   - T.O.S. EL. = BOTTOM OF METAL DECK ELEVATION. SEE PLANS FOR TOP OF STEEL (T.O.S.) ELEVATION.
2. SHEET INDEX:

   THE DETAILS IN THE DRAWINGS, INCLUDING THOSE DRAWINGS REFERENCED BY THIS INDEX, WHICH ARE DESIGNATED AS "TYPICAL DETAILS", APPLY GENERALLY TO THE CONSTRUCTION IN ALL AREAS WHERE THE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAILS, REGARDLESS OF WHETHER OR NOT THE DETAILS ARE SPECIFICALLY REFERENCED IN THE DRAWINGS.

SHEET LIST

3. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF FLOOR DROPS, FLOOR SLOPES, CURBS, MISCELLANEOUS ELEVATIONS, DETAILS AND DIMENSIONS NOT SHOWN ON STRUCTURAL PLANS.
4. 

   CENTERLINE OF PIERS NOT SPECIFICALLY LOCATED ON PLAN BY NOTE OR DIMENSION SHALL BE LOCATED ACCORDING TO THE FOLLOWING INFORMATION, U.N.O.:

   A. FREESTANDING COLUMNS: CENTERLINE OF THE COLUMN
   B. GRADE BEAMS AND WALLS: CENTERLINE OF THE GRADE BEAM OR WALL IN ONE DIRECTION, GRID OR AS NOTED IN THE OTHER DIRECTION. AT CORNER CONDITIONS, CENTERLINES OF INTERSECTING GRADE BEAMS OR WALLS.
   C. COLUMNS EMBEDDED IN GRADE BEAMS OR WALLS (PILASTERS): CENTERLINE OF THE COLUMN

5. SEE ARCH'L. DWGS. FOR SIZES & LOCATIONS OF ROOF OPENINGS.
6. REPETITIVE MEMBERS SUCH AS ROOF OR FLOOR PURLINS SHALL BE EQUALLY SPACED BETWEEN DIMENSIONED POINTS, U.N.O.

STRUCTURAL SYMBOLS

THE FOLLOWING SYMBOLS ARE USED TO REPRESENT THE MATERIALS SHOWN ON THE STRUCTURAL DRAWINGS. SEE SPECIFICATIONS AND GENERAL NOTES FOR MATERIAL QUALITIES REQUIRED.

ARCHITECTURAL FINISHED SURFACE


CAST-IN-PLACE CONCRETE


STRUCTURAL PRECAST CONCRETE


SAND GRAVEL, OR LOW P.I. FILL


EARTH


ROCK


ARCHITECTURAL PRECAST CONCRETE


NON-SHRINK GROUT


SAND CEMENT GROUT


STYROFOAM


EXISTING


C.M.U.


STRUCTURAL STEEL


BEAM BOTTOM CHORD BRACING ON PLAN

TYPICAL SYMBOLS LEGEND

WB-1	INDICATES WIND BRACE - SEE WIND BRACE ELEVATIONS.
TRUSS	INDICATES TRUSS - SEE TRUSS ELEVATIONS.
	INDICATES MOMENT CONNECTION - SEE MOMENT CONNECTION DETAILS.
	INDICATES STEEL BEAM SPLICE - SEE STRUCTURAL STEEL SIMPLE BEAM CONNECTION DETAILS SBX-1.
	INDICATES STRUCTURE OVER VOID - SEE EXPANSIVE CLAY SOIL DETAILS CES-1.
	INDICATES THAT COLUMN STARTS UPWARD FROM THIS LEVEL.
	INDICATES THAT COLUMN STOPS AT THIS LEVEL.

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Datum Rios Project No. 24715

STATE OF TEXAS
MUHAMMAD MUDABBAR UN NOOR
148677
LICENSED
PROFESSIONAL ENGINEER
12/05/2025
Mudabbar

TYPICAL ABBREVIATIONS, SYMBOLS, PLAN NOTES, AND GENERAL NOTES

consultant **revisions**

1 ADDENDUM 01 12/05/25

ADDEMDUM 01

KENWOOD COMMUNITY CENTER

305 DORA STREET
SAN ANTONIO, TEXAS

CITY OF SAN ANTONIO

project number
24715
date
12/5/2025

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S1.1

BEATY PALMER ARCHITECTS

TYPICAL ABBREVIATIONS, SYMBOLS AND PLAN NOTES

GENERAL

THE FOLLOWING GENERAL NOTES CONSTITUTE A MAJOR PART OF THE PLANS AND SPECIFICATIONS. STRICT COMPLIANCE WITH THESE NOTES IS ESSENTIAL TO THE PROPER CONSTRUCTION OF THE BUILDING.

1. REFER TO THE PLAN NOTES FOR APPLICATION OF DETAILS WHICH ARE DESIGNATED AS "TYPICAL DETAILS" IN THIS SET OF DRAWINGS.
2. SLEEVES AND BLOCKOUTS REQUIRED FOR PASSAGE OF DUCTWORK, PIPING, DRAINS, CONDUIT, ETC., AND ANCHORS REQUIRED FOR ANCHORING EQUIPMENT AND PIPING ARE NOT GENERALLY INDICATED ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL DETERMINE SUCH REQUIREMENTS FROM OTHER SERIES DRAWINGS, SUBCONTRACTORS, AND SUPPLIERS AND SHALL COORDINATE THE LOCATIONS AND DETAILS FOR THESE ITEMS PRIOR TO FABRICATION OR CONSTRUCTION OF THE STRUCTURE. ANY CONFLICTS BETWEEN THESE ITEMS AND THE BUILDING STRUCTURE SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION.
3. VERIFY, OR ESTABLISH, LOCATIONS AND DIMENSIONS OF ALL FRAMED OPENINGS RELATED TO EQUIPMENT OR DUCTWORK, INCLUDING INSULATION, IF ANY. WHERE SUBSTANTIAL RELOCATION OR RECONFIGURATION IS REQUIRED, SUBMIT A DRAWING TO THE ARCHITECT FOR REVIEW.
4. LOCATE EXISTING REINFORCEMENT, USING APPROPRIATE IMAGING EQUIPMENT, PRIOR TO CUTTING OR DRILLING INTO EXISTING CONCRETE. DO NOT CUT OR DAMAGE EXISTING REINFORCEMENT. IF THE REQUIRED OPERATIONS MAKE DAMAGING EXISTING REINFORCING UNAVOIDABLE, INFORM ARCHITECT SO THAT THE CONDITION MAY BE EVALUATED AND ALTERNATIVE DIRECTIONS GIVEN.
5. MATERIALS OR PRODUCTS SUBMITTED FOR APPROVAL WHICH ARE NOT AS SPECIFIED IN THE DOCUMENTS SHALL BE ACCOMPANIED BY A CURRENT ES REPORT (BY ICC EVALUATION SERVICE, INC.). MATERIALS OR PRODUCTS THAT DO NOT HAVE AN ES REPORT INDICATING THE SUBSTITUTED MATERIAL OR PRODUCT TO BE EQUAL TO THAT SPECIFIED, WILL NOT BE CONSIDERED.

SUBSTITUTIONS

1. ALL REQUESTS FOR SUBSTITUTIONS OF MATERIALS OR DETAILS SHOWN IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED FOR APPROVAL DURING THE BIDDING PERIOD. ONCE BIDS ARE ACCEPTED, PROPOSED SUBSTITUTIONS WILL BE CONSIDERED ONLY WHEN THEY ARE OFFICIALLY SUBMITTED WITH AN IDENTIFIED SAVINGS TO BE DEDUCTED FROM THE CONTRACT.

CODES & DESIGN SPECIFICATIONS

1. CODES:
   - A. BUILDING CODE: 2024 INTERNATIONAL BUILDING CODE
   - B. STRUCTURAL STEEL: AISC 360-22 "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS" AND AISC 341-16 "SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS."
   - C. STRUCTURAL CONCRETE: "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-19)," THE AMERICAN CONCRETE INSTITUTE.
   - D. STRUCTURAL MASONRY: "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (TMS 402-22), THE MASONRY SOCIETY
   - E. COLD-FORMED STEEL: "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" (AISI S100-16 w/ S3-22), AMERICAN IRON AND STEEL INSTITUTE
   - F. WELDING: "STRUCTURAL WELDING CODE-STEEL" (AWS D1.1-2020), AMERICAN WELDING SOCIETY
   - G. WELDING (SHEET METAL): "STRUCTURAL WELDING CODE-SHEET STEEL" (AWS D1.3-2018), AMERICAN WELDING SOCIETY
2. REFERENCE STANDARDS:
   - A. MINIMUM DESIGN LOADS: "MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES" (ASCE 7-22), AMERICAN SOCIETY OF CIVIL ENGINEERS
   - B. ROOF DECK: "STANDARD FOR STEEL ROOF DECK" (ANSI/SDI RD-2017), AMERICAN NATIONAL STANDARDS INSTITUTE/STEEL DECK INSTITUTE
   - C. COMPOSITE DECK: "STANDARD FOR COMPOSITE STEEL FLOOR DECK-SLABS" (ANSI/SDI C-2017), AMERICAN NATIONAL STANDARDS INSTITUTE/STEEL DECK INSTITUTE
   - D. PROFILED STEEL DIAPHRAGMS: "NORTH AMERICAN STANDARD FOR THE DESIGN OF PROFILED STEEL DIAPHRAGM PANELS (AISI S310-20 w/ S1-22), AMERICAN IRON AND STEEL INSTITUTE

FIRE RESISTANCE

1. THE STRUCTURAL SYSTEM AND CONSTRUCTION DETAILS ARE DESIGNED TO COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING:

STRUCTURAL FRAME:	0 HOUR [1]
EXTERIOR BEARING WALLS:	N/A
INTERIOR BEARING WALLS:	N/A
FLOOR ASSEMBLY:	0 HOUR [1]
ROOF ASSEMBLY:	0 HOUR

2. STRUCTURAL FRAME CONSISTS OF COLUMNS AND MEMBERS FRAMING INTO COLUMNS, INCLUDING GIRDERS, BEAMS, TRUSSES AND BRACING.
3. THE STRUCTURAL FLOOR AND/OR ROOF FRAMING IS CONSIDERED TO BE "RESTRAINED" IN ACCORDANCE WITH THE U.L. "FIRE RESISTANCE DIRECTORY," FOR PURPOSES OF ESTABLISHING THE FIRE RESISTANCE RATING.
4. STEEL BEAMS WHICH ARE LIGHTER THAN THE MINIMUM SIZE SET FORTH IN THE REFERENCED U.L. ASSEMBLY SHALL RECEIVE ADDITIONAL SPRAYED FIREPROOFING AS REQUIRED TO ACHIEVE THE DESIGNATED RATING.

DESIGN LOADS

1. DEAD LOADS INCLUDE THE WEIGHT OF THE STRUCTURAL COMPONENTS AND ALLOWANCES FOR PERMANENT PARTITIONS, PERMANENT FIXTURES, FINISHES, ROOFING, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION MATERIALS SHOWN OR SPECIFIED.
2. LOADINGS FOR MECHANICAL ROOMS ARE BASED ON THE WEIGHTS OF ASSUMED EQUIPMENT, AS INDICATED ON THE MECHANICAL DRAWINGS (INCLUDING THE WEIGHT OF CONCRETE PADS, WHERE INDICATED). ANY CHANGES IN TYPE, SIZE, LOCATION OR NUMBER OF PIECES OF EQUIPMENT SHOULD BE REPORTED TO THE ARCHITECT FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING MEMBERS PRIOR TO THE PLACEMENT OF SUCH EQUIPMENT.
3. DESIGN LIVE LOADING IS AS FOLLOWS:

OFFICES (NOT INCLUDING NON-PERMANENT PARTITIONS)	80 PSF
COMPUTER ROOMS	100 PSF
GYMNASIUMS	100 PSF
DINING	100 PSF
LOBBIES AND CORRIDORS	100 PSF
RESTROOMS (INCLUDING NON-PERMANENT PARTITIONS)	80 PSF
MECHANICAL/ ELECTRICAL ROOMS	150 PSF
LIGHT STORAGE ROOMS	125 PSF
LIBRARY STACK ROOMS	150 PSF
KITCHEN (INCLUDE 25 PSF OF EQUIPMENT)	100 PSF
ROOF (UNOCCUPIED)	20 PSF
ROOF ABOVE KITCHEN	30 PSF
MISC. AWNINGS AND CANOPIES	20 PSF
ROOFS ABOVE MECHANICAL ROOMS	50 PSF
ASSEMBLY AREAS	100 PSF
EXTERIOR PUBLIC SPACE, ENTRANCE, SIDEWALKS	250 PSF

4. DESIGN WIND LOADING IS AS FOLLOWS (NOTE: PER ASCE 7-22, WIND LOADS ARE ULTIMATE. SERVICE LOADS MAY BE OBTAINED BY MULTIPLYING BY A FACTOR OF 0.6 PER ASCE 7-22 ALLOWABLE STRESS DESIGN COMBINATIONS):

WIND DESIGN OPTION	DIRECTIONAL PROCEDURE
ULTIMATE WIND SPEED, Vult	107 MPH
RISK CATEGORY	II
EXPOSURE CATEGORY	C
INTERNAL PRESSURE COEFFICIENT, GCpi	± 0.18

PRESSURE TOWARD COMPONENT (+) / SUCTION AWAY FROM COMPONENT (-), IN PSF (NET = INCLUDING INTERNAL PRESSURE) -LOADS MAY BE LINEARLY INTERPOLATED BETWEEN VALUES FOR GIVEN TRIBUTARY AREAS. HOWEVER, UTILIZED VALUES MAY NOT BE LESS THAN 16 PSF (ULTIMATE), IN EITHER DIRECTION, NORMAL TO THE COMPONENT SURFACE:

ROOF PRESSURE (+) / SUCTION (-):

REFER TO WIND UPLIFT MAPS ON SHEET S1.6 FOR WIND PRESSURES ON ROOF SURFACE.

INTERIOR ZONES - MORE THAN 11'-0" FROM EDGE OR RIDGE (ZONE 1)
- 10 SQ FT ..... +10.2/-27.1 PSF
- 50 SQ FT ..... +8.7/-27.1 PSF
- 100 SQ FT ..... +8.0/-27.1 PSF

END ZONES - WITHIN 11'-0" OF EDGE OR RIDGE (ZONE 2)
- 10 SQ FT ..... +10.2/-31.3 PSF
- 50 SQ FT ..... +8.7/-29.9 PSF
- 100 SQ FT ..... +8.0/-29.2 PSF

CORNER ZONES - WITHIN 11'-0" FROM CORNER OF EDGE, HIP OR RIDGE AT OVERLAPPING EDGES (ZONE 3)
- 10 SQ FT ..... +10.2/-41.9 PSF
- 50 SQ FT ..... +8.7/-33 PSF
- 100 SQ FT ..... +8.0/-29.2 PSF

OVERHANGS AT END ZONES - WITHIN 11'-0" OF EDGE OR RIDGE (ZONE 2)
- 10 SQ FT ..... +10.2/-37.7 PSF
- 50 SQ FT ..... +8.7/-36.2 PSF
- 100 SQ FT ..... +8.0/-35.6 PSF

OVERHANGS AT CORNER - 11'-0" FROM CORNER OF EDGE OR RIDGE AT OVERLAPPING EDGES (ZONE 3)
- 10 SQ FT ..... +10.2/-58.9 PSF
- 50 SQ FT ..... +8.7/-44.1 PSF
- 100 SQ FT ..... +8.0/-37.7 PSF

WALL PRESSURE (+) / SUCTION (-):

INTERIOR ZONES (ZONE 4) - MORE THAN 6'-0" FROM BUILDING CORNER
- 10 SQ FT ..... +22.9/-24.8 PSF
- 100 SQ FT ..... +19.5/-21.4 PSF
- 500 SQ FT ..... +17.2/-19.1 PSF

END ZONES (ZONE 5) - WITHIN 6'-0" OF BUILDING CORNER
- 10 SQ FT ..... +22.9/-30.5 PSF
- 100 SQ FT ..... +19.5/-23.8 PSF
- 500 SQ FT ..... +17.2/-19.1 PSF

INTERIOR PRESSURE ON STRUCTURAL ELEMENTS ..... 10 PSF

5. SEISMIC DESIGN DATA (IBC):

RISK CATEGORY	II
SITE CLASS	D
DESIGN SPECTRAL RESPONSE ACCELERATIONS, S_{DS} & S_{D1}	0.05 / 0.034
SEISMIC DESIGN CATEGORY	A

6. SNOW LOADING (ASCE 7, SECTION 7):

GROUND SNOW LOAD, p_g ..... 10 PSF

7. RAIN LOADING (ASCE 7, SECTION 8):

15-MINUTE PRECIPITATION INTENSITY:	10 INCHES / HR
60-MINUTE PRECIPITATION INTENSITY:	4.72 INCHES / HR

8. ICE LOADS

ICE THICKNESS:	1.17 INCHES
CONCURRENT TEMPERATURE:	15° F
3-s GUST SPEED	32 MPH

LOAD COMBINATIONS

1. LRFD LOAD COMBINATIONS:

   1.4(D+F)
   1.2(D+F)+ 1.6(L+H) + 0.5(Lr or S or R)
   1.2(D+F)+ 1.6(Lr or S or R) + 1.6H + (0.5L or 0.5W)
   1.2(D+F) + 1.0W + 0.5L + 1.6H + 0.5(Lr or S or R)
   1.2(D+F) + 1.0E + 0.5L + 1.6H + 0.2S
   0.9D + 1.0W + 1.6H
   0.9(D+F) + 1.0E + 1.6H

2. ASD LOAD COMBINATIONS:

   D + F
   D + H + F + L
   D + H + F + (Lr or S or R)
   D + H + F + 0.75(L) + 0.75(Lr OR S OR R)
   D + H + F + (0.6W OR 0.7E)
   D + H + 0.75(0.6W) + 0.75L + 0.75(Lr OR S OR R)
   D + H + 0.75(0.7E) + 0.75L + 0.75S
   0.6D + 0.6W + H
   0.6(D + F) + 0.7E + H

DEFERRED SUBMITTALS

1. DEFERRED SUBMITTALS TO BE REVIEWED BY DATUM RIOS, LLC FOLLOWED BY STRUCTURAL OBSERVATIONS AND/OR DIRECTIONS FOR SPECIAL INSPECTIONS DURING CONSTRUCTION:
   - SHIP LADDERS
   - STRUCTURAL STEEL CONNECTION DESIGN
   - COLD-FORMED METAL STUDS (LOAD-BEARING AND/OR EXTERIOR)
2. DEFFERED SUBMITTALS ARE TO BE PREPARED AND SEALED BY THE CONTRACTOR'S DELEGATED DESIGN PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS IN.

CONCRETE MIX

1. PROVIDE CONCRETE HAVING THE FOLLOWING GENERAL CHARACTERISTICS:

STRUCTURAL CONCRETE MIX SPECIFICATION REQUIREMENTS

CONCRETE USAGE	EXPOSURE CLASS[1]				MINIMUM STRENGTH f'c[2] (PSI)	CONCRETE TYPE[3]	NOMINAL MAX. AGGREGATE SIZE (IN.)	SHRINKAGE LIMIT (%)[4]	NOTES
	F	S	W	C					
DRILLED PIERS	F0	S0	W1	C1	4,000	NWC	1 1/2	---	
GRADE BEAMS	F1	S0	W1	C1	4,000	NWC	1	0.04	
STRIP FOOTINGS	F1	S0	W1	C1	4,000	NWC	3/4	0.04	
PILASTERS	F1	S0	W1	C1	4,000	NWC	1	0.04	
SLABS-ON-GRADE (EXTERIOR)	F1	S0	W1	C1	4,000	NWC	1	0.04	
(NWC) SLAB ON STEEL DECK INTERIOR	F0	S0	W0	C0	4,000	NWC	3/4	0.04	
FORMED BEAMS AND SLABS	F1	S0	W0	C0	4,000	NWC	3/4	0.04	

MIX SPECIFICATION NOTES
1. CONCRETE EXPOSURE CLASSES ARE BASED ON CHAPTER 19 OF ACI 318-19.
2. DATES OF ACCEPTANCE WILL BE DETERMINED BASED ON CONTRACTOR INPUT. WHILE NOMINAL CONCRETE STRENGTH OF F'C WILL BE UTILIZED FOR FINAL PROJECT ACCEPTANCE CRITERIA, TRIAL BATCHES SHALL REPORT THE STANDARD DEVIATION FOR THE TESTED MIXES AS WE AS THEIR EXPECTED CONCRETE STRENGTHS.
3. "NWC" REFERS TO NORMAL WEIGHT CONCRETE WITH A MAXIMUM DRY CURED DENSITY OF 150 PCF AND "LWC" REFERS TO LIGHT WEIGHT CONCRETE WITH A MAXIMUM CURED DENSITY OF 120 PCF.
4. PROVIDE LOW SHRINKAGE CONCRETE WITH DRYING SHRINKAGE LIMITED TO 0.02% AT 28 DAYS IN ACCORDANCE WITH ASTM C157 WHERE SLAB IS EXPOSED TO VIEW.

2. IN ADDITION TO THE CONCRETE PROPERTIES SCHEDULED ABOVE, THE WATER/CEMENTITIOUS MATERIALS (W/C) RATIO FOR THE FOLLOWING CONCRETE APPLICATIONS SHALL BE LIMITED TO THE MAXIMUM VALUES NOTED:
   a. SLABS ON GRADE 0.50 (SEE NOTE 3)
3. MAXIMUM WATER-CEMENT RATIO FOR CONCRETE SLABS-ON-GRADE AND SLABS-ON-VOID BOXES SHALL BE AS SCHEDULED IN NOTE 2, ABOVE. CONTRACTOR SHALL USE LOWER WATER-CEMENT RATIO IF IT IS DETERMINED THAT THIS IS NEEDED TO PLACE FLOORING AS SCHEDULED.
4. FLY ASH WILL NOT BE PERMITTED IN ARCHITECTURALLY EXPOSED CONCRETE. FLY ASH MAY BE USED ELSEWHERE, WITHIN THE SPECIFIED PROPORTION LIMITS, BUT THE CONTRACTOR SHALL FIRST VERIFY COMPATIBILITY WITH CURING COMPOUNDS, SEALERS, BOND BREAKER, FLOORING ADHESIVES AND OTHER MATERIALS PROPOSED TO BE IN CONTACT WITH THE CONCRETE.
5. USE OF ACCELERATING OR SET-RETARDING ADMIXTURES REQUIRES PRIOR APPROVAL OF THE ARCHITECT. IN GENERAL, USE OF CALCIUM CHLORIDE WILL NOT BE PERMITTED.

   CEMENT SHALL BE TYPE I OR TYPE III (ASTM C 150), EXCEPT AS FOLLOWS:

CLASS OF CONCRETE	CEMENT TYPE
A	I/II

6. ALL CONCRETE EXPOSED TO THE WEATHER SHALL MEET EXPOSURE CLASS REQUIREMENTS OF ACI. TOLERANCE FOR AIR CONTENT SHALL BE ± 1.5 PERCENT. AIR CONTENT SHALL BE MEASURED AT THE DISCHARGE OF THE TRUCK. IF CONCRETE IS PUMPED, AIR CONTENT SHALL BE MEASURED AT THE DISCHARGE END OF THE PUMP LINE. TESTS FOR AIR CONTENT SHALL MEET ASTM C172 REQUIREMENTS.

CONCRETE REINFORCING

1. REINFORCING STEEL SHALL BE NEW OR RECYCLED DOMESTIC DEFORMED BILLET STEEL, CONFORMING TO ASTM A 615, GRADES AS FOLLOWS:

   #3 THROUGH #6 GRADE 60
   #7 THROUGH #18 GRADE 80
2. REINFORCING STEEL SHOWN IN SECTIONS OF BEAMS, WALLS AND COLUMNS IS SCHEMATIC INDICATION THAT REINFORCING EXISTS. SEE SCHEDULES, SECTION NOTES, AND GENERAL NOTES FOR ACTUAL REINFORCING REQUIRED.
3. REFER TO DOWEL SCHEDULE, SHEET 4/S3.5, FOR ALL BARS MARKED "DWL" ON THE DRAWINGS.
4. DETAIL REINFORCING BARS AND PROVIDE BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH THE ACI DETAILING MANUAL.
5. WHERE BAR TYPES FROM THE BAR BENDING DIAGRAM ARE SPECIFIED, PROVIDE BARS ACCORDINGLY. OTHERWISE, DETAIL BARS IN BEAMS, COLUMNS, SLABS, AND WALLS AS FOLLOWS:
   - A. RUN TOP AND BOTTOM BARS CONTINUOUS, WITH SPLICES AND HOOKS AS DESCRIBED BELOW.
   - B. PROVIDE STANDARD 90 DEGREE HOOK ON TOP BARS AT CANTILEVER ENDS.
   - C. SPLICE TOP BARS AT THE CENTERLINE, AND INTERMEDIATE BARS AT QUARTER POINT, BETWEEN MEMBER SUPPORTS, UNLESS NOTED OTHERWISE.
   - D. SPLICE BOTTOM BARS DIRECTLY OVER MEMBER SUPPORTS, UNLESS NOTED OTHERWISE.
   - E. SPLICE VERTICAL BARS IN WALLS ONLY AT FLOOR LINES, UNLESS NOTED OTHERWISE. HORIZONTAL BARS SHALL BE SPLICED AS SPECIFIED FOR TOP, BOTTOM, AND INTERMEDIATE BARS OF BEAMS.
   - F. CENTER BARS NOTED AS "AT SUPT'S." OVER MEMBER SUPPORTS, AND CENTER BARS NOTED AS "BTWN. SUPTS.." BETWEEN SUPPORTS.
   - G. PLACE BARS NOTED AS "2ND LAYER" BELOW THE PRIMARY TOP BARS (OR ABOVE THE PRIMARY BOTTOM BARS) AND PROVIDE #11 SPACER BARS PLACED AT INTERVALS OF 4'-0" BETWEEN THE TWO LAYERS OF BARS.
   - H. ALL BAR SPLICES IN BEAMS, SLABS, AND WALLS SHALL BE "LCS" SPLICE, EXCEPT THAT SPLICES IN HORIZONTAL WALL BARS AND INTERMEDIATE BEAM BARS SHALL BE "LTS" SPLICE.
   - I. SPLICE VERTICAL BARS IN COLUMNS ONLY AT FLOOR LINES, UNLESS NOTED OTHERWISE. COLUMN BAR SPLICES SHALL BE "LCS" SPLICE, MINIMUM, UNLESS SCHEDULED OR DETAILED OTHERWISE.
   - J. PLACE A COLUMN TIE 3" ABOVE THE TOP OF THE FOUNDATION OR INTERSECTING SLAB AT ANY LEVEL AND 3" BELOW THE LOWEST HORIZONTAL REINFORCING IN THE SLAB OF THE FLOOR OR ROOF FRAMING ABOVE AND SPACE TIES AS REQUIRED IN BETWEEN. WHERE BEAMS FRAME FROM FOUR DIFFERENT DIRECTIONS INTO A COLUMN, TIES MAY BE TERMINATED WITHIN THE FLOOR FRAMING 3" BELOW THE LOWEST HORIZONTAL REINFORCING IN THE SHALLOWEST BEAM. TOP OF COLUMNS SUPPORTING STRUCTURAL STEEL SHALL HAVE 3 TIES AT 3" O.C. STARTING 3" BELOW THE TOP OF THE COLUMN.
   - K. PROVIDE CORNER BARS FOR EACH HORIZONTAL BAR AT THE INSIDE AND OUTSIDE FACES OF INTERSECTING BEAMS OR WALLS. REFER TO CORNER BAR DETAILS ON SHEET S3.03.
6. BARS SHOWN IN THE SCHEDULE TO HOOK AT DISCONTINUOUS ENDS SHALL HAVE THE HOOK PLACED HORIZONTALLY AT EXTERIOR CORNERS.
7. PROVIDE NO. 3 DOWELS X 2'-0" AT 1'-6" ON CENTER, WITH A 90 DEGREE HOOK AT ALL EDGES OF CONCRETE SLABS, UNLESS DETAILED OTHERWISE.
8. PROVIDE FOUNDATION DOWELS TO MATCH MASONRY WALL REINFORCEMENT. DOWELS SHALL EXTEND A MINIMUM OF "LTS" SPLICE ABOVE AND "LCS" SPLICE BELOW TOP OF FOUNDATION.
9. REFER TO SLAB TEMPERATURE REINFORCING SCHEDULE, SHEET S3.06, FOR TEMPERATURE REINFORCING IN SLABS WHERE NOT SPECIFICALLY DETAILED.
10. CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS, MEASURED TO NEAREST BAR, STIRRUP OR TIE:
    - A. AT SLABS-ON-GRADE, BEAM AND WALL SURFACES DEPOSITED AGAINST THE GROUND (WITH OR WITHOUT VAPOR RETARDER): 3".
    - B. AT FORMED FACES OF BEAMS, COLUMNS AND WALLS EXPOSED TO RAIN OR IN CONTACT WITH THE GROUND: 2".
    - C. AT FORMED FACES OF BEAMS NOT EXPOSED TO RAIN OR SOIL: 1 1/2".
    - D. AT FORMED FACES OF COLUMNS NOT EXPOSED TO RAIN OR SOIL: 1 3/4".
    - E. AT INTERIOR AND PROTECTED EXTERIOR FACES OF WALLS: 1".
    - F. AT BEAM AND SLAB BOTTOMS FORMED WITH FIBERBOARD VOID BOXES: 2".
    - G. FORMED SURFACES OF SLABS:
      INTERIOR EXPOSURE: 1"
      #5 BAR AND SMALLER, EXPOSED TO WEATHER: 1 1/2"
      #6 BAR AND LARGER, EXPOSED TO WEATHER: 2"
    - H. FORMED SURFACES OF WIDE PAN JOISTS (JOISTS SPACED GREATER THAN 3'-0" ON CENTER):
      INTERIOR EXPOSURE: 1 1/2"
      EXTERIOR EXPOSURE: 2"
    - I. TOP STEEL IN SLABS AND JOISTS:
      INTERIOR EXPOSURE: 1"
      EXPOSED TO WEATHER: 2"
    - J. TOP STEEL IN BEAMS:
      INTERIOR EXPOSURE: 1 1/2"
      EXPOSED TO WEATHER: 2"
11. CRAWLSPACES SHALL BE CONSIDERED INTERIOR EXPOSURE.
12. MAINTAIN THE SPECIFIED COVER DIMENSION WITHIN A TOLERANCE OF PLUS OR MINUS 3/8" EXCEPT FOR SLABS-ON-GRADE AND SOIL-FORMED MEMBERS, WHERE 5/8" TOLERANCE IS PERMITTED. EXTRA COVER WEAKENS THE MEMBER AND REDUCED COVER LEADS TO CORROSION.
13. REFER TO TYPICAL STEEL CONNECTION DETAIL SHEETS (S5.1 AND S5.2) FOR ADDITIONAL REINFORCING REQUIRED AT STEEL BEAM CONNECTION EMBED PLATES.
14. PROVIDE 5 TONS OF ADDITIONAL REINFORCING STEEL (#3 BARS AND LARGER) TO BE USED IN THE FIELD AS DIRECTED BY THE ARCHITECT/ENGINEER. LABOR FOR DETAILING, CUTTING, BENDING, AND PLACEMENT SHALL BE INCLUDED. ANY UNUSED PORTION OF THIS QUANTITY SHALL BE CREDITED TO THE OWNER AT THE RATE OF $2500 PER TON.

D|R Datum Rios
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Datum Rios Project No. 24715

STATE OF TEXAS · MUHAMMAD MUDABBAR UN NOOR · 148677 · LICENSED · PROFESSIONAL ENGINEER

12/05/2025

Mudabbar

GENERAL NOTES

consultant	revisions		
	1	ADDENDUM 01	12/05/25

ADDEMDUM 01

KENWOOD COMMUNITY CENTER

305 DORA STREET
SAN ANTONIO, TEXAS

CITY OF SAN ANTONIO

project number
24715
date
12/5/2025

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sheet number
S1.2

BEATY PALMER ARCHITECTS

CAST-IN-PLACE CONCRETE

1. CONSTRUCTION JOINTS IN BEAMS, SLABS AND WALLS SHALL ONLY OCCUR WITHIN 2'-0" OF MIDSPAN BETWEEN SUPPORTS. CONSTRUCTION JOINTS IN SOIL SUPPORTED SLABS-ON-GRADE SHALL BE WHERE SHOWN ON PLAN. COLUMN PILASTERS ON THE SIDES OF GRADE BEAMS AND WALLS SHALL BE CAST MONOLITHICALLY WITH THE GRADE BEAM OR WALL UNLESS SHOWN OTHERWISE. SUBMIT A DIAGRAM OF ALL PROPOSED CONSTRUCTION JOINTS WHICH ARE NOT SPECIFICALLY SHOWN ON THESE DRAWINGS (REFER TO SPECIFICATIONS).

2. SLEEVES, MECHANICAL OPENINGS, CONDUITS, PIPES, RECESSES, DEPRESSIONS, CURBS AND ALL EMBEDDED ITEMS SHALL BE PROVIDED FOR AS SHOWN ON THE ARCHITECTURAL AND MECHANICAL DRAWINGS AND AS REQUIRED BY EQUIPMENT MANUFACTURERS. MINIMUM CONCRETE BETWEEN SLEEVES SHALL BE 6". INSTALLATION OF THESE ITEMS SHALL BE COORDINATED WITH SHOP DRAWINGS OF TRADES REQUIRING THESE ITEMS.

3. SET FORMS TO FOLLOW SLOPES AND GRADES DEFINED ON PLAN, KEEPING MEMBER DEPTHS CONSTANT AT DEPTHS DETAILED OR SCHEDULED, UNLESS NOTED OTHERWISE. SLOPE UNIFORMLY BETWEEN ELEVATIONS GIVEN. BUILD IN CAMBER WHERE SPECIFIED.

4. DUE TO THE THIN CONCRETE SLABS ON THIS PROJECT, NO CONDUIT OR PIPE IS PERMITTED TO BE CAST IN THE SLAB.

5. SLEEVES OR PIPES PASSING HORIZONTALLY THROUGH BEAMS OR JOISTS MUST BE LOCATED IN THE MIDDLE THIRD OF THE SPAN AND WITHIN THE MIDDLE THIRD OF THE BEAM DEPTH. MAXIMUM DIAMETER SHALL BE ONE THIRD OF THE MEMBER DEPTH. SPACE AT LEAST 3 DIAMETERS CLEAR APART AND ADD ONE STIRRUP EACH SIDE OF EACH SLEEVE.

6. PROVIDE CAMBERED FORMWORK FOR THOSE MEMBERS SHOWN ON PLAN TO BE CAMBERED.

7. PROVIDE SHEAR KEYS IN ALL CONSTRUCTION JOINTS IN BEAMS AND WALLS, IN ACCORDANCE WITH THE TYPICAL CONCRETE DETAILS.

8. DOCK HEIGHT GRADE BEAMS SHALL BE BRACED FROM THE EXTERIOR DIRECTION PRIOR TO PLACING FILL. BRACING SHALL REMAIN IN PLACE UNTIL THE FLOOR SLAB HAS BEEN POURED AND HAS CURED FOR AT LEAST 7 DAYS.

9. PLACE WATERSTOPS IN ALL EXTERIOR CONSTRUCTION JOINTS BELOW GRADE AND ELSEWHERE AS CALLED FOR.

10. FLOORS ARE NOT DESIGNED TO SUPPORT FORMWORK AND WET CONCRETE WEIGHT OF NEXT LEVEL. CONTRACTOR SHALL DESIGN AND PROVIDE RESHORING TO PREVENT OVERSTRESSING THE STRUCTURE.

11. THE HOUSEKEEPING PADS UNDER MECHANICAL EQUIPMENT ARE SHOWN AND SPECIFIED ON THE MECHANICAL DRAWINGS. REINFORCE HOUSEKEEPING PAD WITH #3@8" ON CENTER EACH WAY, UNLESS SHOWN OTHERWISE ON MECHANICAL DRAWINGS.

12. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO ENSURE COMPLETE CONSOLIDATION OF CONCRETE BEHIND ALL POST-TENSIONING ANCHORAGES.

13. GROUT OR CONCRETE CONTAINING CHLORIDES, FLUORIDES, SULFIDES, NITRATES, OR OTHER SUBSTANCES DETRIMENTAL TO PRESTRESSING STEEL SHALL NOT BE USED.

14. CONSTRUCTION JOINTS IN POST-TENSIONED MEMBERS OTHER THAN WHERE SHOWN SHALL BE APPROVED BY THE ARCHITECT.

15. ALL POCKETS OR BLOCKOUTS REQUIRED FOR ANCHORAGES SHALL BE ADEQUATELY REINFORCED SO AS NOT TO DECREASE THE STRENGTH OF THE STRUCTURE. ALL POCKETS SHALL BE WATERPROOFED TO ELIMINATE WATER LEAKAGE THROUGH OR INTO THE POCKET. IF CONCRETE IS PLACED BY THE PUMP METHOD, SUPPORTS SHALL BE PROVIDED TO SUPPORT THE HOSE. THE HOSE SHALL NOT BE ALLOWED TO RIDE ON THE TENDONS. CONCRETE SHALL NOT BE DROPPED BY HOSE OR BUCKET DIRECTLY ONTO THE TENDONS.

16. ALL INSERTS AND SLEEVES SHALL BE CAST-IN-PLACE WHEREVER POSSIBLE. DRILLED AND POWDER-DRIVEN FASTENERS WILL BE PERMITTED ONLY WHEN IT CAN BE SHOWN THAT THE INSERTS WILL NOT SPALL THE CONCRETE AND ARE LOCATED SO AS TO AVOID THE TENDONS AND ANCHORAGES. THE CONTRACTOR SHALL MARK TENDON LOCATIONS ON THE SURFACE OF THE SLAB IF DRILLING OR CORING IS TO BE DONE AFTER CONCRETE IS PLACED.

17. PROVIDE 20 CUBIC YARDS OF ADDITIONAL CONCRETE TO BE USED IN THE FIELD AS DIRECTED BY THE ARCHITECT/ENGINEER. LABOR FOR PLACEMENT AND FINISHING SHALL BE INCLUDED. ANY UNUSED PORTION OF THIS QUANTITY SHALL BE CREDITED TO THE OWNER AT THE RATE OF $150 PER CUBIC YARD.

OPEN WEB JOISTS

1. STEEL JOISTS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE STEEL JOIST INSTITUTE'S STANDARD SPECIFICATIONS AND LOAD TABLES.

2. JOIST BRIDGING SHALL BE FURNISHED AND INSTALLED TO MEET THE DESIGN AND SPACING REQUIREMENTS OF THE STEEL JOIST INSTITUTE'S STANDARD SPECIFICATIONS, UNLESS SHOWN OTHERWISE ON THE DRAWINGS. PROVIDE ADDITIONAL BRIDGING AS REQUIRED TO BRACE THE BOTTOM CHORD WHEREVER IDENTIFIED WIND UPLIFT EXCEEDS THE ROOF DEAD LOAD.

3. HANGERS SUPPORTING MECHANICAL EQUIPMENT, SPRINKLER LINES, ETC., FROM THE CHORD OF STEEL JOISTS, SHALL BE LOCATED AT THE PANEL POINTS OF THE JOISTS OR THE JOIST CHORD SHALL BE REINFORCED TO SUPPORT THE ADDITIONAL LOAD, EXCEPT AS FOLLOWS. HANGERS SUPPORTING LESS THAN 50 POUNDS FROM THE BOTTOM CHORD OR 150 POUNDS FROM THE TOP CHORD DO NOT HAVE TO BE PLACED AT PANEL POINTS. DO NOT SUSPEND ANYTHING FROM JOIST BRIDGING.

4. EXTEND BOTTOM CHORDS OF ALL ROOF JOISTS CENTERED ON COLUMNS. DO NOT WELD THE BOTTOM CHORDS TO THE COLUMNS EXCEPT WHERE NOTED BY 10/S1.3. WHERE BOTTOM CHORDS ARE TO BE CONNECTED TO THE COLUMNS, DO NOT CONNECT THEM UNTIL THE ROOF DEAD LOAD HAS BEEN APPLIED.

5. DEPTH OF JOIST SEATS SHALL BE 2 1/2" FOR K-SERIES AND 5" FOR LH-SERIES JOISTS, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

6. JOISTS SHALL HAVE POSITIVE CAMBER OF THE MAGNITUDE RECOMMENDED BY THE STEEL JOIST INSTITUTE FOR THE VARIOUS SPANS.

7. JOISTS SHALL BE DESIGNED TO RESIST THE NET (INCLUDING INTERNAL PRESSURE) UPLIFTS TABULATED IN THE "DESIGN LOADS" GENERAL NOTES. PROVIDE EXTRA BRIDGING, WHERE REQUIRED, TO BRACE THE BOTTOM CHORD IN COMPRESSION.

8. PROVIDE BOTTOM FLANGE BRACING PER 9/S5.7 WHERE INDICATED BY "*" ON PLANS.

9. SEE ROOF PLANS FOR JOIST TOP CHORDS TO BE DESIGNED AS DRAG STRUTS FOR HORIZONTAL FORCES (NOTED H = _____ KIPS) IN COMBINATION WITH GRAVITY LOADS. THIS FORCE MAY BE EITHER COMPRESSION OR TENSION. STRESSES MAY NOT BE INCREASED FOR WIND.

10. IF BEAM FLANGES ARE NOT WIDE ENOUGH TO ACCOMMODATE BEARING SEATS FROM BOTH SIDES, JOISTS MAY BE OFFSET AND SEATS OVERLAPPED. CONTRACTOR TO COORDINATE DECK LAYOUT SO END LAPS ALWAYS OCCUR OVER JOISTS. JOISTS ON COLUMN LINES MUST STILL BRACE COLUMNS WITH EXTENDED BOTTOM CHORDS.

11. PROVIDE ALL NECESSARY ERECTION BOLTS, STABILIZER PLATES, BOTTOM CHORD CONNECTIONS, ERECTION BRIDGING, ETC., IN COMPLIANCE WITH OSHA REGULATIONS GOVERNING SAFETY IN THE WORKPLACE. CONNECTION DETAILS SHOWN ARE ADEQUATE FOR FINAL IN PLACE CONDITIONS AND DO NOT NECESSARILY PROVIDE FOR CONSTRUCTION SAFETY.

12. SEALED CALCULATIONS ARE REQUIRED IN ALL CASES WHERE SPECIAL LOADS ARE NOTED (REFER TO SPECIFICATIONS).

STRUCTURAL STEEL

1. COORDINATION OF THE ROOF STRUCTURE AND THE ARCHITECTURAL SECTIONS AND ELEVATIONS IS CRITICAL TO PROPER STRUCTURAL STEEL FABRICATION. ELEVATIONS OF TOP OF STRUCTURAL STEEL ARE SHOWN ON THE ARCHITECTURAL PLANS AND SECTIONS. REFER TO THESE SECTIONS AND DETAILS TO SET THE STEEL ELEVATIONS AND TO UNDERSTAND THE ARCHITECTURAL INTENT.

2. **TOLERANCE REQUIREMENTS** - STRUCTURAL DRAWINGS INDICATE MISCELLANEOUS STEEL ELEMENTS SUCH AS SHELF ANGLES, LINTELS, SUPPORT MEMBERS FOR CURTAIN WALLS OR MASONRY, AND EDGE ANGLES FOR OPENINGS AND PERIMETER CONDITIONS WHICH ARE INTENDED TO SUPPORT OR BE COORDINATED WITH MATERIALS FURNISHED BY OTHER TRADES. IT IS THE INTENT OF THESE DRAWINGS THAT THESE ELEMENTS BE FIELD ATTACHED BY FIELD WELDING OR BOLTING TO MEET THE TOLERANCES REQUIRED BY OTHER TRADES, WHICH MAY BE MORE STRINGENT THAN A.I.S.C. TOLERANCES FOR STRUCTURAL STEEL. CONTRACTOR SHALL COORDINATE TRADES AND FIELD INSTALL MISCELLANEOUS STEEL ELEMENTS AND THE STRUCTURAL STEEL FRAME TO COMPLY WITH THE TOLERANCE CRITERIA FOR PROPER INSTALLATION OF MATERIALS BY OTHER TRADES.

3. STRUCTURAL STEEL MATERIAL SHALL CONFORM TO THE FOLLOWING DESIGNATIONS:

WIDE FLANGE (W) SHAPES AND TEES	A 992 (50 KSI YIELD)
OTHER ROLLED SHAPES, PLATES AND RODS	A572 (50 KSI YIELD)
HOLLOW STRUCTURAL SHAPES (HSS OR TS)	A 500, GRADE B OR GRADE C (42 KSI YIELD ROUND/46 KSI YIELD SQUARE)
PIPE	A 53, GRADE B (35 KSI YIELD)
BOLTS FOR CONNECTIONS	A 325N
ANCHOR BOLTS (ANCHOR RODS)	F 1554 (36 KSI YIELD)

4. PREDESIGNED BEAM CONNECTION DETAILS ARE SHOWN ON SHEET S5.1 AND S5.2. OTHER TYPICAL CONNECTIONS ARE SHOWN IN TYPICAL DETAILS. CONNECTIONS WHICH ARE NOT SPECIFICALLY DETAILED SHALL BE DESIGNED BY THE FABRICATOR IN ACCORDANCE WITH THE CONNECTION NOTES AND SPECIFICATIONS.

5. ALL MOMENT CONNECTIONS SHALL BE FULLY WELDED CONNECTIONS DESIGNED TO DEVELOP THE FULL CROSS-SECTION OF THE MEMBER. STIFFENER PLATES, WHERE SHOWN, ARE MANDATORY AND MAY NOT BE OMITTED. MOMENT CONNECTIONS ARE INDICATED ON THE PLANS BY A TRIANGULAR BULB ON THE END OF THE BEAM, OR BY THE LETTERS "MC".

6. CANTILEVER BEAMS MOMENT CONNECTED TO THE FRAME SHALL BE THE SAME SIZE AS THE BACK-UP SPAN IF NO SIZE IS GIVEN.

7. ALL BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION.

8. BACK TO BACK CHANNELS OR DOUBLE ANGLES ACTING AS COMPRESSION MEMBERS SHALL BE CONNECTED TO EACH OTHER AT THIRD POINTS ALONG THE LENGTH BY WELDING IN SPACER PLATES OF EQUAL THICKNESS TO THE GUSSET PLATES. UNEQUAL LEG ANGLES SHALL BE ORIENTED LONG LEG DOWN UNLESS NOTED OTHERWISE.

9. TEMPORARY CONSTRUCTION BRACING OF STRUCTURAL STEEL FRAME SHALL REMAIN IN PLACE UNTIL AFTER ALL PERMANENT BRACING COMPONENTS HAVE BEEN COMPLETED. THE LATERAL-LOAD-RESISTING SYSTEM OF THE BUILDING INCLUDES DESIGNATED WIND BRACES, CONCRETE MOMENT FRAMES AND CONNECTING DIAPHRAGM ELEMENTS. THE METAL ROOF DECK AND COMPLETED CONCRETE FILL ON METAL FLOOR DECK ARE ESSENTIAL DIAPHRAGM COMPONENTS OF THE PERMANENT BRACING SYSTEM.

10. WHERE W-SHAPES ARE USED AS ROOF PURLINS, PROVIDE BOTTOM FLANGE BRACING PER DETAIL 9/S5.4 AT QUARTER POINT, MINIMUM, UNLESS OTHERWISE INDICATED ON PLANS.

11. WIND BRACES IN THE VERTICAL PLANE ARE DENOTED BY "WB" ON THE PLAN. SEE WIND BRACE DETAILS FOR CONFIGURATIONS.

12. STEEL ANGLES AND OTHER SHAPES THAT DEFINE THE EDGE OF THE FLOOR OR ROOF AND ARE SHOWN TO BE WELDED TO SUPPORTING BEAMS, SHALL BE FIELD WELDED, NOT SHOP WELDED, SO THAT THEIR POSITION CAN BE ADJUSTED TO CORRECT FOR FABRICATION AND ERECTION TOLERANCES OF THOSE SUPPORTING BEAMS AND PROVIDE AN EDGE THAT IS CONSISTENT WITH THE REQUIREMENTS OF THE FINISHES THAT IT SUPPORTS AND/OR ACCOMMODATES.

13. SHELF ANGLES SHOWN AS CONTINUOUS IN THE SECTIONS SHALL BE INSTALLED IN 20'-0" MAXIMUM LENGTHS, LEAVING A 1/4" GAP BETWEEN ENDS AND AT CORNERS. LOCATE GAPS TO MATCH MASONRY CONTROL JOINTS. AT BUILDING EXPANSION JOINT, LEAVE A GAP TO MATCH EXPANSION JOINT WIDTH.

14. CONNECT MISCELLANEOUS STEEL MEMBERS USING FILLET WELDS SUFFICIENT TO DEVELOP THE TENSILE STRENGTH OF THE SMALLER MEMBER AT THE JOINT UNLESS SHOWN OTHERWISE.

15. ALL STEEL SHALL BE FURNISHED WITH SHOP COAT OF RUST INHIBITIVE PRIMER.

16. WHERE ANGLES ARE NOTED TO BE CONTINUOUS, PROVIDE FULL BUTT WELD AT SPLICES.

17. WHERE TWO OR MORE PIECES ARE TO BE WELDED TOGETHER AND THEN HOT-DIP GLAVANIZED, THE SPECIFIED WELD CONNECTING THE PIECES SHALL BE CONTINUOUS ALONG THE ENTIRE LENGTH OF THE INTERFACE (SEAL WELDED).

18. PROVIDE 6 TONS OF ADDITIONAL STRUCTURAL STEEL TO BE USED IN THE FIELD AS DIRECTED BY THE ARCHITECT/ENGINEER, LABOR FOR DETAILING, FABRICATION, AND ERECTION SHALL BE INCLUDED. ANY UNUSED PORTION OF THIS QUANTITY SHALL BE CREDITED TO THE OWNER AT THE RATE OF $5000 PER TON.

19. SIMPLE SHEAR CONNECTIONS SHALL BE DESIGNED FOR THE FOLLOWING REACTIONS SHOWN BELOW:

ROOF BEAM CONNECTION REACTIONS (KIPS)	
W12	5
W14	15
W16	20
W18	25
W21	30

NOTES:
1. WHERE LARGER REACTIONS ARE SHOWN ON PLAN, USE THE LARGER REACTION IN THE CONNECTION DESIGN & DETAILS.
2. AT WIND BRACES, THE VERTICAL REACTION FROM THE BRACE SHALL BE ADDED TO THE VALUE ABOVE.
3. REACTIONS ABOVE ARE SERVICE (ASD) LEVEL LOADS.

1

20. ALL STRUCTURAL STEEL EXPOSED TO VIEW SHALL BE AESS. STEEL BELOW THE 12' ELEVATION SHALL COMPLY WITH CATEGORY 3, AND STEEL ABOVE THAT ELEVATION SHALL COMPLY WITH CATEGORY 2. SEE S5.13 FOR AESS CATEGORY MATRIX.

STRUCTURAL MASONRY

1. MASONRY DESIGN IS BASED ON A MASONRY PRISM STRENGTH OF F'_M = 2000 PSI.

2. HOLLOW LOAD BEARING MASONRY UNITS SHALL CONFORM TO ASTM C 90, LIGHTWEIGHT, GRADE N, WITH A MINIMUM UNIT COMPRESSIVE STRENGTH OF 1900 PSI ON THE NET AREA OF THE BLOCK.

3. MORTAR SHALL CONFORM TO ASTM C 270, TYPE S, CONSISTING OF 1 PART PORTLAND CEMENT, 1/2 PART HYDRATED LIME AND 3 1/2 TO 4 1/2 PARTS MASON'S SAND. DO NOT USE AIR ENTRAINING LIME, MASONRY CEMENT OR ADMIXTURES.

4. COARSE GROUT SHALL CONFORM TO ASTM C 476, WITH A MAXIMUM AGGREGATE SIZE OF 3/8". PROPORTIONS BY VOLUME SHALL BE 1 PART PORTLAND CEMENT, 2 1/4 TO 3 PARTS MASON'S SAND AND 1 TO 2 PARTS PEA GRAVEL. SLUMP SHALL BE 10" TO 11".

5. FINE GROUT SHALL CONFORM TO ASTM C476 AND SHALL HAVE THE FOLLOWING PROPORTIONS BY VOLUME: 1 PART PORTLAND CEMENT AND 2 1/4 TO 3 PARTS MASON'S SAND.

6. FOR VERTICAL REINFORCING SEE SCHEDULE. THE FIRST CELL AT CORNERS AND END WALLS SHALL BE REINFORCED WITH 2#5 AND GROUTED. 1#4 (EXTENDING 2'-0" BEYOND CORNERS) SHALL BE PLACED EACH SIDE OF WALL OPENINGS.

7. PROVIDE FOUNDATION DOWELS TO MATCH MASONRY WALL REINFORCEMENT. DOWELS SHALL EXTEND A MINIMUM OF "LTS" SPLICE ABOVE AND "LCS" SPLICE BELOW TOP OF FOUNDATION.

8. VERTICAL BARS SHALL BE HELD IN POSITION IN THE CENTER OF THE CELL OR GROUT SPACE DURING PLACEMENT OF EACH LIFT OF GROUT UNLESS ANOTHER POSITION IS DETAILED.

9. PROVIDE WEEP HOLES AT 2'-8" ON CENTER IN VERTICAL JOINTS OF EXTERIOR WYTHE OVER ALL GROUTED BOND BEAMS, DOOR HEADERS, OR OTHER CONTINUOUS OBSTRUCTIONS WITHIN THE CAVITY AND ALONG FOUNDATION BEAMS.

10. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL CORE IT SHALL BE SLOPED NOT MORE THAN ONE HORIZONTAL TO SIX VERTICAL. THE DOWEL SHALL BE GROUTED INTO A CELL IN VERTICAL ALIGNMENT, EVEN THOUGH IT IS IN AN ADJACENT CELL TO THE VERTICAL WALL REINFORCING.

11. HORIZONTAL REINFORCING BARS SHALL BE PLACED IN CONTINUOUS MASONRY COURSES, CONSISTING OF BOND BEAM OR TROUGH BLOCK UNITS, AND SHALL BE SOLIDLY GROUTED IN PLACE.

12. REINFORCING BARS SHALL BE STRAIGHT EXCEPT FOR BENDS AROUND CORNERS AND WHERE BENDS OR HOOKS ARE DETAILED ON THE PLANS.

13. HORIZONTAL REINFORCING STEEL SHALL BE LAPPED WHERE SPLICED AND SHALL BE WIRED TOGETHER. BEND BARS AT CORNERS AND TEE INTERSECTIONS, PROVIDING STANDARD LAP SPLICES WITH INTERSECTING BARS.

14. STANDARD LAP SPLICE LENGTHS FOR REINFORCING BARS SHALL BE AS FOLLOWS:

    40 BAR DIAMETERS FOR #5 BARS AND SMALLER

    56 BAR DIAMETERS FOR #6 AND #7 BARS

    60 BAR DIAMETERS FOR #8 AND #9 BARS

15. WHERE CMU WALLS ARE VERTICALLY REINFORCED, HORIZONTAL WALL JOINT REINFORCING SHALL BE STANDARD LADDER TYPE AS MANUFACTURED BY HOHMANN & BARNARD OR WIRE-BOND AT 16" ON CENTER, VERTICALLY, UNLESS SPECIFICALLY NOTED OTHERWISE. PROVIDE THREE WIRE LADDER TYPE AS MANUFACTURED BY HOHMANN & BARNARD OR WIRE-BOND WHERE BRICK IS BACKED UP BY 8" CONCRETE MASONRY UNITS.

16. STANDARD WIRE REINFORCEMENT SHALL BE LAPPED AT LEAST 11" AT SPLICES AND SHALL CONTAIN AT LEAST ONE CROSS WIRE OF EACH PIECE OF REINFORCEMENT IN THE LAPPED DISTANCE. EXTRA HEAVY DUTY WIRE REINFORCEMENT SHALL BE LAPPED 14" AT SPLICES AND CROSSWIRES WITHIN THE SPLICE SHALL BE CUT WHERE NECESSARY TO ALLOW SIDE RODS TO LAP SIDE BY SIDE IN THE MORTAR JOINT.

17. ALL UNGROUTED CELLS OF STRUCTURAL BLOCK WALLS SHALL BE FILLED WITH VERMICULITE OR PERLITE.

18. VERTICAL REINFORCING BARS MAY BE SPLICED IN 6'-0" TO 8'-0" (±) LENGTHS, PROVIDED THE SPLICES IN ADJACENT BARS ARE STAGGERED AND ARRANGED SO THAT NOT MORE THAN ONE-HALF OF THE TOTAL NUMBER OF BARS ARE SPLICED AT ANY ONE HEIGHT.

19. Z-TIES SHALL BE MANUFACTURED FROM 3/16" DIAMETER COLD DRAWN WIRE, CONFORMING TO ASTM A 82 OR APPROVED EQUAL. TIES SHALL HAVE A 2" PERPENDICULAR LEG AT EACH END. TIES SHALL BE GALVANIZED.

20. Z-TIES SHALL BE LOCATED IN ALL HORIZONTAL AND VERTICAL BRICK SURFACES WHICH ARE USED AS A FORM FOR GROUT. Z-TIES SHALL BE PLACED 1'-4" ON CENTER, EACH WAY IN VERTICAL BRICK SURFACES, EXCEPT WHERE HORIZONTAL JOINT REINFORCEMENT IS DETAILED. Z-TIES SHALL BE PLACED AT 8" ON CENTER, EACH WAY IN HORIZONTAL BRICK SURFACES USED AS BOTTOM FORM AND SHALL BE HOOKED AROUND 1/4" DIAMETER GALVANIZED RODS LOCATED IN THE HOLES THROUGH THE BRICKS. ONE LEG SHALL BE PLACED IN MORTAR JOINT A DISTANCE 3/4" FROM AND PARALLEL TO THE OUTSIDE OF THE BRICK. Z-TIES SHALL BE 6" LONG.

21. PROVIDE 3/8" THROUGH-WALL CONTROL JOINTS AT LOCATIONS DETAILED ON THE ARCHITECTURAL DRAWINGS. DO NOT LOCATE CONTROL JOINTS WITHIN WALL OPENINGS OR LINTEL SUPPORTS. COORDINATE SPACING TO MISS BEAM AND JOIST BEARING POINTS. CUT ALL REINFORCING AT CONTROL JOINTS, UNLESS NOTED OTHERWISE.

CONCRETE SPALL REPAIR

1. CONCRETE THAT HAS ANY SPALLS DEEPER THAN 3/4" OR HONEYCOMBING OR IF REBAR IS EXPOSED SHALL BE REPAIRED.

2. REPAIR MATERIALS (INSTALL ALL MATERIALS IN COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS):

   A. BONDING AND ANTI-CORROSION AGENT:
      STO BONDING AND ANTI-CORROSION AGENT (CR246) - STD CORP., ATLANTA, GA
      SIKA ARMATEC 110-SIKA CORP., LYNDHURST, NJ.

   B. PATCHING MORTAR:
      STO OVERHEAD MORTAR (CR702) - STO CORP., ATLANTA, GA
      SIKATOP 123 - SIKA CORP., LYNDHURST, NJ
      EMACO S77 IS - BASF CONSTRUCTION CHEMICALS LLC, SHAKOPEE, MN (FORM AND POUR OPTION FOR LARGE REPAIRS).

3. REPAIR PROCEDURE SHALL BE AS FOLLOWS:

   A. REMOVE HONEYCOMB AND SPALLED CONCRETE BY SAWCUTTING AROUND THE AREA REQUIRING REPAIR AND CHIPPING OUT THE PIECES USING A 30 LB. MAX CHIPPING HAMMER.

   B. RUSTED REBAR MUST BE FULLY EXPOSED AND SANDBLASTED ON ALL SIDES.

   C. APPLY ANTI-CORROSION AGENT TO BARS.

   D. ENSURE EXISTING CONCRETE IS CLEAN AND AT A SATURATED SURFACE DRY (SSD) CONDITION BEFORE APPLYING PATCHING MORTAR.

   E. APPLY PATCHING MORTAR TO RESTORE THE CONCRETE SECTION TO A MINIMUM COVERAGE OF 1/2" AND IN LIFTS NOT TO EXCEED 1 1/2" (EXCEPT IF EMACO S77 CI IS USED). BLEND REPAIR INTO SHAPE OF EXISTING SECTION, BUT DO NOT FEATHER EDGES.

METAL ROOF DECK

1. ALL ROOF DECKS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE STEEL DECK INSTITUTE (SDI.).

2. SCHEDULE:

MARK	DECK DEPTH	DECK TYPE	FY (KSI)
S1	1 1/2"	1.5B22-36	50
S2	2"	2.0DF20-30	50

DEFINITIONS:
Fy = YIELD STRENGTH

3. ROOF DECKS SHALL BE CONTINUOUS OVER THREE OR MORE SPANS, BUT DO NOT EXCEED 7-SPANS.

4. DECK ATTACHMENT SCHEDULE:

   a. ALL ROOFS UNLESS NOTED OTHERWISE:

	S1	S2
DESIGN GAGE:	22	20
SUPPORT FASTENER PATTERN:	36/7	30/4
SUPPORT FASTENER PATTERN AT END-LAPS:	36/4	30/4
SUPPORT FASTENER:	5/8" Ø ARC-SPOT	5/8" Ø ARC-SPOT
EDGE FASTENER:	5/8" Ø ARC-SPOT	5/8" Ø ARC-SPOT
SIDE-LAP FASTENER:	#12 SCREW	#12 SCREW
NO. OF SIDE-LAP FASTENERS PER SPAN:	6	4
NO. OF EDGE FASTENERS PER SPAN:	6	4

   b. SPECIAL DECK ATTACHMENTS:

      REFERENCE FRAMING PLANS FOR SPECIAL DECK ATTACHMENT LOCATIONS.

5. WHEN SPECIFIED, SUPPORT FASTENER SCREWS SHALL BE "TEKS" #12-14X3/4" HWH #2.

6. ARC-SPOTS WELDS SHALL BE FULL-FUSION. METAL AROUND WELDS SHALL BE COMPLETELY INTACT AFTER WELDING.

7. INSTALL ROOF DECK EXTERIOR ENDS WITH AN END-LAP CONDITION OVER SUPPORT FRAMING CONSISTING OF A MINIMUM END BEARING OF 1 1/2" WITH END JOINTS LAPPED AT A MINIMUM OF 2".

8. PROVIDE THE FULL PANEL WIDTH AT ROOF EDGES AND WHERE THE ROOF DIAPHRAGM LOADS ARE BEING TRANSFERRED TO THE LATERAL FORCE-RESISTING STRUCTURAL ELEMENTS. FILLER SHEETS ARE PERMITTED EXCEPT WHERE THE FULL PANEL WIDTH IS REQUIRED. FILLER SHEETS SHALL BE MARKED IN THE SHOP DRAWINGS FOR REVIEW.

9. SCREWS MUST BE INSTALLED USING PROPERLY CALIBRATED TOOLS.

10. WELDING ELECTRODES FOR ARC-SPOT WELDS SHALL BE E70XX UNLESS NOTED OTHERWISE.

11. THE METAL ROOF DECKS ON THIS PROJECT ARE REQUIRED TO PERFORM AS STRUCTURAL DIAPHRAGMS. ALL WELDS AND SCREWS ARE CRITICAL TO THE SUCCESSFUL PERFORMANCE OF THE DIAPHRAGM.

12. SUSPENDED CEILING, LIGHT FIXTURES, DUCTS OR OTHER UTILITIES SHALL NOT BE SUPPORTED BY THE STEEL DECK.

ROOF MOUNTED MECHANICAL UNITS

1. ROOF MOUNTED MECHANICAL UNIT LOCATIONS AND DESIGN WEIGHTS ARE SHOWN ON THE ROOF FRAMING PLANS. JOIST MANUFACTURER SHALL DESIGN JOISTS TO SUPPORT THIS ADDITIONAL LOAD. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ACTUAL SIZES, WEIGHTS, OR LOCATIONS DIFFER FROM THESE SHOWN ON THE ROOF FRAMING PLANS. PROVIDE ADDITIONAL STEEL FRAMING, AS DETAILED, FOR SUPPORT OF RTU CURBS AND PROVIDE DECK SUPPORT ANGLES AT ALL ROOF OPENINGS.

SPECIAL INSPECTIONS

1. PERIODIC SITE OBSERVATIONS BY THE ENGINEER OF RECORD ARE SOLELY FOR THE PURPOSE OF DETERMINING GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS. THOSE LIMITED OBSERVATIONS ARE NOT A SUBSTITUTE FOR INSPECTIONS AND TESTING PERFORMED BY THE OWNER'S QUALIFIED, INDEPENDENT TESTING LABORATORY, NOR ARE THEY INTENDED TO IDENTIFY ALL DEFECTS AND DEFICIENCIES IN THE WORK BY THE CONTRACTOR. THOSE OBSERVATIONS DO NOT FULFILL ANY PART OF THE SPECIAL INSPECTIONS REQUIREMENTS GIVEN IN THE SPECIFICATIONS. THE DESIGNATED SPECIAL INSPECTOR IS SOLELY RESPONSIBLE FOR FULFILLING THE SPECIAL INSPECTION REQUIREMENTS AS OUTLINED HERE AND DEFINED IN THE SPECIFICATIONS.

2. REFER TO THE SPECIFICATIONS AND SHEET S1.2 FOR CODE MANDATED MATERIALS TESTING AND INSPECTION REQUIREMENTS FOR STRUCTURAL WORK.

3. ITEMS OF STRUCTURAL CONSTRUCTION WHICH REQUIRE SPECIAL INSPECTION INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

   - FOUNDATION EXCAVATIONS AND FILL OPERATIONS
   - INSTALLATION OF DRILLED CONCRETE PIERS AND FOOTINGS
   - PLACEMENT OF STRUCTURAL CONCRETE
   - PLACEMENT OF CONCRETE REINFORCING
   - PLACEMENT AND STRESSING OF CONCRETE PRESTRESSING TENDONS
   - ERECTION OF PRECAST CONCRETE MEMBERS
   - PLACEMENT OF ANCHOR BOLTS PLACED IN CONCRETE OR MASONRY
   - INSTALLATION OF DRILLED-IN CONCRETE OR MASONRY ANCHORS (EXPANSION, FRICTION, CEMENTED, OR ADHESIVE ANCHORS)
   - FABRICATION AND ERECTION OF STRUCTURAL STEEL
   - WELDING AND BOLTING OF STEEL CONNECTIONS
   - FIELD WELDING OF SHEAR STUDS
   - ATTACHMENT OF METAL DECKING FASTENERS

4. ARCHITECTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS REQUIRING SPECIAL INSPECTIONS PER SECTION 1705 OF THE IBC HAVE NOT BEEN LISTED HERE. REFER TO ARCH/MEP FOR SPECIAL INSPECTION REQUIREMENTS FOR THESE COMPONENTS.

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12/05/2025
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GENERAL NOTES

consultant **revisions**

1 ADDENDUM 01 12/05/25

ADDEMDUM 01

KENWOOD COMMUNITY CENTER

305 DORA STREET
SAN ANTONIO, TEXAS

CITY OF SAN ANTONIO

project number
24715
date
12/5/2025

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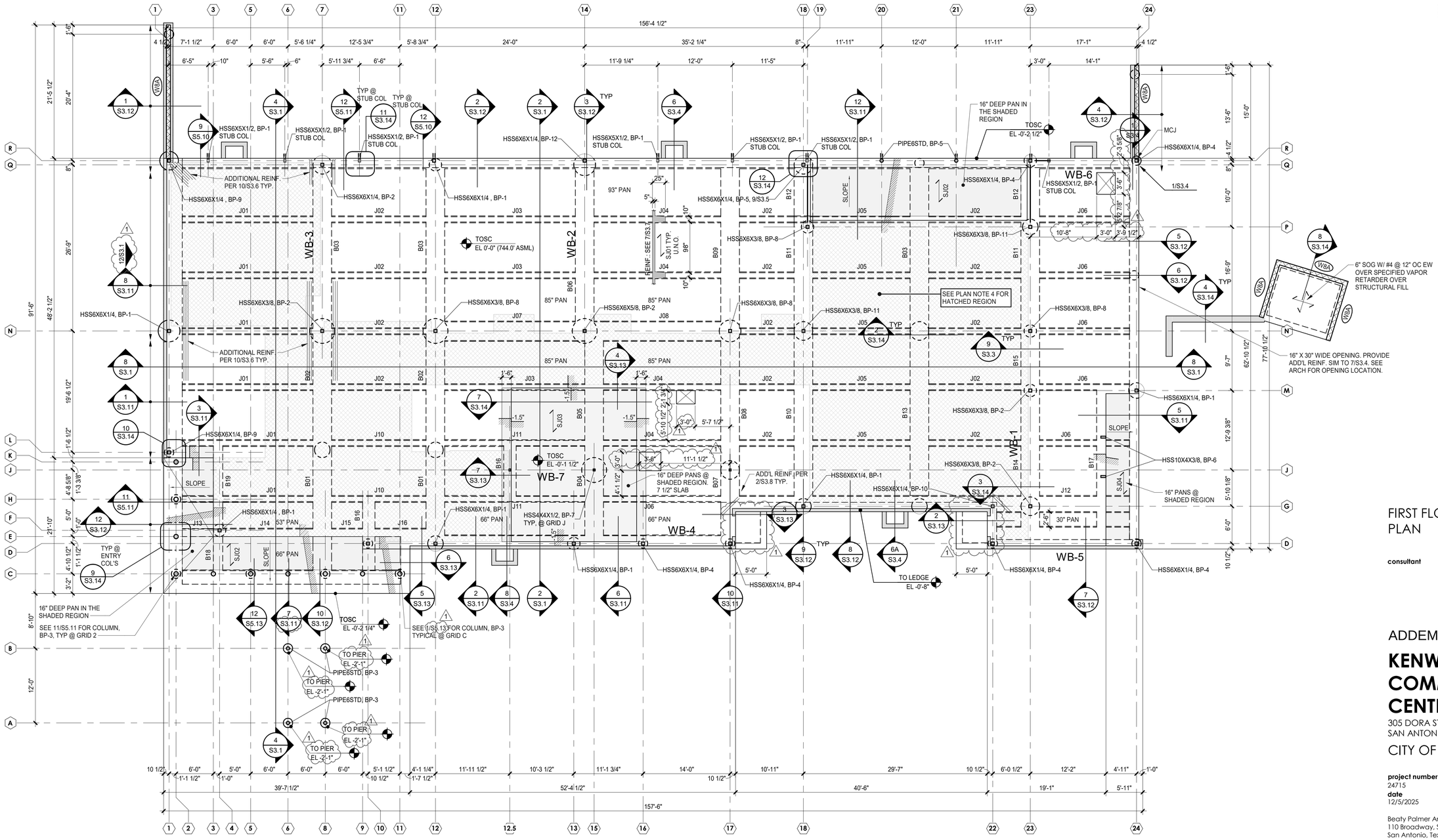
sheet number
S1.3

BEATY PALMER ARCHITECTS

PLAN NOTES:

1. NORTH ARROW
2. SEE SHEET S1.1 FOR TYPICAL PLAN NOTES, SYMBOLS, ABBREVIATIONS AND TYPICIAL DETAIL SHEET LIST.
3. SEE SHEETS S1.2 AND S1.3 FOR GENERAL NOTES
4. HATCHED REGION INDICATES POLISHED CONCRETE FINISH. PLACE CONCRETE 1/4" HIGHER THAN THE TOSC ELEVATION TO ALLOW FOR GRINDING. REFERENCE ARCHITECTURAL DRAWINGS FOR LIMITS AND EXTENT OF FINISH.



1 FIRST FLOOR FRAMING PLAN

1/8" = 1'-0"

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FIRST FLOOR FRAMING PLAN

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BEATY PALMER ARCHITECTS

PLAN NOTES:

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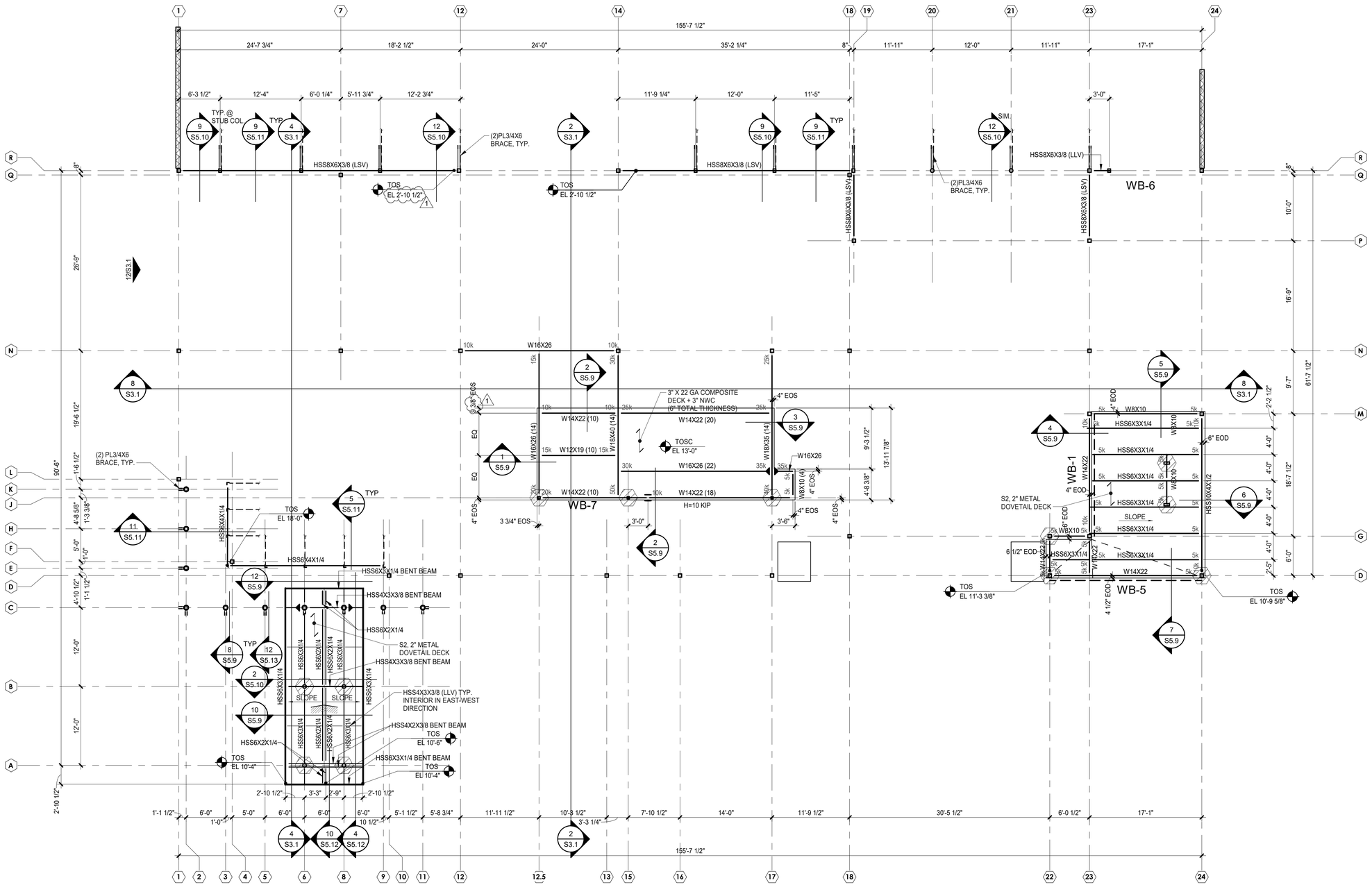
2. SEE SHEET S1.1 FOR TYPICAL PLAN NOTES, SYMBOLS, ABBREVIATIONS AND TYPICIAL DETAIL SHEET LIST.
3. SEE SHEETS S1.2 AND S1.3 FOR GENERAL NOTES



1 MEZZANINE FRAMING PLAN

1/8" = 1'-0"

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MEZZANINE FRAMING PLAN

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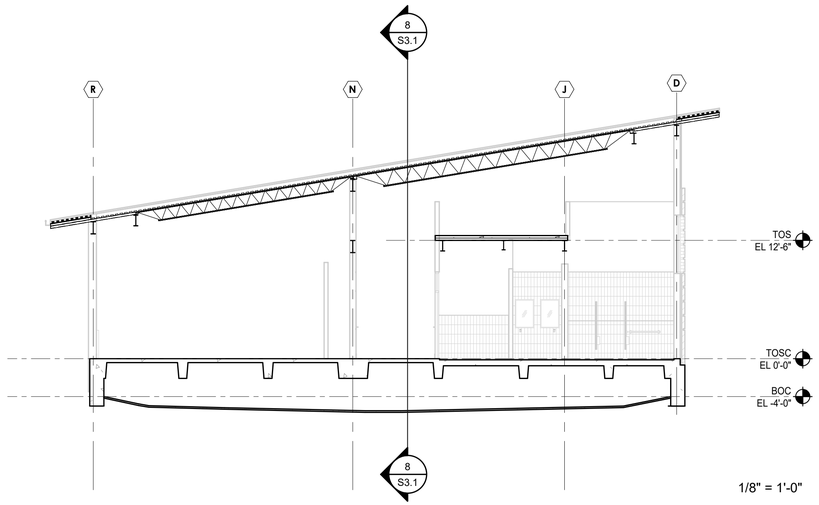
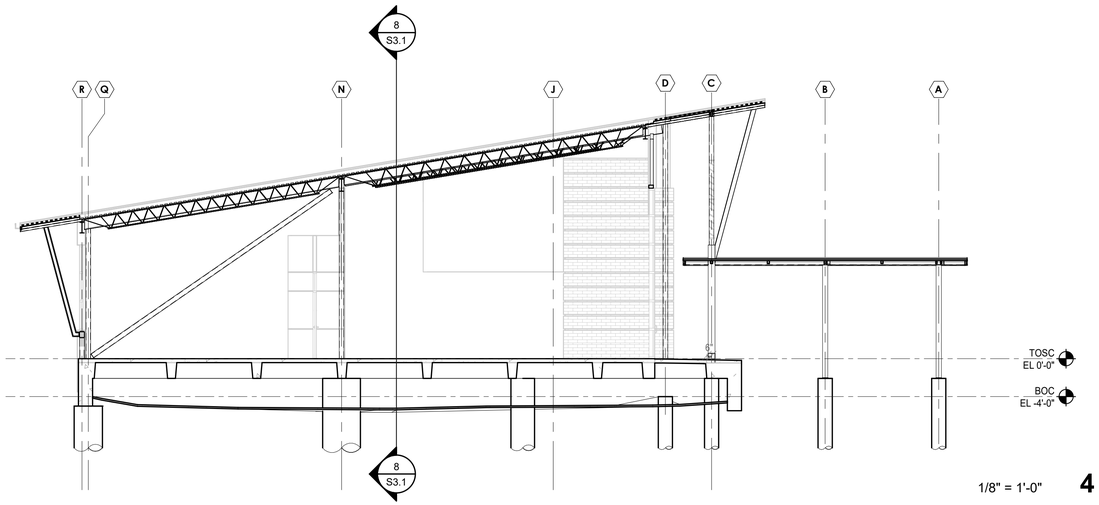
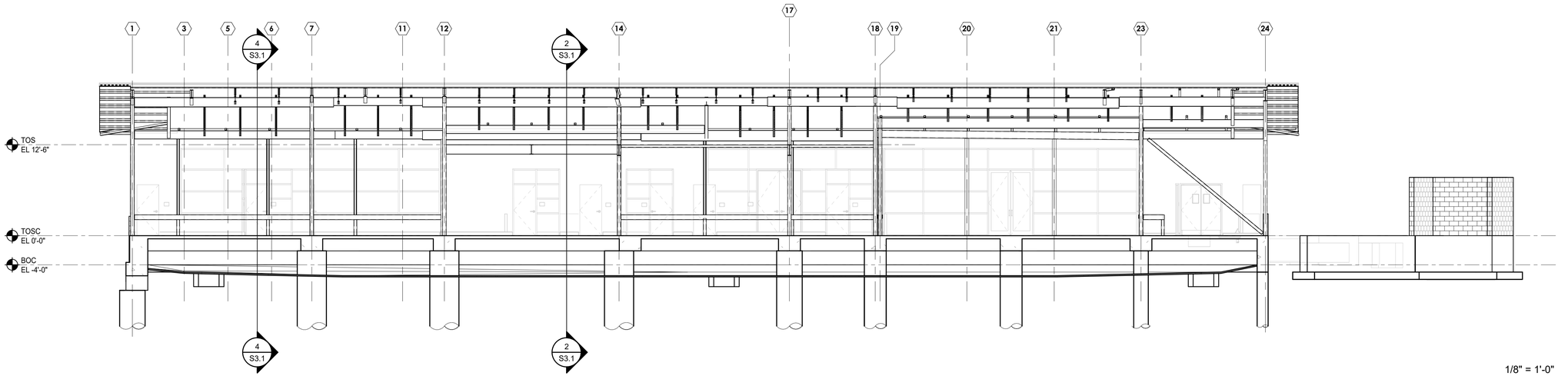


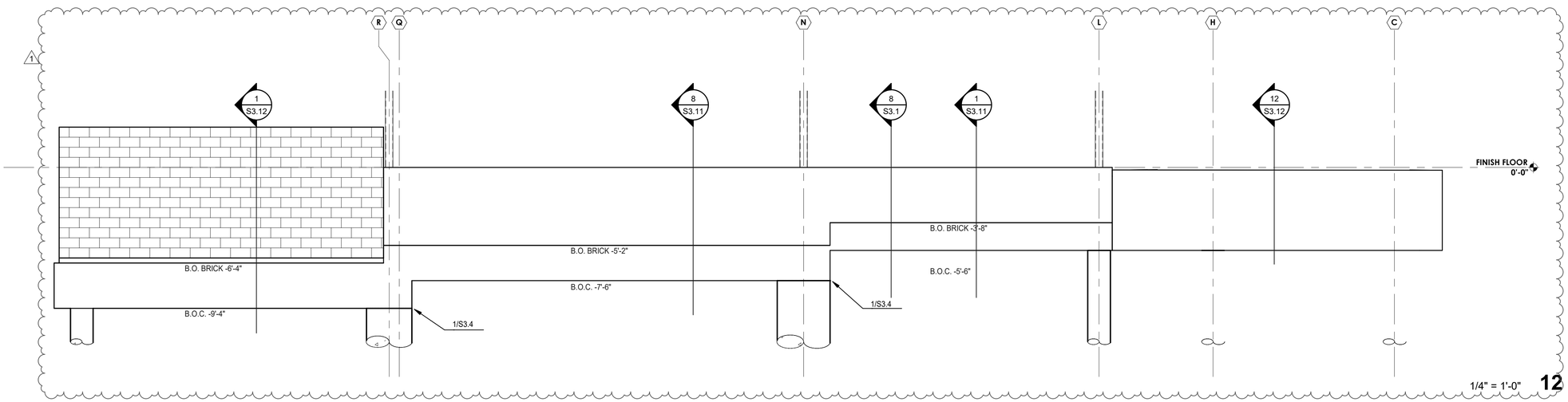
1/8" = 1'-0" **2**



1/8" = 1'-0" **4**



1/8" = 1'-0" **8**



1/4" = 1'-0" **12**

BUILDING SECTIONS

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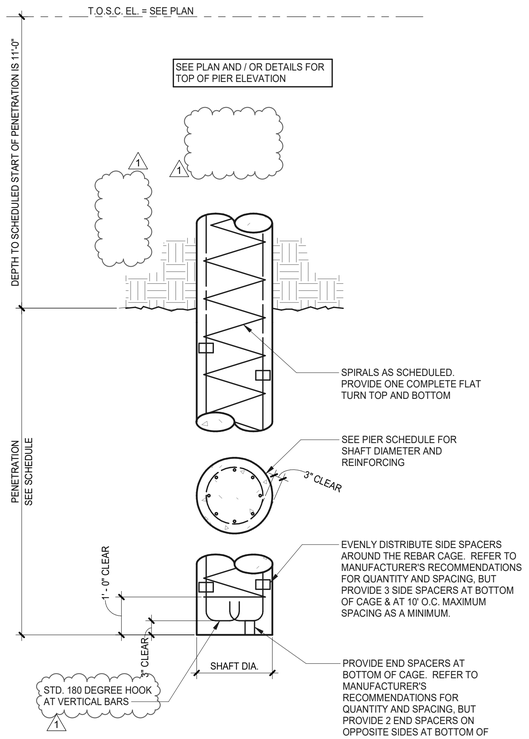
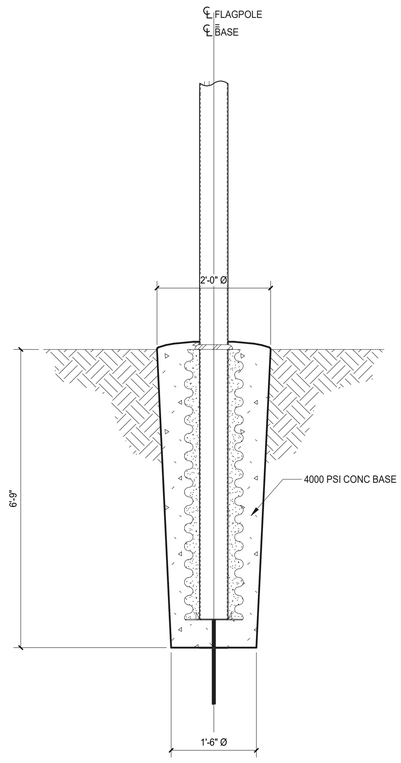


CASED STRAIGHT SHAFT PIER

TYPICAL DETAIL

NO SCALE

NO SCALE **5**



FLAGPOLE BASE

TYPICAL DETAIL

NO SCALE

7

NOTES:

1. THE FLAGPOLE BASE HAS BEEN DESIGNED IN ACCORDANCE WITH THE IBC 2018 SECTION 1807.3 "EMBEDDED POST AND POLES" DESIGN PROCEDURE UTILIZING REACTIONS CALCULATED IN ACCORDANCE WITH THE DESIGN PROCEDURES SET FORTH IN ANSI/NAAMM FP 1001-07.
2. THE FLAGPOLE BASE HAS BEEN DESIGNED WITH THE CONSIDERATION OF THE FOLLOWING CRITERIA:

FLAGPOLE PROPERTIES:	
POLE MATERIAL:	ALUMINUM 6063-T6 (NON-WELDED)
EXPOSED FLAGPOLE HEIGHT:	30'-0"
STRAIGHT SECTION LENGTH:	4'-6"
TAPERED SECTION LENGTH:	25'-6"
BUTT DIAMETER:	6"
TIP DIAMETER:	3 1/2"
STRAIGHT SECTION THICKNESS:	0.188"
TAPERED SECTION THICKNESS:	0.156"
MAXIMUM FLAG SIZE:	6'X10' (NYLON OR COTTON)
GRAVITY DESIGN:	
FLAGPOLE WEIGHT:	96.2 LB
ALLOWANCE FOR ACCESSORIES:	10% OF POLE WEIGHT
LATERAL DESIGN:	
MRI 50-YEAR WIND SPEED:	90 MPH
GUST FACTOR:	1.14
FOUNDATION DESIGN:	
LATERAL-BEARING SOIL TYPE:	CL (IBC 2015 TABLE 1806.3)
TOP OF BASE CONDITION:	NONCONSTRAINED

3. DESIGN OF THE FLAGPOLE AND ACCESSORIES SHALL BE THE RESPONSIBILITY OF THE FLAGPOLE MANUFACTURER.

DRILLED PIER NOTES:

1. PIER DRILLING MUST BE INSPECTED BY THE OWNER'S GEOTECHNICAL ENGINEER. CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER AT LEAST 2 DAYS IN ADVANCE OF DRILLING TO COORDINATE INSPECTION.
2. FOUNDATION DESIGN IS BASED ON AN ALLOWABLE VALUE OF 7500 PSF IN END BEARING AND 600 PSF IN SIDE FRICTION AS RECOMMENDED IN THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY PROFESSIONAL SERVICE INDUSTRIES, INC (PSI PROJECT NO. 0312-3570). DATED MAY 30, 2025..
3. DISTRIBUTION OF THE VARIOUS PIER TYPES IS INDICATED ON THE PIER PLAN.
4. PIER SIZES, REINFORCING, AND DEPTHS ARE SHOWN IN THE PIER SCHEDULE ON SHEET S3.3.
5. THE CONTRACTOR SHALL VERIFY DEPTHS OF PIERS BEFORE PIER STEEL IS CUT. PIER STEEL SHALL BE DELIVERED TO THE JOBSITE IN STANDARD STOCK LENGTHS AND CUT AS REQUIRED BY THE ACTUAL FIELD MEASURED DEPTH OF THE PIER. BARS SHOULD BE SPLICED PER "LTS" SCHEDULE ON S3.10 AND REINFORCING SHALL EXTEND TO 3 INCHES FROM BOTTOM OF HOLE, UNLESS SHOWN OTHERWISE..
6. THE CONTRACTOR SHALL TAKE ACCURATE MEASUREMENTS OF THE DEPTH OF PENETRATION INTO THE BEARING STRATUM, TO BE ASSURED OF CONFORMANCE WITH THE DEPTH OF PENETRATION REQUIRED BY THE PIER SCHEDULE, AND SUBMIT A REPORT OF DEPTHS OF PENETRATION DRILLED TO THE ENGINEER.
7. REINFORCING STEEL SHOP DRAWINGS SHALL INCLUDE DRAWINGS FOR PLACING OF TEMPLATES TO SET DOWELS IN PIERS.
8. PIER HOLES SHALL BE COMPLETED AND FILLED WITH CONCRETE WITHIN 8 HOURS AFTER THE START OF ANY DRILLING IN THE PENETRATION ZONE.
9. ELEVATION OF TOP OF PIERS, WHERE NOT GIVEN, IS AT THE BOTTOM OF THE DEEPEST INTERSECTING BEAM OR WALL SUPPORTED BY THE PIER. CONTRACTOR SHALL CALCULATE ALL TOP OF PIER ELEVATIONS BEFORE PROCEEDING WITH THE PIER DRILLING OPERATION.
10. REMOVE EXCESS CONCRETE AT THE TOP OF THE PIER BEYOND THE LIMITS OF THE PIER DIAMETER. FORM SIDES OF PIER EXTENSIONS TO THE SAME DIAMETER AS SHAFT BELOW, AVOIDING OVERHANGS IN EXPANSIVE CLAY. USE SUREVOID COMMERCIAL SURETOP OR SONOTUBE COLLAR FORMS AT TOP OF EACH HOLE TO MAINTAIN SHAPE.
11. DRILL PIERS AFTER ALL SOIL TREATMENT, FILLING, AND COMPACTION HAVE BEEN COMPLETED IN THE AREA TO BE DRILLED. DISTURBED AREAS SHALL BE RECOMPACTED.
12. CONTRACTOR SHALL PROVIDE ADDITIONAL PIER REINFORCING STEEL (CIRCULAR TIES, HELICAL TIES, DIAGONAL STRUTS, AND/OR VERTICAL REINFORCING), AS REQUIRED TO FACILITATE PLACEMENT OF THE REINFORCING CAGE WITHOUT BUCKLING, COLLAPSING OR EXCESSIVE DEFLECTION.
13. PIERS SHALL NOT BE LARGER THAN THE DIAMETER SHOWN (PLUS 2-INCH TOLERANCE) IN ORDER TO LIMIT SURFACE AREA IN CONTACT WITH EXPANSIVE CLAY.
14. WHERE TWO PIERS ARE CLOSER TOGETHER THAN TWO TIMES THE DIAMETER OF THE LARGER PIER (CLEAR DISTANCE), WAIT AT LEAST 24 HOURS AFTER CASTING THE FIRST PIER BEFORE DRILLING THE SECOND.

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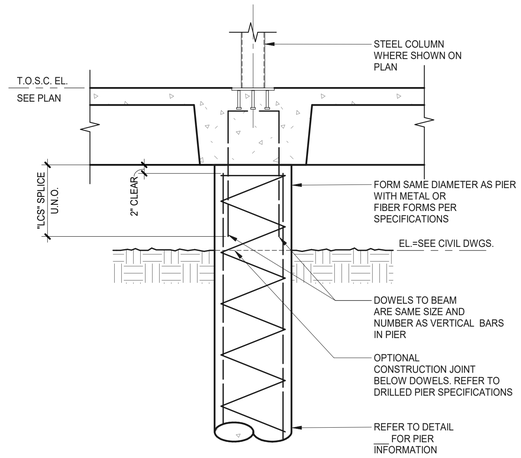


CONCRETE BEAM ABOVE PIER

TYPICAL DETAIL

NO SCALE

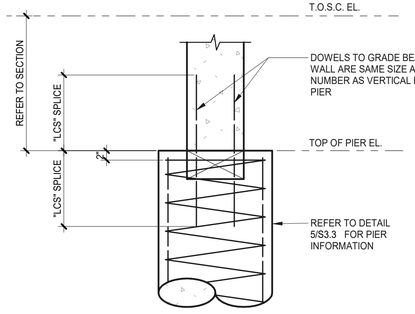
9

PIER SCHEDULE

TYPE	SHAFT DIAMETER	VERTICAL BARS	SPIRALS	PENETRATION	CAPACITY (KIP)
P1	18"	6#6	#3@6"	21'-0"	68
P2	24"	8#7	#3@6"	21'-0"	95
P3	30"	9#8	#3@12"	21'-0"	124
P4	36"	11#9	#3@12"	21'-0"	154
P5	42"	11#10	#4@12	21'-0"	187
P6	48"	12#11	#4@12	22'-0"	230

Grand total: 48

10



GRADE BEAM OR WALL TO PIER

TYPICAL DETAIL

NO SCALE

12

8 DRILLED PIER DETAILS, NOTES, AND SCHEDULE

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1 ADDENDUM 01 12/05/25

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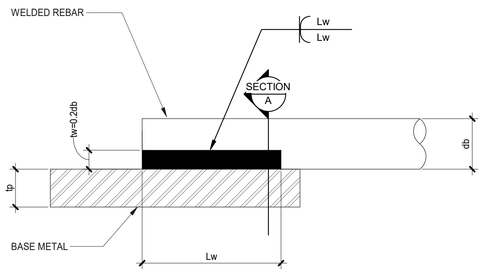
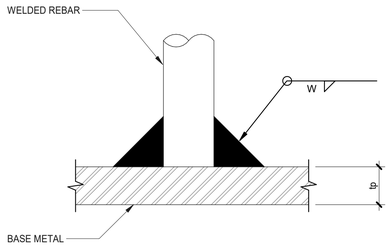
BEATY PALMER ARCHITECTS

WELD PARALLEL TO BAR LENGTH



WELD FOR BAR
PERPENDICULAR TO BASE



SECTION A

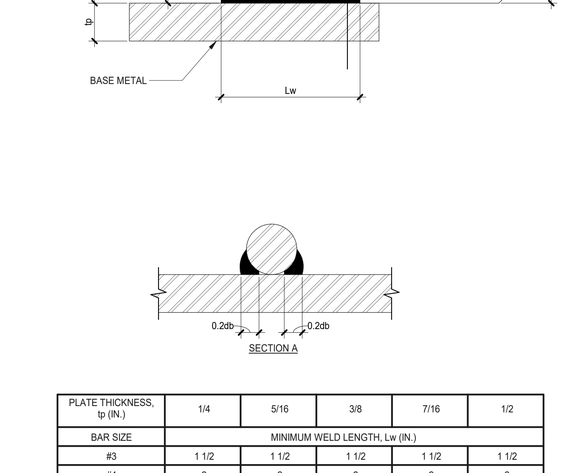
PLATE THICKNESS, tp (IN.)	1/4	5/16	3/8	7/16	1/2
BAR SIZE	MINIMUM WELD LENGTH, Lw (IN.)				
#3	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
#4	2	2	2	2	2
#5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
#6	3	3	3	3	3
#7	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4
#8	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4
#9	4 3/4	4 1/4	4 1/4	4 1/4	4 1/4
#10	6	4 3/4	4 3/4	4 3/4	4 3/4
#11	7 1/4	5 3/4	5 1/4	5 1/4	5 1/4

BAR SIZE	WELD SIZE (IN.)	MIN. PLATE THICKNESS (IN.)
	W	tp
#3	1/4	1/4
#4	5/16	1/4
#5	3/8	1/4
#6	7/16	5/16
#7	1/2	3/8
#8	9/16	3/8
#9	5/8	7/16
#10	11/16	1/2
#11	3/4	9/16

NOTES:
1. WHERE "WELDED REBAR" IS USED IN PROJECT DETAILS, THIS DETAIL SHALL BE USED TO SIZE THE WELD BETWEEN BASE METAL AND REBAR.
2. WELD MATERIAL SHALL BE E70XX.
3. REBAR SHALL BE A706 WELDABLE REBAR.
4. BASE MATERAL SHALL BE WELDABLE STEEL WITH A YIELD STRENGTH OF 36 KSI OR MORE.

TYPICAL WELDED REBAR
TYPICAL DETAIL
NO SCALE

6



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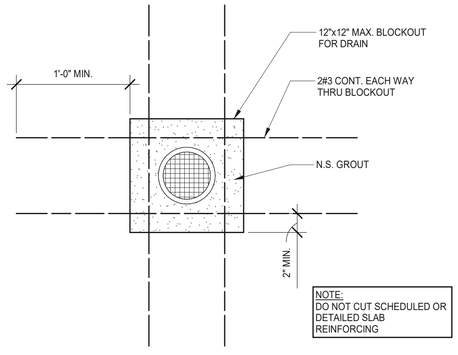
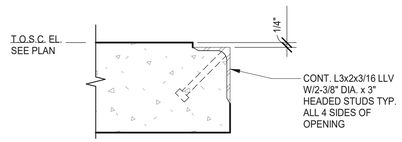


NOTE:
DO NOT CUT SCHEDULED OR DETAILED SLAB REINFORCING

PLAN

BLOCKOUT IN SLAB AT FLOOR DRAIN
TYPICAL DETAIL
NO SCALE

3



NOTE: VERIFY EDGE ANGLE, RECESS & OPENING DIMENSIONS WITH CRAWL SPACE ACCESS DOOR MANUFACTURER.

EDGE SUPPORT AT CRAWLSPACE ACCESS
TYPICAL DETAIL
NO SCALE

7

A B C

DOWEL SCHEDULE

MARK	SIZE	A	B	C
DWL. A	#4	8"	3'-0"	---
DWL. B	#4	3'-0"	3'-0"	---
DWL. C	#4	---	4'-0"	---
DWL. D	#6 THD.	---	4'-0"	---
DWL. E	#4 THD.	---	3'-0"	---
DWL. F	#4 THD.	---	6'-0"	---

NOTES:
1. SCHEDULED DOWELS ARE MARKED "DWL." ON THE SECTIONS AND DETAILS.
2. DOWEL SPACING TO BE THE SAME AS VERTICAL BEAM OR WALL REINFORCEMENT, UNLESS OTHERWISE NOTED ON...
3. DOWELS WITH "THD" IN "SIZE" COLUMN SHALL BE THREADED DOWELS WITH APPROVED DOWEL BAR ANCHORS...

4

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FOUNDATION TYPICAL DETAILS

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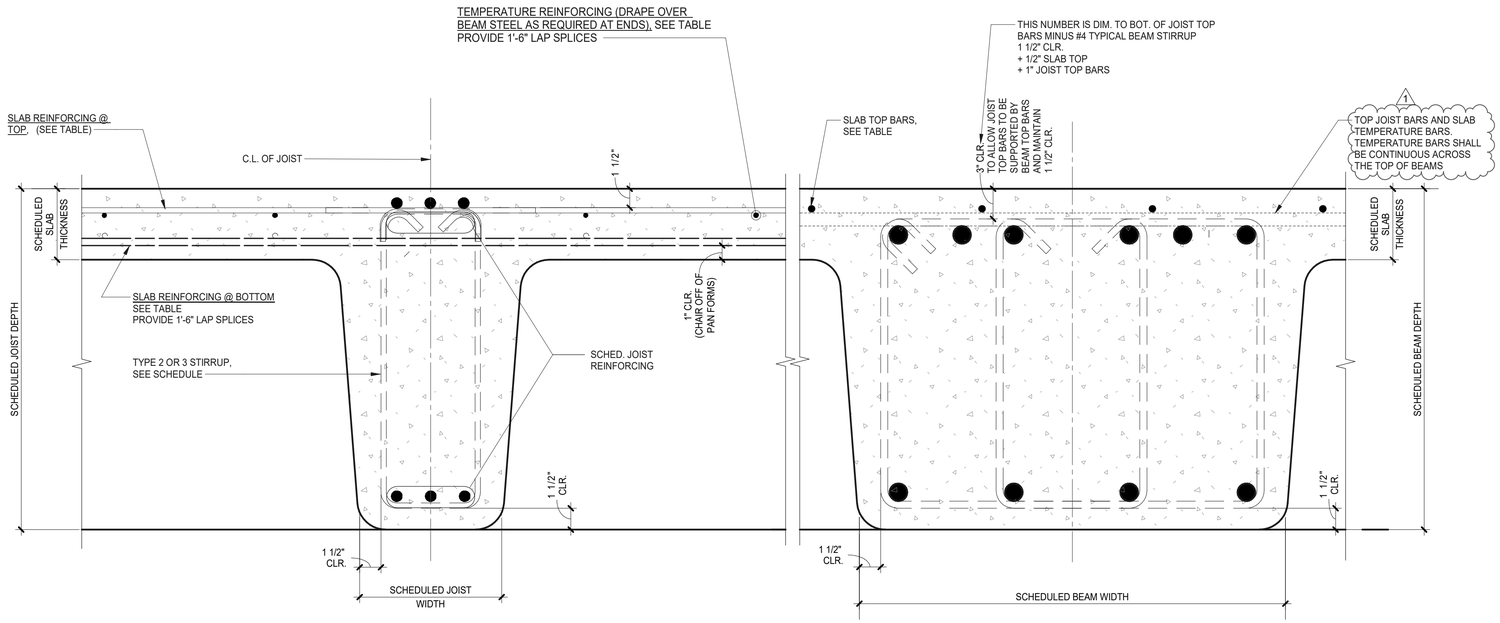


SKIP JOIST & SLAB REINFORCING

GIRDERS/BEAMS PERPENDICULAR TO JOISTS

SLAB REINFORCING FOR SKIP JOISTS

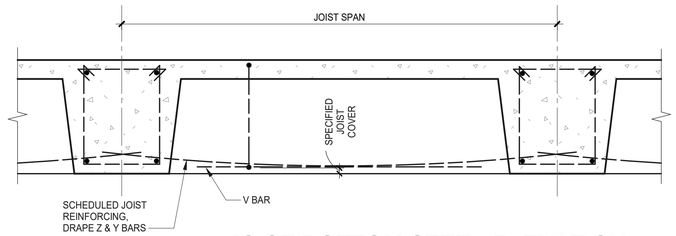
SLAB MARK	SLAB THICKNESS	≤10'-0" SPAN	
		BOTTOM	TOP
SJ01	5"	#4X CONT. @10"	#4 CONT. @10"
SJ02	5"	#4X CONT. @5"	#4 CONT. @10"
SJ03	7.5	#4X CONT. @10"	#4 CONT. @10"
SJ04	9"/VARIES	#4X CONT. @10"	#4 CONT. @10"

1 1

TEMPERATURE REINFORCING

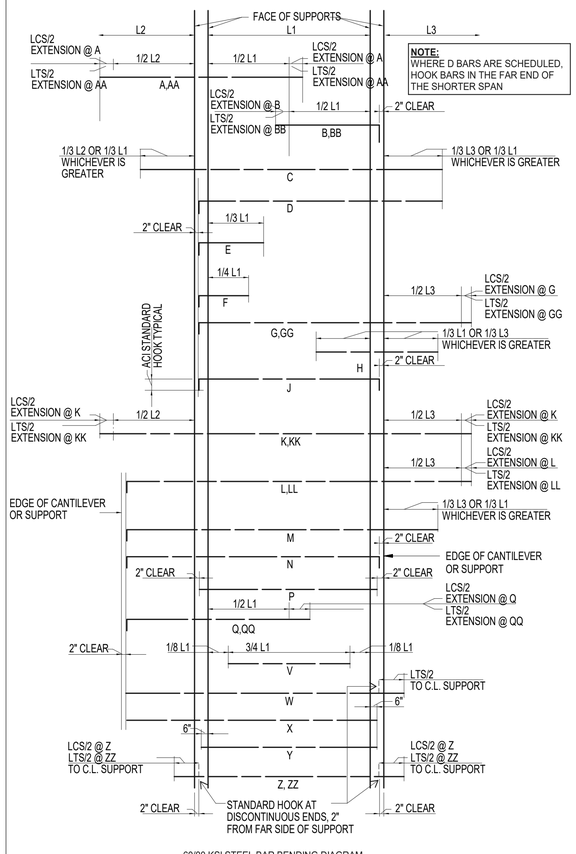
SLAB THICKNESS	TOP	BOTTOM
5"	#3X CONT. @10"	
9"	#4X CONT. @12"	#4X CONT. @9"
7.5"	#4X CONT. @10"	

1 1



JOIST BOTTOM STEEL ELEVATION

7



60/80 KSI STEEL BAR BENDING DIAGRAM

TYPICAL DETAIL

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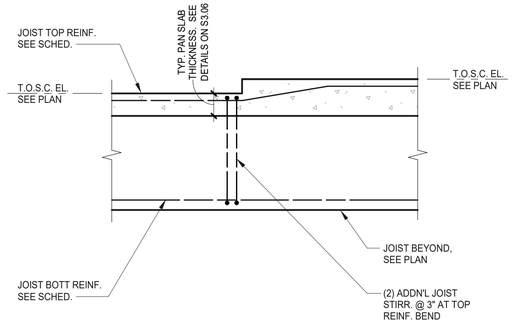
PAN JOIST TYPICAL DETAILS



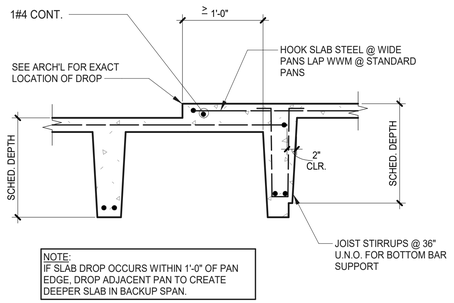
SLAB RECESS PERPENDICULAR TO JOISTS

TYPICAL DETAIL

NO SCALE

3/4" = 1'-0"

9

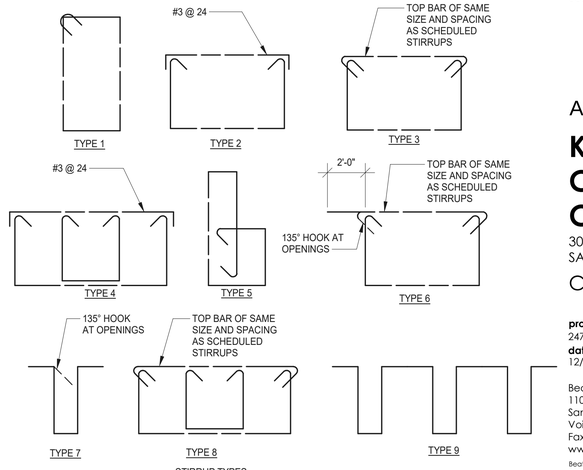


SLAB RECESS PARALLEL TO JOISTS

TYPICAL DETAIL

NO SCALE

10



STIRRUP TYPES

TYPICAL DETAIL

NO SCALE

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1 ADDENDUM 01 12/05/25

ADDEMDUM 01

KENWOOD COMMUNITY CENTER

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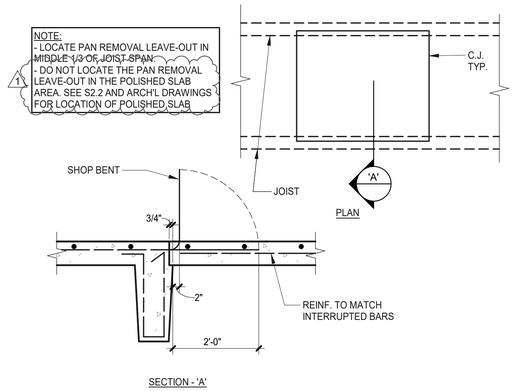
BEATY PALMER ARCHITECTS

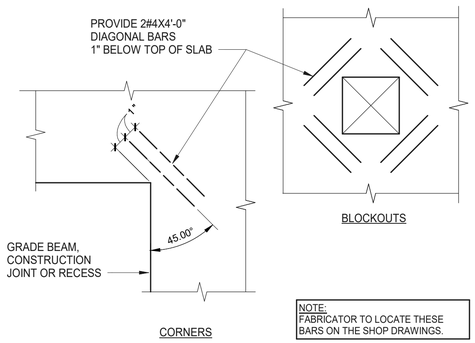


CRAWLSPACE PAN REMOVAL CONSTRUCTION JOINT

TYPICAL DETAIL

NO SCALE

1

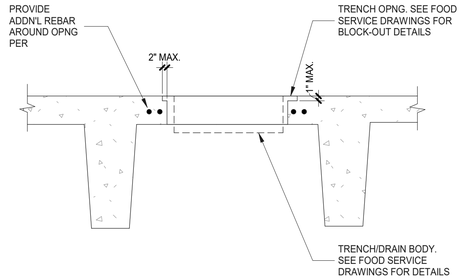


RE-ENTRANT CORNER REINFORCING

TYPICAL DETAIL

NO SCALE

2

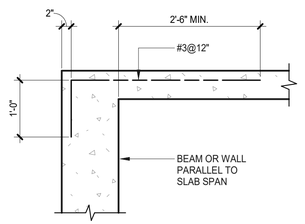


KITCHEN TRENCH OPENING

TYPICAL DETAIL

NO SCALE

4

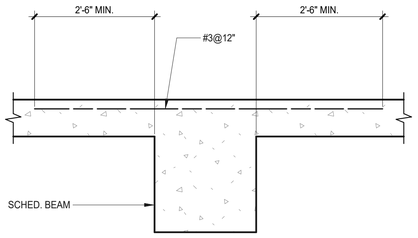


ADDITIONAL REINFORCING AT EXTERIOR BEAM OR WALL

TYPICAL DETAIL

NO SCALE

5

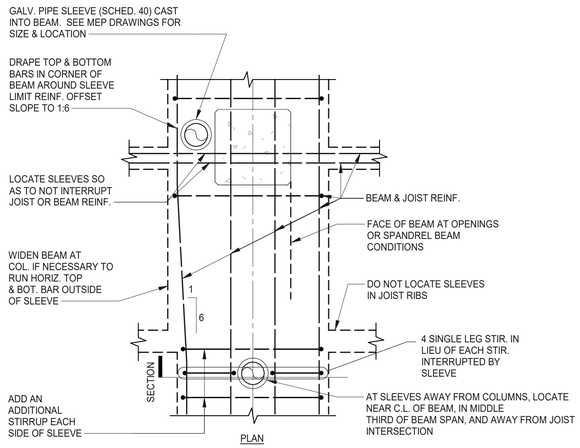


ADDITIONAL REINF. OVER TOP OF BEAMS

TYPICAL DETAIL

NO SCALE

6

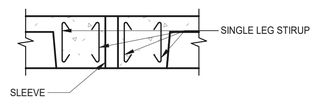


SLEEVES IN CONCRETE BEAMS

TYPICAL DETAIL

NO SCALE

NOTES:
1. ALWAYS LOCATE SLEEVES ON THE SIDES OF COL. AS SHOWN. DO NOT LOCATE ON THE BEAM TO COLUMN INTERSECTION FACES.
2. SEE DETAIL 4/S3.6 FOR ADDITIONAL REINF. AT SLEEVES THRU SLABS.
3. SUBMIT SLEEVE LAYOUT PLAN FOR REVIEW PRIOR TO INSTALLATION.
4. MAXIMUM SLEEVE SIZE SHALL BE 6 IN. DIAMETER.
5. SPACING OF SLEEVES SHALL BE THE GREATER OF 6" OR 3 X LARGER SLEEVE DIA.



8

PAN JOIST TYPICAL DETAILS

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1 ADDENDUM 01 12/05/25

ADDEMDUM 01

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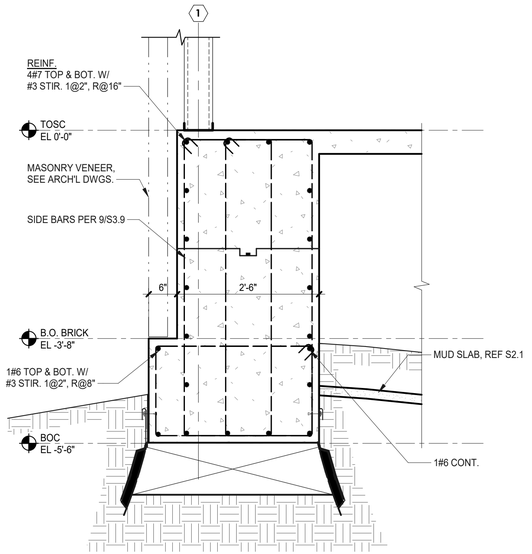
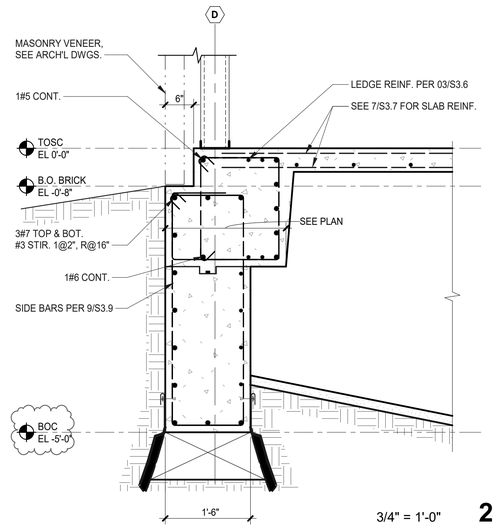


3/4" = 1'-0" **1**



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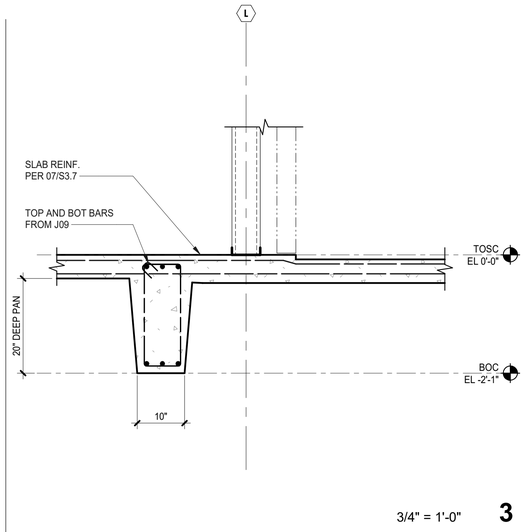
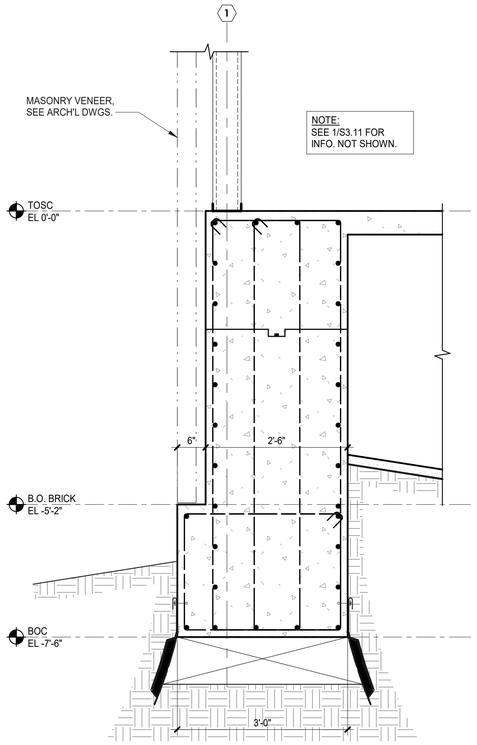


3/4" = 1'-0" **3**

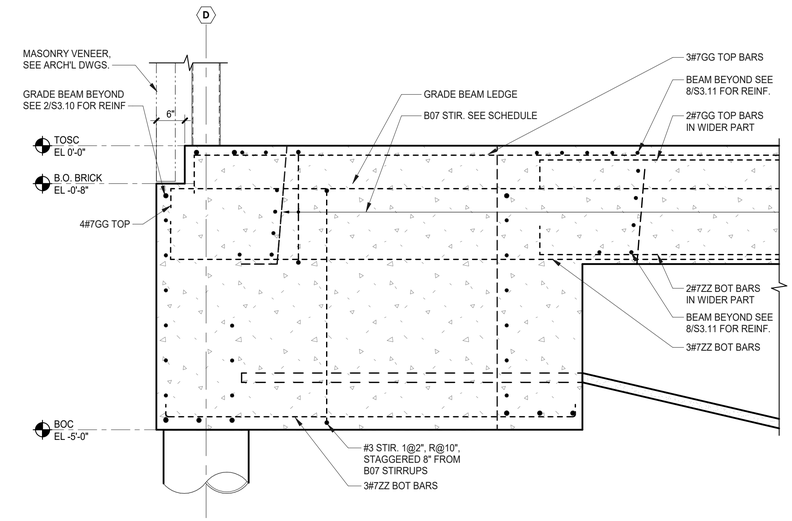


3/4" = 1'-0" **5**

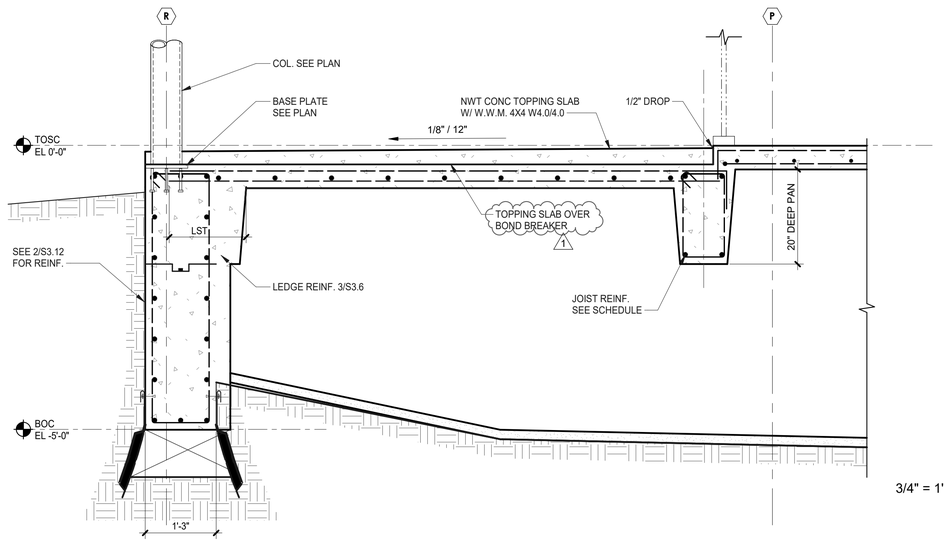
3/4" = 1'-0" **6**

3/4" = 1'-0" **7**

3/4" = 1'-0" **8**



3/4" = 1'-0" **10**



3/4" = 1'-0" **12**

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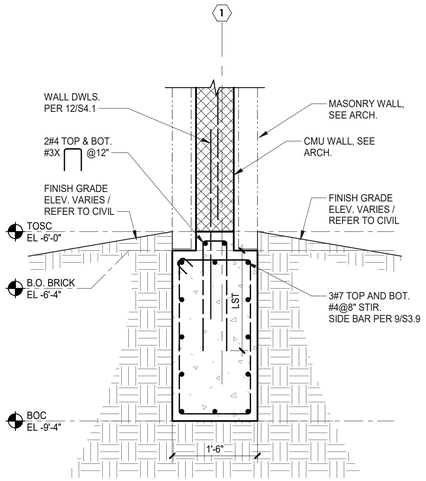
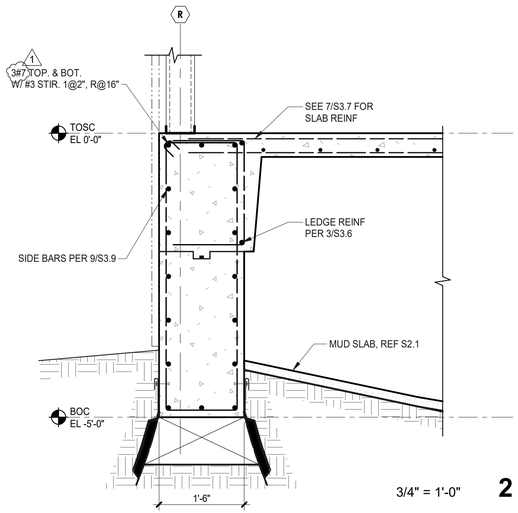
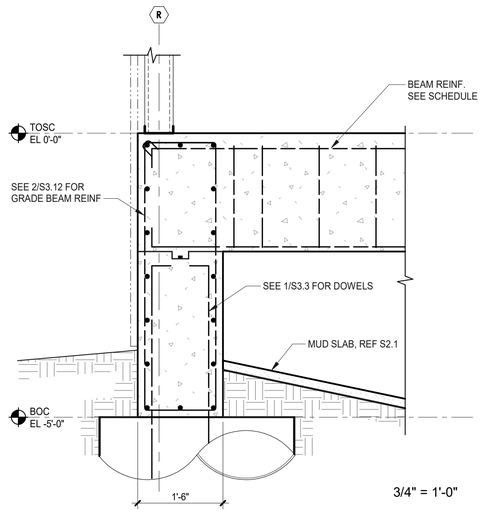


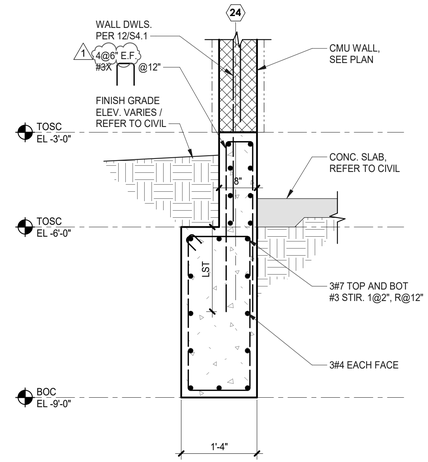
3/4" = 1'-0" **1**



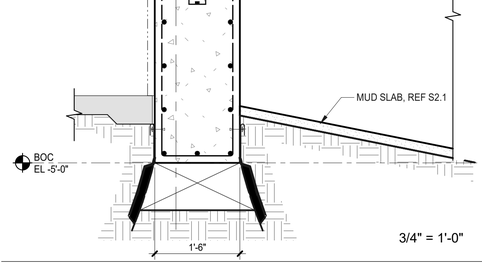
3/4" = 1'-0" **2**



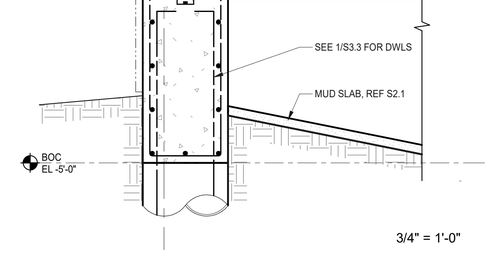
3/4" = 1'-0" **3**



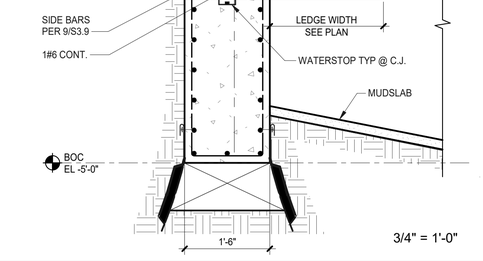
3/4" = 1'-0" **4**



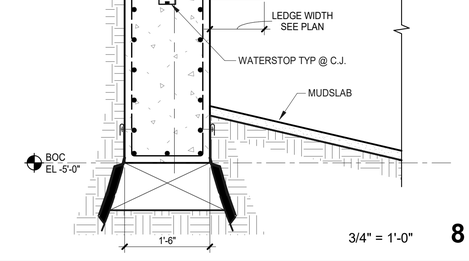
3/4" = 1'-0" **5**



3/4" = 1'-0" **6**

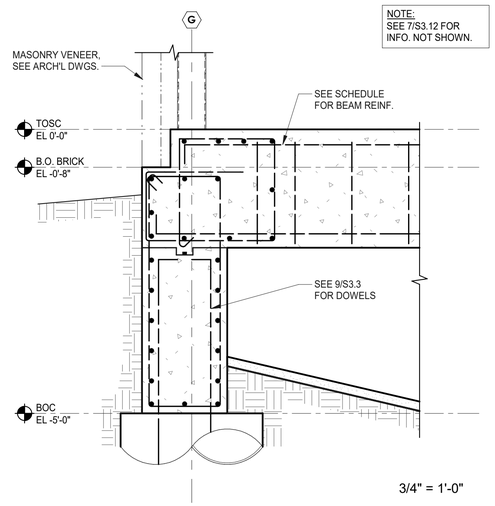


3/4" = 1'-0" **7**

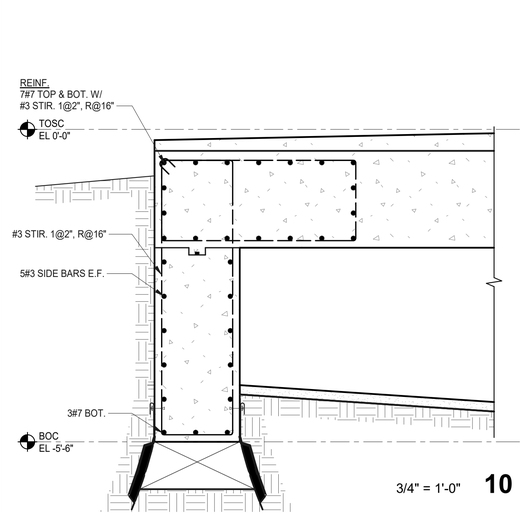


3/4" = 1'-0" **8**

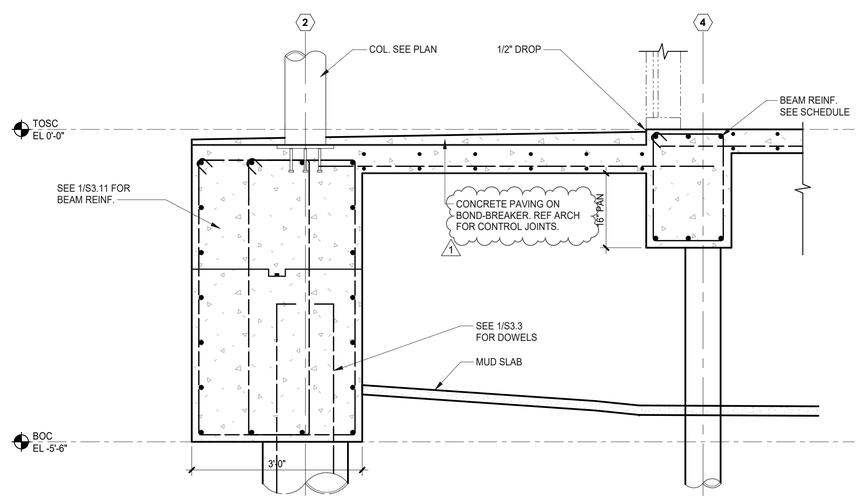
NOTE:
SEE 7/S3.12 FOR
INFO. NOT SHOWN.



3/4" = 1'-0" **9**



3/4" = 1'-0" **10**



3/4" = 1'-0" **12**

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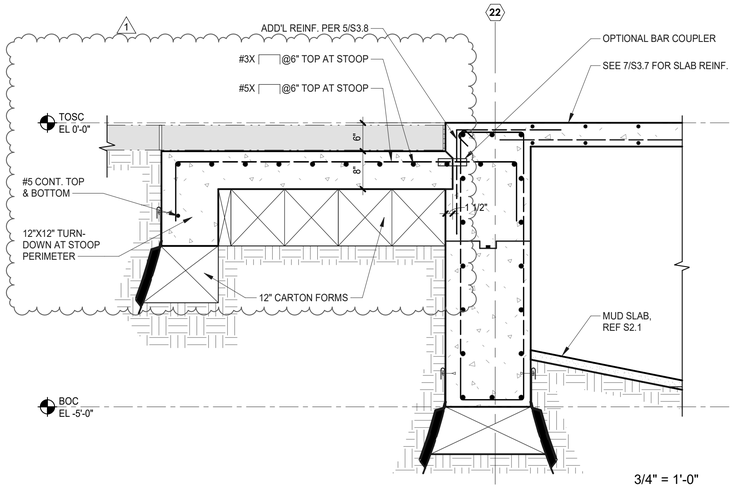

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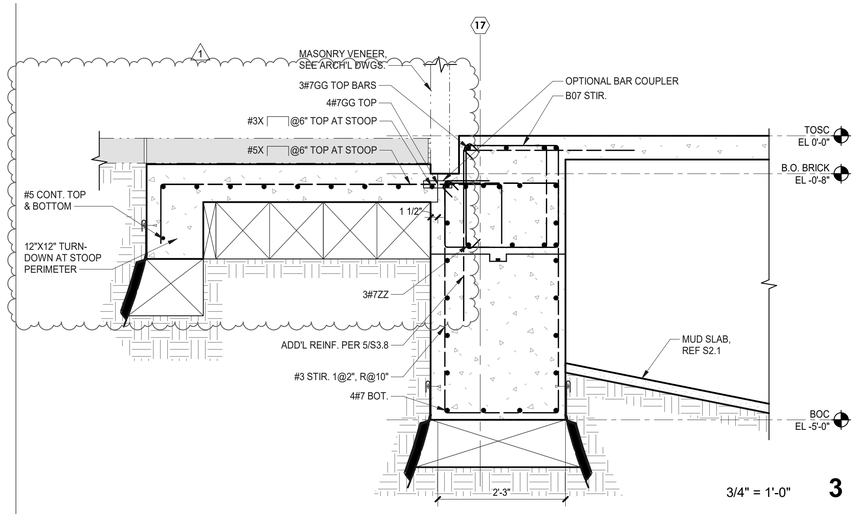

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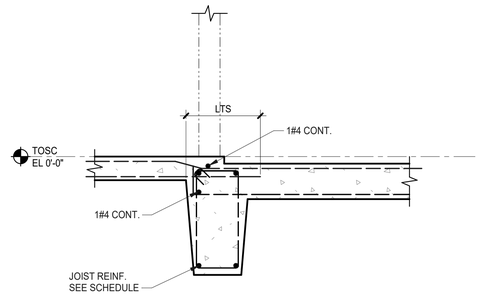

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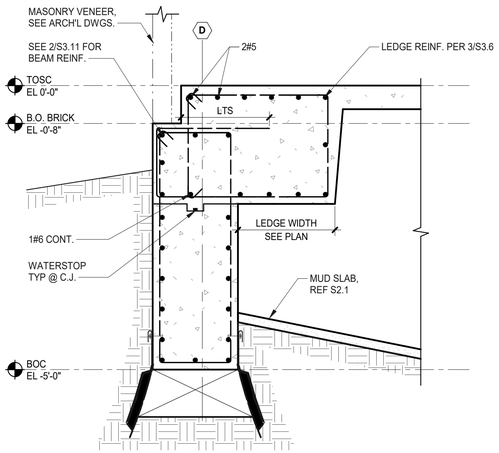

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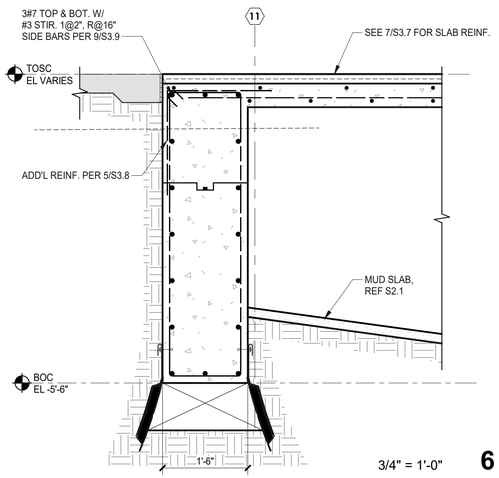
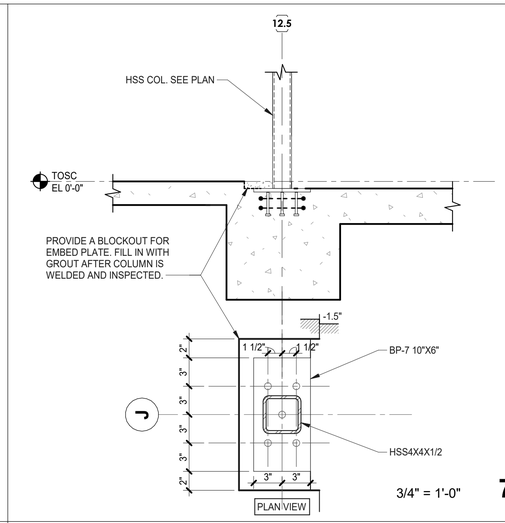
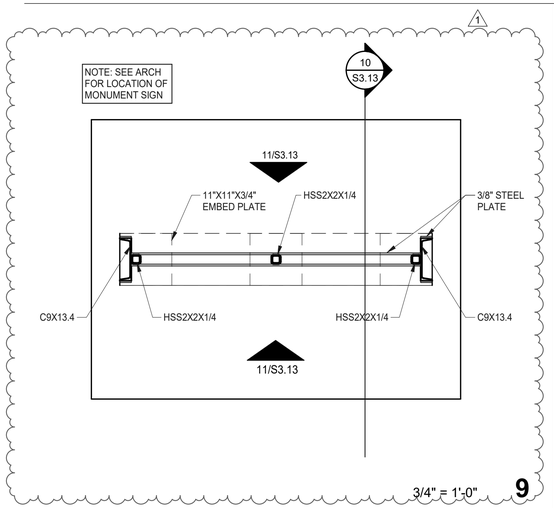


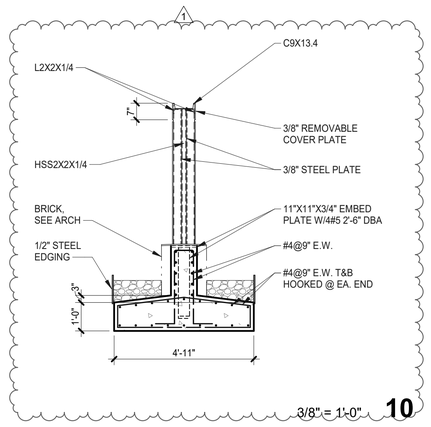
3/4" = 1'-0" **6**



3/4" = 1'-0" **7**



3/4" = 1'-0" **9**



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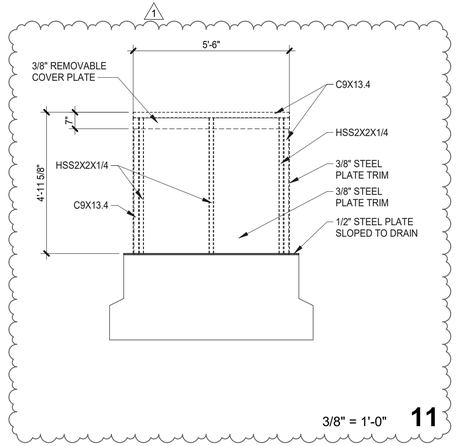

3/8" = 1'-0" **11**

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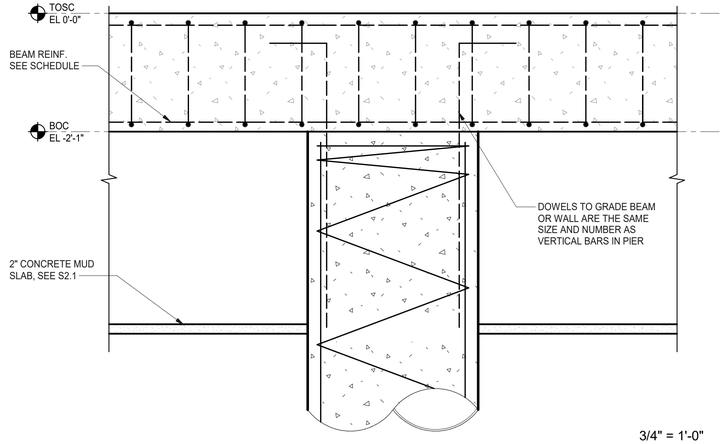
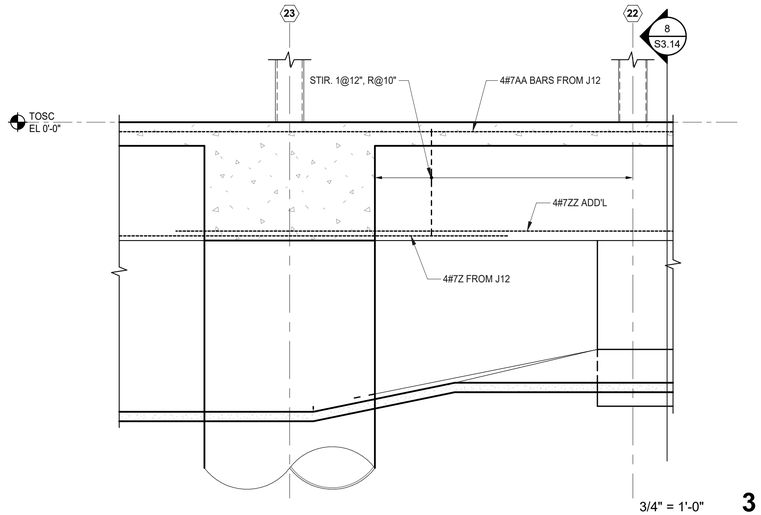
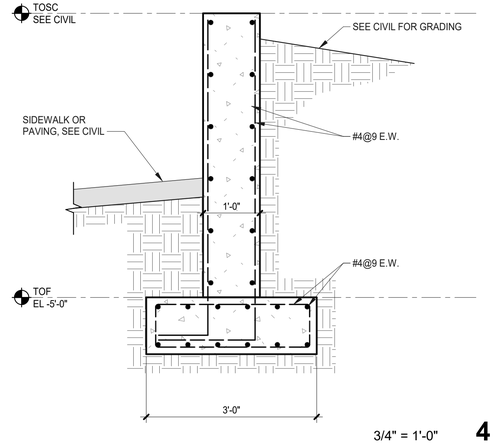


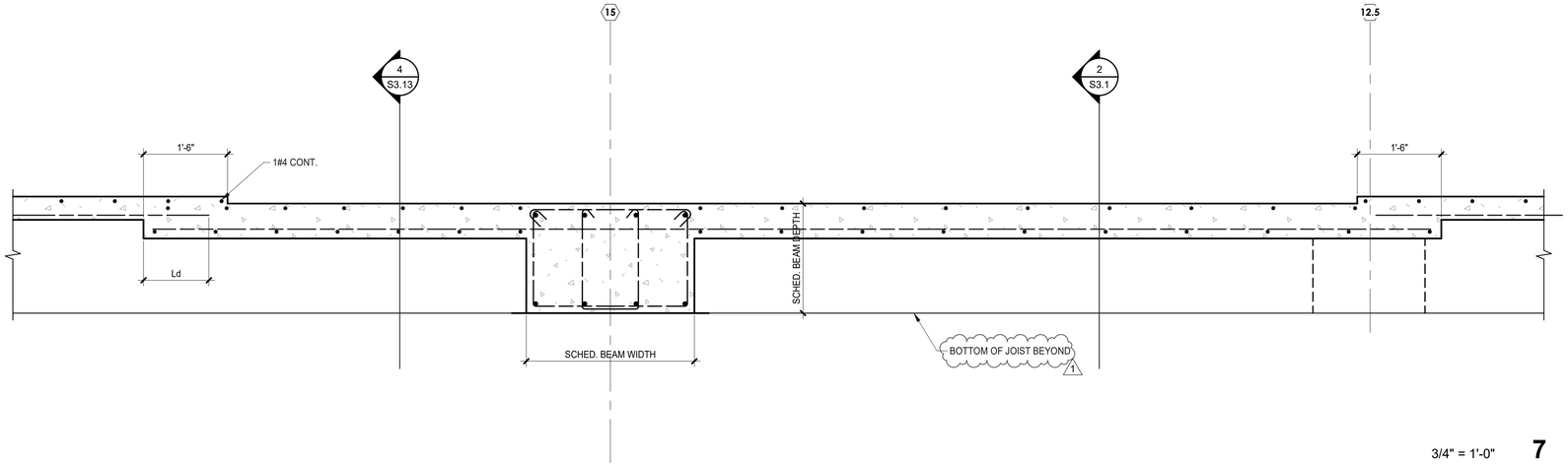
3/4" = 1'-0" **2**



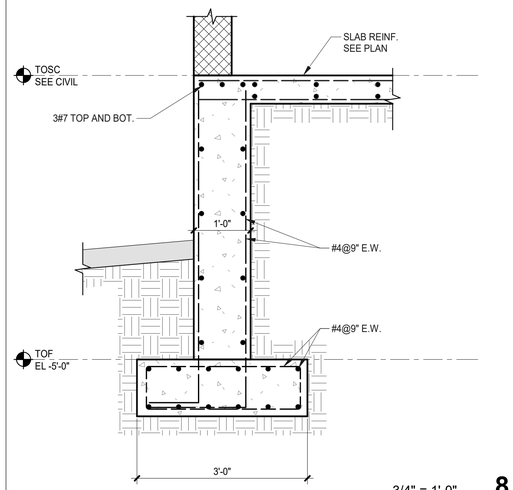
3/4" = 1'-0" **3**



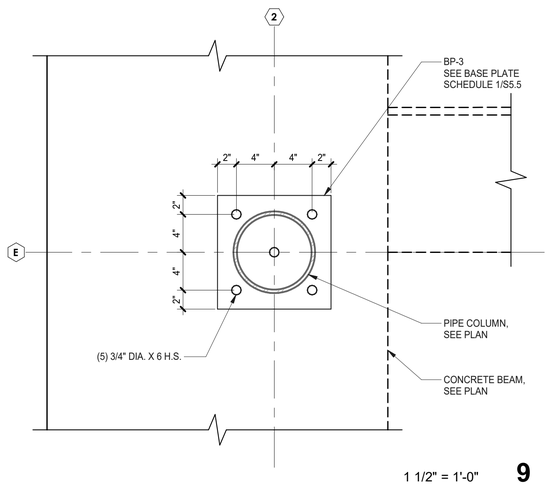
3/4" = 1'-0" **4**



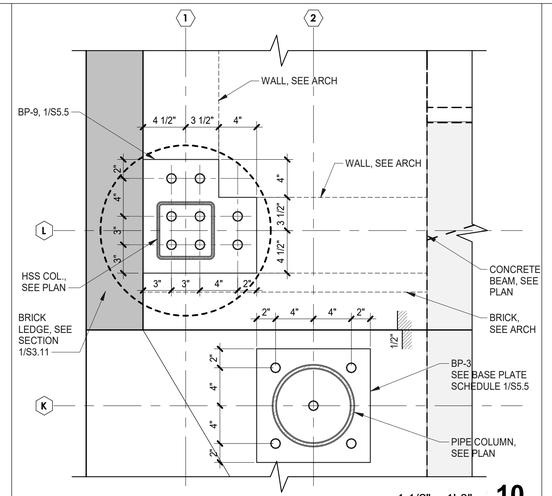
3/4" = 1'-0" **7**



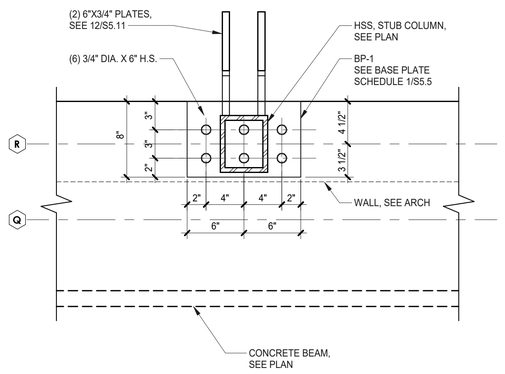
3/4" = 1'-0" **8**



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



1 1/2" = 1'-0" **10**



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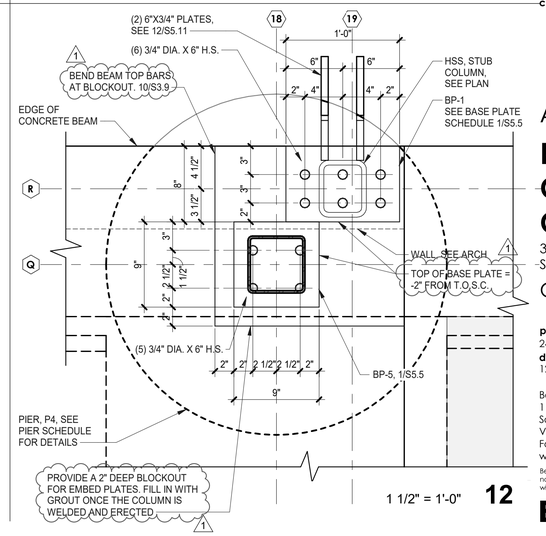

1 1/2" = 1'-0" **12**

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CONCRETE SECTIONS AND DETAILS

consultant	revisions
	1 ADDENDUM 01 12/05/25

ADDEMDUM 01

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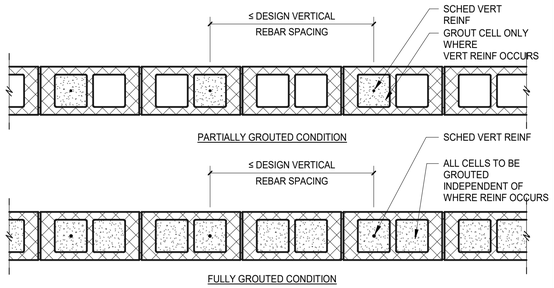
BEATY PALMER ARCHITECTS



NOTES:

1. REFERENCE MASONRY WALL SCHEDULE FOR GROUTING CONDITIONS TO LOAD BEARING MASONRY WALLS.
2. WHERE INSULATING FOAM, SAND INFILL, OR ANY OTHER TYPE OF INFILL SPECIFIED IN THE CONTRACT DOCUMENTS IS SPECIFIED IN A PARTIALLY GROUTED MASONRY WALL, INFILL THE CELLS WHICH ARE NOT INTENDED TO BE GROUTED. DO NOT PLACE INFILL IN GROUTED CELLS. DO NOT MIX GROUT AND INFILL IN GROUTED CELLS.
3. A FULLY GROUTED CONDITION IS ACHIEVED TWO WAYS:
   a. AS SPECIFIED IN THE MASONRY SCHEDULE.
   b. WHERE THE DESIGN VERTICAL REINFORCEMENT SPACING OCCURS IN EVERY CELL (8" ON CENTER).
4. NUMBER OF REINFORCEMENT AND SPACING SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY. REFERENCE MASONRY TYPICAL DETAILS AND MASONRY WALL SCHEDULE FOR ADDITIONAL INFORMATION.

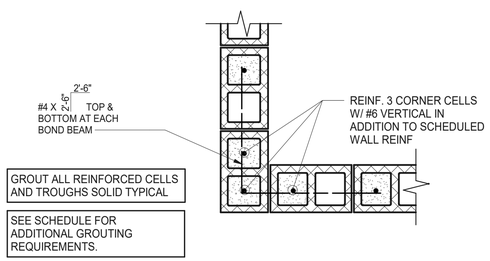
MASONRY GROUTING CONDITION

TYPICAL DETAIL

NO SCALE

1

NOTE:
1. CONT. BOND BEAM REINF. NOT SHOWN FOR CLARITY.



GROUT ALL REINFORCED CELLS AND TROUGHS SOLID TYPICAL

SEE SCHEDULE FOR ADDITIONAL GROUTING REQUIREMENTS.

CMU WALL CORNER REINFORCEMENT

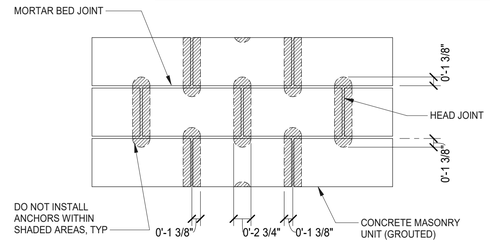
TYPICAL DETAIL

NO SCALE

2

NOTE:
1. ANCHORS MUST BE 4" MIN. FROM ANY EDGE OR OPENING.

ANCHOR INSTALLATION IS RESTRICTED TO NON-SHADED AREAS

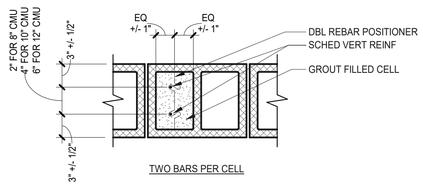


MASONRY ANCHOR INSTALLATION IN GROUT FILLED CMU

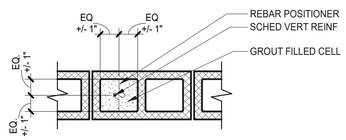
TYPICAL DETAIL

NO SCALE

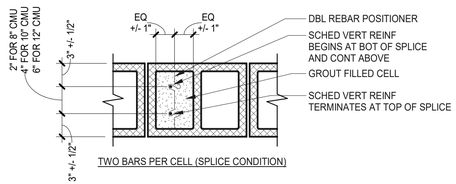
3



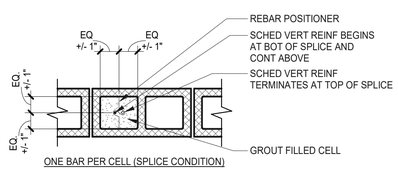
TWO BARS PER CELL



ONE BAR PER CELL



TWO BARS PER CELL (SPLICE CONDITION)



ONE BAR PER CELL (SPLICE CONDITION)

NOTES:

1. ALL REINFORCEMENT MUST BE ALIGNED AS SHOWN AND WITHIN THE TOLERANCES USING REBAR POSITIONERS AS APPLICABLE TO THE AMOUNT OF BARS PER CELL. REBAR POSITIONERS MUST BE PLACED SUCH THAT THE REBAR DOES NOT MOVE. PRE-APPROVED REBAR POSITIONER PRODUCTS: WIRE-BOND #3403 (SINGLE REBAR), WIRE-BOND #3403 (DOUBLE REBAR).
2. ALL SPLICED REBAR MUST BE LAPPED BY CONTACT.
3. SPLICED REBAR SHALL BE ORIENTED AS SHOWN PARALLEL TO THE WALL.
4. WHERE FIELD ELEMENTS SUCH AS CONDUITS, PLUMBING, PIPES, EMBEDDED PLATES, BEARING PLATES, OTHER REINFORCEMENT, ETC. ARE OBSERVED AND DECLARED TO BE IN CONFLICT WITHIN THE TOLERANCES SHOWN AND PROVISIONS TO ADJUST INTERFERING ELEMENTS WERE ATTEMPTED PRIOR TO DECLARING A CONFLICT, THEN THE ENGINEER MUST BE NOTIFIED PRIOR TO ERECTING THE MASONRY WALL HIGHER OR PLACING GROUT.
5. WIRE TIES ARE PERMITTED TO BE USED AT SPLICES TO OBTAIN A CONTACT LAP.
6. WELDING OF REBAR TO OBTAIN A CONTACT LAP SPLICE IS NOT PERMITTED.

MASONRY VERTICAL BAR PLACEMENT

TYPICAL DETAIL

10

CMU WALL REINFORCING SCHEDULE

EXTERIOR LOAD-BEARING INTERIOR WALLS	NOMINAL WALL THICKNESS	WALL MARK	GROUTING CONDITION	VERTICAL REINFORCING	HORIZONTAL REINFORCING	DOWELS	JAMB REINFORCING	REMARKS
SHOWN ON PLAN AS:	8"	W8A	FULLY GROUTED	(1) #6 @ 32" OC	(1) #5 @ 48" OC	(1) #6 @ 32" OC (1)	(1) #6	

12

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TYPICAL MASONRY WALL DETAILS

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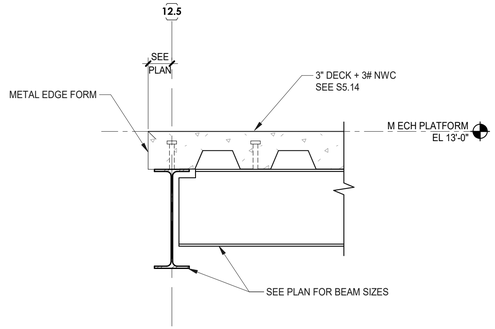
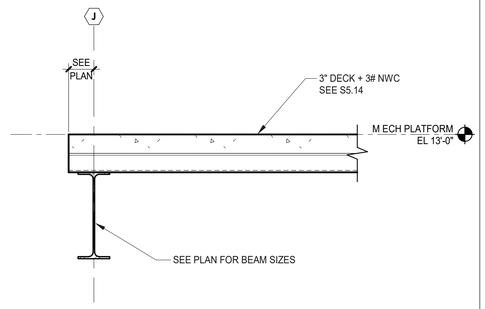
NOTE:
SEE A/S5.14 FOR INFO. NOT SHOWN.



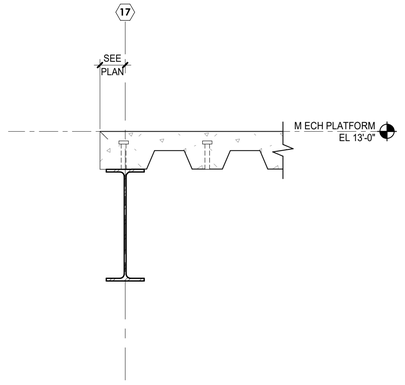
1" = 1'-0" **1**

NOTE:
SEE B/S5.14 FOR INFO. NOT SHOWN.

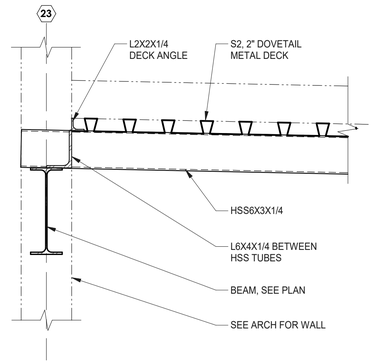


1" = 1'-0" **2**

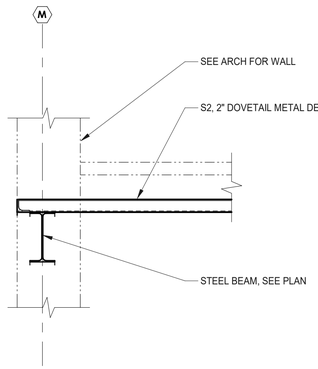
NOTE:
SEE A/S5.14 FOR INFO. NOT SHOWN.



1" = 1'-0" **3**



1" = 1'-0" **4**



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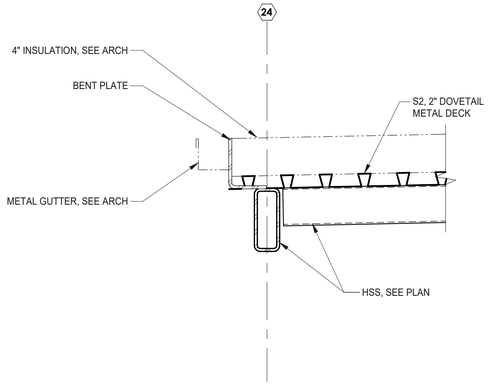
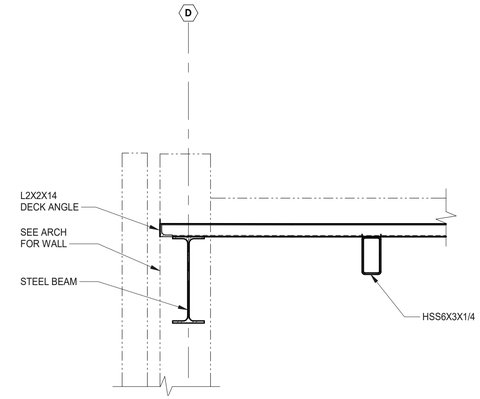
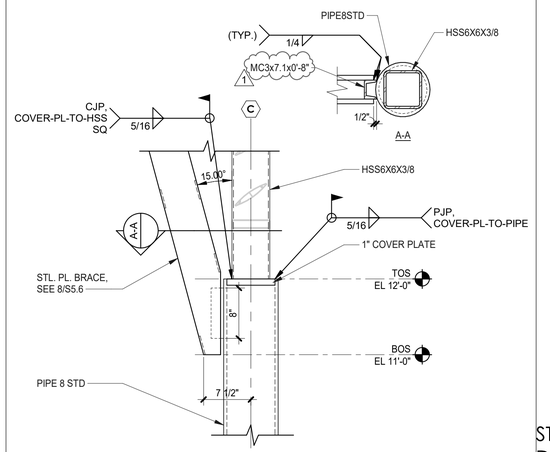


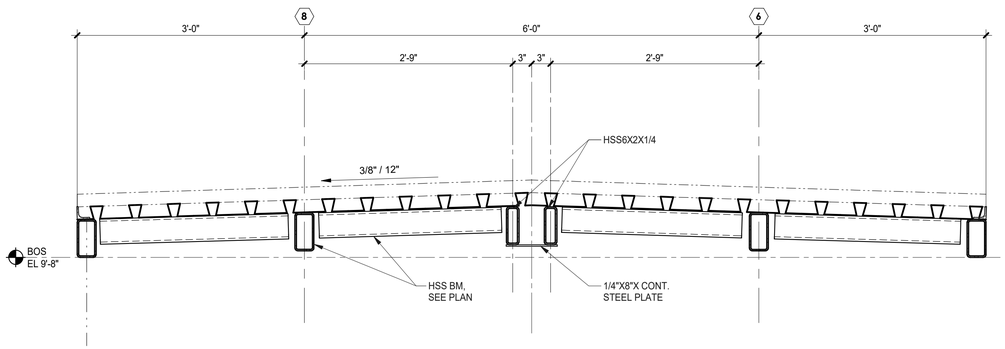
1" = 1'-0" **6**



1" = 1'-0" **7**



1" = 1'-0" **8**



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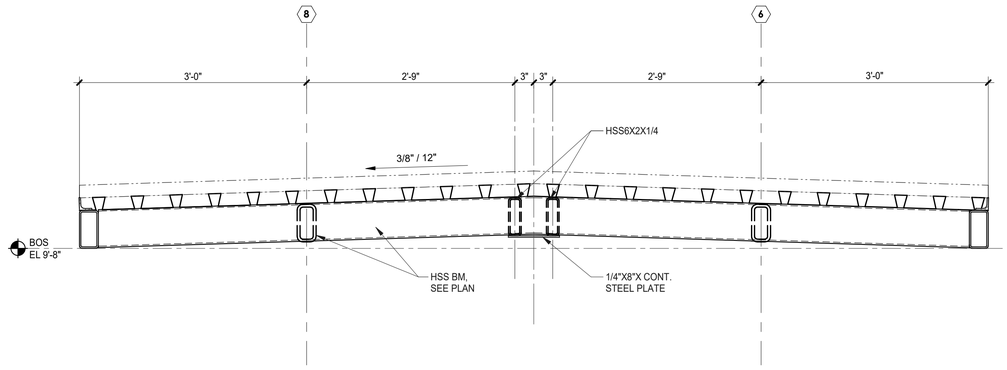

1" = 1'-0" **12**

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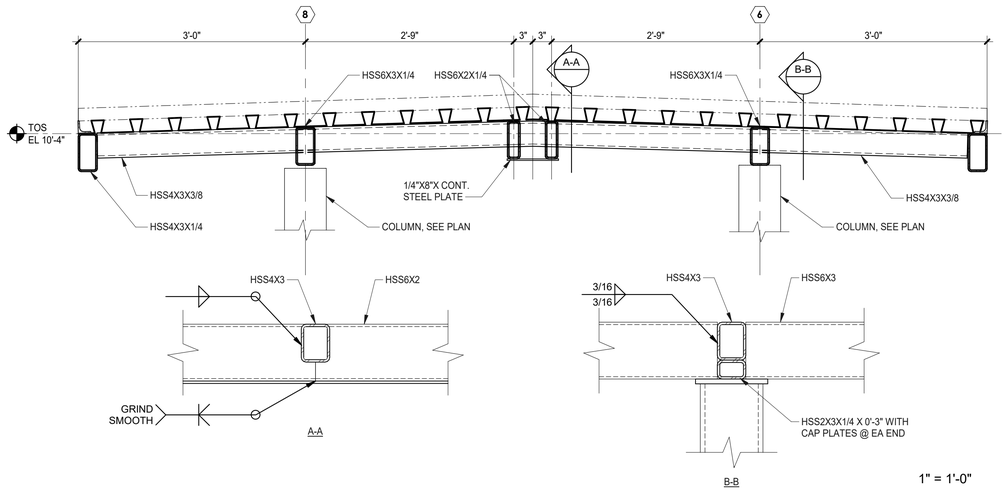
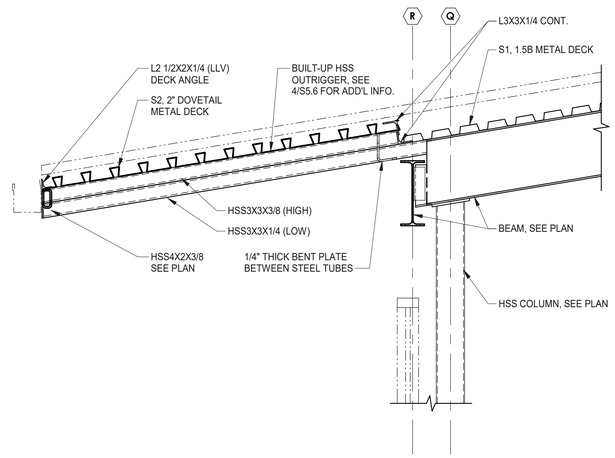
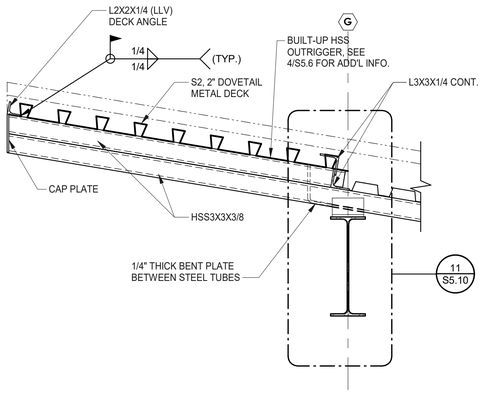


1" = 1'-0" **2**

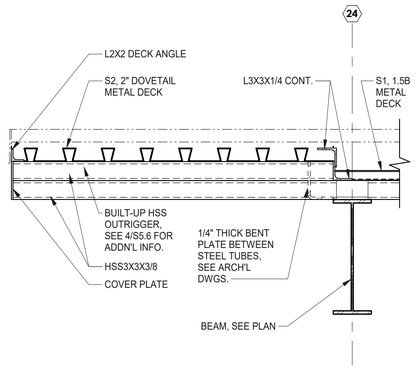


3/4" = 1'-0" **4**

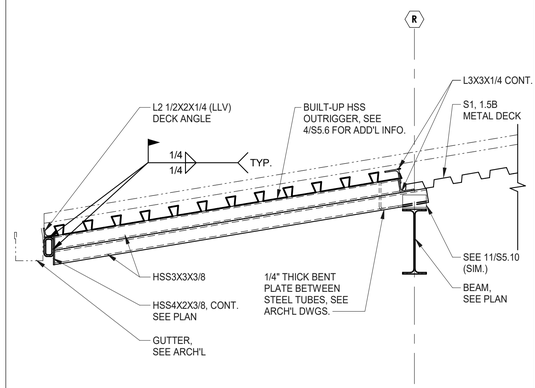


1" = 1'-0" **5**

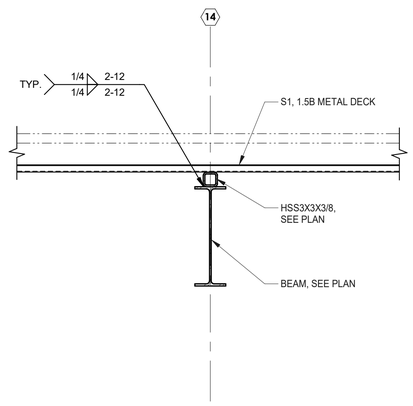
NOTE:
SEE 7/S5.10 FOR
INFO. NOT SHOWN.



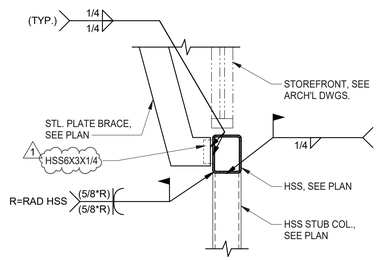
1" = 1'-0" **6**



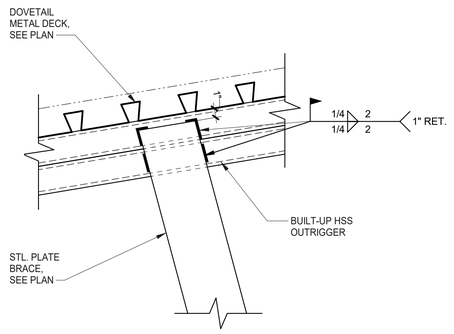
3/4" = 1'-0" **7**



3/4" = 1'-0" **8**



3/4" = 1'-0" **9**



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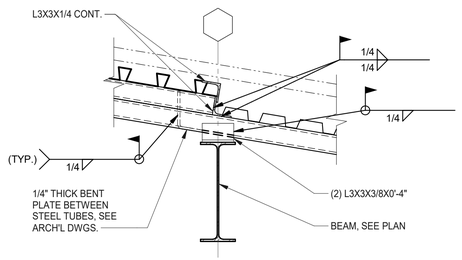

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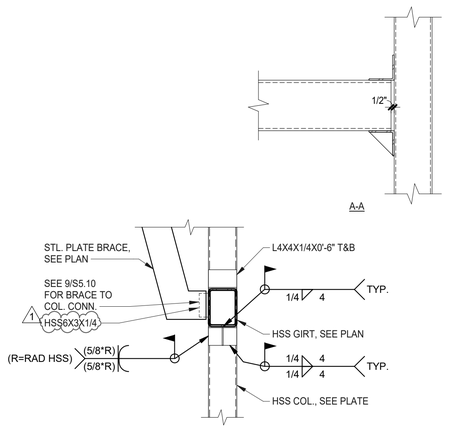

3/4" = 1'-0" **12**

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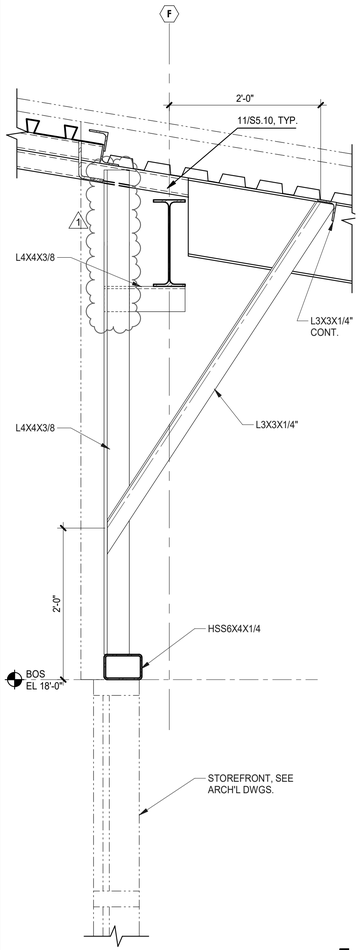
BEATY PALMER ARCHITECTS



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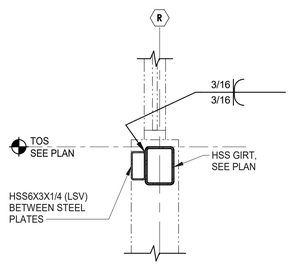

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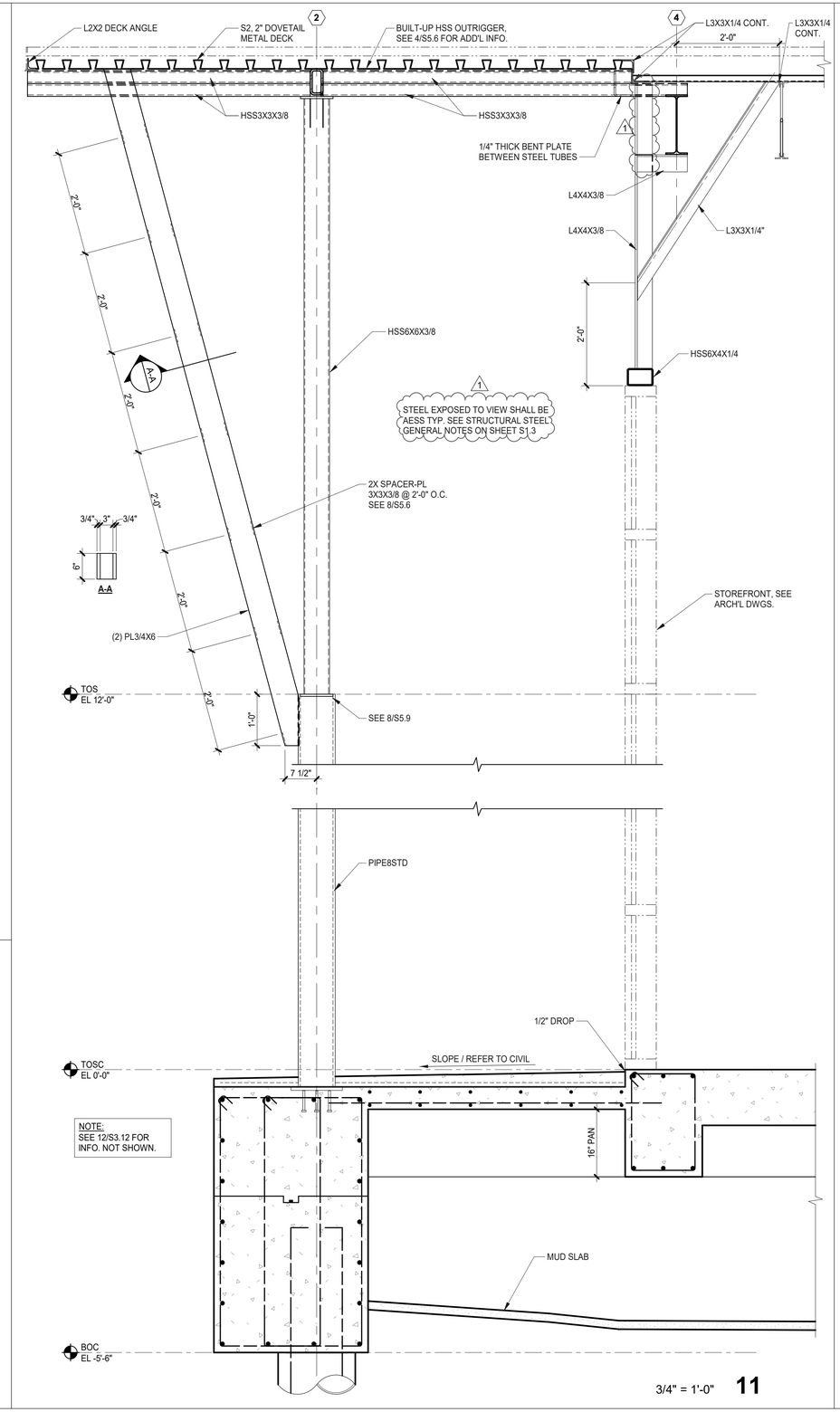

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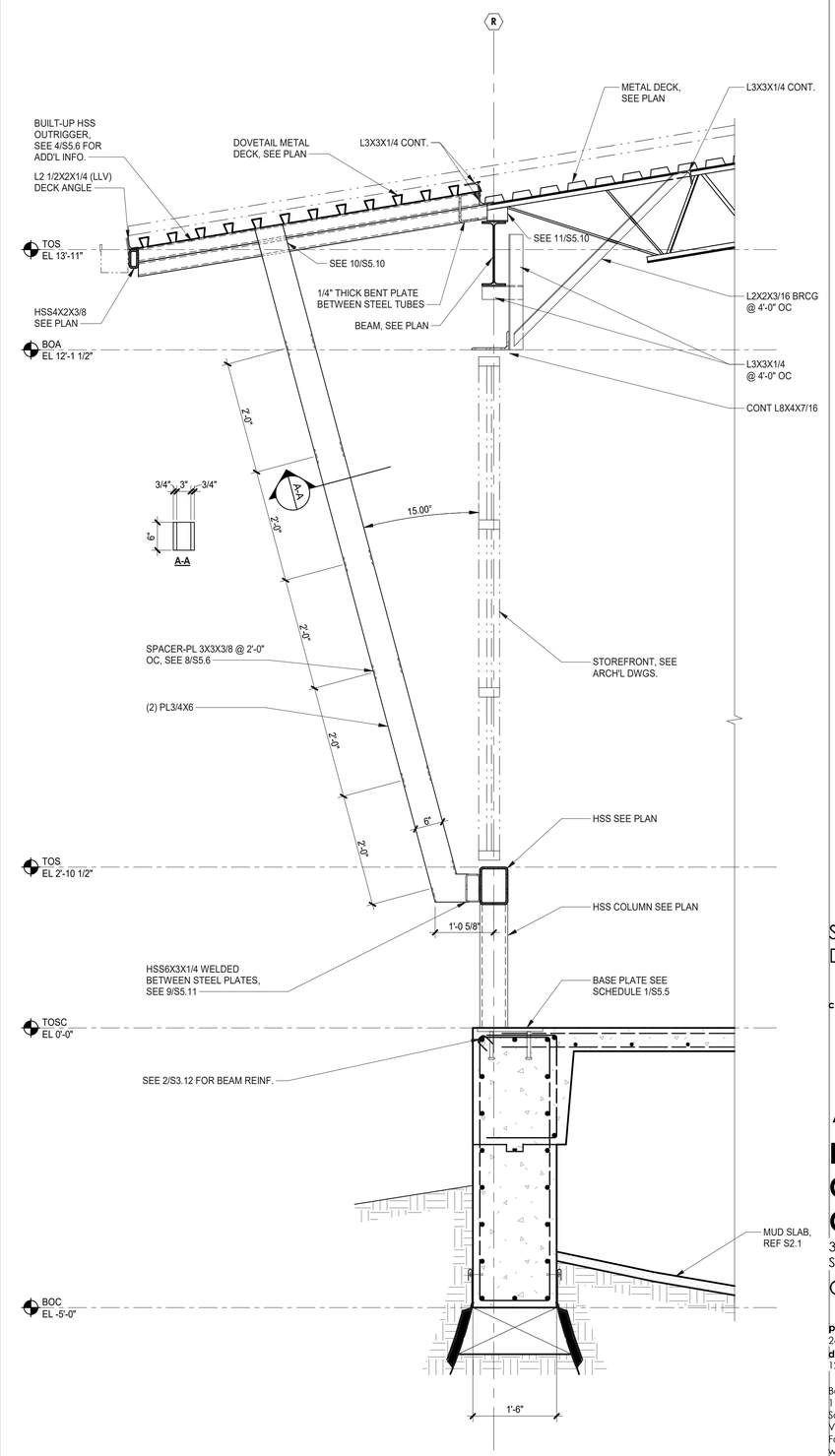
3/4" = 1'-0"



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3/4" = 1'-0"

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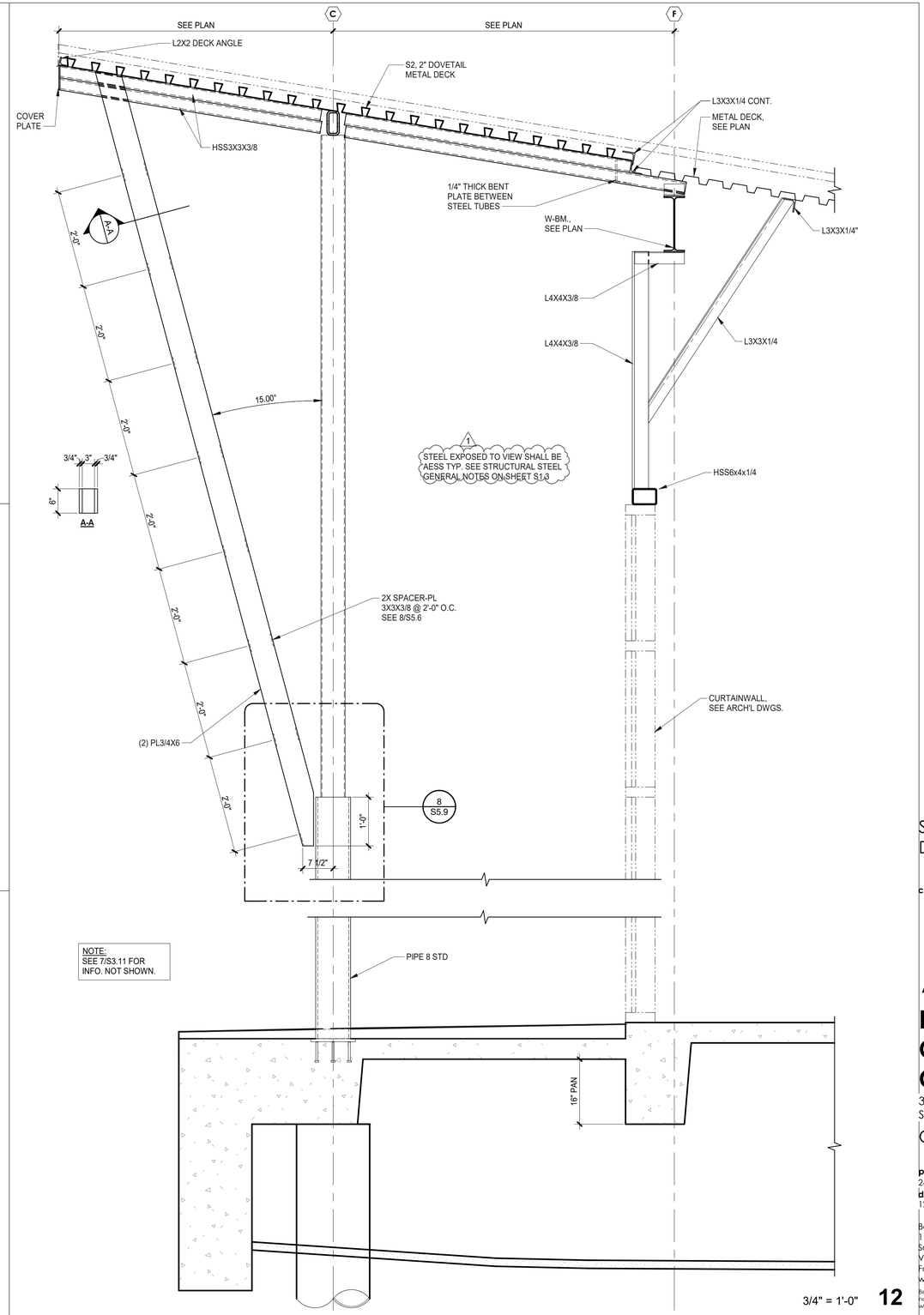
BEATY PALMER ARCHITECTS

AESS CATEGORY MATRIX

ID	Characteristics	AESS C Custom Elements	AESS 4 Showcase Elements	AESS 3 Feature Elements in close view	AESS 2 Feature Elements not in close view	AESS 1 Basic Elements	SSS Standard Structural Steel
1.1	Surface preparation to SSPC-SP 6		•	•	•	•	
1.2	Sharp edges ground smooth		•	•	•	•	
1.3	Continuous weld appearance		•	•	•	•	
1.4	Standard structural bolts		•	•	•	•	
1.5	Weld spatters removed		•	•	•	•	
2.1	Visual samples		•	•	Optional		
2.2	One-half standard fabrication tolerances		•	•	•		
2.3	Fabrication marks not apparent		•	•	•		
2.4	Welds uniform and smooth		•	•	•		
3.1	Mill marks removed		•	•			
3.2	Butt and plug welds ground smooth and filled		•	•			
3.3	HSS weld seam oriented for reduced visibility		•	•			
3.4	Cross sectional abutting surface aligned		•	•			
3.5	Joint gap tolerances minimized		•	•			
3.6	All welded connections		Optional	Optional			
4.1	HSS seam not apparent		•				
4.2	Welds contoured and blended		•				
4.3	Surfaces filed and sanded		•				
4.4	Weld show-through minimized		•				
C.1							
C.2							
C.3							

1



3/4" = 1'-0"

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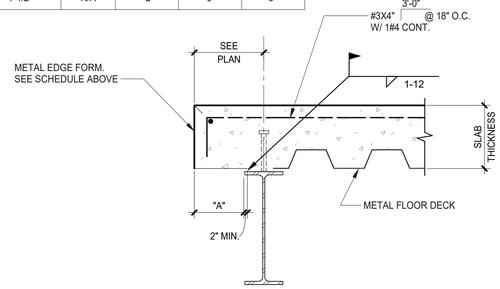
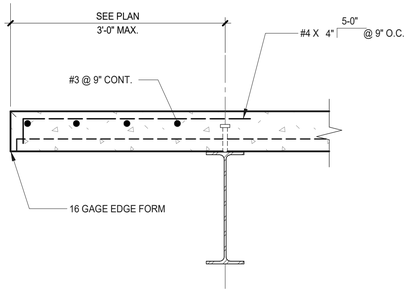
BEATY PALMER ARCHITECTS

MAXIMUM SLAB OVERHANG - "A"				
SLAB THICKNESS	EDGE FORM GAGE			
	16 GA.	14 GA.	12 GA.	10 GA.
4 1/2"	6"	7"	10"	12"
5 1/2"	4"	6"	9"	11"
6 1/2"	2"	4"	8"	10"
7 1/2"	N/A	2"	6"	9"

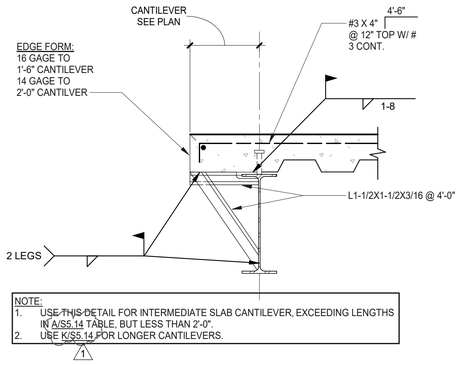
NOTE:
1. IF DIMENSION "A" EXCEEDS TABLE MAXIMUMS, PROVIDE ANGLE SUPPORT PER DETAIL K/S5.14 OR C/S5.14 WHEN DECK RUNS PARALLEL TO BEAM 1
2. WHEN DECK RUNS PERPENDICULAR TO BEAM, PROVIDE DETAIL B/S5.14.



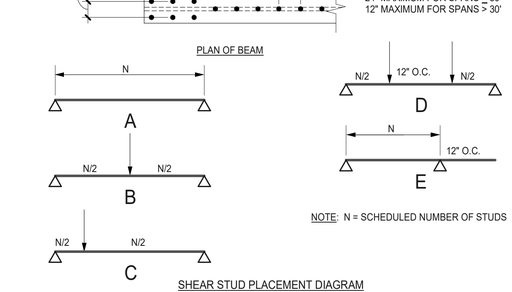
EDGE CONDITION
TYPICAL DETAIL
NO SCALE
A



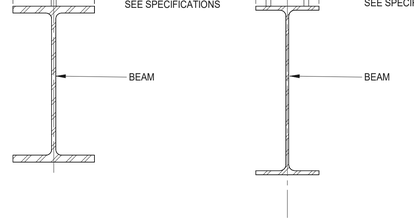
CANTILEVERED SLAB EDGE
TYPICAL DETAIL
NO SCALE
B



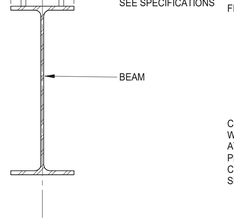
EDGE OF SLAB
TYPICAL DETAIL
NO SCALE
C



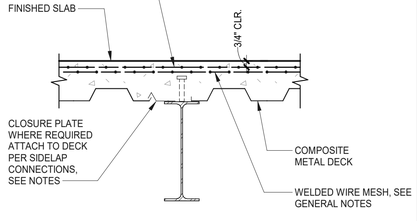
SHEAR STUD PLACEMENT DIAGRAM
TYPICAL DETAIL
NO SCALE
D



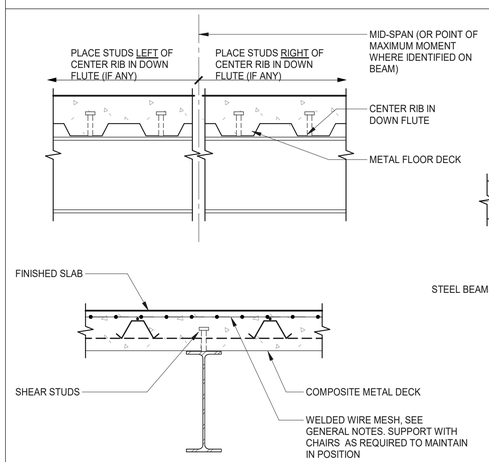
SHEAR STUD
TYPICAL DETAIL
NO SCALE
E



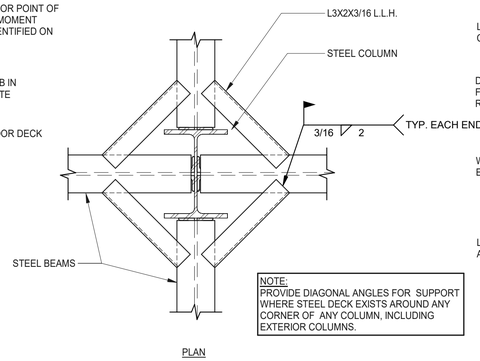
NOTE:
DECK MAY RUN CONTINUOUS OVER GIRDER PROVIDED THAT STUDS CAN BE POSITIONED AS SPECIFIED.



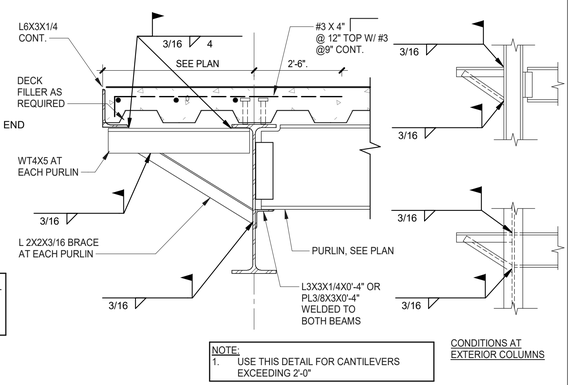
DECK PARALLEL TO BEAM
TYPICAL DETAIL
NO SCALE
F



DECK PERPENDICULAR TO BEAM
TYPICAL DETAIL
NO SCALE
G



METAL DECK SUPPORT AT COLUMN
TYPICAL DETAIL
NO SCALE
H



SLAB EDGE WITH OUTRIGGER
TYPICAL DETAIL
NO SCALE
K

COMPOSITE STEEL FLOOR FRAMING NOTES:

1. COMPOSITE STEEL BEAMS ARE INDICATED ON THE PLANS THUS (EXAMPLE):

   W16X31 (28) C = 2 3/4"

   WHERE 28 IS THE TOTAL NUMBER OF SHEAR STUDS BETWEEN SUPPORTS AND 2 3/4" IS THE BEAM CAMBER (IF ANY). END REACTIONS FOR SIZING CONNECTIONS ARE SHOWN AT EACH END KIPS -SERVICE LEVEL). DO NOT USE AISC SPAN TABLES FOR DETERMINING END REACTIONS. WHERE NO REACTION IS GIVEN, DESIGN CONNECTION TO DEVELOP THE FULL SHEAR CAPACITY OF THE WEB, OR CONTACT THE ENGINEER.
2. COMPOSITE STEEL BEAMS DO NOT REQUIRE SHORING TO SUPPORT THE WET WEIGHT OF CONCRETE. BEAMS WILL BE HIGHLY STRESSED AS CONCRETE IS PLACED AND MUST BE POSITIVELY BRACED BY THE METAL DECK CONNECTIONS. DO NOT EXCEED CONCRETE THICKNESSES SHOWN.
3. WARNING: IN NONSHORED CONSTRUCTION, EXCESSIVE CONCRETE WEIGHT DURING CASTING CAN CAUSE SUPPORTING BEAMS TO COLLAPSE. DO NOT, UNDER ANY CIRCUMSTANCES, EXCEED THE DESIGN SLAB THICKNESS BY MORE THAN 3/4 INCH. CAREFULLY CHECK BEAM CAMBERS AND RETURN ANY FOUND TO BE OUT OF TOLERANCE TO THE SHOP FOR CORRECTION (SEE SPECIFICATION SECTION 05 12 00).
4. PRIOR TO ERECTING THE FIRST COMPOSITE BEAMS, THE CONTRACTOR SHALL CALL A SPECIAL PRE-CONSTRUCTION MEETING WITH APPLICABLE SUBCONTRACTORS, TESTING LABORATORY, ARCHITECT AND STRUCTURAL ENGINEER TO REVIEW ALL REQUIREMENTS AND ESTABLISH A QUALITY CONTROL PROCEDURE.
5. THE FINISHED COMPOSITE FLOOR SHALL NOT BE LOADED WITH CONSTRUCTION MATERIALS BEFORE THE CONCRETE HAS ATTAINED 75 PERCENT OF ITS SPECIFIED STRENGTH.
6. ALL SHEAR STUDS SHALL BE FIELD APPLIED, UNLESS OTHERWISE NOTED. SIZE SHALL BE SELECTED FROM THE FOLLOWING TABLE DEPENDING ON DECK AND SLAB DIMENSIONS:

DECK HT.	SLAB THK.	SHEAR STUDS (STUD HT. AFTER WELDING)
3"	3"	3/4" DIA X 5"

7. PLACE THE INDICATED NUMBER OF SHEAR STUDS ALONG THE LENGTH OF THE BEAM OR BEAM SEGMENT AS SHOWN IN THE SHEAR STUD PLACEMENT DIAGRAMS.
   A. STUDS SHALL BE EQUALLY SPACED IN A SINGLE ROW WHERE POSSIBLE, ALLOWING A SINGLE STUD IN THE DECK FLUTES, WHERE APPLICABLE.
   B. PLACE STUDS IN THE MIDDLE OF THE RIB, IF POSSIBLE. WHERE THE STUD MUST BE OFFSET FROM THE MIDDLE OF THE RIB, SHIFT THE STUD AWAY FROM THE BEAM MIDSPAN, OR TOWARD THE CLOSEST SUPPORT (G/S5.14) 1
   C. WHERE ADDITIONAL STUDS ARE REQUIRED TO OBTAIN THE SPECIFIED NUMBER OF STUDS IN A LENGTH OF BEAM, PLACE STUDS IN TANDEM PAIRS PER THE SHEAR STUD PLACEMENT DIAGRAM AND (E/S5.14) 1
   D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING PROPER STUD LAYOUT FOR EACH BEAM PRIOR TO INSTALLATION OF STUDS IN THE FIELD. REFER TO TYPICAL DETAILS FOR PLACEMENT OF SHEAR STUDS ON BEAMS.
8. PLACE STUDS IN THE MIDDLE OF THE RIB, IF POSSIBLE. WHERE THE STUD MUST BE OFFSET FROM THE MIDDLE OF THE RIB, SHIFT THE STUD AWAY FROM THE BEAM MIDSPAN, OR TOWARD THE CLOSEST SUPPORT (G/S5.14) 1 1
9. PROVIDE ADDITIONAL STUDS AS REQUIRED TO SATISFY THE MAXIMUM SPACINGS SHOWN IN D/S5.14 WHERE NO STUDS ARE CALLED FOR ON A BEAM SEGMENT SUPPORTING METAL FLOOR DECK, PROVIDE A MINIMUM NUMBER TO SATISFY THE FOLLOWING MAXIMUM STUD SPACINGS PER DETAIL D/S5.14. 1
10. PROVIDE CAMBER IN MEMBERS WHERE INDICATED. SPECIFIED CAMBER APPLIES AT JOBSITE, JUST PRIOR TO ERECTION, LYING DOWN FLAT SO THAT MEMBER WEIGHT HAS NO EFFECT. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT OR COMPENSATE FOR CAMBER LOSS DURING SHIPMENT. MEASURED CAMBER IN MEMBERS UP TO 50'-0" LONG SHALL BE WITHIN A TOLERANCE OF -0" TO +1/2" FROM AMOUNT SPECIFIED. FOR MEMBERS GREATER THAN 50'-0" LONG, BOTH POSITIVE AND NEGATIVE TOLERANCE MAY INCREASE 1/8" FOR EVERY 10'-0" OF LENGTH IN EXCESS OF 50'-0". MEMBERS WITH A FIELD MEASURED CAMBER OUTSIDE OF SPECIFIED TOLERANCE SHALL BE RETURNED TO SHOP.
11. THE CONTRACTOR SHALL MEASURE AND RECORD CAMBER OF ALL BEAMS UPON ARRIVAL AND BEFORE ERECTION FOR COMPLIANCE WITH THE SPECIFIED CAMBER. MEASURE LYING FLAT WITH WEB HORIZONTAL. MEMBERS OUTSIDE THE CAMBER TOLERANCE SHALL BE RETURNED TO THE SHOP FOR CORRECTION. CAMBERS MEASURED BY THE CONTRACTOR ARE TO BE VERIFIED BY THE OWNER'S TESTING LABORATORY.
12. SET HORIZONTAL MEMBERS WITH THEIR NATURAL CAMBER (OR SPECIFIED CAMBER) UP.
13. DESIGN OF COMPOSITE STEEL BEAMS AND DETAILS FOR CONSTRUCTION ARE BASED ON THE FOLLOWING DECK SYSTEM: COMPOSITE METAL DECK - VULCRAFT DIVISION OF NUCOR CORPORATION.

    TYPE: VL OR VLI
    YIELD STRENGTH: 50 KSI
    DEPTH: 3 IN.
    GAUGE: 22
14. NORMAL WEIGHT CONCRETE (150 PCF) FILL - AS INDICATED ON FRAMING PLANS.
15. DECK SHALL BE INSTALLED IN THREE SPAN LENGTHS AT ALL POSSIBLE LOCATIONS, INCLUDING AT WIND-BRACE GUSSET PLATES. TWO SPAN AND SINGLE SPAN LENGTHS OF DECK SPANNING MORE THAN 11'-0" SHALL BE HEAVIER GAUGE DECK, PROPERLY SIZED FOR THE REQUIRED SPAN.
16. FILLER STRIPS SHALL NOT BE USED AT DECK EDGES UNLESS SHEAR STUDS ARE APPLIED TO THE SUPPORTING ELEMENT AT SPACINGS NOT GREATER THAN THE REQUIREMENTS OF DETAIL D/S5.14 ON THIS SHEET. 1
17. INTERMEDIATE SHORING OF THREE SPAN LENGTHS OF DECK TO SUPPORT CONSTRUCTION LOADS AND WET CONCRETE IS NOT REQUIRED, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
18. METAL DECK SHALL, IN GENERAL, BE FASTENED TO STEEL FRAMEWORK BY WELDING SHEAR STUDS THROUGH THE DECK. IF FIELD WELDED SHEAR STUDS THROUGH METAL DECK ARE NOT CALLED FOR IN SCHEDULE OR ON DRAWINGS, DECK SHALL BE WELDED TO STEEL FRAMEWORK BY PUDDLE WELDS NOT LESS THAN 3/4" DIAMETER, SPACED NOT MORE THAN 1'-0". WHERE SHEAR STUD SPACING EXCEEDS SPECIFIED MAXIMUM DECK WELD SPACING, USE ADDITIONAL PUDDLE WELDS AT 1'-0" BETWEEN STUDS. WHERE 2 UNITS ABUT, EITHER END TO END OR SIDE TO SIDE, EACH SHALL BE SO FASTENED TO STEEL FRAMING.
19. SIDES OF ADJACENT UNITS SHALL BE JOINED BY WELDING 1" LONG FUSION WELDS OR BUTTON PUNCHING AT A MAXIMUM SPACING OF 3'-0" BETWEEN SUPPORTS.
20. UNLESS OTHERWISE INDICATED IN THE DETAILS, METAL EDGE FORM SHALL BE 14 GAUGE COLD FORMED STEEL, WELDED AT SUPPORTING BEAM FLANGE AT 12" ON CENTER.
21. REINFORCE THE SLAB OVER THE METAL DECK WITH WELDED WIRE MESH, FURNISHED IN FLAT SHEETS. REINFORCEMENT SHALL BE 4X4 - W4XW4.
22. PLACE AN EXTRA LAYER OF WIRE MESH 6'-0" WIDE IN THE TOP OF THE SLAB ABOVE ALL INTERIOR GIRDERS WHICH RUN PARALLEL TO THE DECK SPAN.
23. PLACE #4 x 4'-0" DIAGONAL BAR NEAR TOP OF SLAB AT ALL CORNERS OF ALL OPENINGS LARGER THAN 6". PROVIDE 2 #4 x 4'-0" DIAGONAL BARS AT ALL RE-ENTRANT CORNERS.
24. PLACE SUPPORTS FOR WIRE MESH ON METAL DECK, SO THAT THE MESH IS MAINTAINED IN POSITION 3/4" BELOW THE TOP OF SLAB.
25. DEFLECTION OF DECK AND/OR STEEL WILL TAKE PLACE WHEN CONCRETE IS POURED.
    - THE SPECIFIED CONCRETE SLAB THICKNESS SHALL BE MAINTAINED AT COLUMN LOCATIONS.
    - SLAB THICKNESS AWAY FROM THE COLUMNS WILL VARY DUE TO BEAM AND DECK DEFLECTIONS.
    - MINIMUM THICKNESS OF CONCRETE REQUIRED SHALL BE PROVIDED, AND TOP SURFACES OF SLABS SHALL BE CONSTRUCTED WITHIN SPECIFIED TOLERANCES.
    - WHERE THERE IS RESIDUAL CAMBER IN STEEL BEAMS, FINISHED CONCRETE SURFACE SHALL FOLLOW CAMBER OF BEAMS, BUT FINISHED SURFACE SHALL NOT VARY BY MORE THAN 1/4" FROM ONE BEAM TO ANOTHER ADJACENT BEAM, NOR MORE THAN 1/2" TOTAL FOR LENGTH OF FLOOR.
    - CAMBERED BEAMS ARE INTENDED TO DEFLECT TO APPROXIMATELY A STRAIGHT LINE

    UNDER FULL WEIGHT OF CONCRETE SLAB, IF ALL TOP OF STEEL ELEVATIONS AND CAMBERS ARE AS SPECIFIED IN THE DRAWINGS.

    - THE CONTRACTOR SHALL BE FAMILIAR WITH THE CONDITIONS OF THE PROJECT AND FURNISH THE MATERIALS REQUIRED TO CREATE THE SPECIFIED FLOOR ELEVATION. NO ADJUSTMENT WILL BE MADE TO CONTRACT PRICE FOR ADDITIONAL CONCRETE REQUIRED BECAUSE OF DEFLECTION OF DECK OR STEEL OR DUE TO DIFFERENTIAL CAMBER.

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TYPICAL STEEL DETAILS

consultant	revisions
	1 ADDENDUM 01 12/05/25

ADDEMDUM 01

KENWOOD COMMUNITY CENTER

305 DORA STREET
SAN ANTONIO, TEXAS

CITY OF SAN ANTONIO

project number
24715
date
12/5/2025

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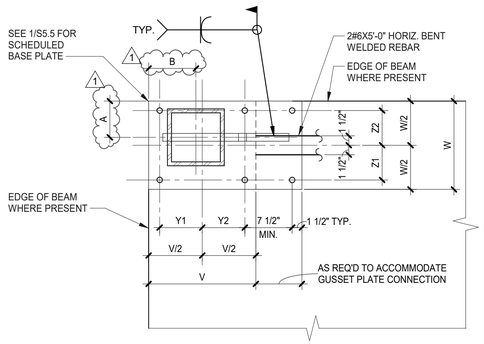
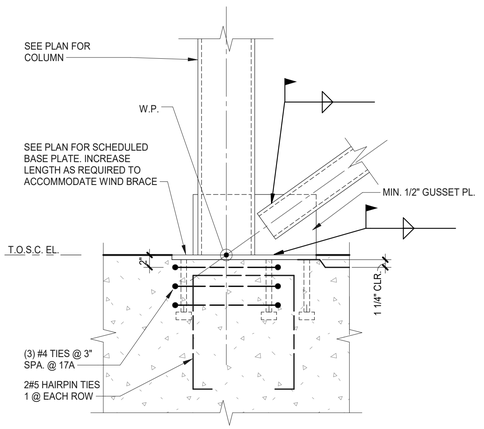
sheet number
S5.14

BEATY PALMER ARCHITECTS

NOTE:
SEE 12/S6.1 FOR BRACE TO GUSSET PLATE WELDS, TYP.



PLAN

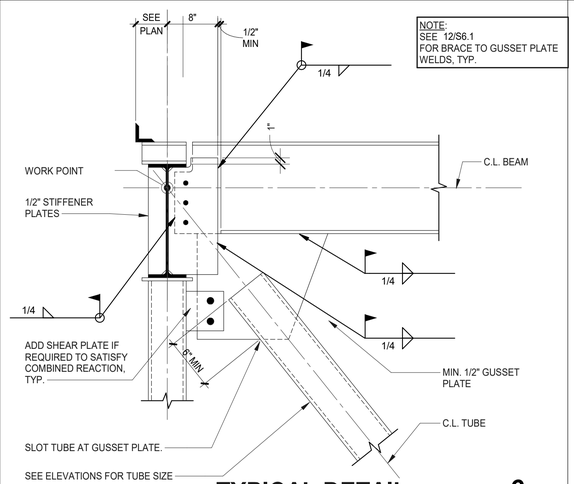


TUBE BRACE CONNECTION AT BASE OF TUBE COLUMN

TYPICAL DETAIL

NO SCALE

5

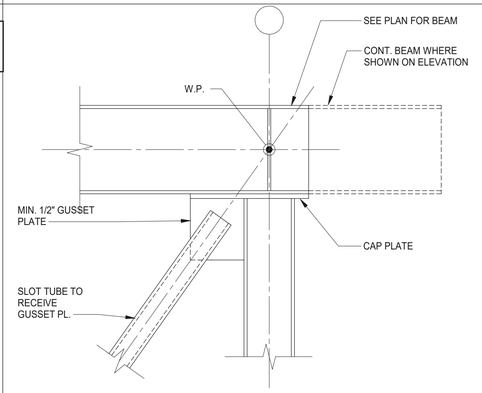


NOTE:
SEE 12/S6.1
FOR BRACE TO GUSSET PLATE WELDS, TYP.

TYPICAL DETAIL

NO SCALE

6



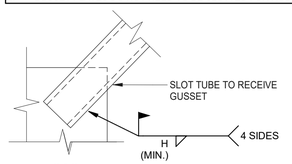
TUBE BRACE CONNECTION AT TOP OF COLUMN

TYPICAL DETAIL

NO SCALE

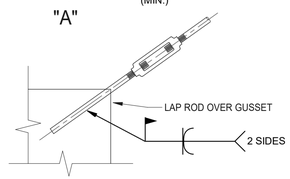
7

NOTES:
1. DESIGN WELDS AND GUSSET PLATES TO CARRY MINIMUM BRACE FORCES SHOWN ON WB ELEVATIONS ON S__.
2. MINIMUM WELD LENGTHS TO BE 4" EA. SIDE.
3. USE FILLET WELDS FOR TUBES, WITH SPECIFIED LEG SIZE AND APPROPRIATE EFFECTIVE THROAT.
4. WELDS SHALL BE BALANCED ABOUT THE CENTROID OF THE BASE.
5. USE DOUBLE-THREADED TURNBUCKLES WITH RODS TO BRING BRACE TO SNUG CONDITION.
6. GUSSET PLATES DO NOT NEED TO BE SLOTTED FOR RODS LESS THAN 1 1/4" DIA.



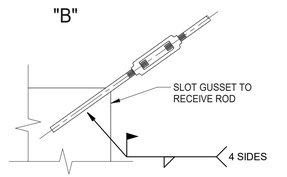
"A"

DETAIL "A" WELD TYPE: FILLET	
FILLET WELD NOMINAL SIZE	ALLOWABLE LOAD (K/IN.)
3/16"	10.8
1/4"	14.8
5/16"	18.4



"B"

DETAIL "B" WELD TYPE: FLARE BEVEL GROOVE	
MINIMUM ROD DIAMETER	ALLOWABLE LOAD (K/IN.)
5/8"	4.1
3/4"	4.9
7/8"	5.7
1"	6.5



"C"

DETAIL "C" WELD TYPE: FILLET			
ALLOWABLE LOAD (K/IN.)			
	NOM. WELD SIZE		
MIN. ROD DIA.	3/16"	1/4"	5/16"
1 1/4"	7.6	9.6	11.2
1 1/2"	8.0	10.4	12.8
1 3/4"	8.4	11.2	13.6
2"	8.8	11.6	14.0

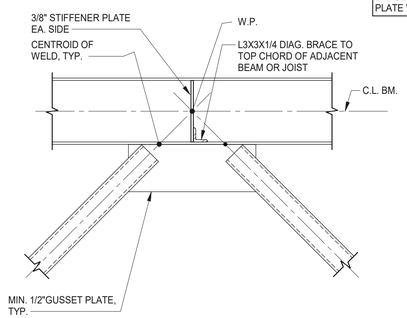
TYPICAL DETAIL

NO SCALE

1" = 1'-0"

12

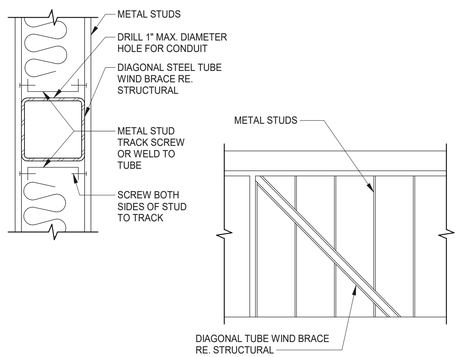
NOTE: SEE 12/S6.1 FOR BRACE TO GUSSET PLATE WELD



TYPICAL DETAIL

NO SCALE

9



WIND BRACING DETAIL

TYPICAL DETAIL

NO SCALE

10

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12/05/2025
Mudabbar

WIND BRACE TYPICAL DETAILS

consultant

revisions

1 ADDENDUM 01 12/05/25

ADDEMDUM 01

KENWOOD COMMUNITY CENTER

305 DORA STREET
SAN ANTONIO, TEXAS

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project number
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S6.1

BEATY PALMER ARCHITECTS

SECTION 271500 – COMMUNICATIONS HORIZONTAL CABLING

PART 1 - GENERAL

1.1 SCOPE

A. This section describes the products and execution requirements relating to telecommunications voice, data and video horizontal (station) cabling and termination components.

B. Horizontal cabling is the cabling between the work area telecommunications outlet and the telecommunications room (TR). Horizontal cabling is often referred to as "station cabling".

C. The horizontal cabling system will consist of the following:
1. Unshielded Twisted Pair (UTP) Cable
2. Outlet Termination Modules (jacks)
3. Outlet Termination Plates
4. Horizontal Fiber Optic/Copper Composite Cabling
5. Above Ceiling Cable Support Systems
6. Horizontal Cable Testing Requirements
7. Cable Pathway/Sleeve Requirements

1.2 RELATED WORK

A. Section 270000 – General Technology Requirements

B. Section 270500 – Communications General Requirements

C. Section 270526 – Grounding and Bonding for Technology Systems

D. Section 270528 – Pathways for Technology Systems

E. Section 270537 – Firestopping for Technology Systems

F. Section 271100 – Communications Equipment Rooms

G. Section 27 13 00 – Communications Backbone Cabling

H. Section 271600 – Communications Connecting Cords

I. Section 271800 – Communications Labeling and Identification

J. Section 27 40 00 – AV/Multimedia General Requirements

K. Section 27 41 00 – Audio Visual Systems

L. Section 27 51 00 – Distributed Communications Systems

M. Section 27 60 00 – Physical Security General Requirements

N. Section 27 62 00 – Electronic Access Control System

O. Section 27 64 00 – Video Surveillance System

P. Section 27 66 00 – Intrusion Detection System

1.3 DEFINITIONS

A. Refer to Section 270000 for additional definitions.

1.4 REFERENCE STANDARDS AND CODES

A. Refer to Section 270000 for additional requirements.

1.5 QUALIFICATIONS

A. Refer to Section 270000 for additional requirements.

1.6 PRE-CONSTRUCTION SUBMITTALS

A. Refer to Section 270000 for additional requirements.

1.7 CONSTRUCTION PROGRESS SUBMITTALS

A. Refer to Section 270000 for additional requirements.

1.8 CLOSEOUT SUBMITTALS

A. Refer to Section 270000 for additional requirements.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Unless noted otherwise, products in this section are intended as a basis of design and are open to substitutions per the product substitution procedures defined in Section 270000.

2.2 CATEGORY 6 HORIZONTAL COPPER CABLES

A. All cables and equipment shall be furnished, tested, installed and wired by the Contractor.

B. All horizontal data cables shall terminate on modular patch panels in the telecommunications closet as specified on the Drawings.

C. This specification defines the requirements for commercially available high performance Category 6 cable.

D. This cable shall be suitable for installation free-air, in building risers, in conduit, and/or in cable tray and shall carry CMP rating.

E. The cable design described herein shall exceed transmission performance of Category 6 cables.

F. Cables shall be Underwriters Laboratory (UL) listed, comply with Article 800 (Communications Circuits) of the National Electrical Code, and meet the specifications of NEMA (low loss), UL 444, and ICEA. Conductor shall also conform to the requirements for solid annealed copper wire in accordance with ASTM B 3.

G. All cables, termination components, and support hardware shall be furnished, tested, installed, and wired by the Contractor.

H. The jacket color for data cables shall be WHITE in color.

I. IMPORTANT: Cable and termination components (jack, patch panel, wiring blocks) are specified to function as a system. The compatibility of the cable to be installed with the proposed termination components shall be recognized and documented by the termination component manufacturer.

J. Manufacturers:
1. General Cable Genspeed 6000
2. Panduit

K. For use in wireless access point (AP) applications exceeding 295 feet:
1. The horizontal balanced twisted pair cable shall meet or exceed the Category 6 transmission characteristics per issue of ANSI/TIA/EIA-568.2-D
2. Four balanced pairs of 22AWG solid copper conductors.
3. Combined with the Category 6 series termination hardware, the channel assembly must be capable of supporting 2.5 GB/ Second up to 656 feet and 10 MB/ Second up to 850 feet.
4. Manufacturers:
   a. Paige Game Changer Cat 6 UTP OSP Cable, Black (Part # 258330804)
      i. Contractor shall terminate with Paige approved plugs:
         a. Simply45 S45-1700P
         b. Platinum tools 100029C

2.3 INFORMATION OUTLET

A. General
1. Station cables shall each be terminated at their designated workstation location in the connector types described in the subsections below. Included are modular jacks, faceplates, and surface mount raceway. The combined assembly is referred to as the Standard Information Outlet (SIO). These connector assemblies shall snap into a mounting frame.
2. SIOs shall be mounted in new outlet boxes, where existing boxes are in place, on surface mount raceway typically in surface raceway with barrier, in floor mount interface boxes, or on power poles either currently owned or new.
3. The telecommunications outlet frame shall accommodate or incorporate a mechanism for adjusting the surface plate to a plumb position.
4. When multiple jacks are identified in close proximity on the Drawings. The Contractor shall determine the optimum compliant configuration based on the products proposed.
5. The same orientation and positioning of jacks and connectors shall be utilized throughout the installation. Prior to installation, the Contractor shall submit the proposed configuration for each SIO type for review by the Consultant.

B. Modular Jack
1. Data jacks shall be non-keyed 8-pin modular jacks.
2. Termination components shall be designed to maintain the cable's pair twists as closely as possible to the point of mechanical termination.
3. Jacks shall utilize a four-layer printed circuit board to control NEXT.

4. Jack housings shall fully encase and protect printed circuit boards and IDC fields.
5. Modular jack contacts shall accept 2500 plug insertions.
6. Modular jack contacts shall be formed flat for increased surface contact with mated plugs. These contacts shall be arranged on the PC board in two staggered arrays of four to maximize contact spacing and minimize crosstalk.
7. Modular jack contacts shall be constructed of Beryllium copper for maximum spring force and resilience.
8. Contact Plating shall be a minimum of 50 micro inches of gold in the contact area over 50 micro-inch of nickel, compliant with FCC part 68.5.
9. Jack termination shall be 110 IDC, integral to the jack housing, laid out in two arrays of four contacts.
10. Jacks shall utilize a paired punch down sequence. Cable pairs shall be maintained up to the IDC, terminating all conductors adjacent to its pair mate to better maintain pair characteristics designed by the cable manufacturer.
11. Jacks shall utilize tin lead plated (60% tin/40%lead) phosphor bronze 110 insulation displacement contacts.
12. Jacks shall terminate 22-26 AWG stranded or solid conductors.
13. Jacks shall terminate insulated conductors with outside diameters up to .050".
14. Jacks shall be compatible with single conductor 110 impact termination tools.
15. Jacks shall be compatible with EIA/TIA 606 color code labeling and accept snap on icons for identification or designation of applications.
16. Jacks shall be marked as either T568A or T568B wiring.
17. Category 6 jacks shall be manufactured by:
    a. Panduit Mini-com TX6 Plus UTP Jack Modules
        i. Network Access
            a. Telecom Room End, Black, Panduit #CJ688TGBL
            b. Field End, Ivory, Panduit #CJ688TGEI
        ii. Wireless Access Points
            a. White, Panduit #CJ688TGWH
        iii. AV Access
            a. Violet, Panduit #CJ688TGVL
        iv. IP Security
            a. Red, Panduit #CJ688TGRD

C. Outlet Faceplates
1. Faceplates shall match the electrical outlets for material type and color. If unknown at the time of bidding, contractor shall assume stainless steel for pricing purposes and verify finish during submittals.
2. Faceplates shall incorporate recessed designation strips at the top and bottom of the frame for identifying labels. Designation strips shall be fitted with clear plastic covers.
3. Any unused jack positions shall be fitted with a removable blank inserted into the opening.
4. Modular jacks shall have capability to incorporate a dust cover that fits over and/or into the jack opening. The dust cover shall be designed to remain with the jack assembly when the jack is in use. No damage to the jack pinning shall result from insertion or removal of these covers. Dust covers that result in deformation of the jack pinning shall not be accepted.
5. Wall-mounted "voice only" outlets shall be installed where identified on the floor plan Drawings to accommodate wall-mounted telephone sets.

The wall plate shall be of stainless steel construction, accommodate one RJ-45 jack, mount on a standard single gang outlet box or bracket, and include mating lugs for wall phone mounting. Wall phone faceplates shall be manufactured by modular jack manufacturer:
a. Panduit KWP6PY

6. All standard information outlets and the associated jacks shall be of the same manufacturer throughout each/the building. An allowable exception, however, is the wall-mounted "voice only" outlet described above.
7. Faceplates shall be manufactured by modular jack manufacturer:
   a. Panduit - Grey – Coordinate exact color with owner. ~~CFPL2SY, CFPL4SY, or CFPL6S-2GY~~

D. Surface Mount Interface Box
1. Low profile, surface mount boxes shall incorporate recessed designation strips at the top for identifying labels. Designation strips shall be fitted with clear plastic covers.
2. The box shall feature built-in cable management for both fiber and copper applications.
3. Any unused jack positions shall be fitted with a removable blank inserted into the opening.
   a. Provide Panduit CMBWH-X.
4. Modular jacks shall have capability to incorporate spring-loaded shutter door for added protection from dust and other airborne contaminants. The dust cover shall be designed to remain with the jack assembly when the jack is in use.
5. The box shall have the capability to incorporate optional magnets that can be internally mounted.
6. Surface mount box shall be manufactured by modular jack manufacturer:
   a. Panduit CBXJ2HW-A

PART 3 - EXECUTION

3.1 TESTING

A. Refer to Section 270000 for additional requirements.

B. Testing of Paige Gamechanger shall comply with manufacturer testing requirements.

3.2 TWISTED PAIR TEST EQUIPMENT

A. Test equipment used under this contract shall be from a manufacturer who has a minimum of five years' experience in producing field test equipment. Manufacturers shall be ISO 9001 certified.

B. All test tools of a given type shall be from the same manufacturer and have compatible electronic results output. Test adapter cable shall be approved by the manufacturer of the test equipment. Baseline accuracy of the test equipment shall exceed TIA Level III, as indicated by independent laboratory testing.

C. Test equipment shall:
1. Be capable of certifying Category 5E, 6 and 6A permanent links.
2. Have a dynamic range of at least 100dB to minimized measurement uncertainty.

3. Be capable of storing full frequency sweep data for all tests and printing color graphical reports for all swept measurements.
4. Include S-band time domain diagnostics for NEXT and return loss.
5. Be capable of running individual NEXT, return loss, etc., measurements in addition to AutoText.
6. Include a library of cable types, stored by major manufacturer.
7. Store at least 1000 Category 5e, 6 or 6A autotests in internal memory.

D. The measurement reference plane of the test equipment shall start immediately at the output of the test equipment interface connector. There shall not be a time domain dead zone of any distance that excludes any part of the link from the measurements.

E. The approved manufacturer of the test equipment is Fluke and JDSU/Viavi.

3.3 TRAINING

A. Refer to Section 270000 for additional requirements.

3.4 WARRANTY

A. Refer to Section 270000 for additional requirements.

3.5 STATION CABLING

A. Information outlet cables with copper media (voice & data UTP and "TV" coax) shall be located as detailed on the Project Drawings.

B. The Contractor shall utilize these documents in determining materials quantities and routing.

C. Station cables shall be run to the information outlet from the telecommunications room serving each area in conduit, free-air above drop ceiling, in cable tray, and/or in modular furniture.

D. The maximum station cable drop length for UTP cables shall not exceed 295 feet (90 meters) in order to meet data communications performance specifications. This length is measured from the termination panel in the wiring closet to the outlet and shall include any slack required for the installation and termination. The Contractor shall install station cabling in a fashion to avoid unnecessarily long runs.

E. Contractor shall verify cable lengths comply with published standards; prior to installation of any horizontal cabling, this Contractor shall verify cable paths and confirm no horizontal cable will exceed 295 total feet. If it is determined that the cable will exceed 295', this Contractor shall route the cabling to another telecommunications room or determine shorter path so cables are under 295'. If this is not possible, the Contractor shall notify the Consultant prior to installation. Failure to do this step will not result in a change order from the Contractor.

F. All cables shall be installed splice-free unless otherwise specified.

G. During pulling operation, an adequate number of workers shall be present to allow cable observation at all points of duct entry and exit as well as the feed cable and operate pulling machinery.

H. Avoid abrasion and other damage to cables during installation.

I. All cable shall be free of tension at both ends. In cases where the cable shall bear some stress, Kellom grips may be used to spread the strain over a longer length of cable.

J. Where installed free-air, installation shall consider the following:
1. Cable shall run at right angles and be kept clear of other trades' work.
2. Cables shall be supported according to code, using "J-hooks" anchored to ceiling concrete, walls, piping supports, or structural steel beams.
3. Hooks shall be designed to maintain cable bend to larger than the minimum bend radius (typically 4x the cable diameter).
4. Supports shall be spaced at a maximum 4-foot interval unless limited by building construction. If cable "sag" at mid-span exceeds 6 inches, another support shall be used.

K. Cable shall never be laid directly on the ceiling grid.

L. Cables shall not be attached to existing cabling, plumbing, or steam piping, ductwork, ceiling supports, or electrical or communications conduit.

M. Manufacturers' minimum bend radius specifications shall be observed in all instances. Use of plastic cable ties is not acceptable. Cable bundles shall be neatly dressed with use of Velcro type straps.

N. Cable sheaths shall be protected from damage from sharp edges. Where a cable passes over a sharp edge, a bushing or grommet shall be used to protect the cable.

O. A coil of one foot in each cable shall be placed in the ceiling at the last support (e.g., J-hook) before the cables enter a fishable wall, conduit, surface raceway, or box. At any location where cables are installed into movable partition walls or modular furniture via a service pole, approximately 20 feet of slack shall be left in each station cable under 250 feet in length to allow for change in the office layout without re-cabling. These "service loops" shall be secured at the last cable support before the cable leaves the ceiling and shall be coiled from 100% to 200% of the cable recommended minimum bend radius.

P. To reduce or eliminate EMI, the following minimum separation distances from ≤480V power lines shall be adhered to:
1. Twelve (12) inches from power lines of <5-kVa
2. Eighteen (18) inches from high voltage lighting (including fluorescent)
3. Thirty-nine (39) inches from power lines of 5-kVa or greater
4. Thirty-nine (39) inches from transformers and motors

Q. All openings shall be sleeved and firestopped per prevailing code requirements upon completion of cable installation.

3.6 INFORMATION OUTLET

A. Information outlets shall be flush mounted on wall-mounted boxes, in floor-mounted boxes, on surface raceway, or on modular furniture.

B. Any outlets to be added where these conditions are not met shall be positioned at a height matching that of existing services or as directed otherwise by the Site Coordinator and the Consultant. Nominal height (from finished floor to center line of outlet) in new installation shall be as follows:
1. Standard Voice & Data Outlet (SIO) shall match adjacent electrical outlets.

2. Wall-Mounted Telephone Outlet (Standard Voice only) shall meet ADA requirements for both front and side reach access.

C. The Contractor shall coordinate the style of the telecommunication outlets to be installed in the floor mount boxes and surface mount raceways with the Owner.

3.7 ELEVATOR INTERFACE

A. The Contractor shall furnish and install an elevator interface box outside of the elevator equipment room.
1. The Contractor shall provide an elevator telecommunications junction box located outside of the Elevator Machine Room, for interface of telecommunication cable to the elevator cab(s). This requirement complies with ANSI A17.1 code which prevents work within the Elevator Machine Room, other than specific elevator work.
2. Telecommunications J-box shall include a keyed lockable door. Additionally, the J-box shall have proper punch down blocks and data jacks suitable for terminating all cables within the J-box.
3. The Contractor shall provide any voice/data cables to this enclosure as required.
4. Electronics or cable for other systems such as security shall not be placed within this enclosure.
5. Coordinate exact location of elevator security junction box with the Elevator Contractor, Architect, and Consultant, prior to installation.
6. Cables entering the elevator telecommunications J-box and elevator equipment room shall be appropriately labeled by the Contractor, so that the Elevator Contractor can connect the appropriate wires to the elevator controllers. Wires should be individually labeled to separate them from other elevator functions and to assist the Elevator Contractor in making proper connection points.

3.8 CABLE TERMINATION

A. At the telecommunication closet, all data and voice cables shall be positioned on termination hardware in sequence of the outlet ID, starting with the lowest number.

B. Termination hardware (blocks and patch panels) positioning and layout will be reviewed and approved by the Consultant prior to construction. The review does not exempt the Contractor from meeting any of the requirements stated in this document.

C. Cable Termination – Data/Voice UTP
1. Data/voice patch panels shall be designed and installed in a fashion as to allow future station cabling to be terminated on the panel without disruption to existing connections.
2. Data patch panels shall be sized to accommodate a minimum of 20% growth in the quantity of stations relative to the initial installation.
3. At information outlets and data/voice patch panels, the installer shall ensure that the twists in each cable pair are preserved to within 0.5 inch of the termination for data/voice cables. The cable jacket shall be removed only to the extent required to make the termination.

D. Cable Termination – Fiber Optic
1. All fibers shall be terminated using the specified connector type.
2. All terminated fibers at the telecommunications closets shall be mated to couplings mounted on patch panels. Couplings shall be mounted on a

panel that, in turn, snaps into the housing assembly. Any unused panel positions shall be fitted with a blank panel inhibiting access to the fiber optic cable from the front of the housing.

3. All couplings shall be fitted with a dust cap.
4. Fibers from multiple locations may share a common enclosure, but they shall be segregated on the connector panels and clearly identified. Fibers from multiple destinations may be secured in a common enclosure, provided they are clearly identified as such. Fibers from different locations shall not share a common connector panel (e.g., "insert").
5. Slack in each fiber shall be provided as to allow for future re-termination in the event of connector or fiber end-face damage. Adequate slack shall be retained to allow termination at a 30" high workbench positioned adjacent to the termination enclosure(s). A minimum of one meter (~39") of slack shall be retained regardless of panel position relative to the potential work area.
6. If the cable is armored the Contractor shall install a plastic twist-on bushing on each end of interlocking armored fiber to protect cable from sharp edges of the armor.

3.9 TEST DATA – COPPER MEDIA

A. The test result records saved by the tester shall be transferred into a Windows-based database utility that allows for the maintenance, inspection, and archiving of these test records. A guarantee shall be made that these results are transferred to the PC unaltered, i.e., "as saved in the tester" at the end of each test. Comma separated value (CSV) format is not acceptable.

B. The database for the completed job – including twisted-pair copper cabling links, if applicable –shall be stored and delivered on USB flash drive. This USB flash drive shall include the software tools required to view, inspect, and print any selection of test reports.

C. A paper copy of the test results shall be provided that lists all the links that have been tested with the following summary information:

1. The identification of the link in accordance with the naming convention defined in the overall system documentation.
2. The overall Pass/Fail evaluation of the copper channel-under-test, including the NEXT worst-case margin (margin is defined as the difference between the measured value and the test limit value).
3. The overall Pass/Fail evaluation of the fiber link-under-test, including the Attenuation worst-case margin (margin is defined as the difference between the measured value and the test limit value).
4. The date and time the test results were saved in the memory of the tester.

3.10 COPPER STATION CABLES

A. Station cabling testing shall be from the jack at the outlet in the work area to the patch panel on which the cables are terminated.

B. Testing shall be of the permanent link. Contractor shall warrant performance, however, based on channel performance and provide patch cords that meet channel performance criteria. All cabling not tested strictly in accordance with these procedures shall be retested at no cost to the Owner.

C. Testing shall be from the jack at the SIO to the patch panel on which the cables are terminated at the wiring hub.

D. Horizontal "station" cables shall be free of shorts within the pairs and shall be verified for continuity, pair validity and polarity, and wire map (conductor position on the modular jack). Any defective, split, or mispositioned pairs shall be identified and corrected.

E. Testing of the cabling systems rated at TIA Category 5e/6/6a and above shall be performed to confirm proper functioning and performance.

F. Testing of the transmission performance of station cables (Category 5e/6/6a) shall include the following:
1. Length
2. Attenuation
3. Pair to Pair NEXT
4. ACR
5. PSNEXT Loss
6. Return Loss
7. Pair to Pair ELFEXT Loss or ACRF
8. PSEFEXT Loss or PS-ACRF
9. Propagation Delay
10. Delay Skew
11. Return Loss

G. The maximum length of station cable shall not exceed 90 meters, which allows 10 meters for equipment and patch cables.

H. Worst case performance at 20°C, based on a horizontal cable length of 90 meters and equipment cord length of 4 meters, shall be as follows:
1. CATEGORY 6 (Permanent LINK)

Frequency (MHz)	Insertion Loss (Maximum dB)	NEXT Loss Pair to Pair (dB)	PS-NEXT Loss (dB; Worst Case)	ELFEXT Loss Pair to Pair (dB)	PSELFEXT loss (dB)
1.0	1.9	65.0	62.0	64.2	61.2
4.0	3.5	64.1	61.8	52.1	49.1
8.0	5.0	59.4	57.0	46.1	43.1
10.0	5.5	57.8	55.5	44.2	41.2
16.0	7.0	54.6	52.2	40.1	37.1
20.0	7.8	53.1	50.7	38.2	35.2
25.0	8.8	51.5	49.1	36.2	33.2
31.25	9.8	50.0	47.5	34.3	31.3
62.5	14.1	45.1	42.7	28.3	25.3
100.0	18.0	41.8	39.3	24.2	21.2
200.0	26.1	36.9	34.3	18.2	15.2
250.0	29.5	35.3	32.7	16.2	13.2

I. In the event results of the tests are not satisfactory, the Contractor shall make adjustments, replacements, and changes as necessary and shall then repeat the test or tests that disclosed faulty or defective material, equipment, or installation method. The Contractor shall make additional tests as the Consultant deems necessary at no additional expense to the Owner or Consultant.

J. All data shall indicate the worst-case result, the frequency at which it occurs, the limit at that point, and the margin. These tests shall be performed in a swept frequency manner from 1 MHz to highest relevant frequency, using a swept frequency interval that is consistent with TIA and ISO requirements. Information shall be provided for all pairs or pair combination and in both directions when required by the appropriate standards.

K. Cables shall be tested to the maximum frequency defined by the standards covering that performance category. Transmission Performance Testing shall be performed using a test instrument designed for testing to the specified frequencies. Test records shall verify "PASS" on each cable and display the specified parameters—comparing test values with standards-based "templates" integral to the unit.

END OF SECTION

SECTION 271600 – COMMUNICATIONS CONNECTING CORDS

PART 1 - GENERAL

1.1 SCOPE

A. This section describes the products relating to high quality Category 6 voice and data patch cords.

B. In this section the term patch cords refers to the cords that connect Owner provided data network electronics to the horizontal cable infrastructure.

C. It is important that the horizontal cable system and the provided patch cords work as one complete system for guaranteed channel performance. Patch cords shall be manufactured by the same manufacturer as the jack and patch panels.

D. The Contractor shall provide and deliver all cords as listed in this section. The Owner will be responsible for installation of cords.

1.2 RELATED WORK

A. Section 270000 – General Technology Requirements

B. Section 270500 – Communications General Requirements

C. Section 270526 – Grounding and Bonding for Technology Systems

D. Section 270528 – Pathways for Technology Systems

E. Section 270537 – Firestopping for Technology Systems

F. Section 271100 – Communications Equipment Rooms

G. Section 27 13 00 – Communications Backbone Cabling

H. Section 271500 – Communications Horizontal Cabling

I. Section 271800 – Communications Labeling and Identification

J. Section 27 60 00 – Physical Security General Requirements

K. Section 27 62 00 – Electronic Access Control System

L. Section 27 64 00 – Video Surveillance System

1.3 DEFINITIONS

A. Refer to Section 270000 for additional definitions.

1.4 REFERENCE STANDARDS AND CODES

A. Refer to Section 270000 for additional requirements.

1.5 QUALIFICATIONS

A. Refer to Section 270000 for additional requirements.

1.6 PRE-CONSTRUCTION SUBMITTALS

A. Refer to Section 270000 for additional requirements.

1.7 CONSTRUCTION PROGRESS SUBMITTALS

A. Refer to Section 270000 for additional requirements.

1.8 CLOSEOUT SUBMITTALS

A. Refer to Section 270000 for additional requirements.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Unless noted otherwise, products in this section are intended as a basis of design and are open to substitutions per the product substitution procedures defined in Section 270000.

2.2 CATEGORY 6 AND 6A PATCH CORDS

A. The Owner has the right to determine the final length of the patch cords after the contract is awarded.

B. All patch cords shall be round and consist of eight insulated 28 AWG, stranded copper conductors, arranged in four color-coded twisted pairs within a flame retardant jacket and be backwards compatible with lower performing categories. Modular patch cords shall utilize ISO termination method that is designed to reduce and control near-end cross talk (NEXT) and far end cross talk (FEXT) without compromising signal impedance.

C. Both ends of the cord shall be equipped with modular 8-position (RJ45 style) plugs wired straight through with standards compliant wiring. All modular plugs shall exceed FCC CFR 47 part 68 subpart F and IEC 603.7 specifications, and have 50 micro inches of gold plating over nickel contacts. Cable shall be label-verifiable. Cable jacket shall be factory marked at regular intervals indicating verifying organization and performance level. Patch cords shall have color-coded insert molded strain relief boot with a latch guard to protect against snagging. Additional color-coding shall be available by the use of snap-in icons.

D. Patch cords shall be wired straight through. Pin numbers shall be identical at each end and shall be paired to match T568B patch panel jack wiring per ANSI/TIA/EIA-568-B. Patch cords shall be unkeyed.

E. The manufacturer of the cords shall be the same as the manufacturer for UTP termination hardware (jacks & patch panels). Cords shall be highest quality patch cords available by connectivity manufacturer.

F. The patch cords shall match the Category rating of the jack and cable it will be connecting to.

G. This Contractor shall provide the following patch cords (for pricing purposes only; refer to article 3.04 below):

Qty	Length	Notes
2 for each terminated cable plus 25% spare parts	15ft	Non-Plenum 28 AWG Cat 6/6A - Black

2.3 FIBER OPTIC PATCH CORDS

A. The Owner has the right to determine the final length of the patch cords after the contract is awarded.

B. All SM fiber optic patch cords shall:
1. Be duplex 2-3mm tight buffer design with Yellow jacket.
2. Have LC-LC connectors with straight thru connectors (A-A Polarity).
3. Have 8-9-micron OS2 core.
4. Manufacturer:
   a. Panduit
   b. Corning
   c. Or approved equal

C. This Contractor shall provide the following patch cords (for pricing purposes only; see article 3.04 below):

Qty	Length	Notes
2 for each strand plus 25% spare parts	3m	SM Non-Plenum

PART 3 - EXECUTION

3.1 TESTING

A. Refer to Section 270000 for additional requirements.

3.2 TRAINING

A. Refer to Section 270000 for additional requirements.

3.3 WARRANTY

A. Refer to Section 270000 for additional requirements.

3.4 ORDERING AND DELIVERY

A. Prior to ordering patch cords the Contractor shall schedule meeting with Owner and Consultant to verify patch cord lengths, colors and quantities.

B. Contractor shall coordinate delivery of patch cords with Owner. Contractor shall have list of delivered cords and shall have Owner sign delivery sheet at time of delivery.

END OF SECTION

SECTION 276000 – PHYSICAL SECURITY GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 SCOPE

A. Refer to Section 270000 for additional project scope information. This section describes the general product and execution requirements related to furnishing and installing Physical Security Systems. Physical Security Systems includes Video Surveillance, Electronic Access Control, Intrusion Detection, and their sub systems.

B. Contractor shall be responsible for providing complete and functional systems as described in this specification and project drawings.

C. Contractor shall provide low voltage power and control lines to and from power supplies, remotely controlled equipment, and other devices, even though not explicitly indicated on drawings or listed in equipment tables.

D. Contractor shall be, or Contractor shall provide, an Electrical Contractor for provision of high voltage power and conduits/raceway, where necessary.

E. Contractor shall be responsible for any and all related programming and end-user training unless noted otherwise.

1.2 RELATED WORK

A. Section 270000 – General Technology Requirements

B. Section 270500 – Communications General Requirements

C. Section 270526 – Grounding and Bonding for Technology Systems

D. Section 270528 – Pathways for Technology Systems

E. Section 270537 – Firestopping for Technology Systems

F. Section 271100 – Communications Equipment Rooms

G. Section 271500 – Communications Horizontal Cabling

H. Section 271600 – Communications Connecting Cords

I. Section 271800 – Communications Labeling and Identification

J. Section 27 51 00 – Distributed Communications Systems

K. Section 27 62 00 – Electronic Access Control System

L. Section 27 64 00 – Video Surveillance System

M. Section 27 66 00 – Intrusion Detection System

N. Section 27 68 00 – Detention Security Systems

1.3 DEFINITIONS

A. Refer to Section 270000 for additional definitions.

1.4 REFERENCE STANDARDS AND CODES

A. Refer to Section 270000 for additional requirements.

1.5 QUALIFICATIONS

A. Refer to Section 270000 for additional requirements.

C. Training: Programmer shall have received manufacturer-provided and/or manufacturer approved training in the configuration of the physical security system(s) being provided.

D. Certification: Programmer shall hold the highest applicable manufacturer programming certification(s) offered by the manufacturer(s) of the physical security system(s).

E. Submittal: Certification certificate shall be submitted with physical security system(s) submittals.

1.6 PRE-CONSTRUCTION SUBMITTALS

A. Refer to Section 270000 for additional requirements.

C. Hardware, Application Software, and Network Requirements: A system description including analysis and calculations used in sizing equipment required by the Physical Security Systems. The description shall show how the equipment will operate as a system to meet the performance requirements of the systems. The following information shall be supplied as a minimum:

1. Server(s) processor(s), disk space and memory size
2. Workstation(s) processor(s), disk space and memory size
3. Operating System(s) Software, where software is provided or upgraded
4. Application Software, with Optional and Custom Software Modules supplied in this project
5. Integration Schemes: Proposed connectivity, software, development requirements, and SDK information, for inter-system communication.
6. Network reliability requirements
7. Number and location of LAN ports required
8. Number of IP addresses required.
9. Other specific network requirements, preferences, and constraints
10. Backup/archive system size and configuration
11. Start-up operations
12. Description of site (field) control equipment (Controllers/Field Panels) and their configuration
13. Access control power calculations.
14. Battery backup requirements

1.7 CONSTRUCTION PROGRESS SUBMITTALS

A. Refer to Section 270000 for additional requirements.

1.8 CLOSEOUT SUBMITTALS

A. Refer to Section 270000 for additional requirements.

B. Quick-Reference Guides: Contractor shall create a concise quick-reference guide covering normal system operation and basic troubleshooting procedures for each room/system type. Length of each quick-reference guide shall be commensurate with the information needed for successful operation, subject to Owner approval.
   1. Upon Owner approval, Contractor shall provide two (2) laminated copies and one (1) digital copy for each room/system type.

C. Serial Numbers: Contractor shall provide a list of serial numbers for all supplied components with serial numbers and with a unit price greater than $99. Organize list by room/system type.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Unless noted otherwise, products in this section are intended as a basis of design and are open to substitutions per the product substitution procedures defined in Section 270000.

2.2 GROUNDING AND BONDING

A. The Contractor shall bond and ground the primary protectors and the metallic member of cable sheaths to building ground utilizing a minimum of 14-awg and no greater then 6-awg at the closest point of entrance as practical, not exceeding 50 feet, in accordance with the NEC.

2.3 REFER TO INDIVIDUAL SECTIONS FOR ADDITIONAL PRODUCT INFORMATION.

2.4 FIRE STOPPING MATERIALS

A. Refer to Section 270000 for additional requirements.

PART 3 - EXECUTION

3.1 NETWORK TIME PROTOCOL (NTP) SYNCHRONIZATION

A. All security systems as well as additional integrated systems such as intercom/PA, SQL/database servers and data logging servers shall synchronize to a common NTP server.

B. All systems including servers and workstations shall be within 250ms of each other or less depending on specific system requirements. The synchronization frequency shall be no less than every 1 hour. The Contractor shall use software such as NetTime (www.timesynctool.com) installed on the servers and dedicated workstations.

C. The Contractor shall coordinate with the Owner for a NTP server connection address.

3.2 TESTING

A. Refer to Section 270000 for additional requirements.

3.3 TRAINING

A. Refer to Section 270000 for additional requirements.

B. On-Site Training
1. General: Present, review and describe equipment and materials to the Owner and Owner's operating personnel and fully demonstrate the operation and maintenance of the systems, equipment and devices specified herein.
2. Include with new systems, Contractor to arrange and provide for video recording of each onsite training session.
a. Provide professional video and audio recording of each software screen option with Owner approval of content.

b. Provide end user video recording for all training levels.

3. Training shall comprise two separate levels of training;
a. User Group upon substantial completion of the project.

i. User group training shall include a site/building walk through indicating locations of equipment and their usage.

ii. User group training shall include the operation of workstation capability of system monitoring, command override and report generation.

b. Maintenance Group upon completion of the project prior to close out.

i. Maintenance group training shall include a site/building walk through indicating locations of equipment and their usage at up to six representative sites.

ii. Review of a-build documentation at each controller location.

iii. Troubleshooting techniques in hardware and software.

4. The training shall cover the overall system, each individual system, each subsystem, and each component. The training shall also cover procedures for database management, normal operations, and failure modes with response procedures for each failure. Each procedural item shall be applied to each equipment level.

C. Duration: Refer to the individual sections for the minimum time requirements.

3.4 WARRANTY

A. Refer to Section 270000 for additional requirements.

B. Furnish and guarantee maintenance, repair and inspection service for the system using factory trained authorized representatives of the manufacturer of the equipment for a period of one year after final acceptance of the installation.

C. Third Party Device warranties are transferred from the manufacturer to the Contractor, which may then transfer third party warranties to the Owner. Specific third party warranty details, terms and conditions, remedies and procedures, are either expressly stated on, or packaged with, or accompany such products. The warranty period may vary from product to product. These products include but

are not limited to devices that are directly interconnected to the field hardware or computers and are purchased directly from the manufacturer.

D. Purpose
1. The Contractor shall repair any system malfunction or installation deficiency discovered by the Owner or their representatives during the burn in and warranty period.
2. The Contractor shall correct any installation deficiencies found against the contract drawings and specifications discovered by the Owner or their representatives during the warranty period.

3.5 EXAMINATION OF SITE AND DOCUMENTS

A. Bidder shall examine all documents, shall visit the site(s) prior to submitting proposal, record their own investigations, and shall inform themselves of all conditions under which the Work is to be performed at the site(s) of the Work, including the structure of the ground, the obstacles that may be encountered, and all of the conditions of the documents, including superintendence of the Work, requirements of temporary environmental controls, the time of completion, list of Subcontractors, and all other relevant matters that may affect the Work or the proposal process.

B. Verify cable lengths comply with published standards.

C. Notify Owner/Consultant of installation that would exceed maximum lengths prior to installation of cable.

D. Contactor shall consult with Owner/Consultant regarding alternative routing or location of cable.

E. Do not proceed until unsatisfactory conditions have been corrected.

F. Failure to make the examination shall not result in any Change Order requests.

G. The Bidder shall base the proposal on the site(s) examination, materials complying with the plans and specifications and shall list all materials where the proposal form requires.

H. The commencement of work by the Contractor shall indicate acceptance of existing conditions, unless a written notice of exceptions has been provided to the Owner/Consultant prior to commencement.

I. If the Contractor observes, during preliminary examinations or subsequent work, existing violations of fire stopping, electrical wiring, grounding, or other safety- or code-related issues, the Contractor shall report these to the Owner/Consultant in a timely manner.

3.6 INSTALLATION REQUIREMENTS

A. Refer to Section 270000 for additional requirements.

B. Contractor shall furnish and install all cables, connectors, and equipment as shown on Drawings and as specified herein.

C. It is the Contractor's responsibility to survey the site and include all necessary costs to perform the installation as specified. This includes any modifications required to route and conceal horizontal distribution wiring.

D. Beginning installation means Contractor accepts existing conditions.

E. The Contractor shall be responsible for identifying and reporting to the General Contractor any existing damage to walls, flooring, tiles, and furnishings in the work area prior to start of work. All damage to interior spaces caused by the installation of cable, raceway, or other hardware shall be repaired by the Contractor.

F. Repairs shall match preexisting color and finish of walls, floors, and ceilings. Any Contractor-damaged ceiling tiles, floor, and carpet shall be replaced to match color, size, style, and texture.

G. Where unacceptable conditions are found, the Contractor shall bring this to the attention of the construction supervisor immediately. A written resolution will follow to determine the appropriate action to be taken.

H. All wiring shall be run "free-air," in conduit, in a secured plastic raceway or in modular furniture as designated on the Drawings. All cable shall be free of tension at both ends. PLENUM rated cable shall be used in areas used for air handling.

I. Avoid abrasion and other damage to cables during installation.

J. The cable system will be tested and documented upon completion of the installation as defined in the section below.

K. All manufactured items, materials, and equipment shall be applied, installed, connected, erected, used, and adjusted as recommended by manufacturers or as indicated in their published literature, unless specifically noted herein to the contrary.

3.7 COOPERATION

A. The Contractor shall cooperate with Consultant's and Owner's personnel in locating work in a proper manner.

B. Should it be necessary to raise, lower, or move longitudinally any part of the work to better fit the general installation, such work shall be done at no extra cost to the Owner, provided such decision is reached prior to actual installation. The Contractor shall check location of electrical outlets with respect to other installations before installing.

3.8 COMMISSIONING SUBMITTALS

A. Provide the following to the Owner no later than 30 days prior to system commissioning/programming.
   1. Commissioning Test Plan and Check-Off List: Specified elsewhere in this document.
   2. Software: One set of fully functional software in manufacturer's original media packaging, temporarily licensed for a 30-day evaluation period.
   3. Web-based Training: Access to web-based training modules.

3.9 COMMISSIONING

A. Provide programming and commissioning for each system as described in individual sections below.

B. This Contractor shall develop and submit a plan for coordination of settings and programming issues with the Consultant and Owner no later than 30 days prior to performing programming and commissioning.

C. The security Contractor is required to place entire system into full and proper operation as designed and specified.

D. Verify that all hardware components are properly installed, connected, communicating, and operating correctly.

E. Verify that all system software is installed, configured, and complies with specified functional requirements.

F. Perform final acceptance testing in the presence of Owner's representative, executing a point-by-point inspection against a documented test plan that demonstrates compliance with system requirements as designed and specified.
1. Submit documented test plan to Owner at least 14 days in advance of acceptance test, inspection, and check-off.
2. Conduct final acceptance tests in presence of Owner's representative, verifying that each device point and sequence is operating correctly and properly reporting back to control panel and control center.
3. Acceptance by Owner is contingent on successful completion of check-off; if check-off is not completed due to additional work required, re-schedule and perform complete check-off until complete in one pass, unless portions of system can be verified as not adversely affected by additional work.
4. The system shall not be considered accepted until all acceptance test items have been successfully checked-off. Beneficial use of part or all of the system shall not be considered as acceptance.

3.10 OPERATION AND MAINTENANCE MANUALS

A. Part One: Notwithstanding requirements specified elsewhere, submit the following labeled as the "Operating and Maintenance Manual" within thirty (30) days after Final Acceptance of the Installation:
1. Record Drawings: Submit two (2) copies of revised versions of drawings as submitted in the "Shop and Field" and "Equipment Wiring Diagrams" Submittals showing actual device locations, conduit routing, wiring and relationships as they were constructed. Include nomenclature showing as-built wire designations and colors. Drawings shall include room numbers coinciding with Owner space planning numbering. Drawings shall be submitted in electronic editable AutoCAD 2010 files, in ".dwg" format, on CD or DVD disks.
2. Manuals: Submit two (2) copies of each of the following materials in bound manuals, or electronic PDF copies, with labeled dividers:
   a. A final Bill of Material for each system
   b. Equipment Instruction Manuals: Complete, project specific comprehensive instructions for the operation of devices and equipment provided as part of this work.
   c. Manufacturers Instruction Manuals: Specification sheets, brochures, Operation Manuals and service sheets published by the manufacturers of the components, devices and equipment provided.
   d. Include information for testing, repair, troubleshooting, assembly, disassembly and recommended maintenance intervals.

e. Provide a replacement parts list with current prices. Include list of recommended spare parts, tools, and instruments for testing and maintenance purpose.

f. Performance, Test and Adjustment Data: Comprehensive documentation of performance verification according to parameters specified herein.

g. Warranties: Provide an executed copy of the Warranty Agreement and copies of all manufacturer's Warranty Registration papers as described herein.

B. Part Two: Within fourteen (14) days of receipt of Consultant reviewed Operating and Maintenance Manual (Phase One), submit three (3) electronic copies in AutoCAD 2010 editable .dwg format of the reviewed Record Drawings and three (3) copies of the reviewed Operating and Maintenance Manuals to the Owner, on CD or DVD disks.
1. Within each equipment enclosure and/or terminal cabinet, the Contractor shall place a Single Line drawing of the system(s) and the respective Terminal Cabinet Wiring Diagram in a clear plastic sleeve permanently attached to the inside cover of the terminal cabinet.
2. In each equipment enclosure the Contractor shall place a drawing providing device locations served by the equipment within the enclosure with identification that is identical to the wiring tags and with the software description of each point.
3. The Contractor shall provide to the Owner one (1) copy of new administration and user software, including required graphical maps, on CD or DVD disks.

C. Sufficient information, (detailed schematics of subsystems, assemblies and subassemblies to component level) clearly presented, shall be included to determine compliance with drawings and specifications.

3.11 CLOSEOUT PROCEDURES

A. Notification: Contractor shall provide written notification to Architect/Consultant and Owner when Contractor is satisfied that the work has been completed and is ready for inspection.

B. Closeout Submittals: Contractor shall provide closeout documentation to the Architect/Consultant. The Architect/Consultant shall receive the closeout submittals no less than 72 hours prior to the scheduled inspection time.

C. Inspection: Contractor shall be present for the inspection by the Architect/Consultant. Contractor shall supply all testing equipment needed to verify compliance with the specifications found in Bid package.

D. Punch List: Work or materials found to be incomplete, of unsatisfactory quality, failing to meet the specifications in the Bid package, and/or unacceptable to the Architect/Consultant shall be documented by the Architect/Consultant and provided to Contractor to rectify.

E. Re-Inspection: If a re-inspection is necessary, the costs of the Architect/Consultant's additional travel, hours, and expenses may be deducted by the Owner from the contract amount due Contractor.

F. Punch List Approval: The punch list shall be considered complete only after having been signed by the Owner and Architect/Consultant.

G. The system has successfully completed a 30-day performance period.

H. Payment Authorization: Final payment will be authorized only after all closeout procedures and requirements have been followed and fulfilled by Contractor and approved in writing by the Owner and Architect/Consultant, including punch list(s) and/or re-inspection(s).

END OF SECTION

SECTION 276200 – ELECTRONIC ACCESS CONTROL SYSTEM

PART 1 - GENERAL

1.1 SCOPE

A. This specification section covers the furnishing and installation of a new and complete, low-voltage, Electronic Access Control System (EACS).

B. Contractor shall furnish and install access control hardware devices, mounting brackets, power supplies, switches, controls, consoles and other components of the system as required.

C. Contractor shall furnish and install access control related software to allow this system expansion. Software includes required license addition for access control readers and electrified portals, workstations and required physical security system Integration.

D. Furnish and install outlets, junction boxes, conduit, connectors, wiring, and other accessories necessary to complete the system installation. Requirements shall be in accordance with Division 26.

E. Refer to Section 270000 for additional project scope information.

1.2 PRECEDENCE

A. Obtain, read and comply with General Conditions and applicable sub-sections of the contract specifications. Where a discrepancy may exist between any applicable sub-section and directions as contained herein, this section shall govern.

1.3 RELATED WORK

A. Division 08 - Door Hardware

B. Section 270000 – General Technology Requirements

C. Section 270500 – Communications General Requirements

D. Section 270526 – Grounding and Bonding for Technology Systems

E. Section 270528 – Pathways for Technology Systems

F. Section 270537 – Firestopping for Technology Systems

G. Section 271100 – Communications Equipment Rooms

H. Section 271500 – Communications Horizontal Cabling

I. Section 271600 – Communications Connecting Cords

J. Section 271800 – Communications Labeling and Identification

K. Section 27 60 00 – Physical Security General Requirements

L. Section 27 64 00 – Video Surveillance System

1.4 DEFINITIONS

A. ACS – Access Control System

B. IDS – Intrusion Detection System

C. VMS – Video Management System

D. Refer to Section 270000 for additional definitions.

1.5 REFERENCE STANDARDS AND CODES

A. IEC 60839-11-5:2020 - Open Supervised Device Protocol (OSDP)

B. Refer to Section 270000 for additional requirements.

1.6 QUALIFICATIONS

A. Lock installers for fire rated doors are to be trained and certified by the manufacturer via Intertek Qualified Personnel (IQP) Raceway and Hardware Installer Program on the proper installation and adjustment of fire, life safety, and security products in compliance with NFPA 80 including: hanging devices; locking devices; closing devices; and seals.
   1. Trained and qualified raceway installers are required to ensure modifications do not affect the integrity of fire doors. Doors must remain compliant with NFPA 80.

B. Refer to Section 270000 for additional requirements.

1.7 PRE-CONSTRUCTION SUBMITTALS

A. The Contractor shall submit the access control hardware layouts which includes the number of controllers, sub-panels and other associated devices per location.

B. The Contractor shall submit full power calculations which includes the anticipated power loads, number and type of power supplies including all power supply boards, number of 120VAC circuits required, battery backup including the quantities of batteries to meet requirements, PoE loads, fire alarm connection requirements, etc.

C. Refer to Section 270000 and 27 62 00 for additional requirements.

1.8 PRE-INSTALLATION PROCEDURES

A. The Contractor shall cable all controlled or monitored doors, intercoms, etc. and terminate this cable in the access control panels no less than 3 weeks prior to substantial completion regardless of the status of the field devices such as door hardware, card readers, intercoms, etc.

B. The Contractor shall program the access control system no less than 2 weeks prior to substantial completion so when field devices are installed and terminated, associated door hardware and full system functionality can be tested. Programming shall include all doors, associated inputs, outputs, and interoperability regardless of final field device status.

C. The Contractor shall perform final connections and testing onsite when field devices such as electrified door hardware has been installed.

D. Refer to section 270000 and 28 00 00 for additional requirements.

1.9 CONSTRUCTION PROGRESS SUBMITTALS

A. Refer to Section 270000 requirements.

1.10 CLOSEOUT SUBMITTALS

A. Refer to Section 270000 for additional requirements.

PART 2 - PRODUCTS

2.1 ELECTRONIC ACCESS CONTROL HARDWARE

A. The Access Control Panel (ACP) is used as the subcomponent to the security management system for the purpose of initiating all decision-making criteria as it relates to the cardholders, readers, and associated hardware connected. Decisions are made by the ACP and uploaded to the host computer as historical events.

B. The ACP shall be listed for Underwriters Laboratory (UL):
1. UL294 (Access Control System)

C. Provide an access control system based off on Identiv Velocity Security Management platform hardware and interface modules. The panels shall:
1. Operate without the need for the host to be on-line. No decisions shall be dependent on the host.
2. Support on-board 10/100 Ethernet communications to the host as primary communication.
3. Include a request-to-exit and door status contact input for each reader without the need for additional modules for future use.
4. Detect “forced entry” and “door left open.” A separate action is required for each.
5. Allow mapping of readers to any output address within the same controller.
6. Support at least 50 user-selected holidays.
7. Allow all unused door logic, such as door strike relays, request-to-exit inputs, and door status inputs to be assigned as general-purpose points.
8. Support optional modules for additional customization of inputs and outputs.
9. Wireless intelligent lock support.
10. Wired intelligent lock support.
11. Elevator support.
12. Maintain historical information for a minimum of three (3) months without AC power.
13. Automatically adjust for daylight savings time and leap year.
14. Support a variety of reader technologies.
15. Support for OSDP V2 and OSDP V2 SC (Secure Channel).
16. Support the following card/reader technologies as a minimum:
    a. Magnetic Stripe
    b. 125KHz Proximity cards
    c. 13.56Mhz Smart Cards and technologies

d. Biometrics

e. Vehicle Identification

f. Support multiple technologies simultaneously.

g. Support for HID 37-bit card formats.

h. Support for HID iClass SE and Seos technologies.

i. Support for NXP and HID MiFare DESFire EV1, EV2 and EV3

17. Maintain the expiration date for each cardholder. Once the date is reached, the card will automatically be disabled. No access shall be authorized.
18. Maintain three (3) access times for each door location: Standard, Long, and Egress.
19. Have the ability to maintain an automatic door unlock during specific hours and days.
20. Support a minimum of (2) "levels" of Anti-Passback: Global and Area.
21. All controllers and expansion modules shall have the latest ACS recommended firmware installed and shall have matching firmware versions. The Contractor shall provide all necessary firmware upgrades to keep the Owner on the latest version throughout the duration of the project. At the completion of the project the Owner shall have the option to receive a final firmware update the latest version before the project is paid in full.

D. Panels shall use EPACS Controller.
1. The Contractor shall provide adequate number of access control panels, controllers, door interface panels and I/O panels for a complete turnkey system to support all components as indicated on project drawings, specifications and as required.
   a. Mx-2

   b. Mx-4

   c. Mx-8

2. Basis of design is Intelligent multi door Controller, compatible with the EPACS application software, with a flash ROM module, power supply, battery standby, and Communications Module, as described herein.
3. PoE+ Intelligent Controller option: A single door controller that can operate on PoE+ power input or 12VDC and 24VDC. Controller shall support 1 door with ENTRY and EXIT readers via Wiegand or OSDP RS485 communications. The door relay shall be a dry output utilizing external lock power, or optionally through onboard settings provide "wet" 12 VDC voltage output for powering a lock with a current rating the meets the power budget available.
4. Contractor shall review drawings and specifications with the Project Representative, and may propose changes to the topology of the system based on device layout, where such changes improve performance or functionality of the system. CLIENT has final authority as to the final approach for system topology.
5. Reader Support: Controller shall be configurable for 2, 4, or 8 doors, supporting readers for ENTRY and EXIT at all doors. Enclosure, controller board, and accessories shall be the same for 2, 4, or 8 reader configuration for consistency in system hardware layout. Controllers shall be field upgradeable from 2 to 4 to 8 doors through firmware upgrade.

6. Provide Boolean logic functions for input/output points for primary and downstream controllers without need for host server
7. Dedicated encryption processor to enable PKI based certificate level encryption between controllers and host server. Encryption shall also include encrypted communication to readers with embedded encryption processor
8. The controller shall have integrated network communications with onboard Ethernet port.
9. High security supervised alarm points.
10. Configurable output relays
11. Expansion capability within standard controller enclosure footprint:
    a. Memory up to 132,000 users
    b. 8 input Alarm Expansion Boards – up to 4
    c. 8 output Relay expansion boards – up t0 5
12. The controller shall support Entry and Exit readers at all controlled doors, using dual reader interface boards, wiegand or RS485 cabling
13. Readers connected to the controller over the reader interface board or RS485 connections may be installed up to 1200 feet from the controller:
14. CODE/Buffer: The controller shall be capable of expanding the CODE database up to a maximum of 132,000 Users with the addition of a memory expansion board. The board shall be mounted in the controller cabinet and connect to the controller board via an expansion bus cable
    a. Event Transaction Buffer: The controller shall be capable of expanding the event transaction buffer up to a maximum of 20,000 events and 2,000 alarms with the addition of a memory expansion board. The board shall be mounted in the controller cabinet and connect to the controller board via an expansion bus cable
    b. Controllers shall utilize flash downloadable firmware that may be updated from the server as manufacturer updates are released
15. Access Control Features: The controller shall include the following access control features at a minimum:
    a. Restrict access by: time of day; day of week; door; holiday
    b. Momentary Access of door up to 8100 seconds
    c. Extended Access for User Definable Momentary Access duration (requires ScramblePad). ScramblePad will display time remaining on the minute, and annunciate at the defined "Warning Time"
    d. Special Needs Time Extension to provide additional time for Momentary Access and Door Open Too Long for selected people
    e. Unlock/Re-lock of door by CODE, card, or Time Zone
    f. Door status monitoring shall allow for: door forced monitoring; door-open-too-long monitoring; door-open-too-long while door is unlocked; and auto-re-lock of door when opened or closed
    g. Request-to-exit masks alarm and/or unlocks door
    h. 2 person requirement by door. A user can be defined as Normal, A/B Rule A, A/B Rule B, or Executive Override. Can be disabled by Time Zone
    i. 63 Passback Zones. Can be disabled by Time Zone. A User can be designated with Passback Executive Override

j. Use Count limits on users

k. Absentee Rule limits on users

l. Temporary Day limits on users

m. Occupancy Counting / Minimum & Maximum limits per Passback Zone

n. Deadman CODE / Timer

o. Threat Levels – 99 Levels may be defined. Based on the Level in effect for the facility, selected readers may be disabled, dual readers in Card/Code Only During Time Zone can require dual, and selected User's Credentials can be disabled

p. Timed Anti-Passback

16. Alarm Management Features: The controller shall include the following alarm management features at a minimum:
    a. Momentarily mask alarm by CODE and/or card

    b. Mask/unmask alarm by CODE and/or card or by Time Zone

    c. Alarm device supervised while masked

    d. Tamper switch on alarm device monitored while masked

    e. Tamper Input may be configured to operate as a "Latch Monitor" with the appropriate door lock hardware

    f. Entry/Exit delay per alarm input

    g. Alarm input triggers relays

17. Relay Control Features: The controller shall include the following relay control features at a minimum:
    a. CODE and/or card, input, or other relay triggers relays

    b. Trigger relays by time zone

    c. Relay may be normally de-energized or energized

    d. Disable relays during time zone

    e. Clear relay at end of time zone.

18. Controller Connectivity
    a. Controllers shall support connection to the security LAN/WAN using TCP/IP protocol, and shall also support connection to the manufacturer's standard data communications protocol (RS-232, RS-485, or RS-422)

    b. TCP/IP-connected controllers may act as a network "gateway", to re-transmit controller data via the manufacturers standard data communications protocol (RS-232, RS-485, or RS-422), to other EPACS controllers located within the same site. Provide controllers which support the manufacturer's standard data communications protocol, RS-232/RS-485, as required

    c. LAN/WAN Interface Board: 10/100/1000 Mbps interface with 256-bit FIPS140-2 AES encryption

19. Reader Connections: Controllers communicate with readers in the following ways, depending upon readers used, distance and wiring conditions:
    a. Direct wiegand cabling and data to the main controller board
    b. MATCH2 reader interface connections, which provide extended distances (up to 1500 feet between interface and controller), support for mag stripe data formats, exit reader capability at a single door using wiegand output readers and hash encryption of card data between MATCH interface and controller
    c. RS485 OSDP communications between OSDP readers and controller. Supports Entry and Exit readers at doors, extended distances and card data encryption between reader and controller
20. Alarm Inputs: The controller shall monitor the status of all doors it controls, and be capable of accepting up to 32 additional supervised alarm inputs, in increments of eight (8). The sensitivity of the line supervision shall be 2% AA with appropriate alarm line modules. The alarm expansion boards shall be mounted in the controller cabinet and connect to the controller board via an expansion bus cable
21. Relay Output: The access control controllers shall be capable of accepting up to 32 additional Form C, 2 Amp rated relay outputs in increments of 8. These outputs shall be used for control applications other than standard door access, such as elevator floor control, local door annunciators, HVAC interface, etc. The relay expansion boards shall be mounted in the controller cabinet and connect to the controller board via an expansion bus cable
22. Controller Power Supply: Controllers shall an include an internal panel supply provided by the controller manufacturer and sized to support the controller requirements. Systems that require external supplies or plug-in transformers are not acceptable
23. Battery Back-up: Controllers shall be equipped with internal UPS battery systems to operate the controller and maintain controller programming in the event of a power failure. Power and UP systems shall be monitored by the system, generating alerts when power is lost, power is restored, and when UPS systems are running low
24. Controller Tamper Switch: Provide a tamper switch on the Controller enclosure. Connect to the system as an individual alarm point
25. Terminations: Provide all connections to labeled screw barrier terminal blocks
26. Secure all devices within the Controller enclosure. Dress all wiring in a neat and competent manner. Label all conductors to match documentation
27. Card Readers and Authentication Devices: The controllers shall support a variety of authentication devices, including card readers, keypads, scramble keypads and biometric devices, including multi-frequency contactless card reader(s) shall be designed to securely read, decipher, and authenticate user card data from 13.56 MHz and 125 kHz proximity cards.
    a. Controllers shall support readers that communicate to the controllers via wiegand data format (26-200 Bits), clock and data and RS485 OSDP formats
    b. Supported reader technologies include magnetic stripe readers, wiegand, low frequency proximity, high-frequency secure contactless smart card and biometric technologies including fingerprint, hand geometry, vein pattern, iris and facial recognition

c. Controllers shall support Entry and Exit readers at each door controlled without sacrificing door capacity

d. Supports programming and re-flashing through RS-485 data protocol or over TCP/IP

e. ScramblePad Digital Keypad: The controller shall be capable of using scrambling keypad readers. The keypad shall incorporate the following features:

i. Scrambling display of numbers 0 - 9 (numbers appear in different location every time it is used); +/- 4 degrees horizontal and +/- 26 degrees vertical viewing restriction; accept 3 - 15 digit CODEs simultaneously; be disabled for 1 minute and report CODE Tamper violation (guessing CODEs); be disabled and report Physical Tamper violation (attempt to remove keypad from mounting box); silent CODE duress; status LEDs for reporting granted, denied, and overridden transactions, AC Fail, Programming Mode active, responses to Status Request of Alarm Inputs and Relay Outputs; weather-resistant; supervised by controller; and built-in diagnostics. The ScramblePad shall include the MATCH Universal Reader Interface functionality enabling Entry and EXIT control

ii. A version of the scrambling keypad shall be available for use in high ambient lighting conditions, or where the front is subject to direct sunlight. This version shall have a +/- 12 degrees horizontal and +/- 26 degrees vertical viewing restriction

iii. Scrambling keypads shall be available with an integrated internal contactless card reader, which support card, PIN and dual card and PIN authentication models. Internal readers can be low frequency (125KHz) proximity, 13.56 MHz contactless smart card, or both

iv. A version of the scrambling keypad with high intensity display shall be available with an integrated Indala compatible proximity card reader. Presentation of the card shall automatically auto-start the scrambling display

2.2 ACS SYSTEM SOFTWARE

A. Operating System Requirements: Shall operate in conjunction with and be compatible with Microsoft Windows Server 2019 operating systems.

B. Support for Microsoft Active Directory Integration.
1. Provide all licenses, professional services and integration required for active directory integration.
2. Provide with forms designer to bring in all Owner required forms and fields.

C. Support for virtualization.
1. System shall support VMware and Microsoft Hyper V virtualization.
2. Provide with a virtual machine client/admin license in addition to the concurrent license count for solutions that require this license.
3. The Contractor shall provide the Owner with server requirements.

D. Software shall include:

1. Graphical user interface to show pull-down menus and a menu tree format.
2. Password-protected operator login and access.

E. Access Control Application Software: Shall provide interface between the ACS Host Workstation, IP based Reader-Controllers, inputs, and outputs in order to monitor sensors operate displays, report alarms, generate reports and provide all other system functions as follows:

1. Overall Access Control System Parameters:
   a. Number of access control readers per system: Unlimited
   b. Number of client work stations per system: Unlimited
   c. Number of cardholders: 64,000 per reader stand-alone mode, unlimited in network mode.
   d. Number of credentials per cardholders: Unlimited
   e. Number of cardholder groups: Unlimited
   f. Number of system inputs: Unlimited
   g. Number of system outputs: Unlimited
   h. Reader Inputs: Door sense, request to exit, auxiliary, optical tamper, RS-232
   i. Reader Outputs: (2) outputs; TTL1 and TTL2
2. Access Control Software Functions: The system software shall provide for the following features and functions:
   a. Door Programming Functions
      i. Extended open alarms Individual Extended open timers per door.
      ii. Personal Identification Number (PIN) Codes – Up to 9 digits.
      iii. Device Support: Supports selected serial RS-232 and Wiegand devices.
      iv. Number of Door Groups: Unlimited
   b. Shifts
      i. Number of shifts: Unlimited
      ii. Interval assignments: Any day of the week.
   c. Permissions
      i. Number of Permissions: Unlimited
   d. Holidays: The software shall provide for an unlimited number of holidays.
   e. Door Control: The software shall provide the following types of area control functions:
      i. Door control based on dual-authentication rules.
      ii. Support requiring credentials belonging to two people
      iii. Support requiring two credentials belong to same person

iv. Cardholder use limits

v. Elapsed Time based

vi. Number of usage based

vii. Configurable individual door strike times.

viii. Configurable extended individual door hold open times.

f. Elevator Control: The software shall provide elevator control for an unlimited number of floors.

g. System Graphical Tree: The software shall provide for graphical tree displays of the configured field hardware.

h. System Partitioning: The system shall support an unlimited number partitions. Each building shall be its own partition at a minimum.

i. Alarm and Event Logging: The software shall provide for logging of all system alarms and events chronologically including time and date stamp.

j. System Scheduling: The system shall provide for scheduling of events including:

i. Open Door, Open Door Group

ii. Deactivate Badges

k. Help Documentation: The software shall include complete documentation through a searchable help menu.

l. Alarm attributes: The software shall provide for programming of the following alarm and monitoring attributes:

i. Display of alarm events at the ACS Host workstation, or support networked workstation.

ii. Require the reader-controller, which generated the alarm to be restored to its normal state before the alarm is cleared.

iii. Require acknowledgment of an alarm to clear the alarm.

iv. Support auto-clearing of network related communication alarms.

v. Trigger a programmed system actions(s) when the alarm is acknowledged.

vi. Require a User Logon for Acknowledgment.

m. Programming Downloads: The software shall provide for downloading of programming from the ACS Host to the Reader-controller-controllers as follows:

i. Credential holders and authorized time zones

ii. Time zones.

iii. Alarm configurations.

iv. Latch intervals.

v. TTL output on REX, Tamper, Unauthorized.

vi. Beep on events (REX, Tamper, Reject)

vii. Complete database download of 10,000 cardholder records in less than 15 minutes with system continuing to operate normally during this time.

n. Reader-controller Programming Options: Provide the following minimum reader-controller programming functions:

i. Request to exit and door position switch: Provide programming for independent supervision of request to exit and door position switch.

ii. Manual activation of outputs: Provide for configurable activation of outputs from a credential presentation.

iii. User definable door strike time: Provide user definable/ programmable door strike functionality for each reader-controller.

iv. In/ out Reader-controller configuration: Reader-controller programmed as either an in reader or out reader for recording of time in and time out data.

v. Program use Limits: Limiting the number of times that cardholders may use their credential to gain access at the Reader-controller.

vi. Input/output linking: Provide programming for linking of reader outputs with inputs.

3. ACS Host Software Functions: The system ACS Host software shall provide for the following features and functions:

a. Device Status Monitoring

i. Alarm Status Indication: Provide real time status display that indicates the current status of all devices in the device tree.

ii. Reader-controller status: Provide display of Reader-controllers that are off line.

b. Device Group Programming

i. Reader-controller Groups: Provide for programming of Reader-controller groups.

ii. Input Groups: Provide for programming of input groups.

iii. Output Groups: Provide for programming of output groups.

c. Trace

i. Historical Trace: Provide for historical trace on any Reader-controller or cardholder.

d. Test Utilities: Provide system test utilities to allow for testing of the following functions:

i. Alarm inputs status.

ii. Output operations.

iii. Credential Presentations.

iv. LED and buzzer operations

e. Real-Time Graphical Maps: Provide graphical maps that display reader-controller status and allow for manual operation of the reader-controller.

i. Map Device Icons: Icons shall dynamically change to reflect the current state of the devices.

f. Map Formats: Support import of maps to include the following file formats:

i. JPEG (.jpg)

ii. Windows Metafile (.wmf)

iii. Windows Bitmap (.bmp)

g. Web Browser Support

i. Support commonly used ACS functions from a standard workstation HTML5 based internet browser.

4. Credential Management Software Functions: The system credential management software shall provide for the following features and functions:

a. Modification of cardholder records: Add, Modify and Delete records based upon permissions.

b. Access and Credential Management: Provide for the following credential management functions:

i. Assignment of single or multiple active badges.

ii. Programming personnel groups.

iii. Programming of group access permissions.

iv. Programming of individual access permissions

c. Badge Design: Provide badge design software that is integral to the access control source code with the following badge layout tools:

i. Complete Badge design and Layout.

ii. Image Import.

d. Badge Printers: Provide support for industry standard USB and Ethernet printers and Microsoft Certified Windows printer drivers.

e. The system shall be capable of a minimum of ## concurrent credential and credential printing users.

F. The ACS shall be provided with a 5-year software maintenance service agreement to last through the duration of the project. The Owner shall be able to receive all major and minor software updates at no additional cost for the duration of the project. At the completion of the project the Owner shall have the option to receive a final software update to the latest version before the project is paid in full.

G. Manufacturer:
1. Hirsch Identiv

2.3 ACS CLIENT SOFTWARE

A. Logging into the client software shall be done via Microsoft Active directory and enables features based on user roles and privileges.

B. The look and feel of the interface shall be customizable on a per user basis and enabled on log-in.

C. The software shall include a reporting interface to view historical events based on activity. The user shall be able to perform actions such as generating and printing a report and troubleshooting a specific event from the reporting view. The user shall be able view audit trails that show a history of user and administrator changes.

D. The software shall support graphical maps with multiple hierarchies to facilitate navigation within and between various sites and buildings. The Contractor shall set up these maps to include all cameras and integrated devices like video surveillance, access control, intercom and intrusion detection.

E. The software shall support the following additional minimum capabilities:
1. Monitoring the events from a live security system.
2. Monitoring and acknowledging alarms.
3. Creating and editing incidents and generating incident reports.
4. Executing actions from a dynamic graphical map and floor plan.
5. Management and execution of hot actions and macros.
6. Customizable display tiles with drag and drop capabilities.
7. The software shall support a minimum of 6 active displays.
8. Intercom with duplex audio through integrated intercom system or camera equipped with or connected to a microphone and speaker.

F. The Contractor shall provide, install and configure client software on the following computers. The Contractor shall coordinate with the Owners to determine privileges. The Contractor shall provide the Owner with recommended workstation/laptop performance levels early in the project so they may evaluate if hardware updates are required to their existing workstations.
1. The system shall be capable of a minimum of 50 concurrent users including alarm management users.

2.4 ACS WEB CLIENT

A. The web client shall be a true HTML5 thin client with no download required.

B. The Contractor shall provide any mobile web servers and licenses required to support this functionality.

C. The web client shall support the latest versions of the following browsers:
1. Microsoft Edge
2. Google Chrome
3. Mozilla Firefox
4. Apple Safari

D. The web client shall support Microsoft Active Directory integration.

E. The system shall be capable of a minimum of 50 concurrent web users.

2.5 ACS MOBILE CLIENT APP

A. The Contractor shall provide any mobile web servers and licenses required to support this functionality.

B. The mobile client shall support the following operating systems:
1. Apple iOS
2. Google Android

C. The mobile client shall support the following minimum functionalities:
1. Remote alarm monitoring and acknowledgment.
2. Door lock/unlock.

D. The Contractor shall provide, install and configure mobile client software apps on up to ## mobile devices of the Owners choosing.

E. The system shall be capable of a minimum of 50 concurrent mobile users.

2.6 MAPPING SOFTWARE

A. The ACS software shall be provided with native integrated mapping software.

B. The mapping software shall be compatible with PDF, JPEG and PNG.

C. The Contractor shall provide a satellite level screen shot map showing exterior devices. These maps shall include drill down links to access the building floor plans where all interior and exterior devices are shown. The overview satellite map shall show alarms signifying there is an alarm in the building to draw attention quickly.

D. The Contractor shall be responsible to provide all the labor to setup these maps and place all the devices.

E. The Contractor shall get sign-off from the Owner and Consultant on the finished maps.

F. The Contractor shall obtain the building plans from the Consultant for their use.

2.7 ELECTRONIC ACCESS CONTROL SERVER

A. The Contractor shall coordinate with the Owner to install any required antivirus or other software on the servers before it is connected to the network. The Contractor shall also provide the Owner with any required antivirus on-access scanning exclusions for files/folders/processes.

B. The servers shall be virtualized on Owner furnished virtual servers.

C. The physical servers shall meet the minimum following requirements:
1. The physical servers shall be rack mountable and provided with all accessories to properly and securely mount to a rack. If the server will be mounted to a 2-post rack, the contractor shall provide with a 4-post to 2-post conversion kit. Not applicable for virtual servers. The servers shall be provided with a 5-year warranty with next day onsite service. Provide any warranty extensions/additions required.
2. The servers shall be an enterprise grade physical server with the minimum following specifications:
a. Intel Xeon processor(s) Silver series, latest generation.

b. 8 GB 1333MHz UDIMMS, Advanced ECC DDR3 RAM Multiple SSD hard drives in a RAID 1 configuration.

c. 8 MB Cache Dual power supplies.

d. Raid Controller (Supports RAID 0, 1,and 10): Embedded 6GB/s SAS, w/512MB cache Workstations or Computers are forbidden to be used.

e. Manufacturer:

i.

3. The primary ACS Server shall be a standalone physical server.
4. The failover ACS server shall be a standalone server and be identical to the primary server.

2.8 WORKSTATIONS

A. Workstations will be Owner furnished and installed. The Contractor shall install the software on the Owner's workstations as required.

B. The Contractor shall provide the Owner with minimum workstation configurations and operating system requirements for the remote workstations and the master workstation.

2.9 CONTACTLESS 13.56 MHZ SMART CARD READERS

A. 13.56 MHz Supported Credentials:
1. HID Seos, iClass SE, iClass SR and iClass with Secure Identity Object (SIO)
2. Mifare DESFire EV1/EV2/EV3, Classic
3. Able to read 37-bit card format support with no facility code.
4. NFC based credentials
5. 2.4 GHz based Bluetooth credentials
6. Apple Enhanced Contactless Polling (ECP) capable

B. Adjustable OSDP Baud rate from 9,600 to 115,200. The contractor shall set the card readers to communication at a minimum of 38,400 Baud rate. The default 9,600 is not acceptable.

C. Provide with integrated keypad where shown or required.

D. Operating voltage: 12 VDC

E. Current draw: 65mA average and 250mA peak @ 12VDC.

F. Color: Black with Silver Bezel

G. UL294 Outdoor and Indoor rated and IP65 rated.

H. With attached pigtail

I. Typical read range of 1.6" to 4".

J. Provide adapter plate to mount on a single-gang mud ring as required.

K. Firmware upgradable via OSDP, HID reader manager or pre-programmed cards.

L. Provide the ability to transmit an alarm signal via OSDP or an integrated dry contact optical tamper switch if an attempt is made to remove the reader.

M. An audio beeper and RGB light bar shall provide various tone and light sequences to signify: access granted, access denied, power up, and diagnostics.

N. Card readers shall be HID Signo Model 40 for standard applications and Model 20 for mullion/jamb applications.

O. Card readers with integrated keypad shall be HID Signo Model 40K for standard applications and Model 20K for mullion/jamb applications.

2.10 HID READER MANAGER

A. The Contractor shall register the end user for the reader manager portal and application. If the Owner is already registered, the Contractor shall request access.

B. The Contractor shall obtain the security keys from the reader manager portal and load them onto the card reader to allow the Contractor and Owner to manage the readers via Bluetooth without rebooting the reader.

2.11 SURGE PROTECTION FOR LOW VOLTAGE AC/DC POWER

A. The Contractor shall provide a surge protector for all exterior devices being supplied by low voltage power. This does not include devices directly connected to a building where the risks of surges are negligible.

B. There shall be a minimum of a 36" shielded cable from the surge protector to the device to allow for adequate clamping time.

C. When protector is mounted in interior, dry or weather sealed enclosure:
1. Nominal voltage rating of 24V AC/DC. Provide correct module per required voltage level if different from 24V.
2. 20,000A surge current rating.
3. Protects 2-pair per module.
4. Accepts up to 10AWG cable
5. Connect directly to ground.
6. UL 497B listed
7. Provide quantity of modules as required for the application.
8. Provide base mounting plate as required for the application.
9. Manufacturer:
   a. Ditek DTK-2MB Mounting Base
   b. Ditek DTK-2MHLP24B Surge Module
   c. Or approved equal

2.12 SURGE PROTECTION FOR 120 VAC POWER

A. The Contractor shall provide a surge protector for all 120VAC supplied panels and enclosure when there is a critical risk of surges. This does not include interior panels which only serve interior devices or devices connected directly to a building where the risks of surges are negligible.

B. There shall be a minimum of a 36" of cable from the surge protector to the load to allow for adequate clamping time.

C. Exterior, enclosure or other mounted:
1. Nominal voltage rating of 120VAC, single-phase, 20A continuous load.
2. Parallel connected.
3. 50,000 A surge current rating.
4. UL 1449 Type 1 SPD listed
5. LED indicator.
6. NEMA 4X rated.
7. Maintain a minimum of 3' of cable from the surge protector to the load.
8. Manufacturer:
   a. Ditek DTK-120HW
   b. Or approved equal

D. Interior, wall mount:
1. Nominal voltage rating of 120VAC, single-phase, 20A continuous load.
2. Series connected.
3. 54,000 A surge current rating.
4. 35db of EMI/RFI filtering.
5. UL 1449 Type 2 SPD listed
6. UL 1289 EMI/RFI Noise Filtering listed.
7. LED indicator.
8. Form C dry contacts for remote monitoring.
9. Include with NEMA 4X enclosure.
10. Maintain a minimum of 3' of cable from the surge protector to the load.
11. Manufacturer:
    a. Ditek DTK-TSS4D
    b. Or approved equal

2.13 POWER SUPPLIES AND ACCESS CONTROL ENCLOSURES

A. Provide a power supply/chargers and sub-assemblies to power various access controller boards, locking hardware and other access control or security system components. The Contractor shall select the appropriate enclosure, power supply and sub-assemblies for each application. The Contractor shall include network monitoring modules for all power supplies.

B. Enclosures
1. Shall be capable of accommodating power supplies, sub-assemblies and other manufactures access control controller boards when required.
2. Wall mountable.
3. Include a cam-lock and tamper switch.
4. Include with rocker switches to control power to the power supplies.
5. Altronix Trove 2 or 3 enclosures to house access control electronics along with power supply and distribution components. Lifesafety Power Unified enclosers are an approved alternate.

C. Power Supplies
1. 115 VAC input
2. 12VDC or 24VDC selectable outputs at:
   a. 4 amp continuous power @ 12VDC or 24VDC.
   b. 6 amp continuous power @ 12VDC or 24VDC.
   c. 10 amp continuous power @ 24VDC.
3. High capacity battery charging circuit.
4. Form "C" supervision contacts for AC Low, AC Fail, and battery presence.
5. Supervised Fire Disconnect.

6. Low power Disconnect.
7. Class 2 aux. output.
8. UL 294 listed sub-assembly for access control.
9. Furnish and install with power rocker switches for each power supply.
10. Manufacturer:
    a. Altronix AL600ULACM

D. Batteries
1. The Contractor shall provide a minimum of (2) 12V, 7ah, sealed Absorbent Glass Mat (AGM) style batteries with F style terminals per 24VDC power supply and (1) 12V, 7ah per 12VDC power supply.
2. Provide adequate battery backup as required by Authority Having Jurisdiction (AHJ) or a minimum of 4-hours.
3. Manufacturer:
    a. Interstate Power Patrol FAS1075
    b. Power Sonic PS-1270
    c. Or approved equal

E. Sub-Assemblies
1. The Contractor shall provide all sub-assemblies to meet the project requirements
2. Access Control Module
    a. Independently controlled fused protected outputs:
        i. Fail-Safe and/or Fail-Secure power outputs.
        ii. Dry form "C" 5 amp rated relay outputs (fused).
        iii. Any combination of the above
3. Access Control System trigger inputs:
    a. Normally open (NO) inputs.
    b. Open collector sink inputs.
    c. Any combination of the above.
4. Fire Alarm Disconnect:
    a. Individually selectable for any or all outputs.
    b. Latching or non-latch input FACP disconnect.
    c. Normally open (NO), normally closed (NC) dry contact or polarity reversal from FACP signaling circuit trigger input.
    d. LED indicates that the Fire Alarm Disconnect has been activated.
    e. Form "C" relay output for auxiliary reporting.
5. Multi-Output Power Distribution Module
    a. Single input distributed over eight (8) outputs.
    b. Fused protected outputs.
    c. Output terminals shall accommodate up to 12AWG wires.
6. Multi-Output Power Distribution Module with Dual Inputs
    a. Two (2) inputs distributed over eight (8) outputs.
    b. Outputs shall be configurable by input.

c. Fused protected outputs.

d. Output terminals shall accommodate up to 12AWG wires.

7. Network Communication Modules
   a. Power Supply Network Interface
      i. Interface for up to two (2) eFlow power supply/chargers.
      ii. Two (2) Network controlled From "C" relays.
      iii. Event timers.
   b. Network Power Distribution Module
      i. Two (2) inputs distributed over eight (8) outputs.
      ii. Outputs shall be configurable by input.
      iii. Fused protected outputs.
      iv. Emergency disconnect interface by output.
      v. Selectable battery back-up by output.
      vi. Output terminals shall accommodate up to 12AWG wires.
   c. Common monitoring features
      i. Network interface via LAN/WAN.
      ii. Centralized dashboard for monitoring all power supplies. Provide appropriate hardware/software required.
      iii. Remote reporting of status via email and/or SNMP trap messaging.
      iv. AC, low battery and battery presence monitoring.
      v. Alert messages of System Service required.
      vi. System log.
      vii. On demand determination of system status.
      viii. Reset of individual outputs as required for remote diagnostics.
      ix. Monitor enclosure temperature.
      x. Static or DHCP IP address configuration.
      xi. SSL Secure Sockets Layer encryption.
8. Voltage Regulator
   a. The Contractor shall provide a voltage regulator to provide constant 5VDC or 12VDC outputs for access control boards, modules or other applicable components as well as a voltage regulator for door hardwiring or controllers requiring 12VDC.
   b. 24vdc Input.
   c. Selectable 5 or 12VDC output.
   d. Output rating of 6amp max.

e. Stackable with both Networkable and dual input power distribution modules for space savings.

9. Power supplies and sub-assemblies shall be manufactured by Altronix or approved equal:
   a. eflow4NB - 4amp 12vdc/24vdc power supply (UL listed Sub-assembly).
   b. eFlow6NB - 6amp 12vdc/24vdc power supply (UL listed Sub-assembly).
   c. eFlow104NB - 10amp 24vdc power supply (UL listed Sub-assembly).
   d. ACM8 - Eight (8) output, fused Access Control Module (UL listed Sub-assembly).
   e. ACMS8 – Dual input, eight (8) output, fused Access Control Module (UL listed Sub-assembly).
   f. Linq2 - Network Communication Module (UL listed Sub-assembly).
   g. Linq8PD - Dual input, eight (8) output, fused Network Communication Module (UL listed Sub-assembly).
   h. PDS8 - Dual input, eight (8) output, fused power distribution module (UL listed Sub-assembly).
   i. VR6 - Voltage Regulator (UL listed Sub-assembly).
   j. RSB2 – Rocker switches with mounting bracket.

2.14 CABLING

A. Provide cabling per manufacturer's recommendations and code requirements for riser rated, plenum, and non-plenum cable types.

B. UTP data cabling required will be provided, installed, terminated and tested by the Division 27 structured cabling Contractor.

C. UTP patch cables will be provided and installed by the Contractor in the IDF and provided and installed by Contractor at the control panels or at the door when required.

D. Wiegand cables for electronic access-controlled doors shall be a composite bundled cable and include the following cables and conductor counts:
   1. Card reader, Wiegand – 6 conductor, 22 awg shielded.
   2. Lock power – 4 conductor, 18 awg unshielded.
   3. Door contact – 2 conductor, 22 awg unshielded. Furnish and install a second 22 awg, 2-conductor cable when the door contact connects to both the access control system and intrusion detection system.
   4. Request to exit and/or latch detection/spare – 4 conductor, 22 awg unshielded
   5. Manufacturer (Wiegand):
      a. Belden (Wiegand) #658AFS
      b. Or approved equal

E. Cables for RS-485/OSDP in panel or in-panel controller shall be: 2 conductor stranded, twisted, 24 awg, 100% foil shield with 90% tinned copper braid shield with drain, 120 ohm nominal impedance.

1. Manufacturer:
   a. Belden #82841

   b. Or approved equal

F. RS-485/OSDP cables for electronic access-card reader only doors not requiring composite cabling such as secondary/daisy-chained OSDP card readers, remote controllers or RS-485 based intelligent locks, hubs or gateways shall be:
1. Card reader, OSDP – 2 conductor stranded, twisted, 24 awg, 100% foil shield with 90% tinned copper braid shield with drain, 120 ohm nominal impedance, designed for RS-485.
2. Card reader/Device power - 2 conductor, 18 awg unshielded
3. Manufacturer (OSDP):
   a. Belden 6381MD

   b. Sterling Wire & Cable # S182241PRS-10

   c. West Penn # 1PR2418P

   d. Or approved equal

G. Exterior OSDP cables for exterior electronic access-card reader only doors not requiring composite cabling shall be:
1. Card reader, OSDP – 2 conductor stranded, twisted, 24 awg, 100% foil shield with 90% tinned copper braid shield with drain, 120 ohm nominal impedance, designed for RS-485.
2. Card reader power - 2 conductor, 16 awg unshielded
3. Manufacturer (OSDP):
   a. West Penn # 1PR485D+

   b. Or approved equal

H. Cables for controlled doors shall be 16-guage, 2-conductor, unshielded, stranded cable per controlled door. The cable shall be white in color and plenum rated.

I. Cables for intercom trigger wires, door release buttons, and panic/lockdown buttons shall be 18-gauge, four-conductor, unshielded, stranded cable. The cable shall be white in color and plenum rated.

J. Cables for intercom trigger wires or door contacts shall be 18-gauge, four-conductor, unshielded, stranded cable. The cable shall be white in color and plenum rated.

K. Cables for magnetic door hold opens shall be 18-gauge, two-conductor, unshielded, stranded cable. The cable shall be white in color and plenum rated.

L. Cables for key switches shall be 18-guage, 4-conductor, unshielded, stranded cable. The cable shall be white in color and plenum rated.

M. Cables for emergency strobes shall be no smaller than 18-guage and shall be increased in size up to 12-guage as voltage drop, distance and the total circuit capacity requires.

N. Cables for PoE locks shall be installed by the Division 27 cabling contractor. Horizontal cable shall be terminated above the door within a j-box to provide a disconnect point for the patch cable to the PoE hinge.

2.15 DOOR CONTACTS/DOOR POSITION SWITCHES (DC)

A. All doors with card readers and all doors shown for monitored only shall have a door position switch. When the door position switches are not shown in the Division 08 specifications, the security contractor shall furnish and install them. The Security Contractor shall be responsible for the connection of all door position devices to the access control system and other systems if sharing the same door position switch. Door position devices shall be integral to the door hardware whenever possible. The Contractor shall refer to the door hardware schedule and coordinate with the door hardware Contractor on locations and requirements.

B. Sealed and potted magnetic reed switch in contact housing.

C. Door contacts shall be appropriately sized for any established holes within door frames.

D. Parts provided are basis of design. Determination of final part number is the responsibility of Contractor.

E. Provide color that matches door as close as possible.

F. Provide recessed switch whenever possible.

G. Provide armored whip for surface mount contacts.

H. Provide with a 1k/2k end of line (EoL) pre-built resistor pack. GRI (George Risk Industries, Inc.) 6644 series or approved equal.

I. Provide GRI (George Risk Industries, Inc.) 180 Series for recessed applications.
1. Magnasphere
2. Nascom
3. Or approved equal.

J. Provide GRI (George Risk Industries, Inc.) 4400 series for surface mount applications.
1. Magnasphere
2. Nascom
3. Or approved equal.

K. Provide GRI (George Risk Industries, Inc.) MC-180 Series for hollow top channel applications.
1. Magnasphere
2. Nascom
3. Or approved equal.

L. Provide GRI (George Risk Industries, Inc.) 4532 Series for overhead door applications.
1. Magnasphere
2. Nascom
3. Or approved equal.

2.16 REQUEST TO EXIT (REX) DEVICES

A. All doors with card readers shall have a request to exit with the exception of doors with a card reader in and a card reader out. When integrated request to exit devices are not shown in the Division 08 specifications, the security contractor shall furnish and install motion-based request to exit devices. The Security Contractor

shall be responsible for the connection of all requests to exit devices integral to the door, motion based or other to the access control system. Request to Exit devices shall be integral to the door hardware whenever possible. The Contractor shall refer to the door hardware schedule and coordinate with the door hardware Contractor on locations and requirements. Motion based Request to Exit devices shall only be used when not available in the door hardware.

B. Provide with a 1k/2k end of line (EoL) pre-built resistor pack when utilized to release doors with magnetic locks or other high security applications. GRI (George Risk Industries, Inc.) 6644 series or approved equal.

C. Independent adjustable beam pattern.

D. Provide with mounting plate or wall mounting plate to mount over a single-gang backbox when required.

E. Provide white or black color that matches door as close as possible.

F. (2) Form C relay contacts each rated 1 A at 30 VAC or VDC for resistive loads.

G. DC Power draw: 39mA max @ 12 VDC.

H. Dimensions: 1.8"H x 6.75"W x 1.75"D.

I. Utilize contact closure REX hardware built into the handle or crashbar whenever possible.

J. Provide Assa Abloy Securitron XMS Exit Motion Sensor
1. Or approved equals.

2.17 ELECTRIFIED HARDWARE (EH)

A. The Security Contractor shall be responsible for the connection of all electrified hardware to the access control system. This shall include providing centralized power supplies located next to or integral to the access control panels. The Contractor shall coordinate with the door hardware specifications and schedules for additional information.

2.18 ADA POWER ASSIST DOOR OPERATOR INTEGRATION RELAYS

A. The Contractor shall provide all necessary relays to interface to the ADA operators at access-controlled doors with ADA door operators. The ADA operator interface shall be managed by the access control system. Local "smart relays" are not allowed.

B. Hardwired paddles
1. Provide with a DPDT relay. Replace existing relay in paddle as necessary.
2. Manufacturer:
a. Altronix RB1224

b. Or approved equal

C. Wireless paddles
1. Provide with DPDT wireless relay transmitter and receiver. Replace existing relay in paddle as necessary.
2. Manufacturer:
a. Larco Atek 234475 transmitter and Larco Atek 233804 receiver

b. Or approved equal

2.19 MAGNETIC DOOR HOLDS

A. The Security Contractor shall be responsible for the connection of all electrified magnetic door hold open intended for security to the access control system. This shall include providing centralized power supplies located next to or integral to the access control panels when required for standalone operation, connecting to the fire alarm system for interface, or interrupting directly at the mag hold with a relay to interrupt power locally. The Contractor shall coordinate with the door hardware specifications, schedules and fire alarm drawing/specifications for additional information.

B. Die cast housing

C. Mounting options include:
1. Floor-mounted
2. Recessed wall-mounted
3. Surface wall-mounted

D. 35 pound holding force

E. Fail-safe

F. 24V powered

G. UL listed

H. Manufacturer:
1. Allegion LCN
a. Sentronic SEM 7800 Series

b. Coordinate finish options with Owner, Architect and Consultant.

c. Provide appropriate mounting options as required.

d. Provide with appropriate extensions as required.

i. LCN SEM series, or equivalent, for short length extensions, stack as required.

ii. Edwards 1500 series, or equivalent, for mid length extensions.

iii. Utilize mag hold open extension chains for long extensions.

iv. Floor mounting may be required when other options to not work.

2. Assa Abloy Rixon
3. Or approved equal

2.20 DISCONNECTING DOOR CORD

A. The Contractor shall furnish and install disconnecting door cords for all removable mullions.

B. Polarized quick disconnecting plug

C. Integrated stress relief chain

D. Surface mountable

E. Manufacturer:
1. Honeywell Resideo 69 Disconnecting Door Cord

2.21 DOOR POWER TRANSFER LOOPS

A. Provide new power transfer loops at the top of the doors for retrofit applications.

B. Provide all necessary materials and labor to connect existing electrified panic hardware and new access control system where appropriate.

C. Power transfer loop shall be armored stainless steel door loop with metal end caps.

D. Minimum interior diameter of 3/8" and exterior diameter of 1/2".

E. Field verify the lengths required for each door.

F. Provide Alarm Controls DL-2
1. Or approved equal.

PART 3 - EXECUTION

3.1 SYSTEM PROGRAMMING

A. The Contractor shall provide all programming necessary for a turnkey system.

B. Programming shall include but not limited to setting all required IP addressing, setting passwords, firmware upgrades, adding the devices into the software, partitioning, area/zone creation, device naming, mapping, cross system integration, schedules, basic card holder groups, access levels, etc.

C. The Contractor shall be responsible for temporary schedules, card holder groups, access levels, etc required to make a building functional for certificate of occupancy requirements or basic facility use.

3.2 SYSTEM MAPPING

A. The Contractor shall provide a satellite level screen shot map showing exterior devices. These maps shall include drill down links to access the building floor plans where all interior and exterior devices are shown. The overview satellite map shall show alarms signifying there is an alarm in the building to draw attention quickly to the correct building then floor plan.

B. The mapping software shall be licensed to use Microsoft Bing maps, Google Maps, Open Street Maps or similar. Coordinate with the Owner to assist with the obtaining these licenses.

C. The maps shall have links to the other levels/sections as well as the global map.

D. Integrated cameras shall show their approximate field of view.

E. The floor plans shall include all access-controlled doors, controlled overhead doors and integrated devices.

F. Alarm icons for lockdown, panic and other alarms.

G. Contractor shall create toggles for IO control Including:
1. Lighting control
2. Water control

H. Contractor shall create interlock overrides on the maps for interlock door control.

I. Contractor shall create non-card reader doors for non-card reader door unlock and status monitoring.

J. Contractor shall create map entities for intercoms.

K. Contractor shall create Elevator control including:
1. Door Status
2. Door Control
3. Level Control

L. Contractor shall map integrated intrusion detection devices, areas and alarms.

3.3 SYSTEM PARTITIONING, ZONING AND NAMING

A. The Contractor shall program each facility to be in its own partition. Some facilities may require sub-partitions to control user access to certain areas. Each manufacturer may use different names for partitions, zones, areas, etc. Adapt as required.

B. All devices, inputs, outputs and other applicable software/hardware entities shall be named by the Contractor which includes naming at the administration/interface level in additional to the user facing interface.

C. As a basis to start, the following partition, zoning and naming shall be followed:
1. Partition: Building name
    a. Zone 1: Building name and zone name such as exterior, 1st floor, etc.
        i. Device 1: Building name and floor/zone name - Door # or device name
        ii. Device 2: Building name and floor/zone name - Door # or device name
        iii. Repeat as required
    b. Zone 2: Building name and zone name such as 2nd floor, etc.
        i. Device 1: Building name and floor/zone name - Door # or device name
        ii. Device 2: Building name and floor/zone name - Door # or device name
        iii. Repeat as required
    c. Repeat zones as required.
2. Repeat Partitions as required.

D. The Owner shall have the final say. The Contractor shall schedule a coordination meeting with the Owner and Consultant to coordinate actual project structure and naming prior to starting any programming.

3.4 INSTALLATION PROCEDURES

A. The Contractor shall cable all controlled or monitored doors, intercoms, etc. and terminate this cable in the access control panels no less than 3 weeks prior to substantial completion regardless of the status of the field devices such as door hardware, card readers, intercoms, etc.

B. The Contractor shall program the access control system no less than 2 weeks prior to substantial completion so when field devices are installed and terminated, associated door hardware and full system functionality can be tested. Programming shall include all doors, associated inputs, outputs, and interoperability regardless of final field device status.

C. The Contractor shall perform final connections and testing onsite when field devices such as electrified door hardware has been installed.

3.5 ADA POWER ASSIST DOOR OPERATOR INTERFACE

A. Certain electric locking mechanisms with card access shall be connected (hardwired) to the ADA Power Assist Door Operator pushbutton. In this scenario, card reader shall be interfaced to the ADA Door Operator pushbutton to approve activation of door motor based on card authorization or pre-programmed security schedule.

B. Door motor/operator shall not be energized until authorized by the security system to prevent operation and eventual burn-out of the motor from hitting the button with the security system activated.

C. The door shall allow free egress via push paddle regardless if the door is in a locked or unlocked state.

D. The paddles and operators shall be tied through the access control system, so the actions appear in the device trees, are mappable, logged and can be scheduled or overridden.

E. Contractor shall provide all necessary cable, hardware, relays, I/O modules, interfaces, and system programming to support all necessary functionality.

F. All logic and programming shall be controlled through the access control system. Local logic boards, smart relays, etc. shall not be utilized.

3.6 DOOR RELEASE BUTTONS

A. Door release buttons shall be tied through the inputs of the access control system.

B. The button release shall be interfaced in a way that the actions appear in the device trees, are mappable, logged and can be scheduled or overridden.

C. Contractor shall provide all necessary cable, hardware, relays, I/O modules, interfaces, and system programming to support all necessary functionality.

3.7 FIRE ALARM INTERFACE

A. Certain electric locking mechanisms shall be connected (hardwired) to the building fire alarm system for fail safe release upon any fire alarm. A single low voltage/low current normally closed dry contact from the fire alarm system shall be provided by others in each room with Security Control Panels. This contact shall open on any fire alarm condition.

B. The access control system shall provide an output to the fire alarm system to release mag hold opens on alarm.

C. The fire alarm system shall provide an output to the access control system to trigger various rules and actions in the access control system.

D. All doors equipped with mag locks shall be connected to a fire alarm relay to release on fire alarm.

E. All doors secured with a card reader in and out shall be connected to a fire alarm relay to release on fire alarm.

F. The Contractor shall provide all additional UL listed failsafe relays and power supplies as necessary to interface to this contact and unlock all of these doors.

G. The Contractor shall verify fail safe and fail secure locking requirements with the Architect, door hardware contractor/provider and the AHJ.

3.8 MAGNETIC DOOR HOLD OPEN INTERFACE

A. Magnetic door hold opens identified to be controlled by the security system shall be interfaced to the access control system via I/O expansion modules.

B. These shall be capable of being controlled by schedule or by override in the event of an emergency.

C. Contractor shall provide all necessary cable, hardware, I/O modules, power supplies, interfaces, and system programming to support all necessary functionality.

3.9 END OF LINE SUPERVISION

A. The Contractor shall furnish and install end-of-line resistors to provide end-of-line supervision on all access control input devices. This shall include but is not limited to door position switches, request to exit devices, door release buttons, and duress/panic buttons.

B. The Contractor shall furnish and install resistors as near to the field device as possible. Supervision resistance values shall be natively compatible with the associated control panel.
   1. Mercury Security based installations shall utilize 1K resistors to provide a 1K / 2K ohm resistance values from associated inputs.

3.10 RS-485 AND OSDP BASED COMMUNICATION

A. RS-485 based communication busses utilized by the access control system shall be compliant with the RS-485 communication standard, including RS-485 end-of-line termination requirements.

1. Repurposed reader communication cable shall adhere to RS-485 end-of-line termination requirements, but does not require compliance to RS-485 cable standards.

B. RS-485 communication busses include control panel and module communication, OSDP based reader communication, and RS-485 based intelligent lock gateways.

C. The Contractor shall furnish and install 120-ohm end of line termination at control panels, modules, readers, and other peripherals where applicable.

D. Termination shall be integral to the hardware where available. The Contractor shall furnish and install a 120-ohm resistor to terminate equipment not featuring on-board RS-485 termination.

E. The Contractor shall furnish and install 1K-ohm pull down/line bias resistors between the DAT/TR- and GND lines on interface modules and controllers. The pull down/line bias resistor shall be installed at the panel for each reader.

F. The Contractor shall configure OSDP devices to communicate at a minimum of 38,400 baud rate. The default 9,600 baud rate is not acceptable.

3.11 PASSWORDS

A. The Contractor shall coordinate a secure project password with the Owner and Consultant. This password shall be documented by the Contractor and used for all devices.

3.12 TESTING

A. Refer to Section 270000 for additional requirements.

B. Prior to energizing or testing the system, ensure the following:
1. All products are installed in a proper and safe manner per the manufacturer's instructions.
2. Dust, debris, solder, splatter, etc., is removed.
3. Cable is dressed, routed, and labeled; connections are consistent with regard to polarity.
4. All products are neat, clean, and unmarred, and parts are securely attached.

C. Contractor shall ensure that each device in the security system is functioning normally and in such a manner as to meet the functional and performance requirements in this specification.

3.13 TRAINING

A. Refer to Section 270000 for additional requirements.

B. Provide system operations, administration, and maintenance training by factory-trained personnel qualified to instruct.
1. Contractor shall provide up to 6 hours of scheduled and dedicated training time in three (3) two (2) hour sessions for administration and investigation.
2. The Contractor shall provide up to 2 hours of dedicated training time for badge creation, printing and printer maintenance.

3. Provide printed training materials for each trainee, including product manuals, course outline, workbook or student guides, and written examinations for certification.
4. Provide hands-on training with operational equipment.
5. Training shall be oriented to the specific system being installed under this contract as designed and specified.
6. Contractor shall provide all necessary documentation of system operating parameters prior to scheduled training sessions.

3.14 WARRANTY

A. Refer to Section 270000 for additional requirements.

3.15 INSTALLATION PRACTICES

A. All services provided shall be professional and conform to the highest standards for industry practices. The Owner reserves the right to halt any installation due to poor workmanship. All work shall be defect free, and the installer shall replace, at their expense, any work found to be defective.

B. The Owner reserves the right to halt any installation due to failure of Contractor to observe installation-free periods due to instructional or administrative requirements. To the maximum extent possible, the Owner will provide advance notice of such periods.

C. Contractor is responsible for providing a complete and system.

D. All manufactured items, materials, and equipment shall be applied, installed, connected, erected, used, and adjusted as recommended by the manufacturers, or as indicated in their published literature, unless specifically noted herein to the contrary.

E. Contractor shall follow these standards and approved submittals for locations of power supplies. The Owner intends to limit the number and location of power supplies to facilitate more effective long-term support and maintenance of the system.

F. Installation of locks on fire rated doors which require any modification or drilling of the door shall be done in accordance with the NFPA by a properly qualified and certified installer. The doors field WH-ETL labelling shall be properly updated.

3.16 COORDINATION

A. Contractor shall provide up to 8 hours (up to four, 2-hour sessions) of scheduled and dedicated coordination time to assist Owner with sequence of operation, rule creation and coordination as requested by Owner or Consultant.

3.17 AESTHETICS

A. All cables and equipment terminating at panels frames shall be vertically straight, with no cables crossing each other, from twelve inches inside the ceiling area to the termination block.

B. All cable bundles shall be combed and bundled to accommodate individual termination block rows and panels.

C. For any given telecom room, a horizontal and vertical alignment for all mounting hardware will be maintained to provide a symmetrical and uniform appearance to the distribution frame.

D. All surface-mounted devices shall be firmly secured level and plumb

E. All rack mount equipment shall be securely installed.

3.18 HARDWARE LAYOUT

A. Hardware positioning and layout shall be reviewed and approved by the Owner prior to construction. The review does not exempt Contractor from meeting any of the requirements stated in this document.

3.19 SERVER INSTALLATION PRACTICES

A. Verify that the manufacturer approved server hardware, OS meets the Owner's IT standards prior to ordering.

B. Coordinate server power, cooling, and mounting requirements with Owner prior to installation.

C. Coordinate virus scan/security software requirements with Owner and manufacturer prior to installation.

3.20 DEVICE CABLING/WIRING INSTALLATION PRACTICES

A. All external wire and cables shall be supported at least every five feet from the structure or as required to maintain not more than 12" cable sag between supports and without over tensioning the cables. Provide j-hooks as needed where cable tray or raceway is not available.

B. This Contractor shall coordinate installation with Division 27 cabling Contractor to ensure there is at least 2-inches of physical separation between security cabling and voice/data cabling throughout cable path. Voice/data cabling Contractor has first claim to cable tray.

C. All cables, regardless of length, shall be labeled within 18" of both ends with an identifier that is keyed to the door, room, or corridor number as identified.

D. All cables shall have 20-foot service loops neatly coiled in the equipment room. During initial cable rough-in, this Contractor shall have sufficient slack to route anywhere within the equipment room.

E. Cabling shall be adequately supported with Velcro wire wraps and horizontal support cable managers fastened to rack frame. Cables shall be dressed in a neat and orderly fashion. Any cabling or equipment installation that is deemed unacceptable by the Owner or Consultant shall be replaced or corrected by the Contractor at no additional cost. Plastic zip ties are not allowed.

F. All cables are to run at right angles to the structure, placed above the ceiling in halls or corridors.

G. Cables shall not run above red iron joist.

H. Contractor shall make every effort to conceal wiring and other apparatus into walls, floors, and ceilings, assuming code and good engineering practice allows and suggests.

I. Ties and straps shall be installed snugly without deforming cable insulation. Ties shall be spaced at uneven intervals not to exceed four feet. No sharp burrs shall remain where excess length of the cable tie has been cut.

J. Contractor shall notify Owner immediately if obstruction or hazard is discovered in a pathway provided by others.

K. Cable shall be stored and handled to assure that it is not stretched, kinked, crushed, or abraded in any way. Bend radiuses shall meet manufacturer specifications and/or recommendations. Cable shall not be installed in ambient temperatures or moisture conditions above or below the manufacturer's rating.

L. No splices shall be installed in any cable.

3.21 CABLE TERMINATION

A. Termination hardware (blocks and patch panels) positioning and layout shall be reviewed and approved by the Owner prior to construction. The review does not exempt Contractor from meeting any of the requirements stated in this document.

3.22 FIRE STOPPING

A. Fire stopping of openings between floors, fire-rated walls, and smoke-rated walls, created by others for This Contractor to pass cable through, shall be the responsibility of the This Contractor. Sealing material and application of this material shall be accomplished in such a manner that is acceptable to the local fire and building authorities having jurisdiction over this work.

B. Any openings created by or for This Contractor and left unused shall be sealed up by This Contractor.

C. This Contractor shall be responsible for creating a waterproof seal in and around any openings that This Contractor creates from the structure to the outside environment.

3.23 SYSTEM INSPECTION

A. Contractor shall coordinate with project representative for inspection after Contractor has completed testing of entire system.

B. Contractor shall have trained Contractor representative and testing equipment on site during inspection to assist with spot verification of tests.

3.24 LABELING

A. Contractor shall neatly label all security devices and cabling at both ends. All labels shall be on Project as-built drawings.

3.25 DOCUMENTATION

A. Upon completion of the installation, Contractor shall provide full documentation sets to the Consultant for approval as described in section 27 60 00. All documentation shall become the property of the Owner.

B. Documentation shall include the additional specific items detailed in the subsections below:
   1. Contractor shall provide hard copy and electronic forms of the final test results.
   2. Contractor shall provide a document including the following:
      a. Door label/identifier
      b. Location of each drop by orientation/permanent landmark in the room
      c. Contractor shall provide accurate as-built Construction Drawings. The drawings are to include cable routes and device locations.

3.26 PRE-CHECK OUT

A. The Contractor shall demonstrate the following to Owner during system demonstration.
   1. The card readers are fully installed and functional.

3.27 FINAL ACCEPTANCE

A. In addition to closeout requirements in section 27 60 00, This Contractor shall demonstrate the following before final approval.
   1. Owner training is complete.
   2. Punch list items are complete.
   3. As-built documentation is complete and submitted to Owner/Consultant.

3.28 FINAL PROCEDURES

A. Perform final procedures in accordance with section 27 60 00.

END OF SECTION

SECTION 276400 – VIDEO SURVEILLANCE SYSTEM

PART 1 - GENERAL

1.1 SCOPE

A. This specification section covers the furnishing and installation of a new and complete, low-voltage, Video Management System (VMS).

B. Contractor shall furnish and install video surveillance hardware devices, mounting brackets, and other components of the system as required.

C. Contractor shall furnish and install all video management system related software to allow this system expansion. Software includes required licensing cameras, devices, workstations and required physical security system Integration.

D. Furnish and install outlets, junction boxes, conduit, connectors, wiring, and other accessories necessary to complete the system installation. Requirements shall be in accordance with Division 26.

E. Refer to Section 270000 for additional project scope information.

1.2 PRECEDENCE

A. Obtain, read and comply with General Conditions and applicable sub-sections of the contract specifications. Where a discrepancy may exist between any applicable sub-section and directions as contained herein, this section shall govern.

1.3 RELATED WORK

A. Section 270000 – General Technology Requirements

B. Section 270500 – Communications General Requirements

C. Section 270526 – Grounding and Bonding for Technology Systems

D. Section 270528 – Pathways for Technology Systems

E. Section 270537 – Firestopping for Technology Systems

F. Section 271100 – Communications Equipment Rooms

G. Section 271500 – Communications Horizontal Cabling

H. Section 271600 – Communications Connecting Cords

I. Section 271800 – Communications Labeling and Identification

J. Section 27 60 00 – Physical Security General Requirements

K. Section 27 62 00 – Electronic Access Control System

1.4 DEFINITIONS

A. Refer to Section 270000 for additional definitions.

1.5 REFERENCE STANDARDS AND CODES

A. Refer to Section 270000 for additional requirements.

1.6 QUALIFICATIONS

A. Refer to Section 270000 for additional requirements.

1.7 PRE-CONSTRUCTION SUBMITTALS

A. Refer to Section 270000 for additional requirements.

1.8 PRE-INSTALLATION PROCEDURES

A. For in-use, existing facilities or retrofit projects, the Contractor shall assign all applicable electronics IP addresses and secure passwords prior to being delivered to the project or installed. Confirm password with Owner and Consultant prior to setting them.

1.9 CONSTRUCTION PROGRESS SUBMITTALS

A. Refer to Section 270000 for additional requirements.

1.10 CLOSEOUT SUBMITTALS

A. Refer to Section 270000 for additional requirements.

1.11 GENERAL SUMMARY

A. System shall include IP cameras and a server based NVR with client stations and storage as described in this section and on the drawings.

B. The Category 6 cabling to each camera shall be provided by the structured cabling Contractor.

C. System installation shall include, but not be limited to, installation, programming, and configuration of system components as well as all associated software upgrades, patches, and maintenance for the first year.

D. Contractor is responsible for meeting with Owner's representative at time of camera installation to verify exact placement and view of each camera to ensure coverage area is as intended.

1.12 MOUNTING AND INSTALLATION

A. Contractor shall provide the appropriate mounting hardware for all ceiling types and wall types where cameras shall be located. Plastic anchors are not allowed.

B. Wall mounted 180/360 degree or multi-sensor cameras shall be mounted horizontally on a wall arm, gooseneck, parapet, pendant or other similar method.

C. Exterior cameras shall be mounted on a wall arm/gooseneck.

D. Cameras mounted in droptile shall have a tile support bridge with a steel support cable connected to structure to prevent tile sagging, theft and vandalism. Utilizing toggle bolts or other screw in anchors is not allowed.

1.13 CODE AND STANDARD REQUIREMENTS

A. All work and materials shall conform in every detail to the rules and requirements of the National Fire Protection Association and any other codes as required by the AHJ.

B. All materials shall be listed by UL and shall bear the UL label. If UL has no published standards for a particular item, then other national independent testing standards shall apply and such items shall bear those labels. Where UL has an applicable system listing and label, the entire system shall be so labeled.

C. Cameras shall meet the following standards:
1. MPEG-4:
a. ISO/IEC 14496-10 AVC (H.264)

2. Networking:
a. IEEE 802.3af (Power over Ethernet)

3. Network Video:
a. ONVIF Profile S or better

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Unless noted otherwise, products in this section are intended as a basis of design and are open to substitutions per the product substitution procedures defined in Section 270000.

2.2 VMS GENERAL REQUIREMENTS

A. The VMS shall be a server/client model and be based on a true open architecture that shall allow for use of non-proprietary workstation and server hardware, non-proprietary network infrastructure and non-proprietary storage.

B. The VMS shall support video encoded in MPEG-4, MPEG-2, MJPEG, H.264, H.265/HEVC and Wavelet compression formats.

C. The VMS shall support audio encoded in g711 (u-law), g721, g723 or AAC compression formats.

D. The VMS shall support and be configured for multicast. Coordinate with the Owner on multicast network requirements.

E. The VMS shall be licensed for active directory.

F. The VMS shall synchronize to a common NTP server as the cameras and other security systems.

G. The system shall log all actions on a per user basis, all alarms and notifications on a per device basis and all errors and failures on a per device basis. These logs shall have the ability to be extracted to a document that can be emailed to an administrator.

H. The system shall support custom rules and actions.

I. The VMS shall be provided with mapping features. The Contractor shall acquire drawings from the Consultant to utilize for the mapping.

J. The VMS shall fully support H.264 and H.265/HEVC Smart Coding with dynamic GOP and Dynamic Frame Rate.

K. The VMS shall support full API level integration with all cameras utilized. Integrating via ONVIF is not acceptable.

L. The VMS shall have native API level support for fisheye cameras and client side dewarping. The VMS shall not utilize the video stream to detect a fisheye camera.

M. The system shall log all actions on a per user basis, all alarms and notifications on a per device basis and all errors and failures on a per device basis. These logs shall have the ability to be extracted to a document that can be emailed to an administrator.

N. The VMS shall be provided with a 5-year software maintenance service agreement to last through the duration of the project. The Owner shall be able to receive all major and minor software updates at no additional cost for the duration of the project. At the completion of the project the Owner shall have the option to receive a final software update to the latest version before the project is paid in full.

O. Manufacturer:
1. Genetec Security Center Enterprise Omnicast
2. Or approved equal

2.3 VMS DIRECTORY MANAGEMENT SOFTWARE

A. The server software shall launch automatically when operating system is booted and run in the background regardless if a user is logged on.

B. The VMS shall include Microsoft Active Directory integration. The Contractor shall coordinate with the Owner on permissions, roles and integration.

C. The directory management server shall be compatible with Microsoft Windows Server Standard 2019.

D. The database server shall be compatible with Microsoft SQL Server 2014 or above.

E. The VMS Directory Management server shall be compatible with virtual environments including VMware and Microsoft Hyper-V Server.

F. The administrator shall be able to perform the following actions from the interface:
1. Manage the system licenses.
2. Configure the database and database server
3. Manually back up the databases, restore the server databases, and configure scheduled backups of the databases.
4. Define the client-to-server communications security settings.
5. Configure the network communications hardware, including connection addresses and ports.
6. Configure mail server SMTP settings and port. The Contractor shall coordinate with the Owner on email accounts to be added.
7. Configure event and alarm history storage options.

G. The software shall support the configuration and management of users and user groups. An administrator shall be able to add, delete, or modify a user or user group.

H. The software shall support partitions and limit what users can view in the configuration database. The administrator shall be allowed to segment a system into multiple security partitions. The Contractor shall coordinate with the Owner on required partitions.
1. A user who is given access to a specific partition shall only be able to view component within that partition.
2. A user or user group can be assigned administrator rights over the partition.
3. It shall be possible to specify user and user group privileges on a per partition basis.

I. The software shall send an email notifying the administrator of a problem. The Contractor shall coordinate with the Owner on desired notifications and configure the system.

2.4 VMS ARCHIVER RECORDING SOFTWARE

A. The directory management server shall be compatible with Microsoft Windows Server Standard 2019.

B. The Archiver Recording Server shall be compatible with Microsoft SQL Server 2016.

C. All recorded video shall be digitally signed.

D. The Archiver Recording Server shall provide the ability to configure key frame (I-Frame) interval.

E. The Archiver Recording Server shall have the ability to assign independent pre and post alarm recording on a per camera basis.

F. The Archiver Recording Server shall have the ability to assign motion detection zones on a per camera basis.

G. The Archiver Recording Server shall have the ability to redirect audio/video streams to active viewing clients on the network using UDP or TCP.

H. The Archiver Recording Server shall have the ability to store video at a reduced frame rate for long term storage.

I. The Archiver Recording Server shall have the ability to utilize and manage edge recording on supported cameras.

J. The Archiver Recording Server shall have the ability to utilize an Auxiliary Archiver Recording Server to use for redundant archives for video, events and bookmarks on a per camera basis.

2.5 SOFTWARE MAINTENANCE

A. The system shall be provided with a 5-year software maintenance agreement. The Owner shall be able to receive all major and minor software updates at no additional cost for the duration of the project. At the completion of the project the Owner shall have the option to receive a final software upgrade to the latest version (including all devices) before the project is paid in full.

2.6 VMS CLIENT SOFTWARE

A. Logging into the client software shall be done via Microsoft Active directory and enables features based on user roles and privileges.

B. The look and feel of the interface shall be customizable on a per user basis and enabled on log-in.

C. The software shall include a reporting interface to view historical events based on activity. The user shall be able to perform actions such as generating and printing a report and troubleshooting a specific event from the reporting view. The user shall be able view audit trails that show a history of user and administrator changes.

D. The software shall support graphical maps with multiple hierarchies to facilitate navigation within and between various sites and buildings. The Contractor shall set up these maps to include all cameras and integrated devices like access control, intercom and intrusion detection.

E. The operator shall be able to bookmark multiple cameras and create an incident report with the associated cameras and integrated devices attached. The bookmarks shall be protected from overwriting until the user manually deletes them. The bookmarks shall be ab le to be moved to a separate storage drive for long term archiving. The user shall be able to pull up a list of all bookmarks saved for easy management of them.

F. The software shall be able to export multiple video clips to a single file system with a self-contained player. These clips shall include the option to be encrypted. The self-contained player shall support multiple and selectable video tiles with the ability to digitally zoom. The user shall be able to build an incident by placing additional video clips into this file system for convenient storage.

G. The software shall support the following additional minimum capabilities:
1. Monitoring the events from a live security system.
2. Monitoring and acknowledging alarms.
3. Creating and editing incidents and generating incident reports.
4. Executing actions from a dynamic graphical map and floor plan.
5. Management and execution of hot actions and macros.
6. Customizable display tiles with drag and drop capabilities.
7. The software shall support a minimum of 6 active displays.
8. Intercom with duplex audio through integrated intercom system or camera equipped with or connected to a microphone and speaker.
9. Control of physical and virtual PTZ cameras with mouse control or PTZ joystick/keyboard control.
10. Client side dewarping of ImmerVision 360 enabled cameras with multiple view areas and virtual PTZ control.
11. Display all cameras from associated with the system and federated systems.
12. Create snapshots from live or recorded video. These snapshots shall be automatically saved to a snapshot folder.
13. Link cameras in live and recorded views for seamless tracking of a subject throughout a facility. The Contractor shall configure the links for all cameras within and outside of the facility.

H. The Contractor shall provide, install and configure client software on the following computers. The Contractor shall coordinate with the Owners to determine viewing privileges. The Contractor shall provide the Owner with recommended

workstation/laptop performance levels early in the project so they may evaluate if hardware updates are required to their existing workstations.

1. The system shall be capable of a minimum of zzz concurrent users.

2.7 VMS WEB CLIENT

A. The web client shall be a true thin client with no download required other than web browser plug-ins.

B. The Contractor shall provide any mobile web servers and licenses required to support this functionality.

C. The web client shall support the latest versions of the following browsers:
1. Microsoft Edge
2. Google Chrome
3. Mozilla Firefox
4. Apple Safari

D. The web client shall support Microsoft Active Directory integration.

E. The web client shall support the minimum following functionalities:
1. Live and recorded video playback.
2. Video export.
3. Multiple video tiles.
4. PTZ mouse controls.

F. The system shall be capable of a minimum of 50 concurrent web users.

2.8 VMS MOBILE CLIENT APP

A. The Contractor shall provide any mobile web servers and licenses required to support this functionality.

B. The mobile client shall support the following operating systems:
1. Apple iOS
2. Google Android

C. The mobile client shall support the following minimum functionalities:
1. Live video monitoring with a minimum of 4 video tiles.
2. Dynamic resolution.
3. Receive mobile push alarm notifications, view and acknowledge alarms.
4. PTZ control with finger.
5. Save snapshots.
6. Video streaming push back to VMS recording server.

D. The Contractor shall provide, install and configure mobile client software apps on up to 50 mobile devices of the Owners choosing.

E. The system shall be capable of a minimum of 50 concurrent mobile users.

2.9 VMS SYSTEM AVAILABILITY MONITOR

A. The Contractor shall provide, install and configure health monitoring software to be installed on each server running the VMS or a service required for the VMS operation.

B. The Server Monitoring Service shall be a Windows service that automatically launches at system startup, irrespective of whether a user is logged in not.

C. The health monitoring software should be installed on a server that is not the directory server.

D. The health monitoring service shall notify the system administrators of any problem or maintenance required.

E. The health monitoring service shall upload data to the cloud for monitoring and historical data.

2.10 VMS UPDATE SERVICE

A. The Contractor shall provide, install and configure a live update service tool which monitors all servers and workstations for software updates.

B. The Owner shall be able to update all system components to the latest version from this update service.

2.11 MAPPING SOFTWARE

A. The VMS software shall be provided with native integrated mapping software.

B. The Contractor shall provide a satellite level screen shot map showing exterior devices. These maps shall include drill down links to access the building floor plans where all interior and exterior devices are shown. The overview satellite map shall show alarms signifying there is an alarm in the building to draw attention quickly to the correct building then floor plan.

C. The maps shall have links to the other levels/sections as well as the global map.

D. All cameras shall show their approximate field of view.

E. The cameras shall change state when motion is detected.

F. The floor plans shall include all access-controlled door and integrated devices.

G. The Contractor shall be responsible to provide all the labor to setup these maps and place all the devices.

H. The Contractor shall get sign-off from the Owner and Consultant on the finished maps.

I. The Contractor shall obtain the building plans from the Consultant for their use.

2.12 VMS SERVERS

A. General Server Requirements
1. The Contractor shall coordinate with the Owner to install any required antivirus or other software on the servers before it is connected to the network. The Contractor shall also provide the Owner with any required antivirus on-access scanning exclusions for files/folders/processes.
2. The servers shall be rack mountable and provided with all accessories to properly and securely mount to a rack. If the server will be mounted to a 2-post rack the contractor shall provide with a 4-post to 2-post conversion

kit. The servers shall be provided with a 5-year warranty with next day onsite service. Provide any warranty extensions/additions required.

4. The servers shall be purpose built for surveillance, video optimized storage and management. The manufacturer shall guarantee performance with the system design at the time of purchase.
5. Workstations or PC Computers shall not be used as a server.

B. VMS Directory Management Servers
1. The servers shall be virtualized on Owner furnished virtual servers.
2. The servers shall be an enterprise grade physical server with the minimum following specifications:
   a. Intel Xeon processor(s) Silver or greater, latest generation.
   b. 32gb Registered ECC memory
   c. Multiple SSD hard drives in a RAID 1 configuration.
   d. Quad NIC ports in a dual teamed configuration.
   e. Dual power supplies.
   f. Windows Server Standard 2019 operating system.
   g. Workstations or Computers are forbidden to be used.
3. The primary Directory Management Server shall be a standalone physical server.
4. The failover Directory Management Server shall be a standalone server and be identical to the primary server.
5. Directory Management Server Manufacturer:
   a. BCD Video
   b. Seneca
   c. Or approved equal

C. VMS Archiver Recording Server
1. The servers shall be a physical enterprise grade standalone server with Intel Xeon processors.
2. The servers shall use enterprise class Serial Attached SCSI (SAS) hard drives with a minimum MTBF of 1 million hours and error recovery time limit of approximately 8 seconds or less. Enterprise class SATA hard drives may be used when connected to a SAS backplane.
3. Servers for Genetec shall utilize SSD drives in a RAID-1 for the OS and RAID-5 for the archiver drives.
4. Genetec server shall have a minimum of 32gb of Registered ECC RAM.
5. Refer to the VMS Video Storage Requirements section for recording requirements and criteria.
6. The camera load shall be distributed evenly across all servers not based on quantity of cameras but throughput.
7. The servers shall be provided with remote health monitoring and management software.
8. The Contractor shall provide the quantity of Archiver Recording Servers required to handle the total storage load and throughput required.
9. Refer to the VMS Video Storage Requirements section for recording requirements and criteria.
10. Manufacturer:
    a. BCD Video
    b. Seneca

c. Or approved equal

D. VMS Web and Mobile Server
1. The server shall be virtualized on Owner furnished virtual server. Other system services such as a health monitor and/or SIP server may be installed on this same server. The Contractor shall coordinate performance requirements with the Owner and Consultant.
2. The servers shall be an enterprise grade physical server with the minimum following specifications:
a. Intel Xeon processor(s) Silver or greater, latest generation.
b. 32gb Registered ECC memory
c. Multiple SSD hard drives in a RAID 1 configuration.
d. Quad NIC ports in a dual teamed configuration.
e. Dedicated Nvidia Quadro graphics card.
f. Dual power supplies.
g. Windows Server Standard 2019 operating system.
h. Workstations or Computers are forbidden to be used.
i. The servers shall be provided with a 5-year warranty with next day onsite service. Provide any warranty extensions/additions required.
3. Directory Management Server Manufacturer:
a. BCD Video
b. Seneca
c. Or approved equal

2.13 VMS VIDEO STORAGE

A. Provide a minimum of thirty-one (31) days of storage calculated at the following resolution and rates. Provide all hardware, software and configuration needed to accomplish this.
1. The system shall be enabled for an automatic video cleanup at 31 days.

B. Record stream using Unicast RTP/TCP on stream 1.

C. Pre and post record buffer of 5 seconds.

D. Provide an additional ~20% storage for additional space for overhead, bookmarked video, etc.

E. Utilize the following for storage calculations:
1. Interior Cameras:
a. 10 fps
b. 1 keyframe (I-Frame) per 4 seconds
c. Max resolution
d. 100% recording with motion enabled for metadata.
e. VBR or framerate priority with cap appropriate to resolution and quality

f. H.264 Main Profile compression

g. Smart codec enabled at the following settings:

i. Medium (50%) dynamic compression setting

ii. Dynamic GoP of up to 30 seconds

iii. Dynamic frame rate enabled

h. No data rate cap when smart codecs are enabled.

2. Exterior Cameras:

a. 10 fps

b. 1 keyframe (I-Frame) per 4 seconds

c. Max resolution

d. 100% recording with motion enabled for metadata.

e. VBR or framerate priority with cap appropriate to resolution and quality

f. H.264 Main Profile compression

g. Smart codec enabled at the following settings:

i. Medium (50%) dynamic compression setting

ii. Dynamic GoP of up to 30 seconds

iii. Dynamic frame rate disabled

h. No data rate cap when smart codecs are enabled.

2.14 CAMERAS AND DEVICES

A. General:

1. All cameras and devices shall be time synced to the Owner's NTP server. Coordinate with the Owner to acquire the appropriate NTP address to use.
2. The contractor shall coordinate with the owner for IP addressing, network configuration, QoS and multicast network configuration.
3. The Contractor shall enable QoS on all cameras and intercoms for the video stream, audio stream, event/alarm data, management and metadata at the Owners request.
4. The system shall be configured for multicast. All cameras shall have a multicast Time To Live (TTL) setting of at least 64.
5. The Contractor shall select the appropriate mounting hardware for the situation.
6. All cameras shall be equipped with remote autofocus or autoback focus with the exception of fixed lens 180/360 degree cameras and encoded analog cameras.
7. Multi-sensor 180 and 360 cameras shall have each sensor optimally calibrated independently to the conditions.
8. All cameras shall be vandal proof and appropriate for the environment it is being installed in.
9. All cameras and devices shall have the latest VMS recommended firmware installed and all cameras of the same model shall have matching firmware versions. The Contractor shall provide all necessary firmware upgrades to keep the Owner on the latest version throughout the duration of the project. At the completion of the project the Owner

shall have the option to receive a final firmware update the latest version before the project is paid in full.

10. The contractor shall coordinate with the owner for IP addressing, network configuration and multicast network configuration.
11. All cameras regardless of manufacturer/model shall have a consistent user name and non-standard password set. This shall be documented and provided to the owner and consultant prior to inspections.
12. Cameras and devices shall not be manufactured by or contain components manufactured by a federal, state or local government proposed blacklisted or sanctioned manufacturer or a subsidiary of those manufacturers.
13. Cameras and devices shall not be an OEM or "white label" product. The camera or device shall be manufactured by the named manufacturer.
14. The cameras and devices firmware shall be developed and manufactured by the stated manufacturer and shall not be developed, written or OEM by a 3rd party.
15. The camera requirements below represent general performance criteria. Approved equals will have slight differences in specifications. The Owner and Consultant have complete discretion to reject approved equals that stray too far from the minimum requirements.

B. Camera Type 1
   1. Dome camera.
   2. Native resolution of pixels.
   3. Be designed to provide at least two video streams in all resolutions at a selectable range up to 30 frames per second (60Hz mode) using H.265, H.264 and MJPEG.
   4. Integrated video analytics with object detection and classification for person and vehicle including car, bus, truck, motorcycle, bicycle and license plate (not LPR).
   5. Integrated audio analytics with scream, gunshot, explosion and glass break classification.
   6. Minimum horizontal view angle of wide°-narrow°.
   7. Supports hallway/corridor view mode (90°/270°).
   8. Mechanical day/night IR cut filter with integrated IR up to xxx'.
   9. Integrated varifocal lens, automated iris functionality and remote focus functionality.
   10. Be equipped with true multi-frame wide dynamic range (WDR).
   11. Camera shall be capable of smart codecs on the H.265 and H.264 streams including dynamic GoV and Dynamic FPS.
   12. Input power: PoE up to W.
   13. Interior dome camera with IP52 and IK08 ratings.
   14. 5-year warranty.
   15. Manufacturer:
       a. Interior – Axis P3265LV

2.15 CAMERA MANAGEMENT TOOLS

A. The Contractor shall setup on an appropriate server the manufacturer's camera management tools utilized to manage the settings, firmware and status of all installed cameras. The Contractor shall train the Owner on the use of this software.

2.16 CAMERA ANALYTICS PLUG-IN

A. The Contractor shall install and configure any analytic plug-ins required on the servers and client workstations as required.

B. The Contractor shall furnish and install all licensing required to utilize the analytics and plug-ins.

2.17 CAMERA EDGE STORAGE

A. Where video surveillance devices are connected via Wireless ethernet components, the Contractor shall provide, install, and configure edge storage both in the camera and Genetec VMS.

B. Edge storage shall be capable of recording during periods where the connection is lost between the video surveillance device and the primary video storage.

C. The contractor shall configure the VMS for transfer of edge stored video to the primary video storage. Video stored locally on the edge device shall be transferred upon restoration of the connection. The transfer shall be over IP communication and shall take place automatically.

D. Edge storage shall be high-endurance, minimum speed class 10 and purpose built for video surveillance.

E. Read Speed up to 100MB/s, Write speed up to 40MB/s.

F. Operating range of -13 degrees to 185 degrees Fahrenheit.

G. 3-year warranty.

H. Confirm camera edge storage capacity limits prior to ordering.

I. Manufacturer and model:
1. Axis Surveillance MicroSD Card, 128GB
2. WD Purple MicroSD Card, 128GB

2.18 CABLING

A. Provide cabling per manufacturer's recommendations and code requirements for riser rated, plenum, and non-plenum cable types.

B. UTP data cabling required will be provided, installed, terminated and tested by the Division 27 structured cabling Contractor.

C. UTP patch cables will be provided and installed by the Contractor in the IDF and provided by Contractor and installed by Contractor at the control panels or at the door when required.

PART 3 - EXECUTION

3.1 SYSTEM PROGRAMMING

A. The Contractor shall provide all programming necessary for a turnkey system.

B. Programming shall include setting all required IP addressing, setting passwords, firmware upgrades, adding the devices into the software, setting video streams, motion detection areas, recording settings, device naming, mapping, cross system integration, etc.

3.2 SYSTEM MAPPING

A. The Contractor shall provide a satellite level screen shot map showing exterior devices. These maps shall include drill down links to access the building floor plans where all interior and exterior devices are shown. The overview satellite map shall show alarms signifying there is an alarm in the building to draw attention quickly to the correct building then floor plan.

B. The maps shall have links to the other levels/sections as well as the global map.

C. Cameras shall show their approximate field of view.

D. The floor plans shall include all integrated access-controlled doors, controlled overhead doors and integrated devices.

3.3 SYSTEM PARTITIONING, ZONING AND NAMING

A. The Contractor shall program each facility to be in its own partition. Some facilities may require sub-partitions to control user access to certain areas. Each manufacturer may use different names for partitions, zones, areas, etc. Adapt as required.

B. All devices, inputs, outputs and other applicable software/hardware entities shall be named by the Contractor.

C. As a basis to start, the following partition, zoning and naming shall be followed:
   1. Partition: Building name
      a. Zone 1: Building name and zone name such as exterior, 1st floor, etc.
         i. Device 1: Building name and floor number– Camera or other device name
         ii. Device 2: Building name and floor - Camera or other device name
         iii. Repeat as required
      b. Zone 2: Building name and zone name such as 2nd floor, etc.
         i. Device 1: Building name and floor - Camera or other device name
         ii. Device 2: Building name and floor - Camera or other device name
         iii. Repeat as required
      c. Repeat zones as required.
   2. Repeat Partitions as required.

D. Camera Naming
   1. All cameras shall be named based on Owner direction.
   2. Multi-sensor cameras shall be named similar, and each sensor shall end with an identifier such as A, B, C and D so the images can be easily aligned in the client software by an end user.

E. The Owner shall have the final say. The Contractor shall schedule a coordination meeting with the Owner and Consultant to coordinate actual project structure and naming prior to starting any programming.

3.4 VMS VIDEO STREAMING

A. All cameras shall have the following VBR streams configured. If a camera or VMS is not capable of the quantity of streams listed below when they shall be set for dual streaming at the Record settings and Live viewing settings.

B. The VMS and cameras shall be setup and enabled for multicast.
1. Stream 1 (Record and High Resolution)
a. Interior Cameras:

i. 10 fps

ii. 1 keyframe (I-Frame) per 4 seconds

iii. Max resolution

iv. 100% recording with motion enabled for metadata.

v. VBR with no cap or high cap when smart codecs are enabled.

vi. H.264 Main Profile compression

vii. Smart codec enabled at the following settings:

viii. Medium (50%) dynamic compression setting

ix. Dynamic GoP of up to 30 seconds

x. Dynamic frame rate enabled

b. Exterior Cameras:

i. 10 fps

ii. 1 keyframe (I-Frame) per 4 seconds

iii. Max resolution

iv. 100% recording with motion enabled for metadata.

v. VBR with no cap or high cap when smart codecs are enabled.

vi. H.264 Main Profile compression

vii. Smart codec enabled at the following settings:

viii. Medium (50%) dynamic compression setting

ix. Dynamic GoP of up to 30 seconds

x. Dynamic frame rate disabled

2. Stream 2 (Live)
a. 10 frames per second

b. ~850x450 resolution for 16:9 aspect ratio cameras and 640x480 for 4:3 aspect ratio cameras. Always maintain the native aspect ratio of the camera.

c. H.264 Main Profile compression

d. Smart codec enabled at a medium setting with a dynamic GoP of up to 8 seconds.

e. 1 key frame per 4 seconds

f. Automatic stream selection with dynamic resolution (resolution of camera window on VMS client)

3. Stream 3 (Low Resolution)
   a. 10 frames per second

   b. ~1280x720 resolution for 16:9 aspect ratio cameras and 1024x768 for 4:3 aspect ratio cameras. Always maintain the native aspect ratio of the camera.

   c. H.264 Main Profile compression

   d. Smart codec enabled at a medium setting with a dynamic GoP of up to 8 seconds.

   e. 1 key frame per 4 seconds

   f. Automatic stream selection with dynamic resolution (resolution of camera window on VMS client)

4. Stream 4 (Web/Remote/Mobile Client)
   a. 5 frames per second

   b. MJPEG at 50% quality when VMS requires for web or mobile clients to avoid transcoding from H.264.

   c. ~850x450 resolution for 16:9 aspect ratio cameras and 640x480 for 4:3 aspect ratio cameras. Always maintain the native aspect ratio of the camera.

   d. Data rate cap or as appropriate based on available bandwidth and use case.

   e. Automatic stream selection with dynamic resolution (resolution of camera window on VMS client)

3.5 CAMERA POSITIONING PROCEDURES

A. The Contractor shall provide an initial aim, zoom, field of view adjustment, rotation and focus immediately after the camera is installed following the design intent on the drawings and camera schedule.

B. The Contractor shall then take screen shots from the camera's web interface, label them based on the drawings device number and present them to the Owner and Consultant for an initial review and comment. The Contractor shall furnish a battery powered PoE injector to power up the camera to provide the initial aim/focus and screen shots and shall not rely on the Owner's network or PoE switches to be online or available.

C. The Contractor shall then fine tune the cameras aim and field of view based on the Consultant's feedback and update the screen shots.

D. After the cameras aim, zoom, field of view adjustment and focus are finalized by the Consultant, the Contractor shall submit the screen shots to the Owner to

obtain their final sign-off or comments. If any comments are received, the Contractor shall make the adjustments necessary and take updated screen shots and submit for re-approval.

E. The above will not happen at the same time and the Contractor shall plan on multiple trips to the project to make the adjustments.

F. The Contractor shall include the final screen shots as part of the as-builts.

3.6 PASSWORDS

A. The Contractor shall coordinate a secure project password with the Owner and Consultant. This password shall be documented by the Contractor and used for all devices.

B. This secure password shall be set in the archiver default password field and each device in the video unit tab shall be set to use that set default.

3.7 TESTING

A. Refer to Section 270000 for additional requirements.

B. Prior to energizing or testing the system, ensure the following:
1. All products are installed in a proper and safe manner per the manufacturer's instructions.
2. Dust, debris, solder, splatter, etc., is removed.
3. Cable is dressed, routed, and labeled; connections are consistent with regard to polarity.
4. All products are neat, clean, and unmarred, and parts are securely attached.

C. Contractor shall ensure that each device in the security system is functioning normally and in such a manner as to meet the functional and performance requirements in this specification.

3.8 TRAINING

A. Refer to Section 270000 for additional requirements.

B. Provide system operations, administration, and maintenance training by factory-trained personnel qualified to instruct.
1. Contractor shall provide up to 12 hours of scheduled and dedicated training time in three (3) four (4) hour sessions for administration and investigation.
2. Contractor shall provide up to 2 hours of scheduled and dedicated training time for maintenance including lens and dome cleaning, focusing and positioning.
3. Provide printed training materials for each trainee, including product manuals, course outline, workbook or student guides, and written examinations for certification.
4. Provide hands-on training with operational equipment.
5. Training shall be oriented to the specific system being installed under this contract as designed and specified.
6. Contractor shall provide all necessary documentation of system operating parameters prior to scheduled training sessions.

3.9 WARRANTY

A. Refer to Section 270000 for additional requirements.

3.10 INSTALLATION PRACTICES

A. All services provided shall be professional and conform to the highest standards for industry practices. The Owner reserves the right to halt any installation due to poor workmanship. All work shall be defect free, and the installer shall replace, at their expense, any work found to be defective.

B. The Owner reserves the right to halt any installation due to failure of Contractor to observe installation-free periods due to instructional or administrative requirements. To the maximum extent possible, the Owner will provide advance notice of such periods.

C. Contractor is responsible for providing a complete and functional video surveillance system.

D. All manufactured items, materials, and equipment shall be applied, installed, connected, erected, used, and adjusted as recommended by the manufacturers, or as indicated in their published literature, unless specifically noted herein to the contrary.

E. Contractor shall follow these standards and approved submittals for locations of power supplies. The Owner intends to limit the number and location of power supplies to facilitate more effective long-term support and maintenance of the system.

3.11 COORDINATION

A. Contractor shall provide up to 8 hours (up to four, 2-hour sessions) of scheduled and dedicated coordination time to assist Owner with camera positioning/repositioning and coordination as requested by Owner or Consultant including post final signoff.

3.12 AESTHETICS

A. All cables and equipment terminating at panels frames shall be vertically straight, with no cables crossing each other, from twelve inches inside the ceiling area to the termination block.

B. All cable bundles shall be combed and bundled to accommodate individual termination block rows and panels.

C. For any given telecom room, a horizontal and vertical alignment for all mounting hardware will be maintained to provide a symmetrical and uniform appearance to the distribution frame.

D. All surface-mounted devices shall be firmly secured level and plumb

E. All rack mount equipment shall be securely installed.

K. Cable shall be stored and handled to assure that it is not stretched, kinked, crushed, or abraded in any way. Bend radiuses shall meet manufacturer specifications and/or recommendations. Cable shall not be installed in ambient temperatures or moisture conditions above or below the manufacturer's rating.

L. No splices shall be installed in any cable.

3.16 CABLE TERMINATION

A. Termination hardware (patch panels) positioning and layout shall be reviewed and approved by the Owner prior to construction. The review does not exempt Contractor from meeting any of the requirements stated in this document.

3.17 FIRE STOPPING

A. Fire stopping of openings between floors, fire-rated walls, and smoke-rated walls, created by others for This Contractor to pass cable through, shall be the responsibility of the This Contractor. Sealing material and application of this material shall be accomplished in such a manner that is acceptable to the local fire and building authorities having jurisdiction over this work.

B. Any openings created by or for This Contractor and left unused shall be sealed up by This Contractor.

C. This Contractor shall be responsible for creating a waterproof seal in and around any openings that This Contractor creates from the structure to the outside environment.

3.18 SYSTEM INSPECTION

A. Contractor shall coordinate with project representative for inspection after Contractor has completed testing of entire system.

B. Contractor shall have trained Contractor representative and testing equipment on site during inspection to assist with spot verification of tests.

C. Contactor shall verify with Project Representative the precise positioning of camera aim and shall make fine adjustments as requested.

3.19 LABELING

A. Contractor shall neatly label all security devices and cabling at both ends. All labels shall be on Project as-built drawings.

3.20 CAMERA INSTALLATION

A. Contractor shall field verify all camera locations and positioning with Owner prior to installation.

3.21 DOCUMENTATION

A. Upon completion of the installation, Contractor shall provide full documentation sets to the Consultant for approval as described in section 27 60 00. All documentation shall become the property of the Owner.

B. Documentation shall include the additional specific items detailed in the subsections below:
   1. Contractor shall provide hard copy and electronic forms of the final test results.
   2. Contractor shall provide a document including the following:
      a. Camera label/identifier
      b. Location of each drop by orientation/permanent landmark in the room
      c. Contractor shall provide accurate as-built Construction Drawings. The drawings are to include cable routes and device locations.

3.22 PRE-CHECKOUT

A. The Contractor shall demonstrate the following to Owner during system demonstration.
   1. The cameras are fully installed and functional.
   2. Camera adjustments are complete to the Owner's satisfaction including.
      a. Aim/Zoom
      b. Focus/Back Focus
      c. Masking Zones
      d. Motion Detection Zones
      e. Pre-Sets/Tours

3.23 FINAL ACCEPTANCE

A. In addition to closeout requirements in section 27 60 00, This Contractor shall demonstrate the following before final approval.
   1. Owner training is complete.
   2. Punch list items are complete.
   3. As-built documentation is complete and submitted to Owner/Consultant.

3.24 FINAL PROCEDURES

A. Perform final procedures in accordance with section 27 60 00.

END OF SECTION

AUDIO/VISUAL MULTIMEDIA LEGEND

SYMBOL	DESCRIPTION
A## V##	WALL AV ROUGH-IN DETAIL
A## V##	CEILING AV ROUGH-IN DETAIL
A## V##	FLOOR AV ROUGH-IN DETAIL
IWB IWB	INTERACTIVE WHITE BOARD - WALL - CEILING
PJ PJ	MULTIMEDIA PROJECTOR
FP# FP#	MULTIMEDIA FLAT PANEL DISPLAY
S S#	LOUDSPEAKER, WALL MOUNTED AND CEILING MOUNTED RESPECTIVELY - # INDICATES TYPE
CP#	CONTROL PANEL
TP#	TOUCH PANEL
M#	MICROPHONE, CEILING MOUNTED - # INDICATES TYPE
VC	VOLUME CONTROL
WB	WALL BOX ENCLOSURE
D1 A1	D1 = DIGITAL SINGLE SIDED CLOCK / A1 = ANALOG SINGLE SIDED CLOCK
D2 A2	D2 = DIGITAL DOUBLE SIDED CLOCK / A2 = ANALOG DOUBLE SIDED CLOCK
ENC	CEILING AV ENCLOSURE
C C	PRESENTATION CAMERA - CEILING - WALL MOUNTED

PREMISE SECURITY LEGEND

SYMBOL	DESCRIPTION
CR	CARD READER
CR M	CARD READER MULLION
KP	INTRUSION DETECTION KEYPAD
IC	INTERCOM (1 DATA CABLE)
IC MS	INTERCOM MASTER STATION (1 DATA CABLE)
PB	PANIC/DURESS BUTTON
LD	LOCK DOWN BUTTON
MD	MOTION DETECTOR
GB	ACCOUSTICAL GLASS BREAK SENSOR
BM	BIOMETRIC READER
RX	REQUEST TO EXIT - SURFACE PIR
KS	KEY SWITCH
LA	LOCAL ALARM SOUNDER
RG	RED/GREEN INDICATOR LIGHT
DB	DOORBELL
DH	MAGNETIC DOOR HOLD
DR	DOOR RELEASE
RX	REQUEST TO EXIT - INTEGRAL TO DOOR HARDWARE
DC	DOOR CONTACT / MONITOR
ES EL EH	ELECTRIFIED STRIKE - ELECTRIFIED LATCH - ELECTRIFIED HARDWARE (REFER TO SCHEDULES)
C C	STANDARD IP SURVEILLANCE CAMERA, (1) CABLE
C C	180° MULTI-IMAGER IP SURVEILLANCE CAMERA, (1) CABLE
C	360° MULTI-IMAGER IP SURVEILLANCE CAMERA, (1) CABLE
C	360° FISHEYE LENS CAMERA
IR	IR ILLUMINATOR

STRUCTURED CABLING LEGEND

SYMBOL	DESCRIPTION
#	TELECOMMUNICATIONS OUTLET, # =NUMBER OF DATA CABLE(S)/JACK(S)
#/#	TELECOMMUNICATIONS OUTLET, #/# = NUMBER OF VOICE CABLE(S)/JACK(S) AND NUMBER OF DATA CABLE(S)/JACK(S)
#	TELECOMMUNICATIONS OUTLET, # =NUMBER OF VOICE/DATA CABLE(S)/JACK(S), SURFACE MOUNT
#/#	TELECOMMUNICATIONS OUTLET, #/# = NUMBER OF VOICE CABLE(S)/JACK(S) AND NUMBER OF DATA CABLE(S)/JACK(S), SURFACE MOUNT
W	WALL MOUNT PHONE (1 CABLE/JACK)
W	WALL MOUNT PHONE, SURFACE MOUNT (1 CABLE/JACK)
#	FLOOR MOUNTED OUTLET, # =NUMBER OF VOICE/DATA CABLE(S)/JACK(S) (FLOOR BOX BY E.C.)
#/#	FLOOR MOUNTED OUTLET, #/# = NUMBER OF VOICE CABLE(S)/JACK(S) AND NUMBER OF DATA CABLE(S)/JACK(S) (FLOOR BOX BY E.C.)
#	CEILING MOUNTED DATA OUTLET, # =NUMBER OF VOICE/DATA CABLE(S)/JACK(S)
AP#	CEILING MOUNTED OUTLET FOR WIRELESS ACCESS POINT #=NUMBER OF CABLE(S)/JACK(S)
AP#	WALL MOUNTED OUTLET FOR WIRELESS ACCESS POINT #=NUMBER OF CABLE(S)/JACK(S)
	CABLING SLEEVE(S)
	TYPICAL LADDER RACK
	TYPICAL CABLE TRAY, BASKET STYLE

GENERAL ANNOTATION LEGEND

SYMBOL	DESCRIPTION
MER	MAIN EQUIPMENT ROOM
TR	TELECOMMUNICATION ROOM
MDF	MAIN DISTRIBUTION FRAME
IDF	INTERMEDIATE DISTRIBUTION FRAME
ETR	EXISTING TO REMAIN
PBO	PROVIDED BY OTHERS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AC	ABOVE COUNTER
EC	ELECTRICAL CONTRACTOR
PSC	PREMISE SECURITY CONTRACTOR
SCC	STRUCTURAL CABLING CONTRACTOR
AVC	AV/MULTIMEDIA CONTRACTOR
UNO	UNLESS NOTED OTHERWISE
ACS	ACCESS CONTROL SYSTEM
VSS	VIDEO SURVEILLANCE SYSTEM

TECHNOLOGY SHEET INDEX

TECHNOLOGY SYMBOLS LEGEND

NOT ALL SYMBOLS ARE USED

- AV WALL ROUGH-IN WITH DATA
- KEYNOTE
- Proposed Camera Direction; SURVEILLANCE CAMERA; Camera Schedule Number (Floor #-Camera #); Camera (N)ew, (E)xisting Rough-in, (D)emo
- Proposed Camera Direction; PTZ CAMERA; PTZ
- Proposed Camera Direction; FIXED SURVEILLANCE CAMERA
- 360°/MULTI-SENSOR FIXED SURVEILLANCE CAMERA OR FISHEYE LENS CAMERA
- Approximate view of lens; Lens View Angle; 360°/MULTI-SENSOR FIXED SURVEILLANCE CAMERA OR FISHEYE LENS CAMERA; Lens size
- MICROPHONE WITH AUDIO LINKED TO CAMERA
- CARD READER LINKED TO CAMERA
- SYMBOL TAG CR #: (#) = DIFFERENT TYPES OF CARD READERS: M = MULLION; W = WIRELESS (Proprietary); Wi = Wi-Fi (802.11); POE = POWER OVER ETHERNET
- SYMBOL TAG KP #: (#) = DIFFERENT TYPES OF CARD READERS: TS = TOUCHSCREEN; PU = PUSH BUTTON
- TOP = DETAIL NUMBER; DETAIL REFERENCE; BOTTOM = SHEET NUMBER
- NORTH ARROW
- SHEET NUMBER; SECTION MARKER; DETAIL NUMBER
- DIRECTION OF ELEVATION; ELEVATION MARKER; SHEET NUMBER; DETAIL NUMBER
- DIRECTION OF ELEVATION; SHEET NUMBER; DIRECTION OF ELEVATION; DETAIL NUMBER
- BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS DRAWING ADJUST SCALES ACCORDINGLY

TECHNOLOGY - GENERAL NOTES

1. EACH KEYNOTE MAY NOT BE UTILIZED ON EVERY SHEET.
2. ALL CONDUIT MEASUREMENTS REFER TO STANDARD CONDUIT TRADE SIZES.
3. ALL CABLES SHALL BE CONCEALED.
4. EACH CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY SLEEVES, WHETHER OR NOT SPECIFICALLY NOTED ON PROJECT DRAWINGS. ALL SLEEVES SHALL BE 2" UNLESS NOTED OTHERWISE ON THE DRAWINGS. CABLE FILL PERCENTAGE SHALL COMPLY WITH NEC.
5. DEVICE LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL REVIEW CONDITIONS AND COORDINATE WITH OTHER TRADES AS NECESSARY FOR EXACT PLACEMENT.

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
Brian C Porter
BICSI ID # 256657
EXPIRES 12-31-27
RCDD

TECHNOLOGY - INDEX SHEET

consultant

revisions
1 ADDENDUM 01 02/06/2026

100% CONSTRUCTION DOCUMENTS

KENWOOD SENIOR & COMMUNITY CENTER

305 DORA STREET
SAN ANTONIO, TEXAS 78212
CITY OF SAN ANTONIO

project number
24-04
date
09-16-25

Beaty Palmer Architects, Inc.
110 Broadway, Suite 600
San Antonio, Texas 78205
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sheet number
T000

BEATY PALMER ARCHITECTS

TECHNOLOGY - FLOOR PLAN - GENERAL NOTES

1. Equipment not related to the support of the MDF/Telecommunications room (E.G. Piping, Ductwork, Pneumatic Tubing) shall not be installed in, pass through, or enter the MDF/Telecommunications room.

2. All walls shall be covered with 4-feet x 8-feet x ¾-inch AC Grade Void Free Fire- R e t a r d a n t Plywood, aligned vertically starting at 12 inches above the finished floor.

3. The plywood shall be installed with the "A" grade side exposed and the "C" grade side against the building or structure. The plywood shall be painted with two coats of fire-retardant paint and one stamp from each sheet shall be masked during the painting and uncovered after the paint has dried so the fire rated plywood stamps are visible for inspection.

4. Vertical section of ladder rack shall be attached to the wallboard to manage backbone cables, or cables as they transition from the entrance conduits or other building in a campus environment to overhead ladder rack.

5. Electrical service outlets shall be labeled with the associated panel and circuit information. Power shall be in two categories: dedicated and convenience.

6 Dedicated (2) 208 VAC J-boxes shall be mounted to a uni-strut above the equipment cabinets or relay racks at 12" above the ladder rack and shall be provided with a 7-foot "SO Type" cord with a female NEMA L6-20R core cap on the end.

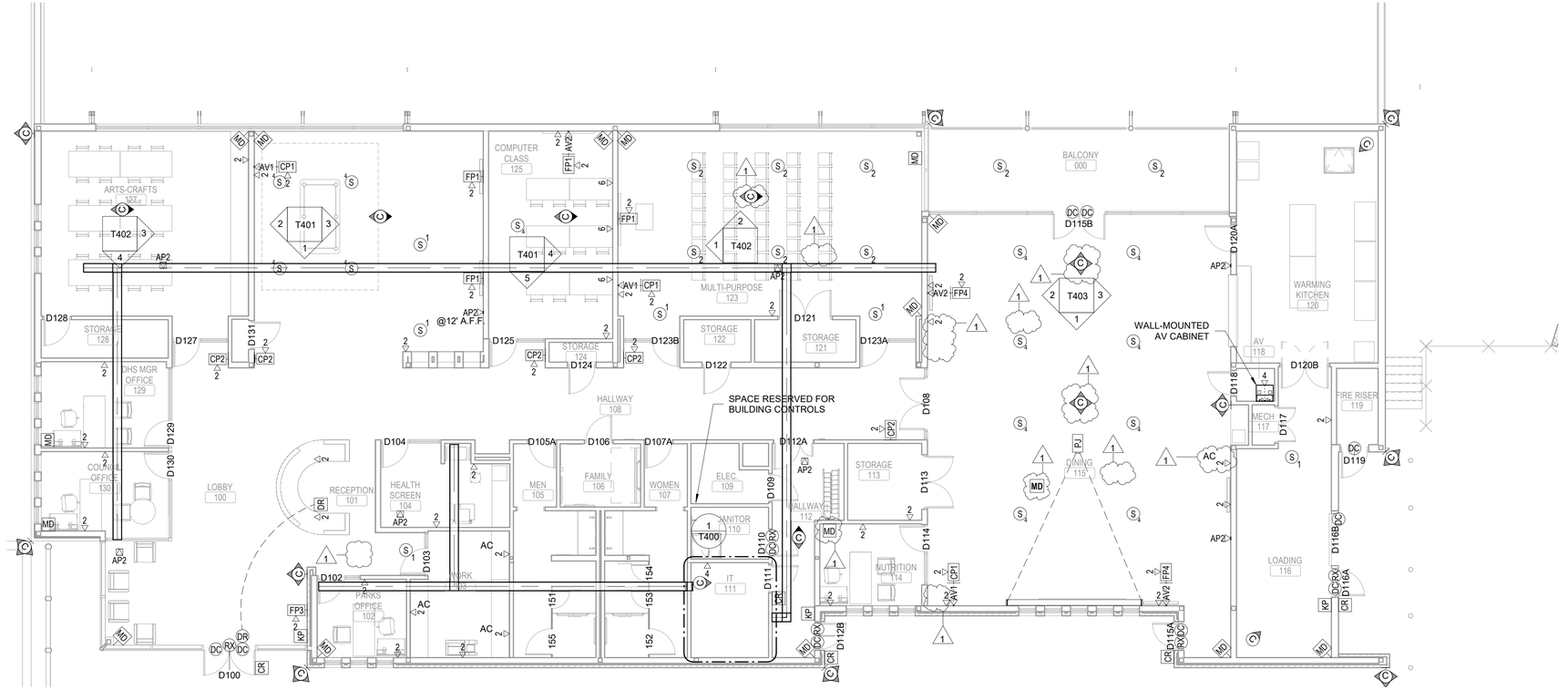
7 (2) 120 VAC J-box shall be mounted to a uni-strut above the equipment cabinets or relay racks at 12" above the ladder rack and shall be provided with a 7-foot "SO Type" cord with a female NEMA 5-20R core cap on the end.

8 The originating electrical panel shall be properly sized for the loads calculated and shall be in the nearest Electrical Room.

9 Additional power circuits to be allocated to security panels, paging systems, A/V racks, CATV, and service provider equipment shall be considered and coordinated at the time of building design.

10 Convenience
The MDF/IDF shall be equipped with 120-volt 20 Amp duplex NEMA 5-20R receptacles, with maximum (3) receptacles on each circuit. The originating electrical panel shall be equipped with a 20 Amp breaker per circuit.

11 A duplex receptacle shall be spaced at least 1 foot from an adjacent wall and every 6 feet thereafter. A minimum of (1) duplex receptacle shall be placed in each wall and be flush mounted to the finished wall surface at 18 inches above finished floor.



1 FINISH FLOOR - CEILING PLAN
SCALE: 1/8" = 1'-0"

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
Brian C Porter
BICSI ID # 256657
EXPIRES 12-31-27
RCDD

TECHNOLOGY - LEVEL ONE

consultant

revisions
1 ADDENDUM 01 02/06/2026

100% CONSTRUCTION DOCUMENTS

KENWOOD SENIOR & COMMUNITY CENTER

305 DORA STREET
SAN ANTONIO, TEXAS 78212
CITY OF SAN ANTONIO

project number
24-04
date
09-16-25

Beaty Palmer Architects, Inc.
110 Broadway, Suite 600
San Antonio, Texas 78205
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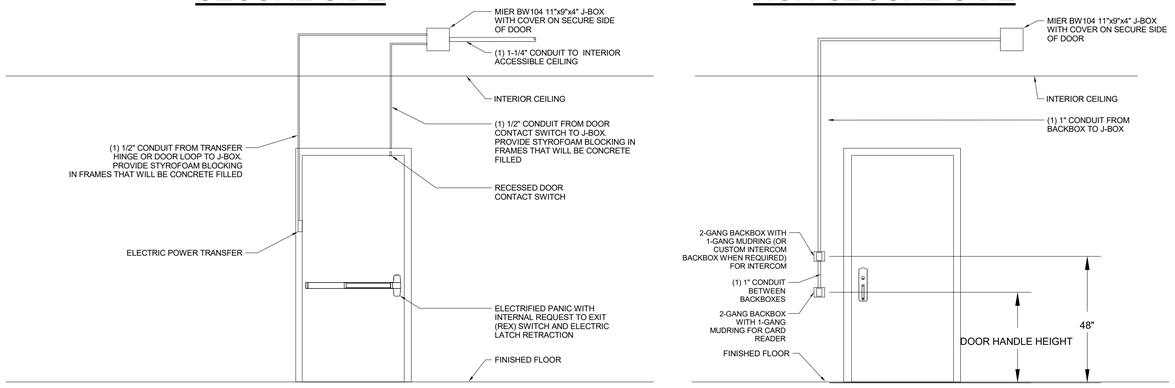
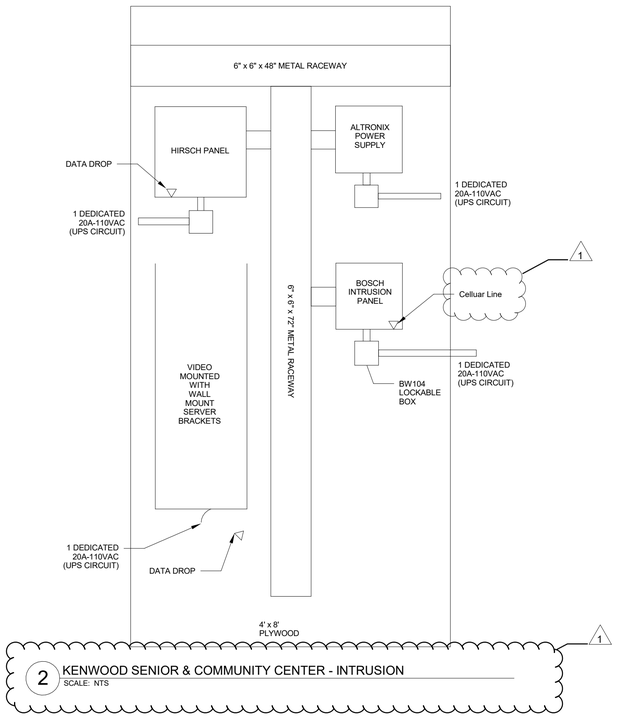
sheet number
T101

BEATY PALMER ARCHITECTS



1 TYPICAL UNIVERSAL SINGLE DOOR ROUGH-IN DETAIL
SCALE: NTS



2 KENWOOD SENIOR & COMMUNITY CENTER - INTRUSION
SCALE: NTS

GENERAL NOTES:

1. REFER TO SECURITY SCHEDULE AND WRITTEN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. DOOR DETAIL INDICATES DOOR HANDLE OR CRASHBAR ON SECURED SIDE OF DOOR FOR REFERENCE ONLY. REFER TO DOOR HARDWARE DIVISION SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. LOCK POWER WILL VARY DEPENDING ON LOCK TYPE AND DOOR HARDWARE. REFER TO SECURITY SCHEDULES/SPECIFICATIONS FOR COORDINATED POWER REQUIREMENTS. CONTRACTOR SHALL CROSS REFERENCE WITH OFFICIAL DOOR HARDWARE SCHEDULE/SPECIFICATIONS TO CONFIRM FINAL REQUIREMENTS.

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
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Brian C Porter
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EXPIRES 12-31-27
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TECHNOLOGY - SECURITY DETAILS

consultant **revisions**

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