GEORGE KELLS PARK

714,724,726 N KEDZIE CHICAGO IL 60612

Chicago Park District

Kells (George) Park Field House #2417

Project Number 11340

BROOK ARCHITECTURE

bailey edward

SMNGA

TERRA ENGINEERING LTD.

K2NCREST

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PROJECT DESCRIPTION

Project Description
The Public Building Commission of Chicago (PBC) along with its partner at The Chicago Park District (CPD-PARKS), and the Aldermanic Offices of the 27th Ward, are embarking on delivering the construction of a new Fieldhouse along with site development.

The proposed single-story +/-12,000 SF Fieldhouse will include a multi-purpose room for activities such as basketball and volleyball with room for spectators. Also included are club rooms for Chicago Park District activities, gym storage, reception area, an administrative office, and public restrooms. The fenestration of curtainwall at the lobby entrance will allow great visibility into the fieldhouse and strategically placed fenestrations will invite generous daylight into the gymnasium and main building spaces. The mechanical system will be designed to reduce energy consumption while providing a comfortable environment for fieldhouse activities.

The fieldhouse is designed to achieve minimum LEED v4.0/v4.1 Silver Certification as defined by the U.S. Green Building Council (USGBC). The project will maximize efficiency with the use of natural light, rainwater harvesting, and include a mechanical system targeted to reduce energy consumption and native and adaptive planting in the landscaping immediately surrounding the fieldhouse.

The project will also include site improvements for stormwater management infrastructure and for conformance to the landscaping ordinance. Site demolition scope will involve removal of the existing decommissioned City Firehouse and the abandoned playground. A new soft scape playground will be provided as well. The proposed Full-Time Equivalent (FTE) has not been determined but the plan will provide 4 parking spaces and new bicycle racks per requirement.

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The proposed Full-Time Equivalent (FTE) will be ## and the site minimum parking on the zoning ratio of 3:1 is 4 min space and the project will include new bicycle racks per requirement.

Park History

In 1924, the City of Chicago ("City") acquired an almost 2-acre site using Water Bond Funds to construct the Chicago Avenue Water Tunnel. After the completion of the tunnel, the City determined that the land above the tunnel was suitable for use as a park. In 1942, the City's Bureau of Parks and Recreation installed playground equipment, a wading pool, a sand box, and a playing field that was flooded in the winter for ice skating.

The City named the park for George D. Kells (c.1894-1959), alderman of the surrounding 28th ward from 1931 to 1951. (At the time, the City regularly named parks for standing aldermen of the wards in which the sites were located.) During World War I, Kells served as an attaché at the U.S. Embassy in France. A strong proponent of civil rights, he served as the Democratic state attaché chairman from 1944 to 1950. ,The Chicago Park District began leasing Kells Park from the City of Chicago in 1959 with the most recent lease renewal in 2013. Over the years, the Park District made a number of improvements to the site. New basketball courts were installed in 1979. In the early 1990s, the Park District built a new soft surface playground and thoroughly replanted Kells Park's landscape.

ADDITIONAL PROJECT CONSIDERATIONS

- Permitting: Standard Plan Review
- Project Phasing may be required
- Environmental: IEPA Site Remediation Program (SRP)
- Project Funding per Chicago/Central Park TIF and Kinzie Industrial Conservation Area TIF, Expiration: December 31, 2026

PROJECT REQUIREMENTS

PROGRAM MATRIX

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Program Matrix

Program	Room Name	Net Area (Sq.ft)	Description	Qty	Notes
Gym	Large Gym	7,212	high school basketball gym with bleachers	1	Overall GYM size: 64'-8" X 96'-0" Amenities: • Basket ball court : 50'-0" X 84'-0" • Volleyball court : 29'-6" X 59'-0" • Badminton court : 24'-0" X 48'-0" • a ceiling mounted sound system with downward projection is required. CPD does not have a current standard • destratification fans • key-switch retractable basketball and manually operated bleachers. Control panel for gym equipment shall be located within the gym office but with clear views to the equipment that it's operating • scoreboard for basketball & volleyball
Sub total		7,212		1	
Club Room	Club Room A	626		1	include window treatments, not automated
	Storage - A	74		1	
	Club Room B	393		1	include window treatments, not automated
	Storage - B	74		1	
	Pantry	125		1	large commercial refrigerator for camp programming, CPD to provide spec
Sub total		1,292		5	
Circulation	Vestibule	97		1	
	Lobby & Reception	462		1	
	Corridor	989		1	
Sub total		1,548		3	
Office	Office	300		1	A security system is required. A meeting should be set up with CPD security and Active Alarm as the building progresses. Include window treatments in office spaces, not automated.
Sub total		300		4	
Restrooms	Toilet - Women's	234		1	W.C. – 4+1(accessible), LAV – 2
	Toilet - Men's	266		1	W.C. – 3+1(accessible), LAV - 2
	All gender toilet	103		1	
	Toilet Hallway	149		1	
	Men's locker room	120		1	
	Women's locker room	88		1	
Sub total		960		6	
BOH	Electrical Room	141		1	
	Tele Comm. Room	71		1	
	Vending	41		1	2 vending machines; dry goods and drinks, adjacent to lobby
	Mechanical	179		1	will follow CPD BAS standards
	Janitor room	114		1	Janitors closet with slop sink, power for charging, adequate storage for
	Storage	291		1	
	Water Room	168		1	
Sub total		1,005		7	
Grand total		12,317		21	
Building envelope factor		+/- 12%			
Grand Total		13,795			

DESIGN TEAM DIRECTORY

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Name	Organization	Discipline	Email	Phone	Address
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PRELIMINARY ZONING CODE AND BUILDING ANALYSIS

Zoning Analysis

The Park District has assumed ownership of 8 lots currently zoned R-3. The subject properties will be rezoned POS which allows the construction of park accessory buildings including a field house. POS zoning has 0’ front yard setback and the side and rear yard setbacks are the building height. With an administration relief, buildings are allowed to encroach upon the rear and side yards by 50%. Refer to the enlarged site plans for specific zoning requirements for each design option.

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KELLS PARK FIELDHOUSE – 100%SD CODE MATRIX

UPDATED - 2/2/2025

	SUBJECT	CODE REFERENCE	ORDINANCE REQ'MT	ACTUAL	NOTES
1	OCCUPANCY CLASSIFICATION	14B-3-303.4	DNA	A-3	
2	GRADE PLANE	14B-2 203.2	DNA	TBD (SURVEY REQ'D)	
3	NO. STORIES ABOVE GRADE PLANE	14B-2-202, 14B-5-504.4	DNA	1-STORY	
4	BUILDING AREA	14B-2-203.4, 14B-5-506	DNA	OPTION 1 – 10,873 SF OPTION 2 – 13,862 SF	
5	FRONTAGE INCREASE	14B-5-506.3	DNA		
6	MIXED OCCUPANCY STRATEGY	14B-5-508	DNA		
7	ACCESSORY OCCUPANCIES	14B-5-508.2	DNA		
8	CONSTRUCTION TYPE	----SEE BELOW----			
9	INCIDENTAL USES	14B-5-508.2	DNA		
10	COMBUSTIBLE MATERIAL, TYPE I-IV CONST.	14B-6-603, 14B-6-604.1	FIRE-TREATED WOOD MATERIALS ARE PERMITTED WHERE ALLOWED IN TYPE I+II CONSTRUCTION, REFER TO 603.1	F.T. WOOD BLOCKING ONLY	
11	EXTERIOR WALL RATING	TABLES 14B-6-601, 14B-6-602	II-B BASED ON SEPARATION DISTANCE: 2-HR REQ'D X < 3'-0"; 1-HR REQ'D 3 </- x < 10'-0" 0-HR REQ'D TO WALLS 10'-0" </= X < 30'-0"; 0-HR REQ'D TO WALLS X > 30'-0"	BUILDING IS OVER 10' FROM PERIMETER LOT LINES IN ALL OPTIONS, 0-HR REQUIRED.	
12	EXTERIOR WALL PROJECTIONS	14B-7-705.2	DNA	MAY EXTEND UP TO 40"	
	EXTERIOR WALL OPENINGS	14B-7-705.8	UNPROTECTED, NONSPRINKLERED (UP/NS): 0' - <3' AND 3' =<5' = NOT PERMITTED 5' - <10' = 10% 10' - <15' = 15% 15' - <20' = 25% 20' - <25' = 45% 25' - <30' = 70% 30' OR GREATER = NO LIMIT	OVER 30' / NO LIMIT	
13	EXTERIOR WALL PARAPETS	14B-7-705.11	PARAPET 30"H REQUIRED EXCEPT WHERE WALLS TERMINATE AT ROOFS NOT LESS THAN 2-HOUR FIRE-RESISTANCE RATED CONSTRUCTION, OR WHERE THE ROOF, INCLUDING THE DECK OR SLAB AND SUPPORTING CONSTRUCTION IS CONSTRUCTED ENTIRELY OF NONCOMBUSTIBLE MATERIALS.	PARAPET REQUIRED, ROOF IS NOT REQ'D TO BE 2-HR AND WE ARE CONTEMPLATING USE OF HEAVY TIMBER IN ROOF ASSEMBLY WHICH IS COMBUSTIBLE.	
14	AUTOMATIC SPRINKLER SYSTEM	14B-9-903.2.1	AN AUTOMATIC SPRINKLER SYSTEM SHALL BE PROVIDED THROUGHOUT ALL BUIDLINGS AND PORTIONS OF BUILDINGS AS OUTLINED IN THIS SECTION		
15	AUTOMATIC SPRINKLER SYSTEM – GROUP A-3 OCCUPANCY	15-B-9-903.2.1.3 GROUP A-3	SPRINKLERS SHALL BE PROVIDED WHEN ONE OF THE FOLLOWING CONDITIONS EXIST:SPRINKLERS SHALL BE PROVIDED WHEN ONE OF THE FOLLOWING CONDITIONS EXIST 1. FIRE AREA EXCEEDS 12,000 SF 2. FIRE AREA HAS AN OCCUPANT LOAD OF 300 OR MORE		

TYPE III-A NON-COMBUSTIBLE CONSTRUCTION

TYPE III CONSTRUCTION IS THE TYPE OF CONSTRUCTION IN WHICH THE EXTERIOR WALLS ARE OF NONCOMBUSTIBLE MATERIALS AND THE INTERIOR ELEMENTS ARE OF ANY MATERIAL PERMITTED BY THIS CODE.

	SUBJECT	CODE REFERENCE	ORDINANCE REQ'MT	ACTUAL	NOTES
8A	ALLOWABLE HEIGHT	TABLE 14B-504.3	55' NON-SPRINKLERED 70' SPRINKLERED	30'	COMPLIES
8B	ALLOWABLE NUMBER OF STORIES	TABLE 14B-504.4	2-STORIES NON-SPRINKLERED 3-STORIES SPRINKLERED	1 STORY	COMPLIES
8C	ALLOWABLE AREA	TABLE 14B-506.2	6,000 NON-SPRINKLERED 24,000 SPRINKLERED 1-STORY 18,000 SPRINKLERED MULTI-STORY	OPTION 1 – 10,298 SF OPTION 2 – 13,833 SF	BLDG. MUST BE SPRINKLERED
8D	RATING – PRIMARY STRUCTURAL FRAME	TABLE 14B-6-601	1-HR, FIRE PROTECTION OF STRUCTURAL MEMBERS IN ROOF CONSTRUCTION NOT REQUIRED, INCLUDING PRIMARY STRUCTURAL FRAME, WHERE EVERY PART OF ROOF CONSTRUCTION IS 20' ABOVE FLOOR BELOW	1-HR FOR ALL CONST. BELOW 20' A.F.F. 0-HR FOR ALL CONST. ABOVE 20' A.F.F.	LOBBY, CLUB RMS, TOILETS, OFFICES, ETC. 1-HR, GYM 0-HR ABOVE 20'
8E	RATING – EXTERIOR BEARING WALLS	TABLE 14B-6-601	2-HRS	2-HRS	
8F	RATING – INTERIOR BEARING WALLS	TABLE 14B-6-601	1-HR	1-HR	
8G	RATING – EXTERIOR NON-BEARING WALLS	TABLE 14B-6-601	SEE TABLE 602 (NOTED ABOVE)	WILL COMPLY	
8H	RATING – FLOOR CONSTRUCTION	TABLE 14B-6-601	1-HR TYP. – 0-HR ABOVE BASEMENTS AND UNEXCAVATED AREAS (S.O.G.)	0-HR, UNEXCAVATED / SLAB ON GRADE	
8J	RATING – ROOF CONSTRUCTION	TABLE 14B-6-601	1-HR BELOW 20' A.F.F., 0-HR ABOVE 20' A.F.F., H.T. COMPLYING W/ 2304.11 IS ALLOWED WHERE RATING IS 1-HR OR LESS		
8K	ROOF LOADS ONLY: MINIMUM DIMENSIONS OF HEAVY TIMBER (ROOF AND CEILING LOADS) – COLUMNS - LOWER HALF OF WOOD-FRAME OR GLUED-LAMIATED ARCHES SPRINGING FROM FLOOR OR GRADE	TABLE 2304.11	MIN. NOM. SOLID SAWN SIZE: 6"W, 8"D MIN. GLUED-LAM SIZE: 5"W, 8-1/4"D MIN STRUCT. COMPOSITE LUMBER NET SIZE: 5-1/4"W, 7-1/2"D		
8L	ROOF LOADS ONLY: MINIMUM DIMENSIONS OF HEAVY TIMBER (ROOF AND CEILING LOADS) – UPPER HALF OF WOOD-FRAME OR GLUED-LAMINATED ARCHES SPRINGING FROM FLOOR OR GRADE	TABLE 2304.11	MIN. NOM. SOLID SAWN SIZE: 6"W, 6"D MIN. GLUED-LAM SIZE: 5"W, 6"D MIN STRUCT. COMPOSITE LUMBER NET SIZE: 5-1/4"W, 5-1/2"D		
8M	ROOF LOADS ONLY: MIN. DIMENSIONS OF FRAMED OR GLUE-LAM ARCHES THAT SPRING FROM THE TOP OF WALLS	TABLE 2304.11	MIN. NOM. SOLID SAWN SIZE: 4"W, 6"D MIN. GLUED-LAM SIZE: 3"W, 6-7/8"D MIN STRUCT. COMPOSITE LUMBER NET SIZE: 3-1/2"W, 5-1/2"D		

TYPE IV HEAVY TIMBER CONSTRUCTION

PER 602.4 TYPE IV CONSTRUCTION HAS EXTERIOR WALLS OF NONCOMBUSTIBLE MATERIALS AND THE INTERIOR ELEMENTS ARE OF SOLID WOOD, LAMINATED WOOD, HEAVY TIMBER (HT) OR STRUCTURAL COMPOSITE LUMBER (SLC) WITHOUT CONCEALED SPACES. THE MIN. DIMENSIONS PERMITTED SHALL COMPLHY WITH THIS SECTION AND 2304.11. INTERIOR PARTITIONS AND NONCOMBUSTIBLE FLOOR AND ROOF ASSEMBLIES WITH NOT LESS THAN 1-HR FIRE RESISTANCE RATING OR HEAVY TIMBER COMPLYING WITH SECTION 2304.11.2.2 SHALL BE PERMITTED.

	SUBJECT	CODE REFERENCE	ORDINANCE REQ'MT	ACTUAL	NOTES
8A	ALLOWABLE HEIGHT	TABLE 14B-504.3	65' NON-SPRINKLERED 85' SPRINKLERED	30'	COMPLIES
8B	ALLOWABLE NUMBER OF STORIES	TABLE 14B-504.4	2-STORIES NON-SPRINKLERED 3-STORIES SPRINKLERED	1 STORY	COMPLIES
8C	ALLOWABLE AREA	TABLE 14B-506.2	6,000 NON-SPRINKLERED 24,000 SPRINKLERED 1-STORY 18,000 SPRINKLERED MULTI-STORY	OPTION 1 – 10,298 SF OPTION 2 – 13,833 SF	BLDG. MUST BE SPRINKLERED
8D	RATING – PRIMARY STRUCTURAL FRAME	TABLE 14B-6-601	HEAVY TIMBER:		
8E	RATING – EXTERIOR BEARING WALLS	TABLE 14B-6-601	2-HRS	2-HRS	
8F	RATING – INTERIOR BEARING WALLS	TABLE 14B-6-601	1-HR / HEAVY TIMBER	1-HR	
8G	RATING – EXTERIOR NON-BEARING WALLS	TABLE 14B-6-601	SEE TABLE 602 (NOTED ABOVE)	WILL COMPLY	
8H	RATING – FLOOR CONSTRUCTION	TABLE 14B-6-601	HEAVY TIMBER	0-HR, UNEXCAVATED / SLAB ON GRADE	
8J	RATING – ROOF CONSTRUCTION	TABLE 14B-6-601	HEAVY TIMBER		
8K	ROOF LOADS ONLY: MINIMUM DIMENSIONS OF HEAVY TIMBER (ROOF AND CEILING LOADS) – COLUMNS - LOWER HALF OF WOOD-FRAME OR GLUED-LAMIATED ARCHES SPRINGING FROM FLOOR OR GRADE	TABLE 2304.11	MIN. NOM. SOLID SAWN SIZE: 6"W, 8"D MIN. GLUED-LAM SIZE: 5"W, 8-1/4"D MIN STRUCT. COMPOSITE LUMBER NET SIZE: 5-1/4"W, 7-1/2"D		
8L	ROOF LOADS ONLY: MINIMUM DIMENSIONS OF HEAVY TIMBER (ROOF AND CEILING LOADS) – UPPER HALF OF WOOD-FRAME OR GLUED-LAMINATED ARCHES SPRINGING FROM FLOOR OR GRADE	TABLE 2304.11	MIN. NOM. SOLID SAWN SIZE: 6"W, 6"D MIN. GLUED-LAM SIZE: 5"W, 6"D MIN STRUCT. COMPOSITE LUMBER NET SIZE: 5-1/4"W, 5-1/2"D		
8M	ROOF LOADS ONLY: MIN. DIMENSIONS OF FRAMED OR GLUE-LAM ARCHES THAT SPRING FROM THE TOP OF WALLS	TABLE 2304.11	MIN. NOM. SOLID SAWN SIZE: 4"W, 6"D MIN. GLUED-LAM SIZE: 3"W, 6-7/8"D MIN STRUCT. COMPOSITE LUMBER NET SIZE: 3-1/2"W, 5-1/2"D		

CIVIL ENGINEERING AND LANDSCAPE

DESIGN NARRATIVE

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Civil Schematic Design Narrative

Kells Field House

714, 724, 726 N. Kedzie Ave
Chicago, IL 60612

Prepared for:

Chicago Parks District
541 N Fairbanks Ct
Chicago, Illinois 60611

Issued: March 14, 2025

PROJECT SUMMARY

1. Existing Parcel:
    a. The proposed project is located on an approximately 0.53-acre site at the southeast corner of Kells Park along N Kedzie Ave and north of W Huron St in the city of Chicago, Illinois. The project site is comprised of an existing abandoned 2-story firehouse, asphalt pavement, concrete sidewalk, fencing, and landscape.

2. Proposed Project:
    a. The Kells Field House project will involve the construction of a new field house at the southeast corner of Kells Park. The redevelopment will include a new playground north of the proposed field house as well as a new parking lot with access to the adjacent north/south public alley. Site utility improvements will be performed as needed. The firehouse and a portion of the existing concrete walks on site will be removed and reconfigured to improve accessibility and pedestrian circulation on the property. Landscape improvements are also planned for the proposed project.

CIVIL ENGINEERING DESCRIPTION

1. Site Demolition & Erosion Control
    a. Notable site items for removal include:
        i. The existing two-story firehouse, associated appurtenances, utility services, and surrounding concrete walks will be demolished.
        ii. The existing chain link fence separating the two lots will be removed.
        iii. Decorative metal fence along N Kedzie Ave will be removed.
        iv. Existing trees on site will be removed.
        v. Depressed curb and sidewalk along N Kedzie Ave will be removed.
        vi. Ally apron along N. Kedzie will be removed.

    b. Earthwork removal will be in accordance with the environmental investigation reports and shall be in accordance with IEPA regulations for Subtitle D, CCCD, or any other landfill identified in the anticipated environmental investigation report.

    c. Erosion control measures anticipated are:
        i. Construction fence with dust screening at property boundary
        ii. Silt fence at property boundary and at base of all stockpiles
        iii. Inlet filters at all proposed and existing catch basins
        iv. Temporary seeding at all stockpiles
        v. Erosion control blankets at all slopes 4:1 or greater
        vi. Stabilized construction entrance

2. Earthwork Requirements
    a. Earthwork excavation shall be performed in accordance with IDOT Standard Specifications for Road and Bridge Construction (latest edition) and shall also include the following:
        i. Excavation to design subgrade ±0.1’
        ii. Hauling, placement, and compaction of excavated material to 95% Standard Proctor Density, in fill areas.
        iii. Discing and drying of suitable materials to obtain proper compaction.
        iv. Borrow excavation to obtain suitable material.
        v. Undercutting, hauling and placement of unsuitable materials to non-structural fill areas.
        vi. Handling, hauling and placement of all excess spoil to fill areas.
        vii. Import or export of material necessary to bring site to final grade.
        viii. Fill to obtain desired subgrade shall be coordinated with stormwater management objectives.

3. At-Grade Improvements
    a. General Requirements:
        i. Subgrade preparation shall include final grading of the pavement subgrade to ±1" with an average subgrade elevation of ±0.02' from the proposed subgrade elevation.
        ii. Aggregate base course for concrete and asphalt pavements shall be constructed in conformance with Section 351. It shall be type "B" with a CA-6 gradation, unless otherwise specified. Up to 25% RAP allowable for base course aggregate as long as required gradation is maintained.
        iii. Hot mix asphalt aggregate base course shall be constructed in accordance with Section 311 of the Standard Specifications for Road and Bridge Construction. It shall have a minimum Marshall Stability of 1,700 or greater.
        iv. Hot mix asphalt binder course shall conform to IDOT SSRBC, latest edition.
        v. Hot mix asphalt surface course shall conform to IDOT SSRBC, latest edition. A prime coat will be required prior to surfacing.
        vi. Concrete sidewalks shall be 5" thick with a 6" aggregate base. The concrete shall be 3,500 psi air entrained. A ½" premoulded expansion joint shall be provided at minimum 30' intervals and tooled contraction joints at 5' centers will be required. Maximize recycled content for concrete; substitute fly-ash and slag for up to 40% of cementitious material.
        vii. Combination concrete curb and gutter shall be B6.12. Construction will conform to Section 606 of the Illinois Standard Specifications. The concrete shall be Class SI in accordance with Section 720. Maximize recycled content for concrete. Substitute fly-ash and slag for up to 40% of cementitious material.
        viii. Concrete pavement for driveways shall be 8” thick with 6” CA-6 granular base. The concrete shall be equivalent to IDOT class PV concrete and conform to Section 1020. Provide 3/4” premoulded expansion joints at 30’ intervals and tooled contraction joints at 10’ centers.
        ix. Pavement markings shall be thermoplastic in accordance with Illinois Department of Transportation T501 of the Standard Specifications for Traffic Control Items.

    b. Pavement Sections
        i. Proposed, on-site new paving improvements within the project site are planned as follows, pending coordination with geotechnical engineer and their forthcoming report:
            1. Asphalt Pavement
                a. 10” compacted CA-6 subbase
                b. 2.5” HMA Binder Course IL-4.75, N50
                c. 2” HMA Surface Course Mix D, N50
            2. Concrete Pavement - Vehicular
                a. 8” compacted CA-6 subbase
                b. 8” Portland Cement Concrete
            3. Concrete Pavement - Pedestrian
                a. 6” compacted CA-6 subbase
                b. 5” Portland Cement Concrete
            4. Permeable Rubber Playground Surface
                a. Poured-in-place rubber surface
                b. 4” CA-16
                c. 12” CA-7

4. Stormwater Management
    a. Since the project will disturb more than 15,000 square-ft of land and create 7,500 square-ft of new or reconstructed impervious area, the proposed project is understood to be regulated as defined by the current edition of the Chicago Stormwater Management Ordinance.
    b. Detention:
        i. Approximately 8,000 cubic-feet of detention volume will be required.

c. Volume Control:
    i. Approximately 900 cubic-feet of volume control volume will be required.

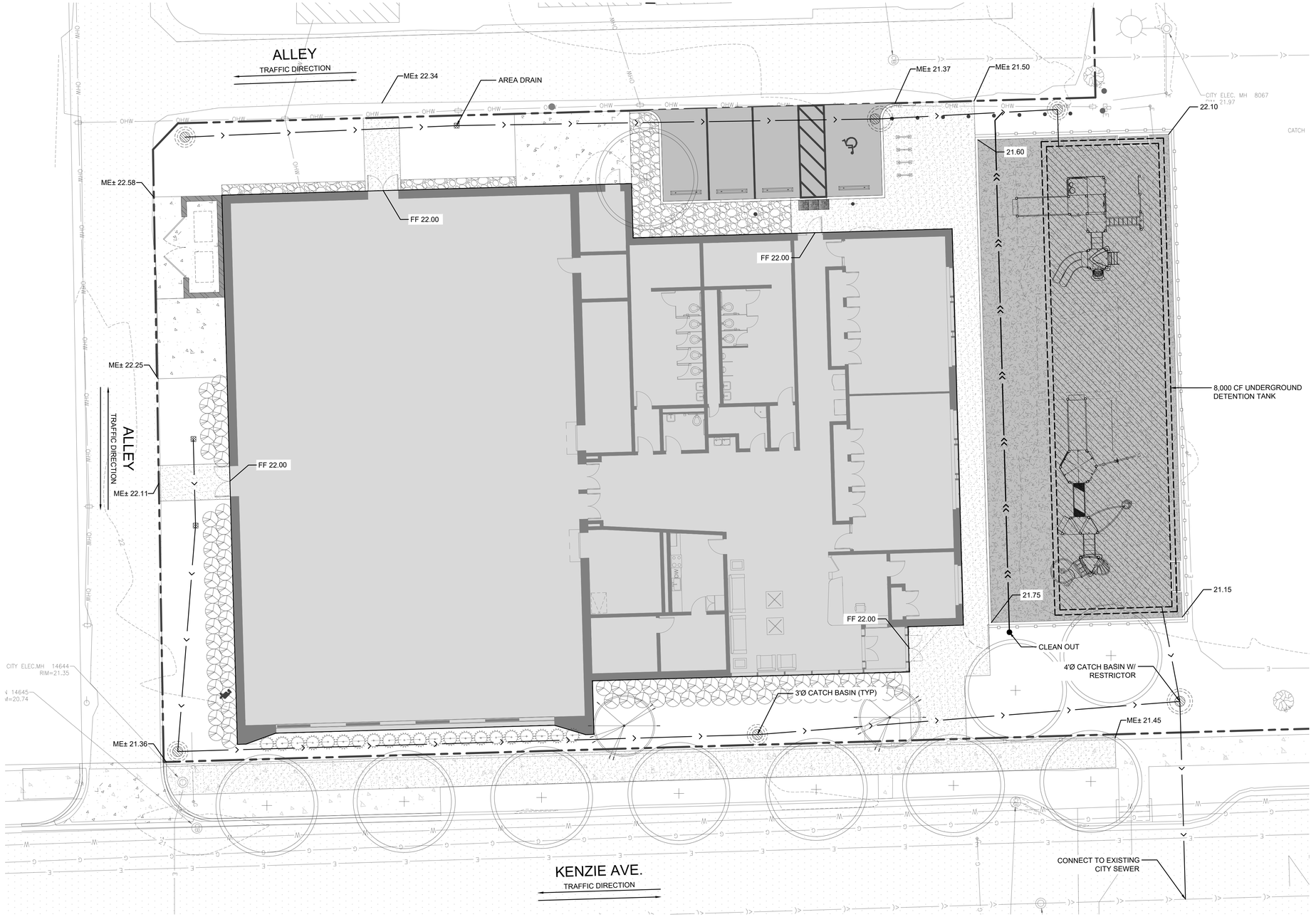
d. Stormwater Strategy:
    i. To meet the required detention and volume control volumes, the proposed playground will have permeable surfacing, with an aggregate stone layer and concrete detention tank below.

5. Underground Utilities
    a. General
        i. All underground utility improvements shall be constructed in accordance with the Chicago Department of Water Management (CDWM) and City of Chicago requirements.
        ii. Select granular trench backfill will be required for all storm sewer trenches lying under existing or proposed streets, loading dock or sidewalks, and within 24" thereof. Trench materials shall be Illinois Department of Transportation CA-6 gradation.
        iii. Manholes, catch basins, and inlets shall be constructed of reinforced precast concrete ring construction with tongue and groove joints in conformance with ASTM C-478.
    b. Sanitary/Combined sewer shall be installed in accordance with the following:
        i. Pipe material shall be of water main quality, Ductile Iron Pipe (DIP), Class 56 or equivalent; or Extra Strength Vitrified Clay Pipe, ASTM C-700 specification, with PVC compression collar seal type joints conforming to ASTM Specification D-1784.
        ii. Pipe bedding shall consist of compacted aggregate, CA-11, placed 6" below to springline of pipe, and compacted FA-6 from springline of the pipe to 12” above for the width of the trench. Up to 25% RAP allowable for base course aggregate as long as required gradation is maintained.
        iii. Frames and lids shall be as specified by the DWM and shall include an external 10" elastomeric band extending from the frame to the manhole.
        iv. A watertight rubber boot conforming to ASTM C-923 shall be provided at all pipe connections to structures.
        v. Testing and televising of sanitary sewer shall be in accordance with the Standard Specifications for Sewer and Water Main Construction, and City of Chicago Department of Water Management.
    c. Storm sewer shall be installed in accordance with the following:
        i. Pipe material shall be reinforced concrete pipe for pipes greater than 21 inches, ASTM C-76, Class III, Wall-B O-ring joints is the minimum requirement. Pipe material shall be PVC-SDR-26, DIP, or Extra Strength vitrified Clay Pipe for pipes 21” and smaller in diameter.
        ii. Pipe material shall be 6” Perforated PVC SDR-26 for all subgrade drainage beneath the permeable pavement section.
        iii. Pipe bedding shall consist of Illinois Department of Transportation CA-11 gradation compacted from 6" below to the spring line of the pipe and compacted CA-11 or CA-16 from springline of the pipe to 12” above, over the trench width. Up to 25% RAP allowable for base course aggregate as long as required gradation is maintained.
        iv. Frame and lids shall be as specified by the City of Chicago Department of Water Management.
        v. A watertight rubber boot conforming to ASTM C-923 shall be provided at all pipe connections to structures.

d. Water Main shall be installed in accordance with the following:
   i. Pipe material shall be Ductile Iron Pipe, Class 56 or equivalent with mechanical joints.
   ii. Pipe bedding shall consist of compacted aggregate, CA-11 or CA-16, placed 6" below and to springline of pipe, and compacted CA-16 from spring line to 12" above the pipe for the width of the trench. Up to 25% RAP allowable for base course aggregate as long as required gradation is maintained.
   iii. Frame and lids shall be as specified by the City of Chicago Department of Water Management.
   iv. Thrust blocking will be required at all bends greater than 11¼" degrees.
   v. Testing shall be in conformance with City of Chicago Department of Water Management.

SPECIAL CONSIDERATIONS & PERMITTING

1. DOB Stormwater: Since the project is expected to include more than 15,000 square-ft of contiguous disturbance and 7,500 square-ft of new impervious area, the proposed project is understood to be regulated as defined by the current edition of the Chicago Stormwater Management Ordinance.
2. OUC-EFP: It is understood that new building services will be required for this project. As a result, an OUC-EFP permit will be required from the Office of Underground Coordination for any and all work performed in the public right-of-way.



N

10' 0 5' 10' 20'

Scale: 1 inch = 10 feet

LEGEND:

- PROPERTY LINE
- DETENTION TANK
- STORM SEWER
- PERFORATED PIPE
- 3'Ø CATCH BASIN (CB)
- 4'Ø CATCH BASIN (CB)
- AREA DRAIN (AD)
- CLEAN OUT (CO)
- 18.89 — SPOT ELEVATION
- ME± — MATCH EXISTING
- FFE — FINISHED FLOOR ELEVATION

DOB Stamp

BROOK ARCHITECTURE

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PBC KELLS PARK FIELD HOUSE

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Chicago, IL 60642

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Current Issuance:

Mark	Description	Date

Project No.: 2417

Title

GRADING AND DRAINAGE EXHIBIT

Sheet

CEX-1

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DESIGN NARRATIVE

Building and Playground Description

In support of the Chicago Park District's mission, the construction will be institutional quality, vandal resistant, safe and accessible and above all aesthetically pleasing. The design will meet the following codes and standards:

Poured concrete strip and spread footings; 4' foundation wall. Reinforced concrete slab with vapor barrier, insulation R-10 and granular fill. Site prep and excavation as required for utilities

- Chicago Park District Code
- Chicago Zoning Ordinance
- With administrative adjustments for setbacks
- City of Chicago Building Code
- With an ACAR for plumbing fixture reduction
- Chicago Energy Conservation Code
- Via performance method / energy modeling
- Current Regulations for Sewer Construction and Storm Water Management
- American National Standard: Accessible and Usable Building and Facilities
- Americans with Disabilities Act Accessibility Guidelines
- Guide to the Chicago Landscape Ordinance
- Environmental Protection Agency Regulations
- Chicago Sustainable Development Policy
- USGBC's Leadership in Energy and Environmental Design standards for sustainability
- Illinois Department of Transportation, Bureau of Design standards
- NFPA NAtional Codes for Life Safety #101and National Electrical Code #70 and Chicago Electrical Code
- OSHA - Occupational Safety and Health Administration standards
- Chicago Park District's Design Guidelines and Standards 2019
- Public Playground Safety Handbook, U.S. Consumer Product Safety Commission

Playground

- Stand alone play equipment for games as noted on the drawings.
- Poured in place rubber surface
- Three (3) tier water conserving drinking fountain to meet ADA child use with integral hose bib
- Enclosed fencing with a 2 gates
- 5' concrete walkway
- Provide energy efficient lighting via light poles or bollards with spare conduit under playground surfacing and handholes at each light fixture
- Product and materials must qualify for LEED points and adhere to green standards

Building Exterior

- Substructure: Poured concrete strip and spread footings; 4' foundation wall. Reinforced concrete slab with vapor barrier, insulation R-10 and granular fill. Site prep and excavation as required for utilities
- Shell
  - Superstructure

    Steel columns and load-bearing CMU with glu-laminated joists;

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A. 2-½" acoustical cellular metal deck at gymnasium and sloped room over corridor and club rooms (no concrete / basis of design Epic Toris A). 1-hour columns / bracing to 20' a.f.f. (UL Des. X772), no fire protection req'd for cols/girders over 20' a.f.f.

B. 2-½" concrete filled cellular acoustical deck (basis of design Epic Toris CA or 4CA) lower roof. 1-hour rated roof UL Des. P908; columns/ bracing supporting roof only 1-hr UL Des. X772.

Exterior enclosure

Exterior wall A: reinforced concrete block, spray applied vapor barrier, polystyrene insulation R-20, thermally broken anchorage system, with norman brick masonry veneer

Exterior wall B: Precast concrete cladding shadow-box/frame, vapor barrier, insulation R20, Kalwall translucent insulated glazing unit, laterally braced and supported by perimeter structural column and beam system.

Exterior wall C: Glazed Aluminum Entrance and Storefront system, insulated glazing, Awning: aluminum composite wall panel system over steel framing, continuous R-20 insulation at perimeter envelope

Exterior wall D: Reinforced concrete block, spray-applied vapor barrier, polystyrene insulation R-20, thermally-broken anchorage system (green girt), corrugated metal with acid etched mural

Exterior windows: Aluminum frame, insulated glazing units

Exterior doors: Aluminum and glass, Hollow metal and Insulated Steel overhead door

Roofing:

Envelope: Single PVC membrane, mechanically adhered R-Value 40, ½" cover board, 3 layers 2.5" polyisocyanurate insulation, 5/8" Type X substrate board over structural roof deck. Drainage via thru wall scupper to downspout. Cast-iron hubs at perimeter extended 8' above grade to accept roof downspouts, cast-iron piping tied to storm system.

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Building Interior

Gymnasium Playcourt +/- 7,000 sf

- High school sized basketball court 50'x84' with striping for 2 half courts
- Striping for volleyball courts
- Collapsible bleachers on one side
- 5' apron when bleachers are open
- Clear ceiling height to underside of structure to be 23'
- Floors to be: 33/32" thick tongue and groove certified maple flooring with ventilated cove base
- Walls to be: burnished and filled CMU or Solid surface material
- Ceilings to be: exposed structural system
- Doors and Frames to be: Painted hollow metal
- Windows to be: Kalwall translucent insulated glazing units, operable as noted. Clerestory to be 14' AFF.
- Mechanical: perimeter heating with fans for exhaust
- Electrical: ceiling mounted pendant fixtures, with separate switching in divided gym. Locate the switch instructors office.
- Locate outlets to allow equipment with 50" cord to all areas
    - Ceiling hung retractable backstops
    - Walk draw divider curtain, lower section solid vinyl upper section netting
    - Collapsible bleachers
    - Floor inserts for volleyball stanchions
    - Safety wall padding
    - Electronic score boards and wall clocks
    - Emergency exits equipped with alarm
    - Ceiling mounted sound system with downward projection
    - Destratification fans

Gymnasium equipment storage, +/- 500SF

- Storage for gym equipment, floor mats, balance beams, horses, volleyball nets and game balls.
- Shelving, 12" deep
- Space should be accessible from both halves of the gym
- Provide overhead rolling doors between the storage and the gym.
- Floors to be: sealed concrete
- Walls to be burnished and filled CMU
- Ceiling to be: exposed structure (min height 10')
- Doors to be: Hollow metal overhead doors 8'x8', lockable and keyed to CPD standard
- Electrical: energy efficient surface mountedLED fixtures, convenience outlets for cleaning

Toilets and Lockers

- Plumbing fixture count may exceed minimum code requirement and must conserve water
- Men's and Women's toilet plumbing chase (2'-6") is desired and be accessible for maintenance
- Toilets adjacent to locker room
- Secure toilets and locker rooms from each other
- Locker rooms to accommodate 50 half height lockers (metal or solid plastic), center bench and a diaper changing area and coat hooks
- Provide ADA unisex family toilet
- Floors to be: Ceramic tile with cover base or terrazzo, pitch to floor drains
- Walls to be: Structural glazed tile
- Ceilings to be: Gypsum board, 8'-6"
- Doors and Frames to be: painted hollow metal
- Windows to be: operable clerestory with obscure glazing and guards
- Mechanical: exhaust fans

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- Electrical: Recessed LED or cove LED lighting, electric hand dryers, work light and outlet in pipe chase, GFCI outlets above lavatories and in locker rooms
- Wall mounted plumbing fixtures to be 20% more efficient than Energy policy act of 1992, provide floor drains with clean outs in all rooms, provide drinking fountain near the locker room, provide electronically activated toilet flushing system, manual metered faucets at the lavatories
- Vandal resistant accessories, including paper towel, soap and toilet tissue dispenser.
- Toilet partitions to be metal ceiling mounted

Clubrooms with Storage, +/- 900 sf cluster of 2

- Ceiling Mounted room divider - Skyfold (see appendix)
- Room to be used as a meeting room when one space
- Storage closet for tables, chairs and supplies in each room
- Provision for portable stage or lectern in one room
- Provide refrigerated alcove nearby for box lunches
- Floors to be: resilient LVT material
- Walls to be: burnished and filled CMU
- Ceilings to be: exposed
- Doors and Frames to be: Painted hollow metal; moveable partition to be acoustical vinyl coated panels suspended from ceiling tracks. Lockable doors at closets
- Mechanical: Perimeter heating with mechanical ventilation, operable windows for ventilation and air conditioning
- Electrical: wall outlets for computers on dedicated circuits. Energy efficient recessedLED fixtures.
- Plumbing: Provide floor drain and deep sink in one of the club rooms
- Provide and data/telephone in each club room
- Provide folding and stackable tables and chairs, stored in closet
- Provide deep shelving in closets
- Provide energy star refrigerator with ice maker and overhead lockable storage
- Provide one wall with tack surface/white board
- Fitness equipment?
- Provide manually operated window treatments

Visitor/Public Spaces

- Entry vestibule, provide 2 sets of double doors with metal grate walk off mat, visible from drop-off, 150sf minimum
- Lobby to include accessible counter with visual control and space for large gathering, with entry vestibule 400sf min
- Floors to be: Thick set terrazzo or polished concrete
- Walls to be: burnished and filled block with bull nose edge and integral base
- Ceilings to be: exposed structure
- Doors and Frames to be: Aluminum and glass exterior and painted hollow metal interior
- Windows to be: Aluminum store front with safety glass as required, operable
- Mechanical: natural and mechanical ventilated, perimeter heating and airconditioning
- Electrical: 2 power/ date outlets at service counter, recessed LED lighting, power for 2 vending machines, power for security system TBD
- Plumbing: 2 wall hung drinking fountains, one for ADA. Provide drain with clean-out
- Communications: 2 public phone enclosures? 1 telephone and 1 date outlet Building security, TBD

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- Furnishings and equipment: Building directory, bulletin board for announcements, trophy case, seating for patrons and millwork service desk with storage, outdoor ash urn, trash receptacle, bike rack, vending machine alcove for 1 drink machine and 1 dry goods machine.

Administrative Office,300 sf

- Locate adjacent to lobby, visibility into gym and locker room entry is important
- Lockable office storage within the room for coats and equipment
- Adjacent to lobby with vision glass
- Audio control panel for Public address system
- Floors to be: Resilient LVT
- Walls to be: burnished and filled CMU
- Ceiling: exposed
- Doors and Frames: Painted Hollow metal with vision window to service counter
- Window to be: Operable aluminum
- Mechanical: natural and mechanical ventilation, perimeter heating and air conditioning
- Electrical: Power for computer and printer, recessedLED fixtures
- Communications: 2 telephone outlets one data
- Furnishings: tack surface on one wall, desk, chairs and workstation, file cabinets, computer, phone and printer.

Building Services, Mechanical room, 550 SF

- Location should be easily serviceable, room noise and vibration to be isolated from the gym, clubrooms and offices.
- Space for domestic hot water, fan equipment and controls
- Consider geothermal, wind and solar
- Mechanical: Provide water, gas and electricity as required to equipment
- Electrical: Surface mountedLED fixtures, power for all equipment hardwired CO detector
- Plumbing: floor drains and water connections, hose bib with hot water
- Communications: telephone and data outlet

Building Services, Electrical Room, 100 SF

- Location for building main distribution panels boards and circuit breakers, locate nearest to electric service and utilize energy star equipment, accessible from the main corridor.
- Floor to be: Sealed concrete
- Walls to be: CMU
- Ceiling to be: exposed
- Doors and Frame to be: painted hollow metal
- Mechanical: ventilation per code
- Electrical: Surface mountedLED fixture and maintenance outlet

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Building Services, Staff Pantry, 100SF

- To be used for staging catering and food prep area for preschool (club rooms), space for refrigerator, with ice maker, range, microwave, storage cabinet and sink. Provide service entry close to staff and trash removal.
- Floors to be: Resilient LVT
- Walls to be: Burnished and Filled CMU
- Ceiling to be: Suspended ACT
- Doors and Frames to be: Painted hollow metal and lockable
- Mechanical: provide exhaust fan
- Electrical: GFI outlets above counter, dedicated outlet for microwave and refrigerator
- Plumbing: Stainless steel double compartment sink, faucets with vacuum breaker, grease interceptor, floor drain with clean out
- Communications: Wall phone outlet
- Furnishings and Equipment: Broom closet, plastic laminate wall and base cabinets with solid surface countertop, heavy duty refrigerator with ice make and microwave, trash and recycling receptacles

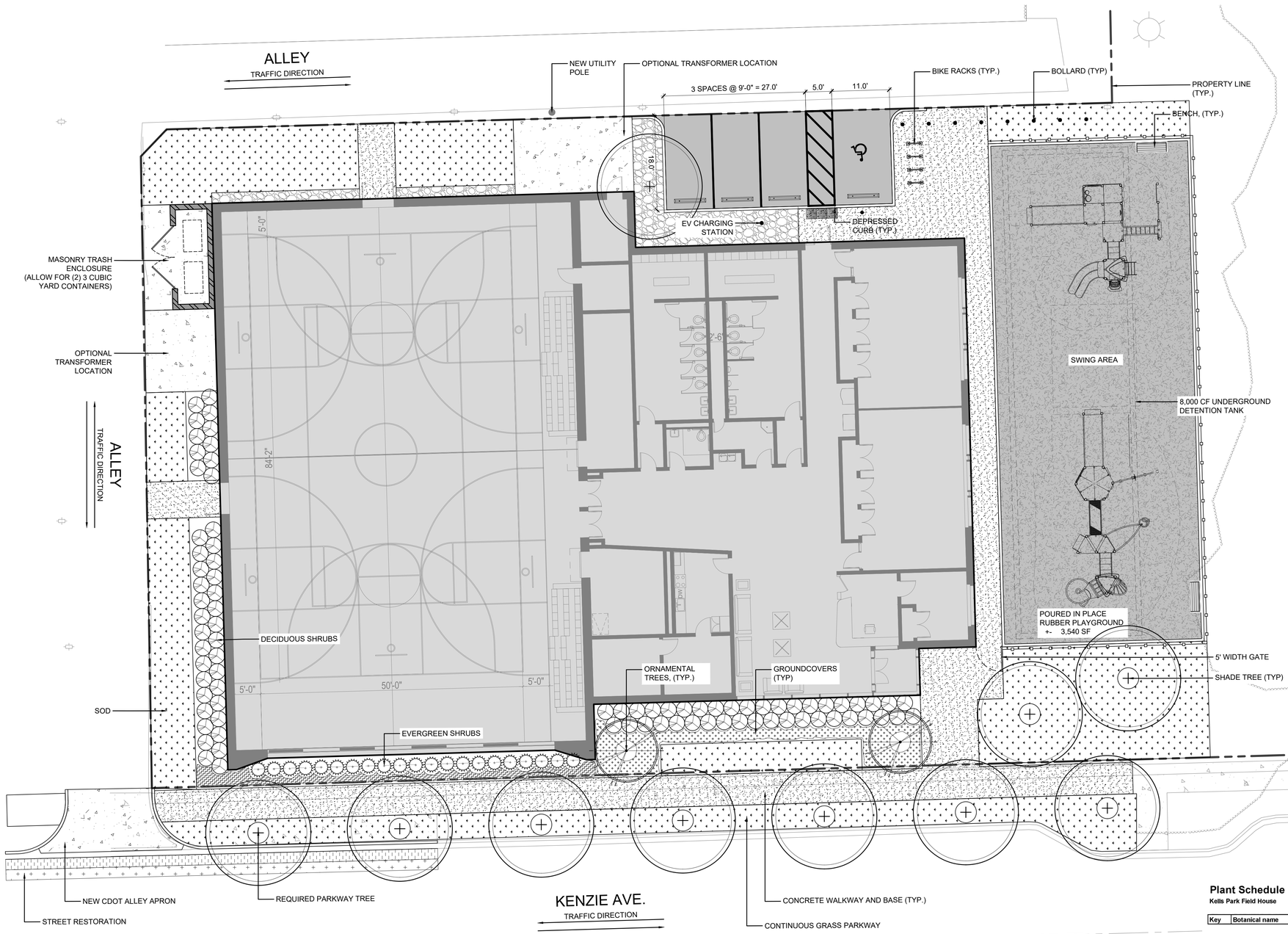
Building Services, Janitor closet,

- For service sinks with mop holders and floor drains, shelving for supplies could be combined with plumbing chase/toilet room components. Locate the main corridor
- Floors to be: Sealed concrete
- Walls to be: unpainted CMU
- Ceilings to be: Exposed
- Doors and Frames: Painted hollow metal, lockable with louver and undercut
- Mechanical: louvered and undercut door
- Electrical: outlets for vacuum cleaners and surface-mountedLED fixtures
- Plumbing: Service sinks with hose attachment and vacuum breaker and floor drain
- Furnishings: mop holder and shelving

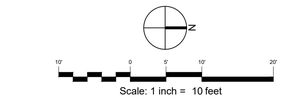
LANDSCAPE

SITE PLAN

BROOK
ARCHITECTURE



1 OVERALL SITE PLAN
SCALE: 1" = 10'



LEGEND:

- PROPERTY LINE
- BUILDING
- CONCRETE WALK AND BASE
- CONCRETE PAVEMENT AND BASE
- ASPHALT PAVEMENT AND BASE
- GRAVEL/DECORATIVE STONE
- POURED IN PLACE PLAYGROUND SURFACE
- STREET PAVEMENT AND BASE
- XX" ASPHALT SURFACE COURSE
- CONCRETE CURB AND GUTTER
- CONCRETE BARRIER CURB
- BIKE RACKS
- BENCH
- WHEELSTOP
- DEPRESSED CURB
- ORNAMENTAL FENCE
- SHADE TREE
- ORNAMENTAL TREE
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- LAWN SOD

SWORN STATEMENTS:

The undersigned acknowledges the landscape planting shown on the landscape plan for the property at:

714,724,726 N. KEDZIE AVE. , Chicago, Illinois

to the best of the undersigned applicant's knowledge has been designed and will be installed, maintained, and replaced, as required, by current and subsequent owners in accordance with the requirements of Chapter 32 of the Chicago Municipal Code, the landscaping standard of the Chicago Zoning Ordinance, and the "Guide to the Chicago Landscape Ordinance."

Existing parkway and on-site interior trees are to be protected while project is under construction and will be replaced by current and subsequent owner if damaged.

Owner's Name and Signature

The undersigned LANDSCAPE ARCHITECT, registered in the State of Illinois, acknowledges that the landscape planting plan and construction details shown on the attached landscape plans for the property at:

714,724,726 N. KEDZIE AVE. , Chicago, Illinois

has been designed in accordance with the requirements of Title 10, Chapter 32 of the Chicago Municipal Code, the landscaping standards of the Chicago Zoning Ordinance, and the Guide to the Chicago Landscape Ordinance.

#157.01738
exp. 8/31/25

Stephen J. Lekan, PLA
TERRA Engineering Ltd.
225 W. Ohio Street, Fourth Floor
Chicago, Illinois 60610
ph: 312.467.0123

*Estimated time of planting: June 15, 2025

Plant Schedule

Kells Park Field House

Key	Botanical name	Common name	Size	Notes
SHADE TREES				
GYD	Gymnocladus dioicus	Kentucky Coffee Tree	2.5" cal.	B&B
QUB	Quercus bicolor	Swamp White Oak	2.5" cal.	B&B
ORNAMENTAL TREES				
AMC	Amelanchier grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	8' Ht.	B&B, multi-stem
DECIDUOUS SHRUBS				
ARM	Aronia melanocarpa 'Iroquois Beauty'	Aronia melanocarpa 'Iroquois Beauty'	30" Ht.	#5 Cont.
COS	Cornus sericea 'Farrow'	Arctic Fire Dogwood	24" Ht.	#5 Cont.
HYA	Hydrangea arborescens 'Annabelle'	Annabelle Hydrangea	24" Ht.	#5 Cont.
RHA	Rhus aromatica 'Gro-low'	Gro-Low Sumac	24" width	#3 Cont.
VIB	Viburnum dentatum 'Chicago Lustre'	Chicago Lustre Viburnum	36" Ht.	B&B
EVERGREEN SHRUBS				
BUX	Buxus 'Glencoe'	Chicagoland Green Boxwood	24" wide	#5 Cont.
PERENNIALS				
AMB	Amsonia 'Blue Ice'	Blue Ice Blue Star	#1 Cont.	18" o.c.
ASC	Asclepias tuberosa 'Hello Yellow'	Hello Yellow Milkweed	#1 Cont.	18" o.c.
ECM	Echinacea purpurea 'Magnus'	Magnus Purple Coneflower	#1 Cont.	18" o.c.
EUM	Eupatorium maculatum 'Phantom'	Phantom Joe Pye Weed	#1 Cont.	18" o.c.
LIC	Liatris aspera	Rough Blazing Star	#1 Cont.	18" o.c.
NEF	Nepeta × faassenii 'Kit Cat'	Kit Cat Catmint	#1 Cont.	18" o.c.
RUF	Rudbeckia fulgida var. sullivantii	Showy Black-Eye Susan	#1 Cont.	18" o.c.
SES	Sedum spectabile 'Autumn Joy'	Autumn Joy Sedum	#1 Cont.	18" o.c.
SYO	Symphyotrichum oolentangiense	Sky Blue Aster	#1 Cont.	18" o.c.

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OVERALL SITE PLAN

Sheet

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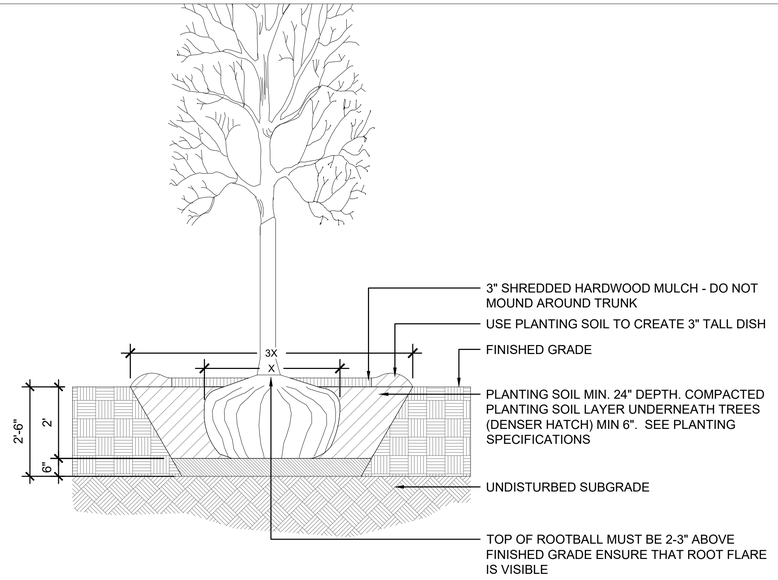
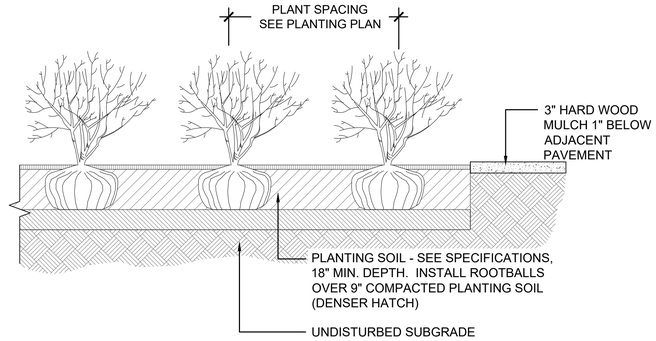
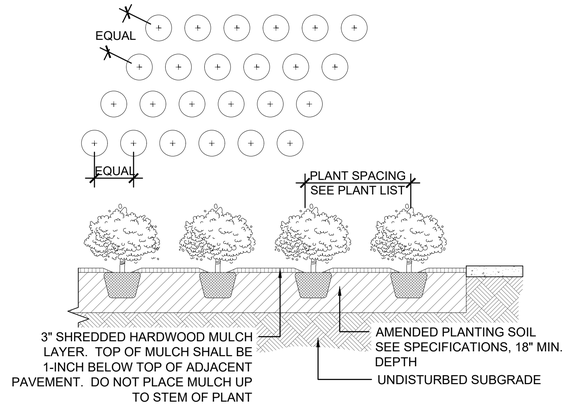


1 SHADE TREE PLANTING DETAIL
SCALE: NTS



2 SHRUB DETAILS
SCALE: NTS



3 GROUNDCOVER/PERENNIAL DETAIL
SCALE: NTS

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Project No.: 2417

Title

LANDSCAPE DETAILS

Sheet

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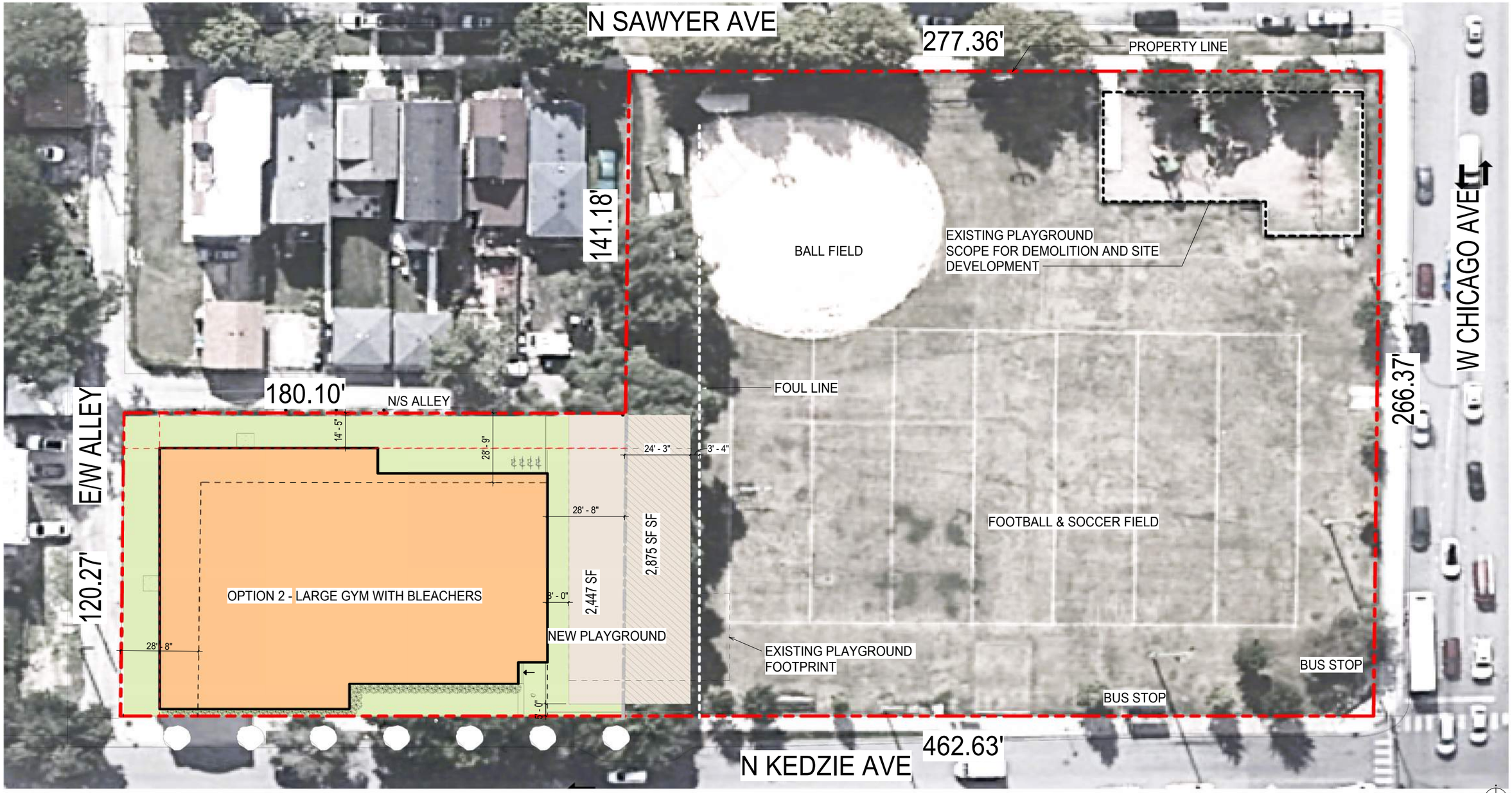
SITE PLAN



0' 8' 16' 32' 64'

LEGEND

- ADMINISTRATIVE RELIEF LINE
- PROPERTY LINE
- SETBACK LINE LINE

POS-1 ZONING

PR-0.2
03/14/2025

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03/14/2025. SITE PLAN

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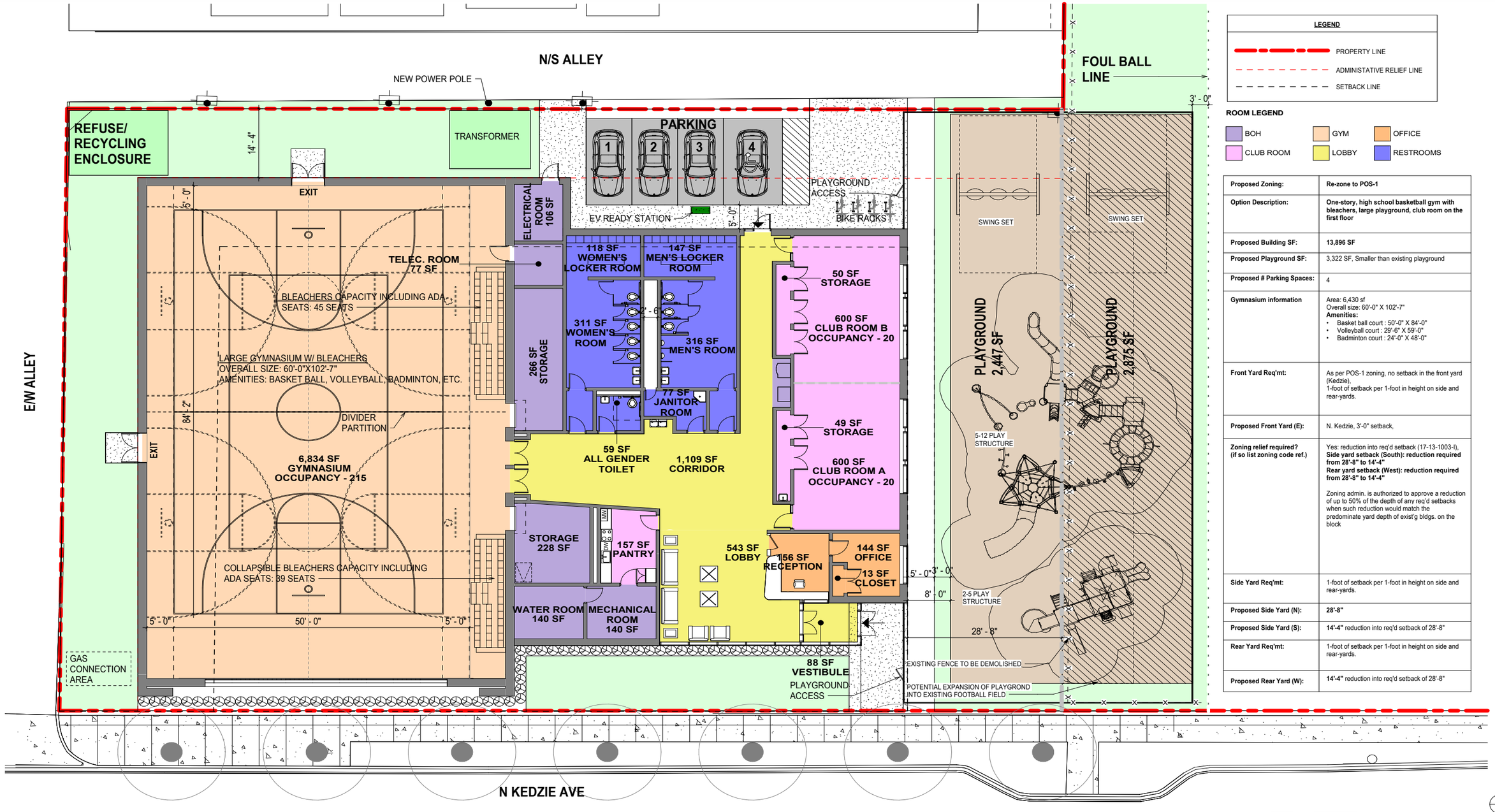
ARCHITECTURE
ENLARGED PLAN



LEGEND

- PROPERTY LINE
- ADMINISTATIVE RELIEF LINE
- SETBACK LINE

ROOM LEGEND

- BOH
- GYM
- OFFICE
- CLUB ROOM
- LOBBY
- RESTROOMS

Proposed Zoning:	**Re-zone to POS-1**
Option Description:	**One-story, high school basketball gym with bleachers, large playground, club room on the first floor**
Proposed Building SF:	**13,896 SF**
Proposed Playground SF:	3,322 SF, Smaller than existing playground
Proposed # Parking Spaces:	4
Gymnasium information	Area: 6,430 sf Overall size: 60'-0" X 102'-7" **Amenities:** • Basket ball court : 50'-0" X 84'-0" • Volleyball court : 29'-6" X 59'-0" • Badminton court : 24'-0" X 48'-0"
Front Yard Req'mt:	As per POS-1 zoning, no setback in the front yard (Kedzie), 1-foot of setback per 1-foot in height on side and rear-yards.
Proposed Front Yard (E):	N. Kedzie, 3'-0" setback,
Zoning relief required? (if so list zoning code ref.)	Yes: reduction into req'd setback (17-13-1003-I), **Side yard setback (South): reduction required from 28'-8" to 14'-4"** **Rear yard setback (West): reduction required from 28'-8" to 14'-4"** Zoning admin. is authorized to approve a reduction of up to 50% of the depth of any req'd setbacks when such reduction would match the predominate yard depth of exist'g bldgs. on the block
Side Yard Req'mt:	1-foot of setback per 1-foot in height on side and rear-yards.
Proposed Side Yard (N):	**28'-8"**
Proposed Side Yard (S):	**14'-4"** reduction into req'd setback of 28'-8"
Rear Yard Req'mt:	1-foot of setback per 1-foot in height on side and rear-yards.
Proposed Rear Yard (W):	**14'-4"** reduction into req'd setback of 28'-8"

0' 4' 8' 16' 32'

PR-0.3
03/14/2025

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03/14/2025. ENLARGED PLAN

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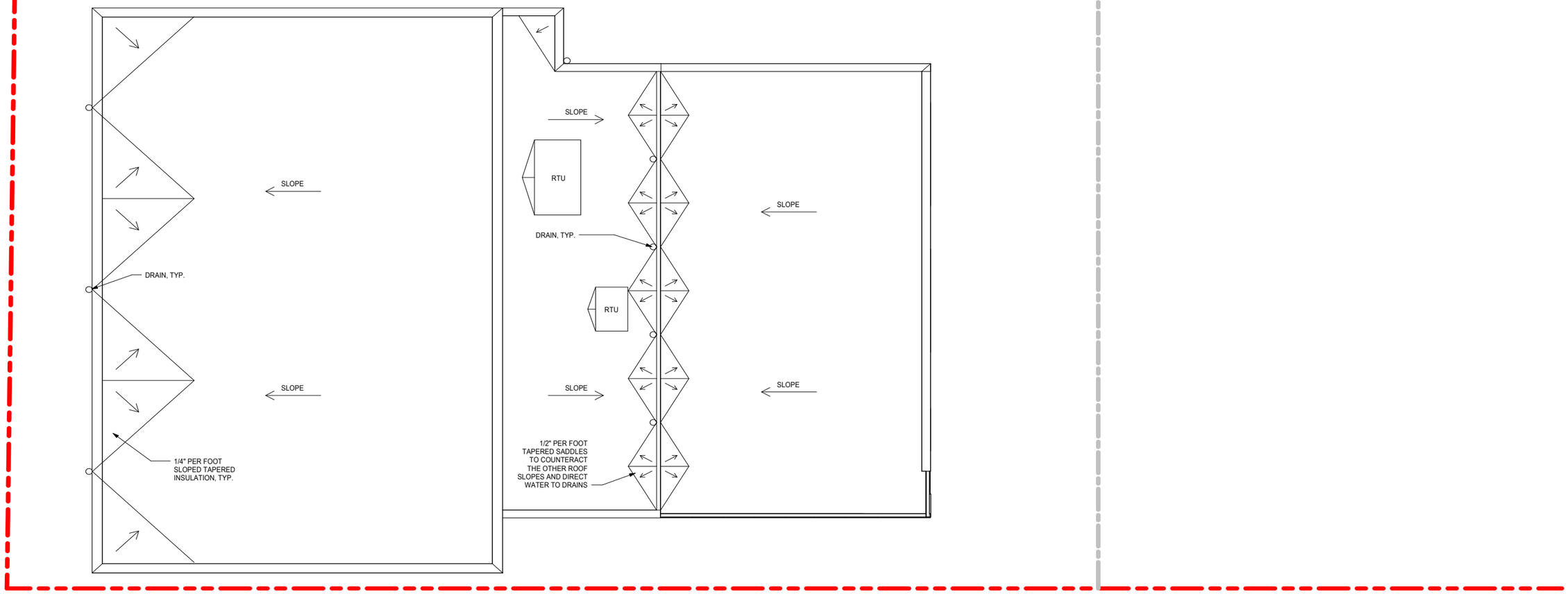
ARCHITECTURE
ROOF PLAN



0' 4' 8' 16' 32'

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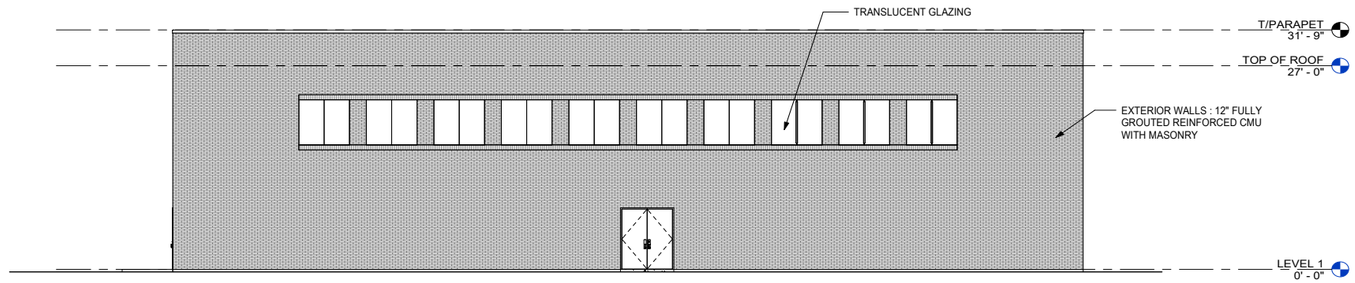
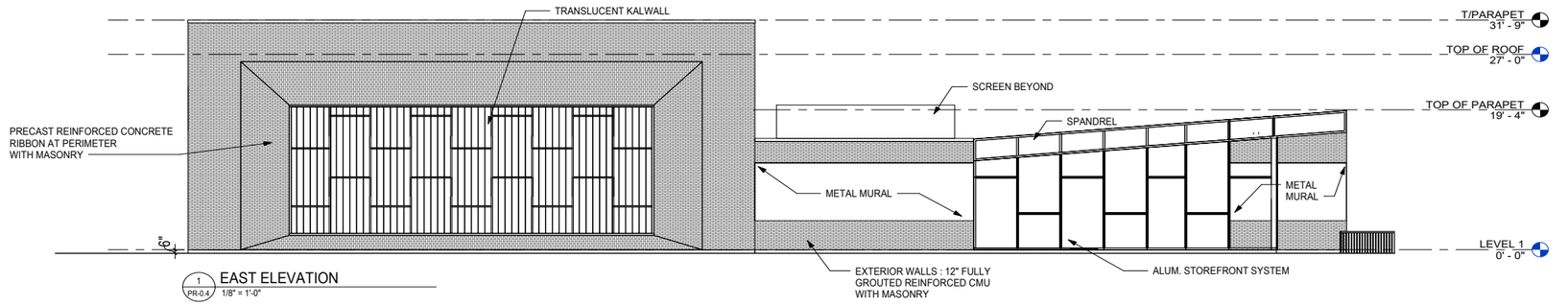
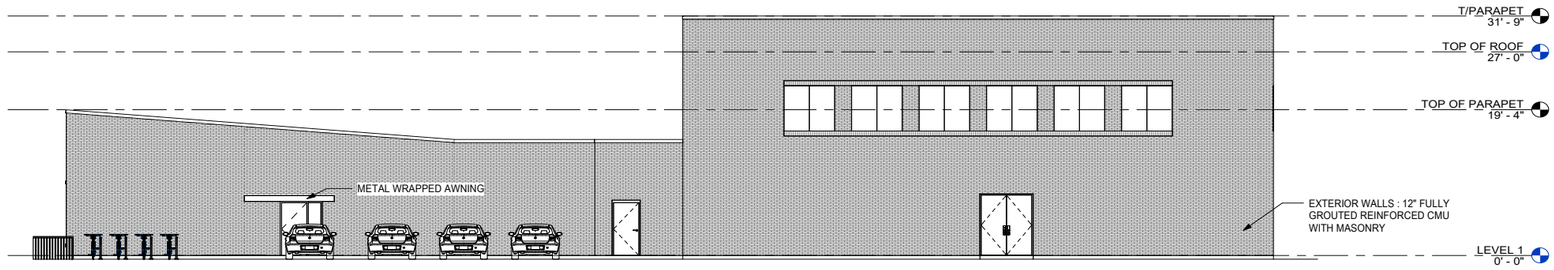
ARCHITECTURE
ELEVATIONS



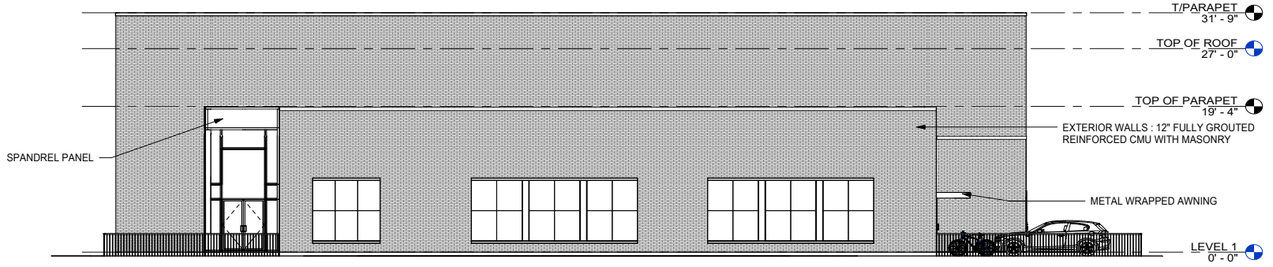
2 PR-0.4 SOUTH ELEVATION
1/8" = 1'-0"



1 PR-0.4 EAST ELEVATION
1/8" = 1'-0"



3 PR-0.4 WEST ELEVATION
1/8" = 1'-0"



4 PR-0.4 NORTH ELEVATION
1/8" = 1'-0"

PR-0.4
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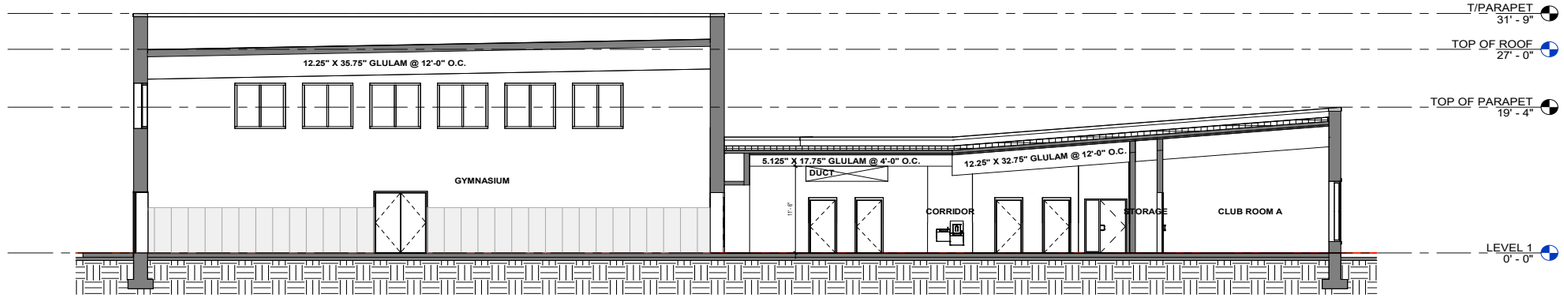
SECTION



1 PR-0.13 Section 1
1/8" = 1'-0"

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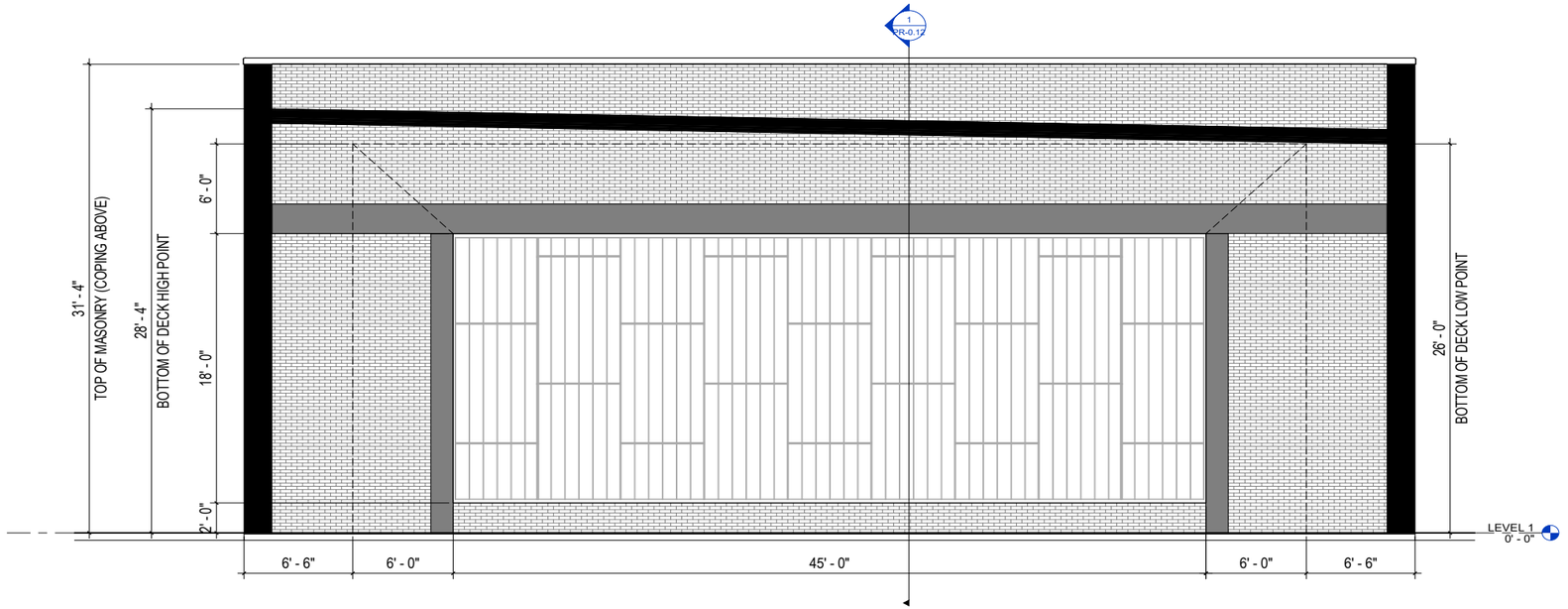
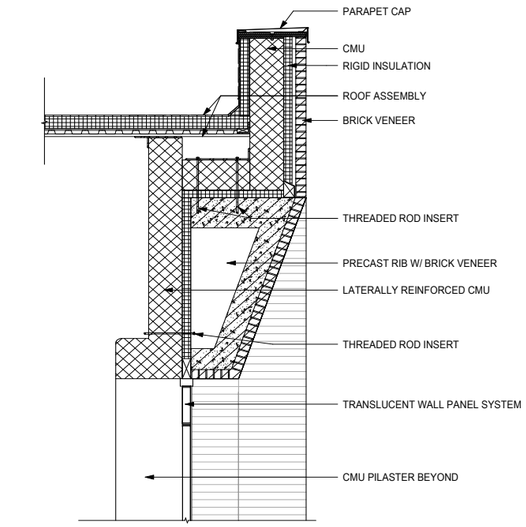
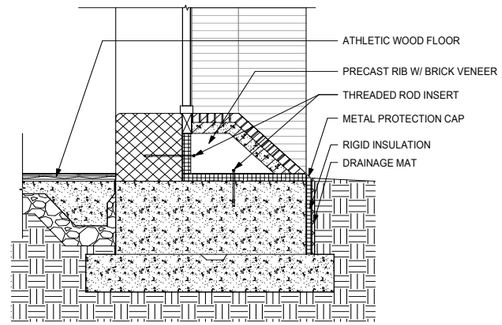
DETAILS



2 PR-0.12 INTERIOR ELEVATION - GYM EAST WALL
1/4" = 1'-0"





1 PR-0.12 GYM EAST WALL SECTION DETAILS
1/2" = 1'-0"

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STRUCTURAL ENGINEERING
DESIGN NARRATIVE

BROOK
ARCHITECTURE

K2NCREST

March 13, 2025
K2N #: 25908

PBC Kells Park Fieldhouse – Chicago, Illinois

Schematic Structural Framing System

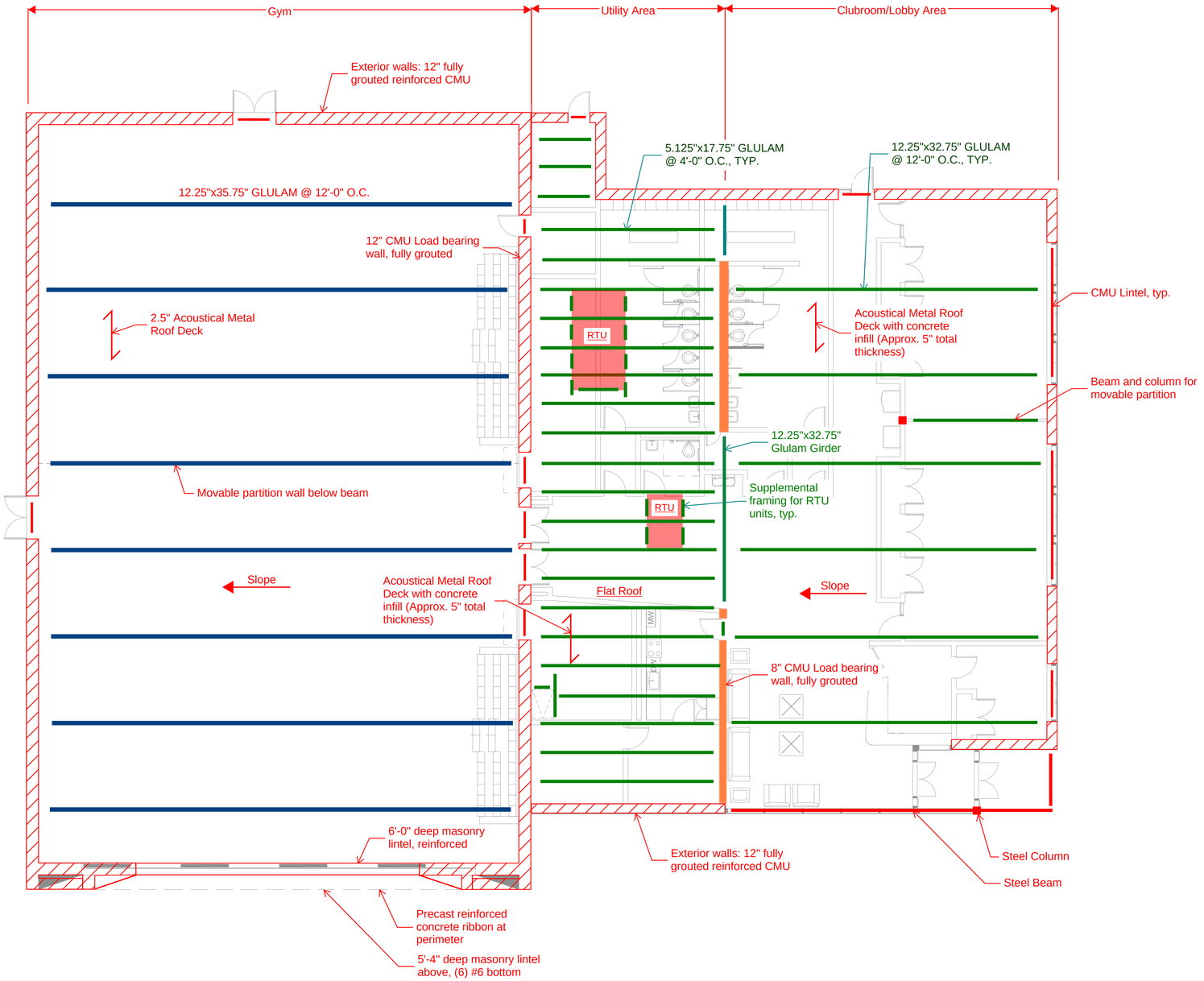
1. General: The structure of the building will be designed in accordance with the 2019 Chicago Building Code (Based on the 2018 International Building Code).
2. Building Foundation System:
    a. Soil summary:
        i. Current assumed soil bearing pressure: 3,000 PSF
    b. Typical exterior wall:
        i. Stem foundation wall with continuous footing.
        ii. Exterior foundation wall width:
            i. 1’-8” at Gym perimeter pending coordination.
            ii. 1’-0” at Lobby/Clubhouse area locations pending coordination.
        iii. Exterior wall continuous strip footing: 3’-0” wide x 1’-0” thick
        iv. Footing depth:
            i. Bottom of footing 4’-0” below top of slab (or deeper depending on thickness of footing).
        v. Foundation wall insulation:
            a. Rigid horizontal insulation at perimeter (per Architect).
    c. Typical interior load bearing wall:
        i. Minimum 2’-0” wide x 1’-0” thick reinforced continuous thickened slab.
    d. Isolated spread footings located under heavily loaded columns and at shear wall hold down locations.

3. Framing Structure:
    a. Wall System:
        i. Gym Exterior Walls:
            1. East Façade:
                a. Window wall system (see Arch.) within masonry opening.
                b. 6’-0” wide reinforced with interior insulation precast concrete frame at perimeter. Thin brick veneer will be set into forms on the exterior face.
                c. 12” reinforced CMU, fully grouted, with deep masonry lintels to span across the masonry opening.
                d. Steel frame within masonry opening for window wall system support. Assume (3) columns at third points and (2) beam lines/wind beams.
            2. South and West Walls:
                a. 12” reinforced CMU, fully grouted,
                b. Masonry veneer
            3. North Wall:
                a. 12” reinforced CMU, fully grouted
                b. Masonry veneer
        ii. Clubhouse Area Exterior Walls:
            1. Lobby Area: Glass storefront system with structural mullions. Steel beams and columns to support cantilevered corner.
            2. Clubhouse:
                a. 12” reinforced CMU, fully grouted
                b. Masonry veneer
        iii. Clubhouse Area Interior Load Bearing Walls:
            1. 8” fully grouted CMU

b. Roof Framing System:
    i. Gym:
        1. 12.25"x35.75” Glulam @ 12’-0” O.C.
        2. 2.5” Acoustical metal roof deck
    ii. Utility Area:
        1. 5.125”x17.75” Glulam @ 4’-0” O.C.
        2. Acoustical metal roof deck with concrete infill (Approximate 5” total thickness)
        3. Supplemental glulam framing at RTU perimeters. Include additional miscellaneous framing for duct penetrations through roof (not shown on sketch).
    iii. Clubhouse:
        1. 12.25”x32.75” Glulam @ 12’-0” O.C.
        2. Acoustical metal roof deck with concrete infill (Approximate 5” total thickness)

K2N CREST
large Gym
SD Framing Layout
03-13-2025

1/8" = 1'-0"



0' 4' 8' 16' 32'

PR-0.3
03/12/2025

03/12/2025. OPTION 2 - LARGE GYM WITH BLEACHERS - ENLARGED PLAN

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MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION

DESIGN NARRATIVE

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MEPFP Schematic Design Narrative for a New Construction Chicago Park District Building at Kells Park

PROJECT OVERVIEW:

The project entails the design and construction of a new park district building that includes two multipurpose/club rooms and a gymnasium. The building will be located within the City of Chicago and is designed to provide community recreational space, including areas for events, fitness activities, and general gatherings.
The schematic design for the MEPFP systems takes into account energy efficiency, sustainability, user comfort, and code compliance while adhering to local regulations, including those specific to the City of Chicago and applicable energy codes such as the Illinois Energy Conservation Code.

System types and equipment selections to be used shall be industry standard, readily available systems and should be available at reasonable lead times to maintain project schedule.

MECHANICAL SYSTEMS:
HVAC (HEATING, VENTILATION, AND AIR CONDITIONING):

- **System Type:** The building will be served by a centralized HVAC system using energy-efficient rooftop units (RTUs) with direct expansion (DX) cooling and natural gas heating. These units will provide heating and cooling to the building's common areas, multipurpose rooms, and gymnasium.
- **Air Distribution:** The building will have a mix of supply air ducts and return air grilles. The system will be

designed to ensure adequate airflow and ventilation, with the gymnasium area requiring higher air exchange rates to meet occupancy and activity levels.
    - **Zoning:** The HVAC system will be zoned to accommodate the varying heating and cooling needs of the multipurpose rooms, gymnasium, and other building spaces. The gymnasium will have a dedicated zone with higher cooling and dehumidification needs, while the multipurpose rooms will have more moderate climate control.
    - **Energy Recovery:** The inclusion of energy recovery ventilators (ERV) or heat recovery ventilators (HRV) will be considered to enhance energy efficiency and reduce operational costs by transferring heat between exhaust and fresh air streams.
2. **Ventilation and Air Quality:**
    - **Fresh Air Intake:** The system will be designed to comply with ASHRAE Standard 62.1 for minimum ventilation rates. Fresh air will be provided to each zone, with dedicated outdoor air units where needed.
    - **Gymnasium Specifics:** Due to the high occupancy and physical activity, the gymnasium will be equipped with an enhanced ventilation system, ensuring adequate air changes per hour to maintain air quality and reduce humidity levels.
3. **Building Automation System (BAS):**
    - An ASHRAE BACNET compatible Building Automation System shall be provided to monitor and manage operation of the HVAC equipment and integrate energy meters.
4. **HVAC Sustainability**
    - Refer to the sustainability checklist for the initiatives involving HVAC. More information can be found in the LEED reference guide provided by the LEED experts.

ELECTRICAL SYSTEMS:

1. **Power Distribution:**

- The building will have a main electrical service entry, fed by a pole mounted utility transformer with adequate capacity to support all loads, including HVAC, lighting, gymnasium equipment, and general building systems. Pole mounted transformer shall be mounted on a new utility pole.
- **Panelboards:** The electrical distribution system will include a main distribution panel and dedicated panelboards for each major load area, including separate panels for HVAC, lighting, gym equipment, receptacles and emergency systems.

2. **Lighting:**
   - The lighting design will incorporate energy-efficient LED fixtures, which will be specified for both general and task lighting. The gymnasium and multipurpose rooms will feature adjustable lighting levels, automatic shut off, with dimming controls for flexibility in space use.
   - **Control Systems:** Occupancy sensors, daylight harvesting, and timed lighting controls will be included to reduce energy consumption and improve the building's sustainability.
3. **Fire Alarm System:**
   - A fully integrated fire alarm system will be designed in compliance with NFPA 72 and local Chicago Fire Department requirements. The system will include smoke detectors, manual pull stations, and alarm notification appliances (horns, strobes) throughout the building.
   - The fire alarm system will be tied into the building's emergency power supply to ensure functionality during power outages.
4. **Electric Vehicle Charging Station:**
   - (1) EV charging station required.
5. **Electrical Sustainability**
   - Refer to the sustainability checklist for the initiatives involving Electrical. More information can be found in the LEED reference guide provided by the LEED experts.

PLUMBING SYSTEMS:

1. **Water Supply:**
    - The building will be served by the City of Chicago's water supply, with a metered connection to the municipal water system. A 6" water service will be required for domestic water and fire protection (3" for domestic water, 4" for fire protection.)
    - Plumbing will include hot and cold water distribution to restrooms and any kitchen or utility areas.
    - Letter of intent from CPD to share utility data with USGBC. A verification meter shall be placed directly after the municipal water meter prior to distribution to the building.
    - Provide a high efficiency gas-fired storage tank type domestic water heater with a hot water recirculation pump. Tank shall be approximately 40 gallons capacity.
    - Provide a water meter on the cold water line supplying the domestic hot water heater.
    - Provide a water meter on the cold water line supplying the toilet fixtures.
    - The system will be designed with backflow prevention devices where required.
    - No outdoor irrigation systems planned for this facility.
2. **Sanitary Drainage:**
    - The sanitary drainage system will consist of gravity-fed pipes, with properly sized sewer lines to meet the peak demand of the building.
3. **Stormwater Drainage:**
    - Stormwater runoff will be managed according to local codes, with a combination of gutters and downspouts. Provide cast iron piping at grade to +/- 10'-0" above grade. Provide transition from cast iron to gutter above. Provide a clean out in cast iron piping at +/- 24" above grade.
4. **Fixtures and Fittings:**
    - The quantity of plumbing fixtures shown (water closet stalls, lavatories) are based on IL Plumbing

Code requirements plus 15% in lieu of Chicago Building Code requirements. An Alternative Code Approval Request (ACAR) will need to be submitted with the City of Chicago for approval of the reduced number of plumbing fixtures shown.

- The building will be equipped with water-saving fixtures, such as low-flow toilet and faucets. This is part of the commitment to sustainability and reducing the building's overall water consumption.
- Provide a walk-in plumbing chase; minimum 2'-6" deep.
- Fixtures shall be per CPD approved standards.
- For the fixtures and fittings listed in Table 1, as applicable to the project scope, reduce aggregate water consumption by 20% from the baseline. Base calculations on the volumes and flow rates shown in Table 1. All newly installed toilets, urinals, private lavatory faucets, and showerheads that are eligible for labeling must be WaterSense labeled.
- Baseline is 1.6 GPF water closets; 1.0 GPF urinal; 0.5 GPM at 60psi for lavatories. Design should support reduction in water use with 1.28 GPF water closets, 0.125 GPF urinals, 0.25 GPM lavatories.
- Water closets shall be wall hung with manual flushometer valves.
- Lavatories shall have manual metering faucets.
- Provide a wall mounted high/low electric water cooler with bottle filling station. Water cooler shall have a filter for water supply. Water cooler shall have an ADA cane apron.

5. **Plumbing Sustainability**
   - Refer to the sustainability checklist for the initiatives involving Plumbing. More information can be found in the LEED reference guide provided by the LEED experts.

TABLE 1. Baseline water consumption of fixtures and fittings

Fixture or fitting	Baseline (IP units)	Baseline (SI units)
Toilet (water closet)*	1.6 gpf	6 lpf
Urinal*	1.0 gpf	3.8 lpf
Public lavatory (restroom) faucet	0.5 gpm at 60 psi all others except private applications	1.9 lpm at 415 kPa, all others except private applications
Private lavatory faucets	2.2 gpm at 60 psi	8.3 lpm at 415 kPa
Kitchen faucet (excluding faucets used exclusively for filling operations)	2.2 gpm at 60 psi	8.3 lpm at 415 kPa
Showerhead*	2.5 gpm at 80 psi per shower stall	9.5 lpm at 550 kPa per shower stall

*WaterSense label available for this product type
gpf = gallons per flush gpm = gallons per minute psi = pounds per square inch
lpf = liters per flush lpm = liters per minute kPa = kilopascals

FIRE PROTECTION SYSTEMS:

1. **Fire Suppression:**

- A wet-pipe sprinkler system will be installed throughout the building, with sprinkler heads located in all areas, including the gymnasium and multipurpose rooms. The design will comply with NFPA 13 and Chicago Fire Code requirements.
- Fire sprinklers will be zoned by area to ensure efficient coverage and meet local fire protection regulations.

SUSTAINABILITY AND ENERGY EFFICIENCY:

The building will aim for sustainability, incorporating energy-efficient systems and materials in all aspects of the MEPFP design. Specific goals include:

- **LEED Certification**: The building design will strive to meet or exceed LEED (Leadership in Energy and Environmental Design) v4.0/v4.1 Silver Certification standards.
- More information can be found in the LEED reference guide provided by the LEED experts. Refer to the LEED reference guide for information on prerequisites and credits associated with LEED process. Refer to the reference guide for additional information regarding credits.
- **Energy-efficient Equipment**: Use of high-efficiency HVAC units, LED lighting, and low-flow plumbing fixtures.

CONCLUSION:

The MEPFP schematic design for this new Chicago Park District building is developed to meet the specific needs of the facility while ensuring high performance, energy efficiency, and user comfort. The design will comply with all applicable local codes and standards, ensuring a safe, functional, and sustainable space for the community.

SUSTAINABILITY
STRATEGIES

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Chicago Sustainable Development Policy (2024)

Strategy Menu and Third-Party Building Certifications

Strategy No.	Strategy Name	Points	Available in Compliance Pathway #1: Menu	Available in Compliance Pathway #2: Third-Party Certification
A. Bird Protection				
A.1	Bird Protection (Basic)	20	Y	Y
A.2	Bird Protection (Enhanced)	30	Y	Y
B. Energy				
B.1	Exceed Current Energy Transformation Code (5%)	20	Y	N
B.2	Exceed Current Energy Transformation Code (10%)	30	Y	N
B.3	*Rooftop Solar-Ready Construction**	*5*	*Y*	*Y*
B.4	*On-Site Renewable Energy Provision of 5-10%**	*10*	*Y*	*Y*
B.5	*On-site Renewable Energy Provision of 10-20%**	*20*	*Y*	*Y*
B.6	*On-site Renewable Energy Provision of > 20%**	*30*	*Y*	*Y*
B.7	Building Electrification	30	Y	N
B.8	Maximum 40% Glass	10	Y	N
B.9	Meet ComEd New Construction Best Practice Requirements	20	Y	N
C. Landscape and Green Infrastructure				
C.1	Green Roof Coverage (>50%)	10	Y	Y
C.2	Green Roof Coverage (100%)	20	Y	Y
C.3	Productive Landscapes	5	Y	Y
C.4	Native Landscapes	5	Y	Y
C.5	Tree Health	5	Y	Y
C.6	*Industrial Landscaped Buffer**	*10*	*Y*	*Y*
C.7	Non-toxic Pavement Sealants	5	Y	Y
C.8	Naturalize River Edges	10	Y	Y
C.9	Exceed River Setback for Naturalized Space	5	Y	Y
C.10	Aquatic River Habitat	10	Y	Y
D. Public Health and Community Benefits				
D.1	Well Building Standard	50	Y	Y
D.2	Fitwel Certification	30	Y	Y
D.3	100% on-site ARO	10 to 15	Y	Y
D.4	*Air Quality Monitoring**	*10*	*Y*	*Y*
D.5	Indoor Air Quality	5	Y	Y
D.6	*Cleaner Industrial Operations Equipment**	*5*	*Y*	*Y*
D.7	Cleaner Construction Equipment	5	Y	Y
D.8	Community Resiliency Asset	10 to 15	Y	Y
D.9	*Workforce Development**	*10*	*Y*	*Y*
D.10	Exceed Requirements for Accessible Dwelling Units	5	Y	Y

Strategy No.	Strategy Name	Points	Available in Compliance Pathway #1: Menu	Available in Compliance Pathway #2: Third-Party Certification
E. Stormwater				
E.1	Sump Pump Capture and Reuse	5	Y	Y
E.2	*Exceed Stormwater Ordinance by 25%**	*10*	*Y*	*Y*
E.3	*Exceed Stormwater Ordinance by 50%**	*20*	*Y*	*Y*
E.4	100% Stormwater Infiltration	40	Y	Y
E.5	100-year Detention for Lot-to-Lot buildings	25	Y	Y
E.6	100-year Detention for Bypass	5	Y	Y
F. Transportation				
F.1	Divvy Bikeshare Sponsorship	5	Y	N
F.2	Residential Bike Parking Facilities	5	Y	N
F.3	Non-Residential Bike Parking Facilities	5	Y	N
F.4	EV Charging Stations 30%	5	Y	N
F.5	EV Charging Stations Fast Charger	10	Y	N
F.6	EV Charger Readiness (Basic)	5	Y	N
F.7	EV Charger Readiness (Enhanced)	10	Y	N
F.8	*Commercial EV Fleet Readiness**	*10*	*Y*	*Y*
F.9	CTA Digital Display	5	Y	Y
G. Waste				
G.1	80% Waste Diversion	5	Y	N
G.2	80% Waste Diversion + 10% reuse	10	Y	N
H. Water				
H.1	Indoor Water Use Reduction (25%)	5	Y	N
H.2	Indoor Water Use Reduction (40%)	10	Y	N
Sustainability Excellence & Innovation				
-	Sustainability Excellence and Innovation	5 to 20	Y	Y

Third-party Building Certification Program	Points
LEED Gold	80
LEED Platinum	90
LEED Zero	95
Three Green Globes	80
Four Green Globes	90
Green Globes Journey to Net Zero Carbon / Net Zero Energy	95

Third-party Building Certification Program	Points
PHIUS	90
PHIUS Zero	95
ILFI Living Building Challenge	90
ILFI Zero Energy	95
Enterprise Green Communities	80
National Green Building Standard Gold	70
National Green Building Standard Emerald	80

** Recommended strategy for Air Quality Ordinance and industrial use category projects*

DPD
Department of Planning and Development

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name:

Date:

Y	?	N			
			Credit	Integrative Process	1

11	0	5	**Location and Transportation**		16
			Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
2			Credit	High Priority Site	2
4		1	Credit	Surrounding Density and Diverse Uses	5
2		3	Credit	Access to Quality Transit	5
		1	Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

3	0	7	**Sustainable Sites**		10
Y			Prereq	Construction Activity Pollution Prevention	Required
		1	Credit	Site Assessment	1
		2	Credit	Site Development - Protect or Restore Habitat	2
		1	Credit	Open Space	1
		3	Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

5	1	5	**Water Efficiency**		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
2			Credit	Outdoor Water Use Reduction	2
2	1	3	Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

13	7	13	**Energy and Atmosphere**		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
5	1		Credit	Enhanced Commissioning	6
7	5	6	Credit	Optimize Energy Performance	18
1			Credit	Advanced Energy Metering	1
		2	Credit	Demand Response	2
		3	Credit	Renewable Energy Production	3
	1		Credit	Enhanced Refrigerant Management	1
		2	Credit	Green Power and Carbon Offsets	2

6	2	5	**Materials and Resources**		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
		5	Credit	Building Life-Cycle Impact Reduction	5
2			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
	2		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
2			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

13	0	3	**Indoor Environmental Quality**		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
2			Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1		1	Credit	Interior Lighting	2
2		1	Credit	Daylight	3
1			Credit	Quality Views	1
		1	Credit	Acoustic Performance	1

5	0	2	**Innovation**		6
4		2	Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

3	0	1	**Regional Priority**		4
1			Credit	Regional Priority: Advanced Energy Metering	1
1			Credit	Regional Priority: High Priority Site and Equitable Development	1
1			Credit	Regional Priority: Inhanced Indoor Air Quality Strategies	1
		1	Credit	Regional Priority: Specific Credit	1

59	10	41	**TOTALS**	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

APPENDIX

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0' 8' 16' 32' 64'

LEGEND

- ADMINISTRATIVE RELIEF LINE
- PROPERTY LINE
- SETBACK LINE LINE

POS-1 ZONING

PR-0.2
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03/14/2025. SITE PLAN

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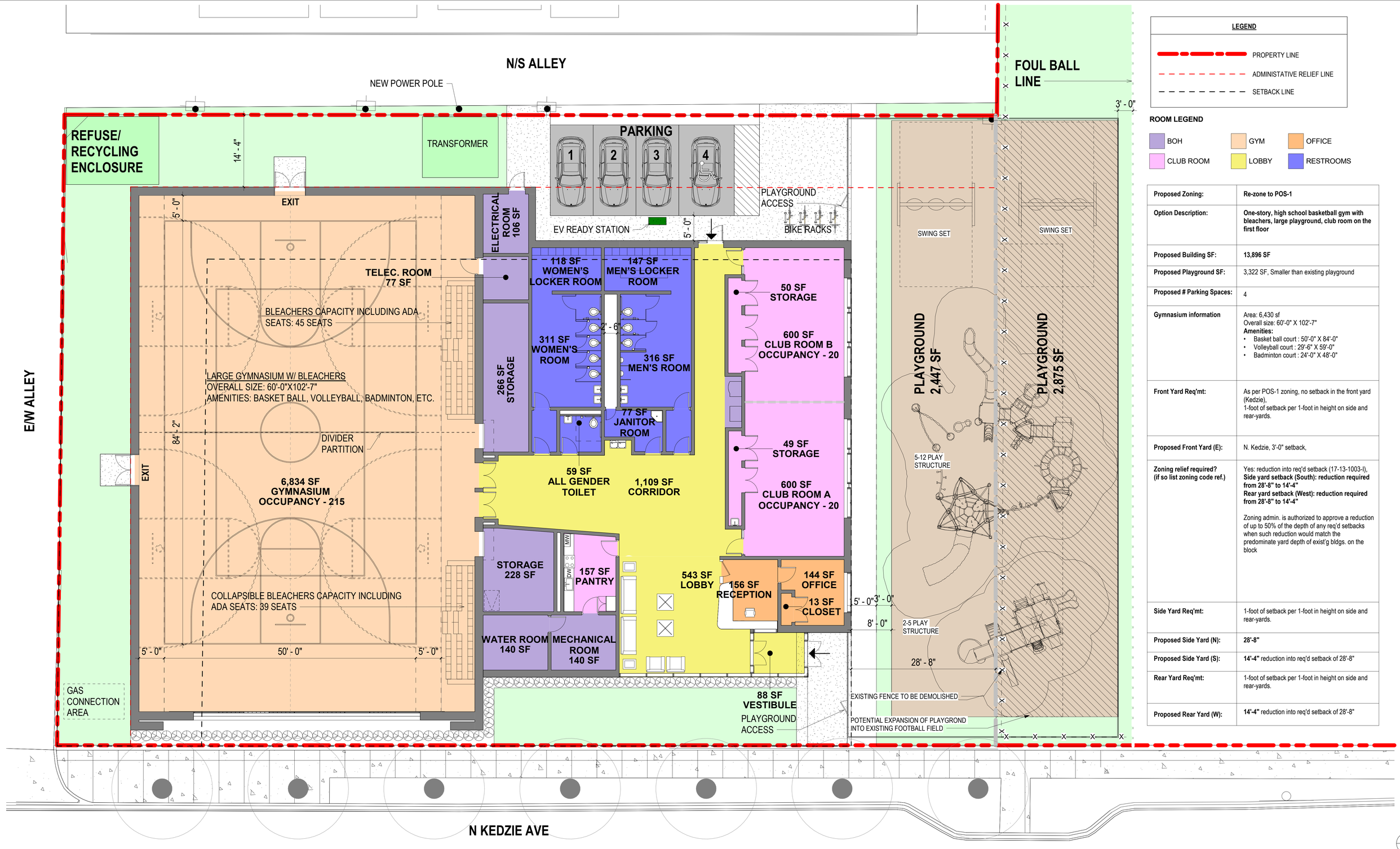


LEGEND

- PROPERTY LINE
- ADMINISTATIVE RELIEF LINE
- SETBACK LINE

ROOM LEGEND

BOH · GYM · OFFICE · CLUB ROOM · LOBBY · RESTROOMS

Proposed Zoning:	**Re-zone to POS-1**
Option Description:	**One-story, high school basketball gym with bleachers, large playground, club room on the first floor**
Proposed Building SF:	**13,896 SF**
Proposed Playground SF:	3,322 SF, Smaller than existing playground
Proposed # Parking Spaces:	4
Gymnasium information	Area: 6,430 sf Overall size: 60'-0" X 102'-7" **Amenities:** • Basket ball court : 50'-0" X 84'-0" • Volleyball court : 29'-6" X 59'-0" • Badminton court : 24'-0" X 48'-0"
Front Yard Req'mt:	As per POS-1 zoning, no setback in the front yard (Kedzie), 1-foot of setback per 1-foot in height on side and rear-yards.
Proposed Front Yard (E):	N. Kedzie, 3'-0" setback,
Zoning relief required? (if so list zoning code ref.)	Yes: reduction into req'd setback (17-13-1003-I), **Side yard setback (South): reduction required from 28'-8" to 14'-4"** **Rear yard setback (West): reduction required from 28'-8" to 14'-4"** Zoning admin. is authorized to approve a reduction of up to 50% of the depth of any req'd setbacks when such reduction would match the predominate yard depth of exist'g bldgs. on the block
Side Yard Req'mt:	1-foot of setback per 1-foot in height on side and rear-yards.
Proposed Side Yard (N):	**28'-8"**
Proposed Side Yard (S):	**14'-4"** reduction into req'd setback of 28'-8"
Rear Yard Req'mt:	1-foot of setback per 1-foot in height on side and rear-yards.
Proposed Rear Yard (W):	**14'-4"** reduction into req'd setback of 28'-8"

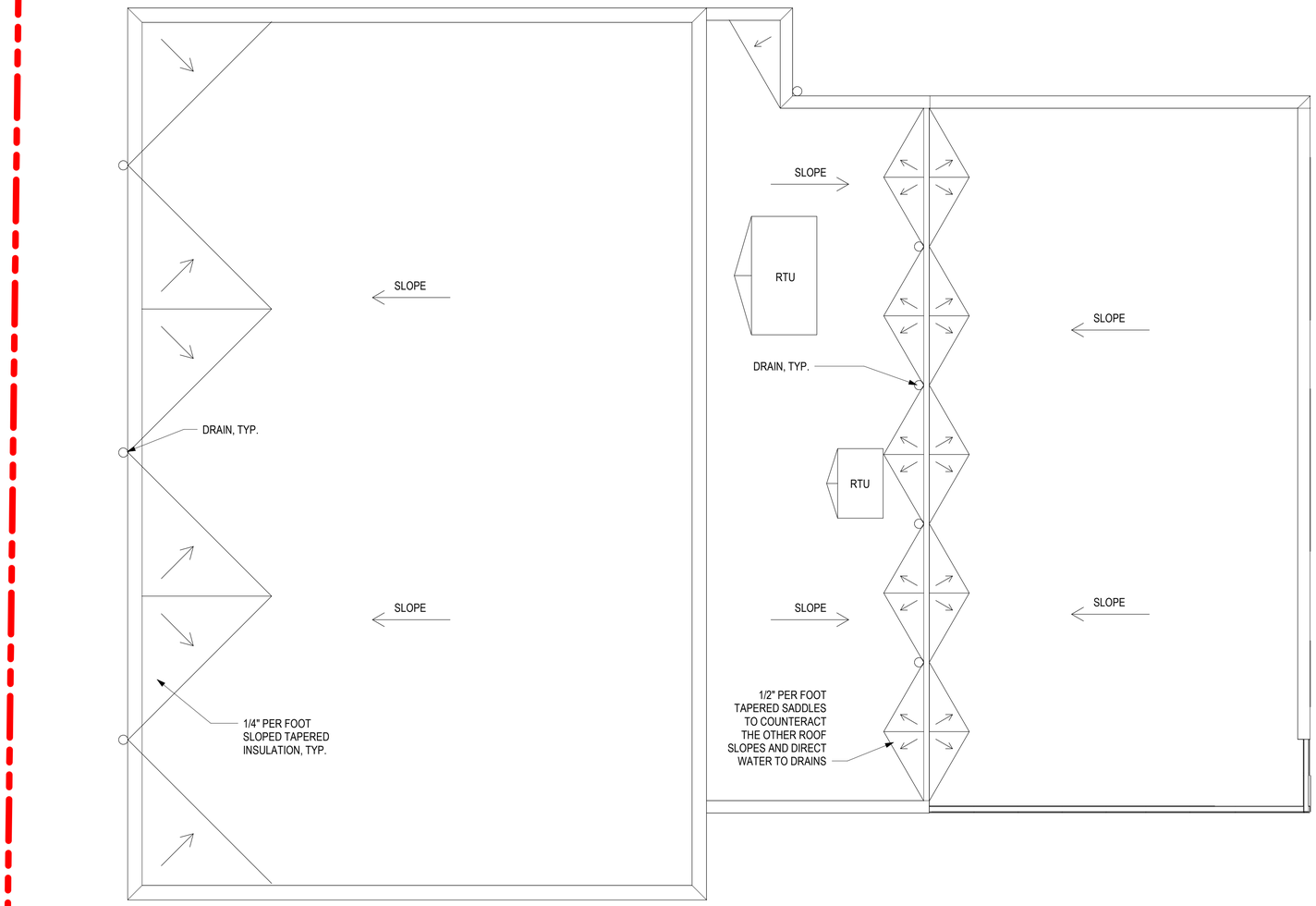
0' 4' 8' 16' 32'

PR-0.3
03/14/2025

BROOK ARCHITECTURE
2301 S. MICHIGAN AVE. 60616 P.312.528.0890
WWW.BROOKARCHITECTURE.COM

03/14/2025. ENLARGED PLAN

PBC KELLS PARK FIELD HOUSE 2417
714, 724, 726 N.KEDZIE AVE
Chicago, IL 60612



0' 4' 8' 16' 32'

PR-0.14
03/14/2025

BROOK ARCHITECTURE

2301 S. MICHIGAN AVE. 60616 P.312.528.0890
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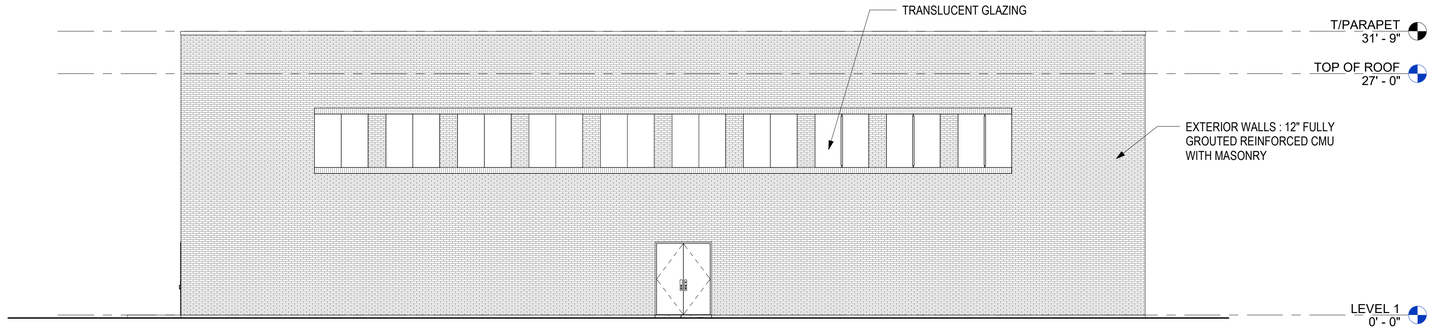
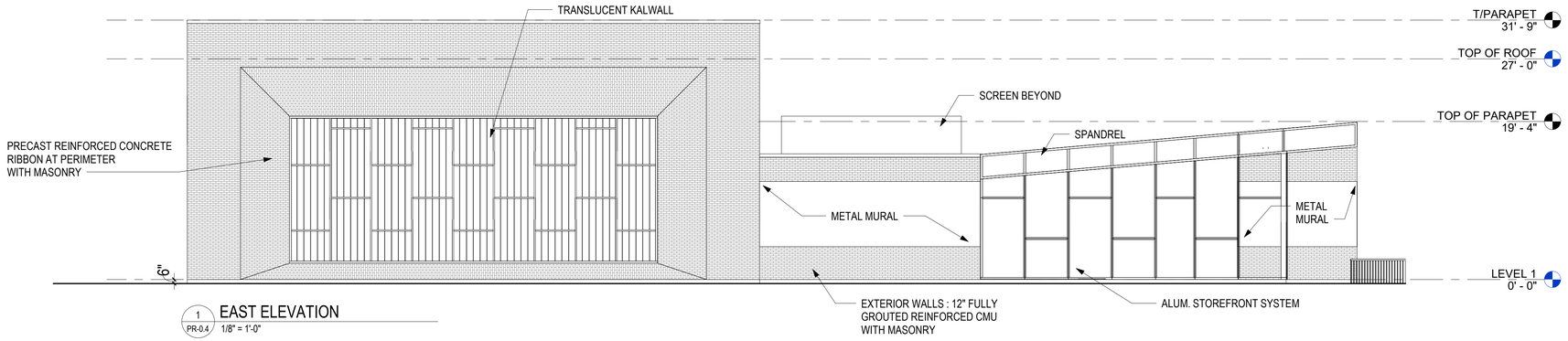
03/14/2025. ROOF PLAN

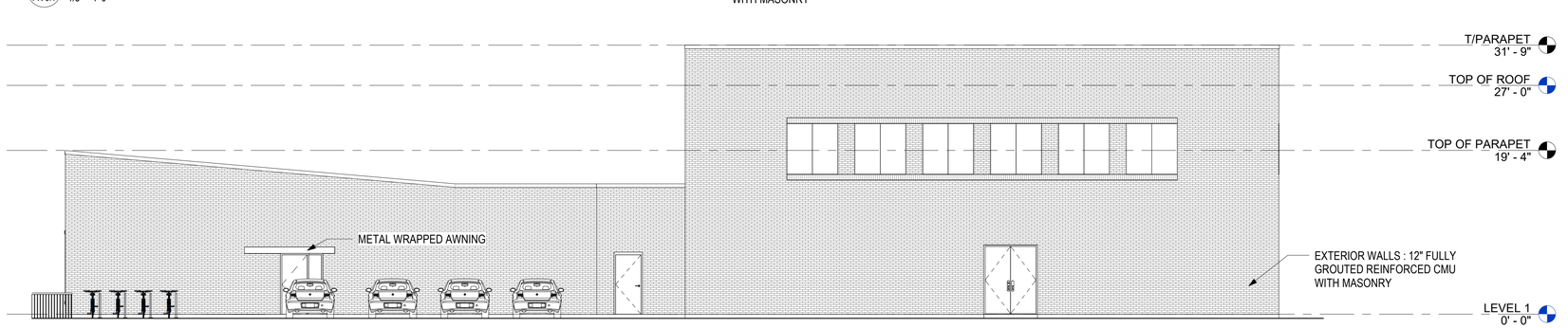
PBC KELLS PARK FIELD HOUSE 2417
714, 724, 726 N.KEDZIE AVE
Chicago, IL 60612



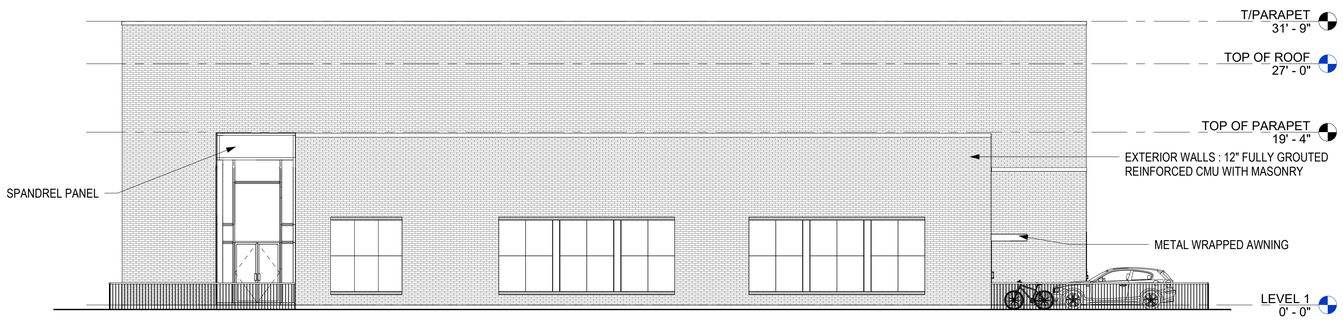
2 PR-0.4 SOUTH ELEVATION
1/8" = 1'-0"



1 PR-0.4 EAST ELEVATION
1/8" = 1'-0"



3 PR-0.4 WEST ELEVATION
1/8" = 1'-0"



4 PR-0.4 NORTH ELEVATION
1/8" = 1'-0"

PR-0.4
03/14/2025

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03/14/2025. EXTERIOR ELEVATIONS

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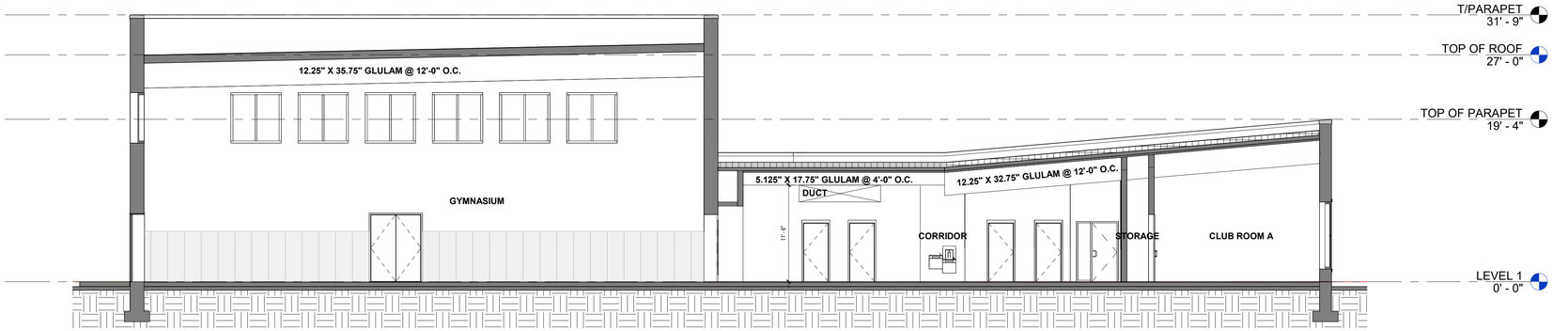
Chicago, IL 60612



1 PR-0.13 Section 1
1/8" = 1'-0"

PR-0.13
03/14/2025

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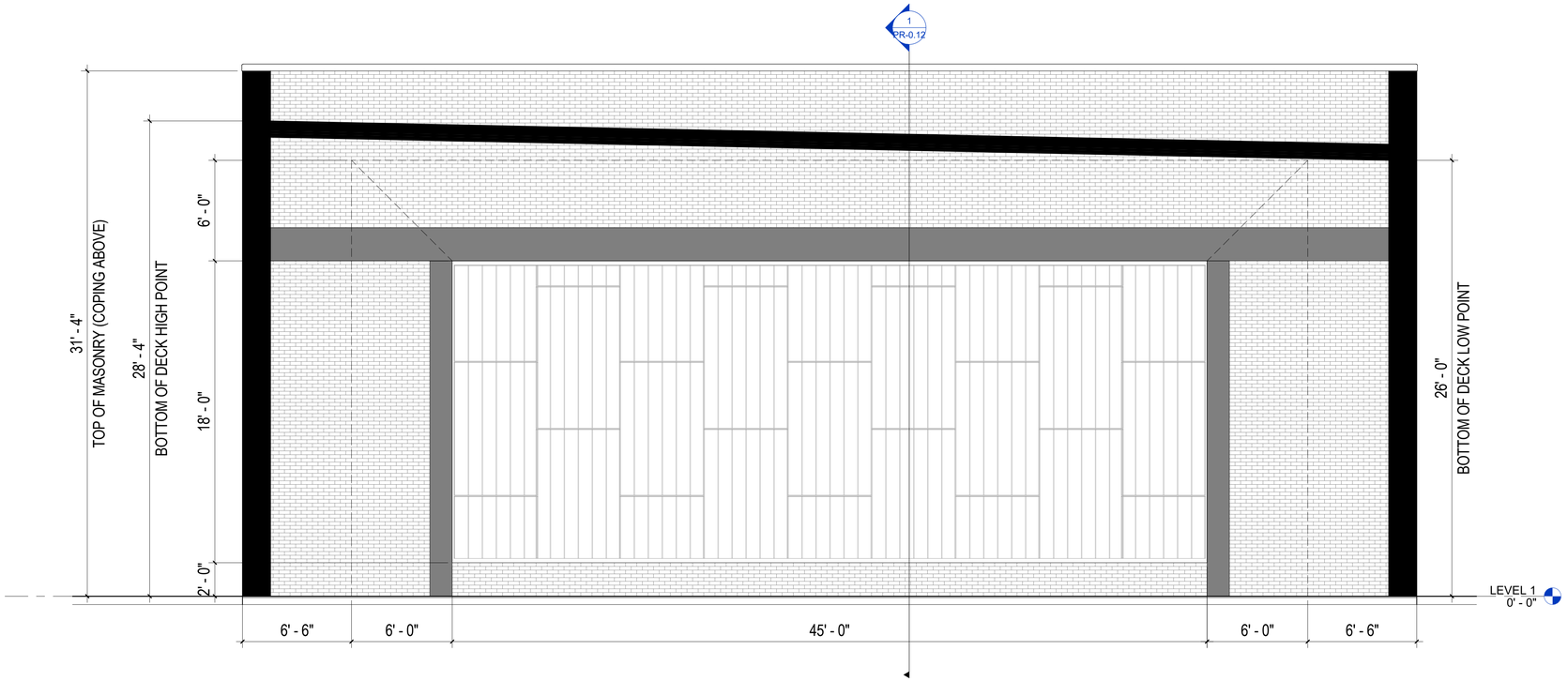
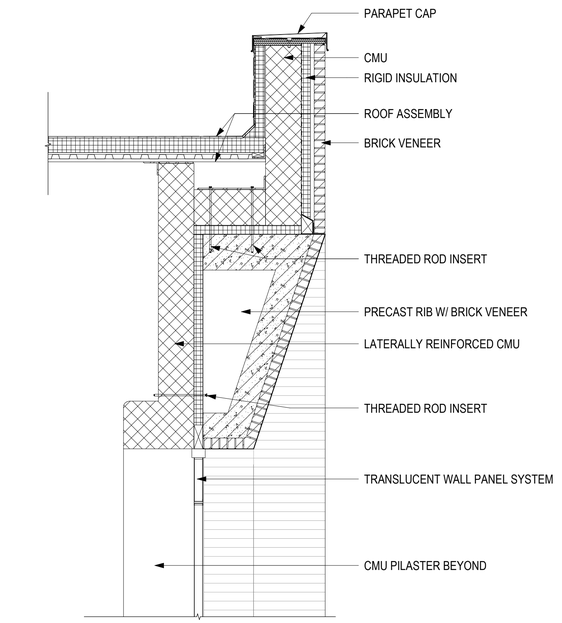
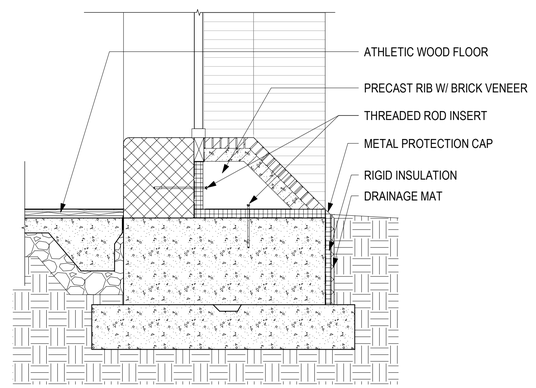
03/14/2025. SECTION

PBC KELLS PARK FIELD HOUSE 2417
714, 724, 726 N.KEDZIE AVE
Chicago, IL 60612



2 PR-0.12 INTERIOR ELEVATION - GYM EAST WALL
1/4" = 1'-0"





1 PR-0.12 GYM EAST WALL SECTION DETAILS
1/2" = 1'-0"

PR-0.12
03/14/2025

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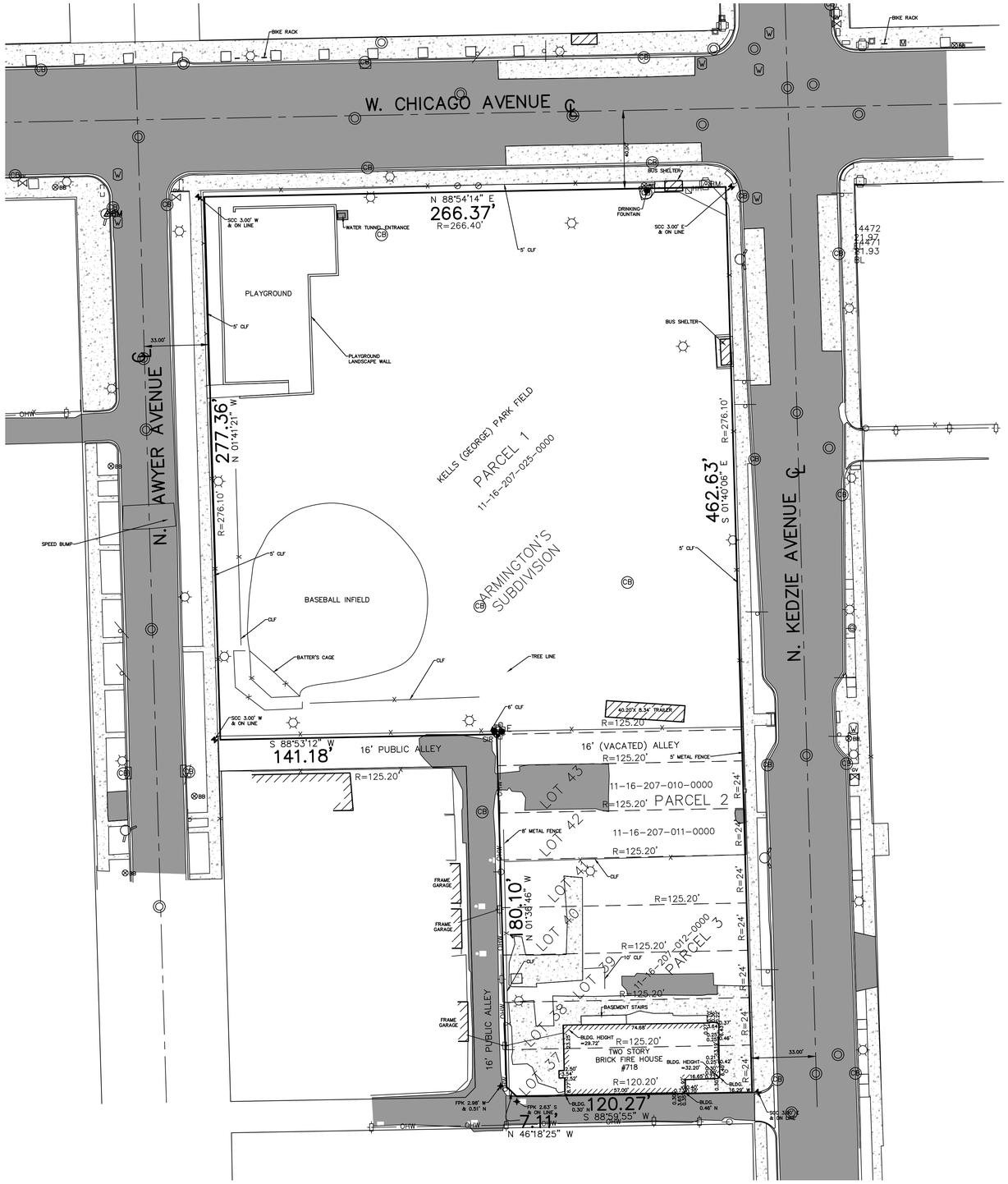
03/14/2025. DETAILS

PBC KELLS PARK FIELD HOUSE 2417
714, 724, 726 N.KEDZIE AVE
Chicago, IL 60612

ALTA/NSPS LAND TITLE SURVEY

WITH TOPOGRAPHY



OF

PARCEL 1
LOTS 1 THROUGH 18 EXCEPT THE SOUTH 16 FEET THEREOF AND LOTS 44 EXCEPT THE SOUTH 16 FEET THEREOF THROUGH 50 IN 2 ARMINGTON'S SUBDIVISION OF THE NORTHEAST 14 OF THE NORTHEAST 14 OF SECTION 11 TOWNSHIP 39 NORTH RANGE13 EAST OF THE THIRD PRINCIPAL MERIDIAN TOGETHER WITH THE VACATED EAST WEST ALLEY LYING SOUTH OF AND ADJACENT TO SAID LOTS 1 THROUGH 11 ALSO THAT PART OF THE VACATED NORTH SOUTH ALLEY WHICH LIES NORTH OF THE SOUTH LINE OF THE NORTH 8 FEET OF SAID LOT 18 COOK COUNTY ILLINOIS.

ADDRESS: 3250 W. CHICAGO AVENUE, ILLINOIS 60651
P.I.N.: 16-11-207-025

PARCEL 2
LOTS 42 AND 43 IN ARMINGTON'S SUBDIVISION OF THE NORTHEAST OF THE NORTHEAST ¼ OF THE NORTHEAST IF SECTION11 TOWNSHIP 39 NORTH RANGE13 EAST OF THE THIRD PRINCIPAL MERIDIAN IN COOK COUNTY ILLINOIS.

AND

THE SOUTH 16 FEET OF LOT 44 IN ARMINGTON'S SUBDIVISION OF THE NORTHEAST ¼ OF THE NORTHEAST ¼ OF SECTION 11 TOWNSHIP 39 NORTH RANGE 13 EAST OF THE THIRD PRINCIPAL MERIDIAN COOK COUNTY ILLINOIS.

ADDRESS: 726 N. KEDZIE AVENUE, CHICAGO, ILLINOIS 60612
P.I.N.: 16-11-207-010
ADDRESS: 724 N. KEDZIE AVENUE, CHICAGO, ILLINOIS 60612
P.I.N.: 16-11-207-011

PARCEL 3
LOTS 37 THROUGH 41 IN ARMINGTON'S SUBDIVISION OF THE NORTHEAST ¼ OF THE NORTHEAST ¼ OF SECTION 11 TOWNSHIP 39 NORTH RANGE 13 EAST OF THE THIRD PRINCIPAL MERIDIAN COOK COUNTY ILLINOIS.

ADDRESS: 724 N. KEDZIE AVENUE, CHICAGO, ILLINOIS 60612
P.I.N.: 16-11-207-012

CONTAINING AN TOTAL AREA OF 97,024 SQ.FT OR 2.227 ACRES, MORE OR LESS

N
W E
S

GRAPHIC SCALE
0 15 30 60
(IN FEET)
1 inch = 30 ft.

LEGEND

△BM	BENCHMARK
+ FCC	FOUND CROSS-CUT
+ SCC	SET CROSS-CUT
○ FIP	FOUND IRON PIPE
● SIP	SET IRON PIPE
⊕ FIR	FOUND IRON ROD
● SIR	SET IRON ROD
+ FPK	FOUND P.K. NAIL
◆ FMN	FOUND MAG NAIL
◆ SMN	SET MAG NAIL
⊞ SCM	SET CONCRETE MONUMENT
	EXISTING TRAFFIC LIGHT
	EXISTING POWER POLE
	EXISTING GUY ANCHOR
TCB	EXISTING TRAFFIC CONTROL BOX
	EXISTING LIGHT STANDARD
TP	EXISTING TRANSFORMER PAD
A/C	EXISTING AIR CONDITIONER UNIT
E	EXISTING ELECTRIC PEDESTAL
T	EXISTING TELEPHONE PEDESTAL
C	EXISTING CABLE PEDESTAL
E	EXISTING ELECTRIC METER
G	EXISTING GAS METER
W	EXISTING WATER METER
	EXISTING HAND HOLE
	EXISTING DOUBLE HAND HOLE
	EXISTING UTILITY FLAGGING
	EXISTING GAS VALVE
	EXISTING WATER VALVE
	PROPERTY LINE
W	EXISTING WATER MAIN
G	EXISTING GAS MAIN
S	EXISTING COMBINED SEWER LINE
S	EXISTING STORM SEWER LINE
S	EXISTING SANITARY SEWER LINE
TV	EXISTING CABLE/TV LINE
T	EXISTING TELEPHONE/COMMUNICATION LINE
E	EXISTING ELECTRIC LINE
OHW	EXISTING OVERHEAD LINE
	CENTERLINE
	EASEMENT
	BUILDING SETBACK
X	EXISTING CHAIN LINK FENCE
O	EXISTING WOOD FENCE
	EXISTING GUARDRAIL
	EXISTING RAILROAD TRACKS
FO	EXISTING FIBER OPTICS
	EXISTING WATER EDGE
	DEPRESSED CURB
B12	EXISTING CONTOUR LINE
B12	PROPOSED CONTOUR LINE
	ASPHALT PAVEMENT
	CONCRETE PAVEMENT
	GRAVEL PAVEMENT
	BRICK PAVEMENT
X (XXX.X)	PROPOSED SPOT ELEVATIONS
XXX.X	AS-BUILT SPOT ELEVATIONS
	DRAINAGE FLOW ARROW
+/-XX.XX	EXISTING SPOT ELEVATIONS
⊗BB	EXISTING WATER BUFFALO BOX
⊗GAS	EXISTING GAS BUFFALO BOX
	EXISTING CLEANOUT
	EXISTING SANITARY WYE CONNECTION
V	EXISTING WATER VALVE VAULT
CB	EXISTING STORM CATCH BASIN
	EXISTING STORM CURB INLET
	EXISTING MANHOLE
	EXISTING DECIDUOUS TREE W/ SIZE
	EXISTING CONIFEROUS TREE W/ SIZE
	EXISTING BOLLARDS
	EXISTING FIRE HYDRANTS
	EXISTING STREET SIGN
DSP	EXISTING DOWNSPOUT
W	EXISTING WELL
MW	EXISTING MONITORING WELL
	EXISTING HEADWALL
M	EXISTING MAILBOX
	EXISTING RAILROAD SIGNAL
	EXISTING BUSH
PU	EXISTING POP-UP EMITTER
(XX.XX')	RECORD DIMENSIONS AND BEARINGS

ABBREVIATIONS

B/C	BACK OF CURB
B/W	BOTTOM OF WALL
BIT.	BITUMINOUS
CALC.	CALCULATED DATUM
CHD	CHORD
CLF	CHAIN LINK FENCE
CMP	CORRUGATED METAL PIPE
CONC.	CONCRETE
D.E.	DRAINAGE EASEMENT
D/C	DEPRESSED CURB
DEED	DEED DATUM
DIP	DUCTILE IRON PIPE
E	EAST
E/P	EDGE OF PAVEMENT
EXIST./EX	EXISTING
F/F	FINISHED FLOOR
F/L	FLOW LINE
FES	FLARED END SECTION
I.E.E.	INGRESS EGRESS EASEMENT
INV	INVERT
MEAS./M=	MEASURED DATUM
MH	MANHOLE
N	NORTH
P.U. & D.E.	PUBLIC UTILITY & DRAINAGE EASEMENT
P.U.E.	PUBLIC UTILITY EASEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
PROP.	PROPOSED
PT	POINT OF TANGENCY
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
REC./R=	RECORD DATUM
S	SOUTH
SAN	SANITARY
T/C	TOP OF CURB
T/F	TOP OF FOUNDATION
T/P	TOP OF PIPE
T/W	TOP OF WALL
U.E.	UTILITY EASEMENT
VCP	VITRIFIED CLAY PIPE
W	WEST
WW	WINDOW WELL

GENERAL NOTES:
1. ALL DIMENSIONS ARE GIVEN IN FEET AND DECIMAL PARTS THEREOF.
2. COMPARE DEED DESCRIPTION AND SITE CONDITIONS WITH THE DATA SHOWN HEREON AND REPORT ANY DISCREPANCIES AT ONCE.
3. NO DIMENSIONS SHALL BE DERIVED FROM SCALED MEASUREMENT.
4. ONLY THOSE BUILDING SETBACK LINES AND EASEMENTS WHICH ARE SHOWN ON THE RECORDED PLAT OF SUBDIVISION ARE SHOWN HEREON, UNLESS INDICATED OTHERWISE. REFER TO DEED, TITLE INSURANCE POLICY AND LOCAL ORDINANCES FOR OTHER RESTRICTIONS WHICH MAY OR MAY NOT EXIST.
5. DISTANCES AS SHOWN ALONG CURVES ARE ARC DISTANCES UNLESS NOTED AS OTHERWISE.

SURVEYOR'S NOTES
1. BEARINGS BASED ON GPS MEASUREMENTS REFERENCED TO THE ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (2011 ADJUSTMENT).
2. ONLY THE IMPROVEMENTS THAT WERE VISIBLE FROM ABOVE GROUND AT TIME OF SURVEY AND THROUGH A NORMAL SEARCH AND WALK THROUGH OF THE SITE ARE SHOWN ON THE FACE OF THIS PLAT. LAWN SPRINKLER SYSTEMS, IF ANY, ARE NOT SHOWN ON THIS SURVEY.
3. VISIBLE SURFACE INDICATIONS OF UTILITIES AROUND THE PERIMETER OF THE SURVEYED PARCEL AND WITHIN THE EXISTING EASEMENTS HAVE BEEN SHOWN. UNDERGROUND AND OFFSITE OBSERVATIONS HAVE NOT BEEN MADE TO DETERMINE THE EXTENT OF UTILITIES SERVING OR EXISTING ON THE PROPERTY. PUBLIC AND/OR PRIVATE RECORDS HAVE NOT BEEN SEARCHED TO PROVIDE ADDITIONAL INFORMATION.
4. OTHER THAN VISIBLE OBSERVATIONS NOTED HEREON, THIS SURVEY MAKES NO STATEMENT REGARDING THE ACTUAL PRESENCE OR ABSENCE OF ANY SERVICE OR UTILITY LINE. CONTROLLED UNDERGROUND EXPLORATORY EFFORT TOGETHER WITH DIGGER LOCATIONS IS RECOMMENDED TO DETERMINE THE FULL EXTENT OF UNDERGROUND SERVICE AND UTILITY LINES. DIGGER AT 1-312-744-7000.
5. LEGAL DESCRIPTION AS SHOWN HEREON CONFORMS TO THAT CONTAINED IN FIDELITY NATIONAL TITLE INSURANCE COMPANY FILE NUMBERS GSG-2025CO-247240, GSG-2025CO-247250, AND GSG-2025CO-247260, ALL DATED JANUARY 17, 2025. THE FOLLOWING SCHEDULE B SPECIAL EXCEPTIONS ARE NOTED:
   a. EXCEPTION 8 IN THE ABOVE REFERENCED NOTE NO. 5 FILE NUMBER GSG-2025CO-247240 REFERS TO NOTE THE DEED CONVEYING THE SUBJECT PROPERTY TO THE OWNER SHOWN HEREIN 10932543 WAS NOT AVAILABLE FROM THE COUNTY RECORDER AT THE TIME OF THIS COMMITMENT IT HAS BEEN ORDERED AND WILL BE PROVIDED WHEN AND IF IT BECOMES AVAILABLE.
   b. EXCEPTION 9 IN THE ABOVE REFERENCED NOTE NO. 5 FILE NUMBER GSG-2025CO-247240 REFERS TO TERMS AND CONDITIONS OF AN ORDINANCE VACATING ALLEYS MADE BY THE CITY OF CHICAGO RECORDED AS DOCUMENT 12892991. (DOCUMENT NOT AVAILABLE FOR REVIEW.)
   c. EXCEPTION 8 IN THE ABOVE REFERENCED NOTE NO. 5 FILE NUMBER GSG-2025CO-247250 REFERS TO POSSIBLE UNRECORDED EASEMENTS FOR UTILITIES AND OR ACTUAL UTILITIES LYING WITHIN THE VACATED ALLEY BEING THE SOUTHERLY 16 FEET OF LOT 44 DESCRIBED HEREIN AND THE RIGHTS OF THE PUBLIC OR QUASI PUBLIC UTILITY COMPANIES TO IMPROVE REPAIR OR MAINTAIN SAID POLES CONDUITS PIPES SEWERS ETC.
   d. EXCEPTION 8 IN THE ABOVE REFERENCED NOTE NO. 5 FILE NUMBER GSG-2025CO-247260 REFERS TO NOTE THE DEED CONVEYING THE SUBJECT PROPERTY TO THE OWNER SHOWN HEREIN 5779389 WAS NOT AVAILABLE FROM THE COUNTY RECORDER AT THE TIME OF THIS COMMITMENT IT HAS BEEN ORDERED AND WILL BE PROVIDED WHEN AND IF IT BECOMES AVAILABLE.
6. SUBJECT PROPERTY HAS ACCESS TO SOUTH CICERO AVENUE, SHOWN GRAPHICALLY.
7. BASED ON CAREFUL INSPECTION OF FEMA FLOOD INSURANCE RATE MAP, NUMBER 17031C0415 J FOR COOK COUNTY, ILLINOIS DATED AUGUST 19, 2008, THE PROPERTY SHOWN HEREON LIES WITHIN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
8. NO PARKING STALLS WERE OBSERVED AT TIME OF SURVEY.

TO: -FIDELITY NATIONAL TITLE INSURANCE COMPANY
-CITY OF CHICAGO, A MUNICIPAL CORPORATION
-PUBLIC BUILDING COMMISSION OF CHICAGO

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 7(a), 7(c), 8, 9, 11(b), AND 14 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON FEBRUARY 12, 2025.

DATE OF PLAT OR MAP: _____

PRELIMINARY

STEVEN BARCZAK, IPLS NO. 035-003269
LICENSE EXPIRES: 11/30/2026
SBARCZAK@GSG-CONSULTANTS.COM

THIS PROFESSIONAL SERVICE CONFORMS TO THE ILLINOIS MINIMUM STANDARDS FOR A BOUNDARY & TOPOGRAPHIC SURVEY

REVISIONS

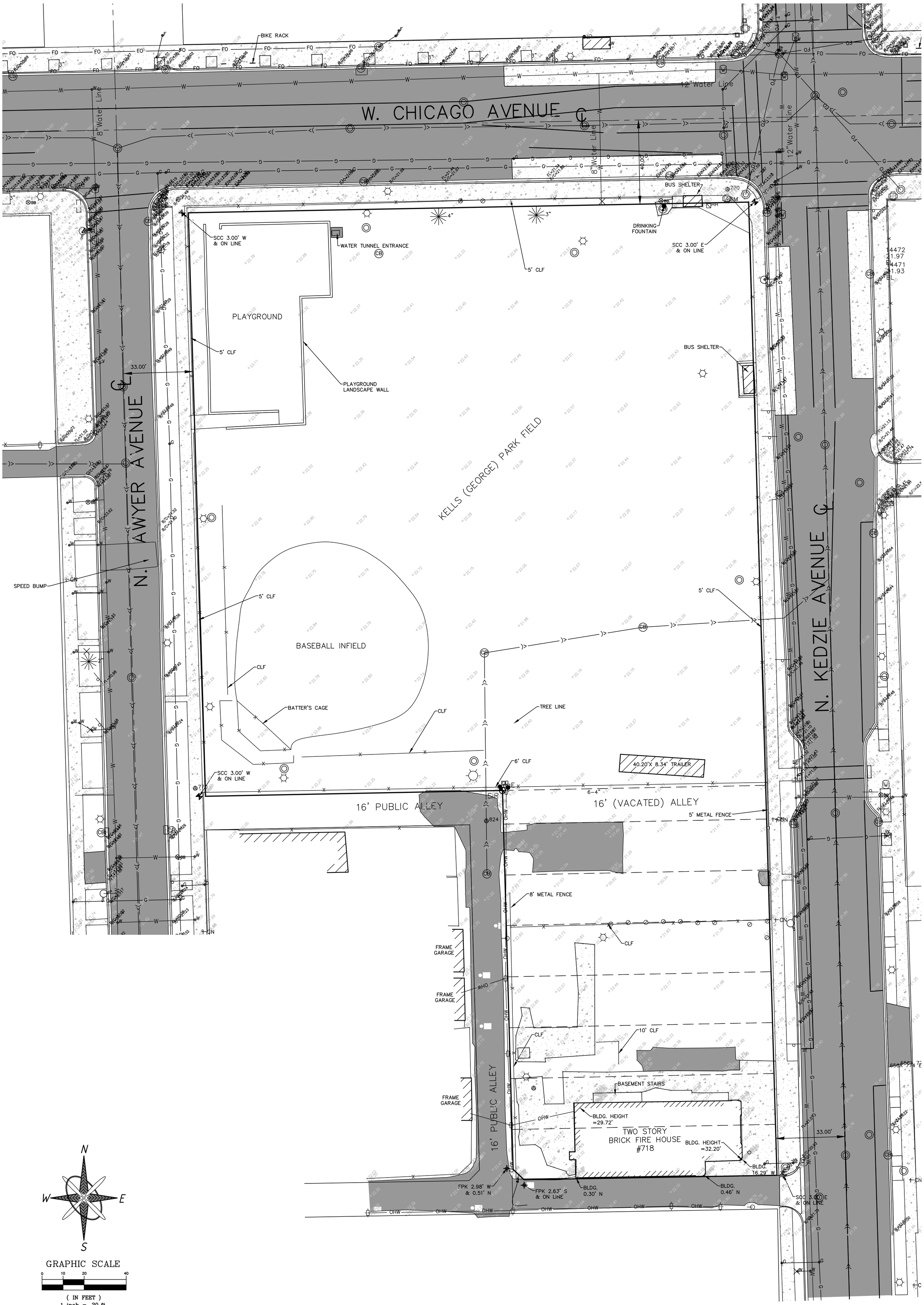
NO.	DATE:	DESCRIPTION:
1		
1		
1		
1		
1		

GSG CONSULTANTS, INC.
735 E REMINGTON RD, SCHAUMBURG, IL 60173
TEL: 1-630.794.2600 | WWW.GSG-CONSULTANTS.COM
ILLINOIS PROFESSIONAL DESIGN FIRM # 184-002852

KELLS GEORGE PARK FIELDHOUSE
714 - 750 N. KEDZIE AVENUE
CHICAGO, IL 60612

PUBLIC BUILDING COMMISSION OF CHICAGO
50 WEST WASHINGTON ST. ROOM 200
CHICAGO, ILLINOIS 60602

DRAWN BY:	PROJECT:
AMS/IS/JV	24-10027
CHECKED BY:	SCALE:
SB	1"=30'
DATE:	SHEET #:
2/21/2025	1 OF 1
FILE NAME:	
24-10027 KELLS PARK ALTA	



N

W E

S

GRAPHIC SCALE

0 10 20 40

(IN FEET)
1 inch = 20 ft.

KELLS GEORGE PARK FIELDHOUSE
714 - 750 N. KEDZIE AVENUE
CHICAGO, IL 60612

PUBLIC BUILDING COMMISSION OF CHICAGO
50 WEST WASHINGTON ST. ROOM 200
CHICAGO, ILLINOIS 60602

GSG CONSULTANTS, INC.
735 E. REMINGTON RD, SCHAUMBURG, IL 60173
TEL: +1630.994.2600 | WWW.GSG-CONSULTANTS.COM
ILLINOIS PROFESSIONAL DESIGN FIRM# 184-002852

REVISIONS

NO.	DATE:	DESCRIPTION:
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DRAWN BY:	AMS/IS/JV
PROJECT:	24-10027
CHECKED BY:	SB
SCALE:	1"=20'
DATE:	2/21/2025
SHEET #:	1 OF 1
FILE NAME:	24-10027 KELLS PARK ALTA

EPIC METALS®

Toris®

Roof and Floor Deck Ceiling Systems

inspiring
CREATIVITY
through
PERFORMANCE®

Central Arizona College, Signal Peak Campus, Coolidge, Arizona
Toris A

Toris®

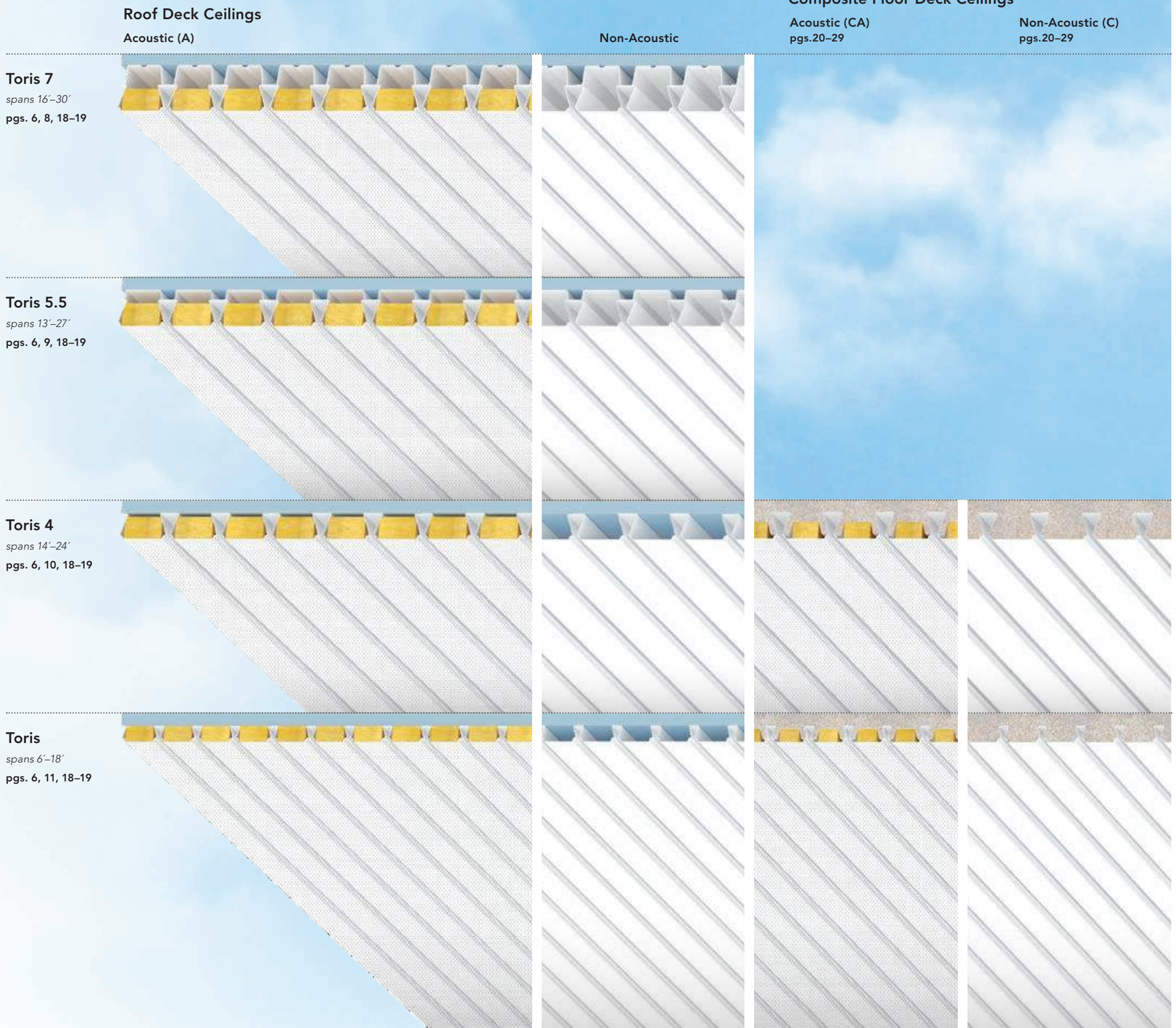
Roof & Floor Deck Ceiling System

EPIC's Toris® Roof and Floor Deck Ceiling Systems offer an innovative approach to designing modern, visually unobstructed interiors with architectural appeal.

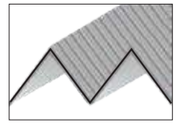
Recessed corners soften the linear plank form of Toris and create a unique appearance with a gently rounded edge.

A dovetail recess hides roofing fasteners – enhancing the architectural appearance. The depth of Toris profiles range from 7″ to 2.5″, allowing roof clear spans up to an impressive 30 feet. Choose the Toris profile that fits best with project span requirements, depth/gage parameters, and load carrying capacities. All Toris profiles offer a hanging system to accommodate signage, lighting, or utilities. The various features and design innovations of the Toris Roof and Floor Deck Ceiling Systems can lead to their specification in a variety of projects including: airport terminals, schools and universities, office buildings, libraries, gymnasiums, canopies, museums, theaters, natatoriums, or any area where an architectural roof/floor deck ceiling system is desired.

Skydeck® option: All Toris profiles may be specified to accommodate Solatube® daylighting systems to bring natural light into any design (see page 15).

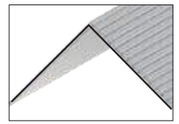


Design Examples:

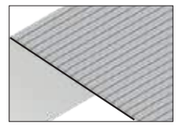


Cathedral Folded Plate

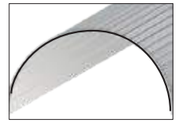
Gambrel Folded Plate



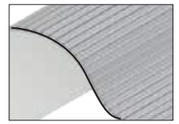
Cathedral



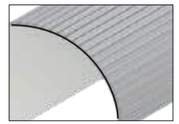
Half Cathedral



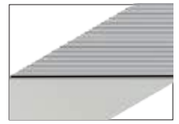
Barrel Vaulted



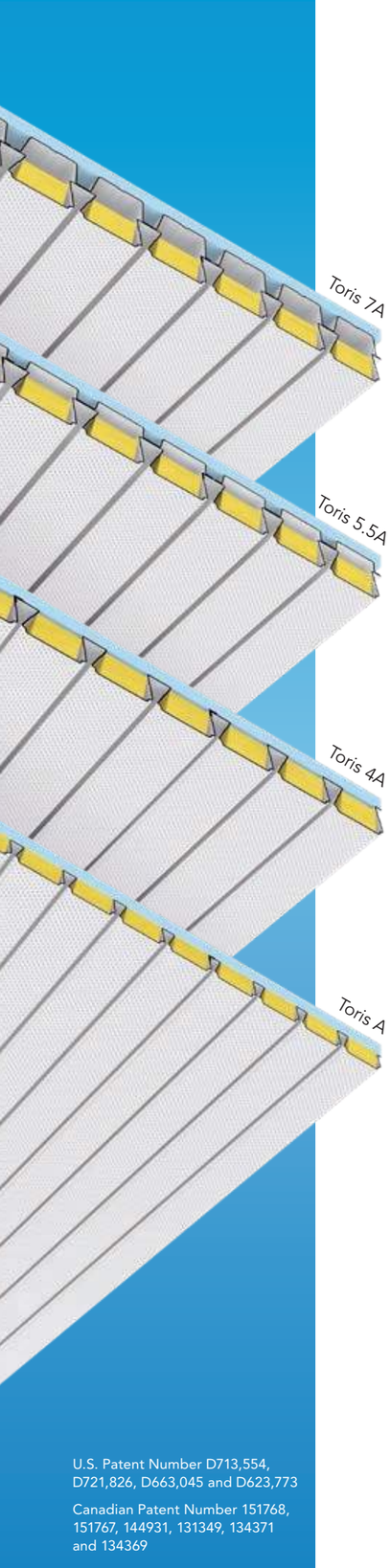
Serpentine



Half Vaulted



Flat



U.S. Patent Number D713,554, D721,826, D663,045 and D623,773

Canadian Patent Number 151768, 151767, 144931, 131349, 134371 and 134369

Toris®
Roof Deck Ceiling Systems

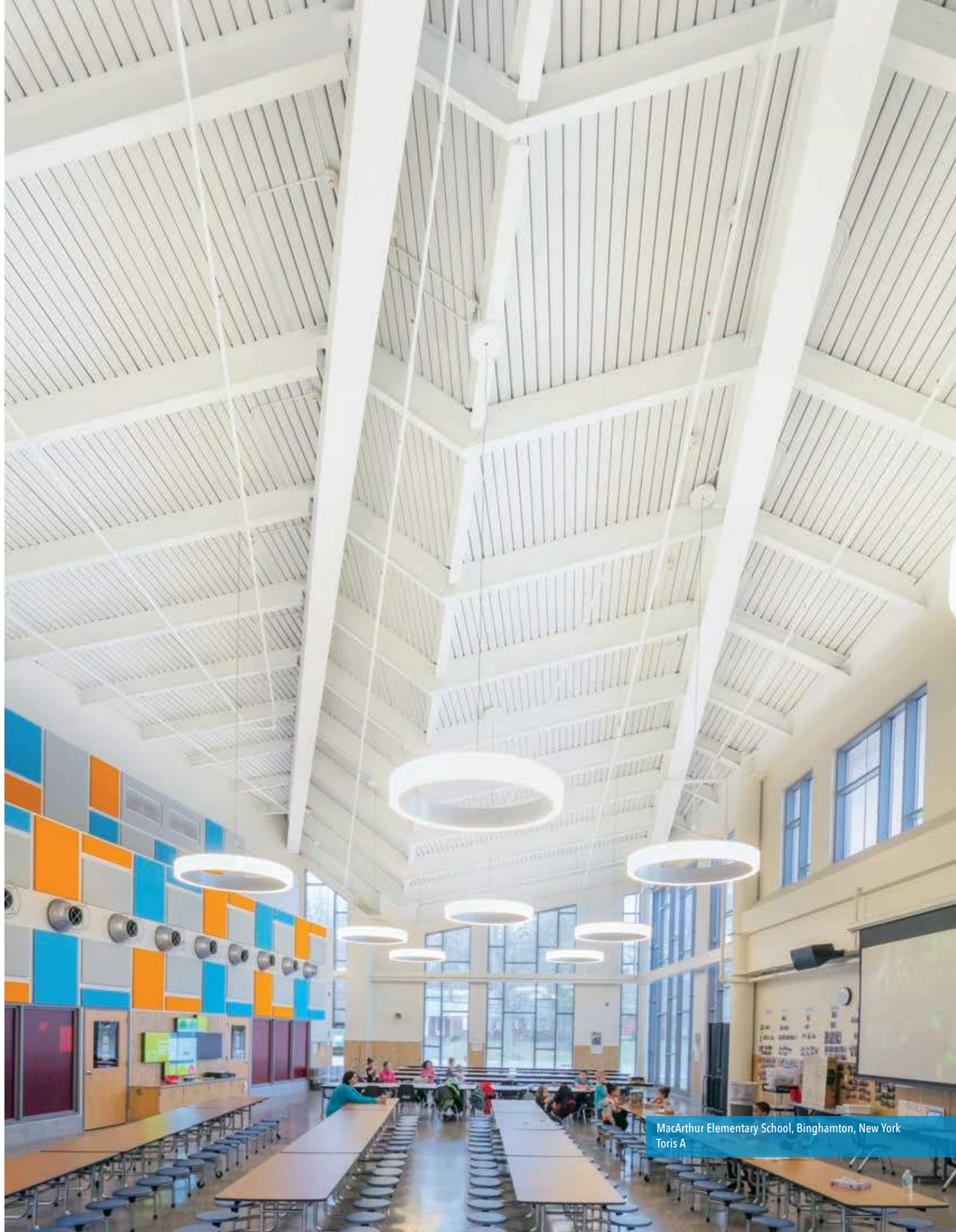
Toris profiles, when painted with a light color, aid in the reflection of natural light when designed in buildings with clerestory windows. These same principles work well with indirect up-lighting. Acoustical Toris profiles reduce the noise levels across all sound frequency ranges. The noise reduction coefficients of each profile can be found in the technical tables beginning on page 8. The Toris rib shape enables the roof deck ceiling to provide a hanging system. Toris hangers placed in the ribs can be used for hanging signage, speakers, lighting, banners and projection screens. Hangers can be purchased and installed as they are needed, and can be relocated, or removed and reused, at any time during the life of the building (see page 17).

U.L. Approved Pipe Hangers for Fire Protection Systems

Use Ankore® and Ankore Lock with Toris 7(A), Toris 5.5(A) and Toris 4(A) or ⅜˝ Wedge Bolt and Wedge Lock with Toris (A). Install per EPIC detail sheet EHI17. Connections and parts have been tested by U.L. under standard #203, and in accordance with NFPA 13.

Diaphragm Resistance

Another benefit of specifying Toris 7(A), Toris 5.5(A), Toris 4(A) and Toris (A) is their inherent ability to resist lateral forces caused by wind or seismic occurrences. The Toris family of products, when properly designed and attached, can provide an effective and efficient diaphragm bracing system for any structure. Contact EPIC Metals for diaphragm tables.



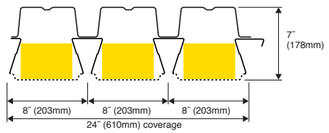
MacArthur Elementary School, Binghamton, New York
Toris A

Toris 7(A) Roof Deck Ceiling System Technical Tables

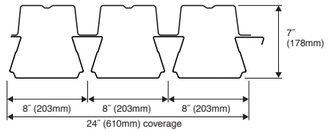
SPANS
16'–30'

ACOUSTIC (TORIS 7A) **NON-ACOUSTIC** (TORIS 7)

Toris 7A*



Toris 7*



*U.S. Patent Number D713,554
Canadian Patent Number 151768

Toris 7(A) Approvals

IAPMO evaluation report 0226

Toris 7A Noise Reduction Coefficients

Deck Type	Absorption Coefficients						NRC
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
Toris 7A	.52	1.15	.98	1.00	.95	.74	1.00

In accordance with ASTM C423 and E795. Consult EPIC Metals for other test results and individual reports.

The NRC is the average of the absorption coefficients at 250, 500, 1000, and 2000 Hz., rounded off to the nearest .05.

Toris 7A & Toris 7 Section Properties (per foot of width)

Deck Type	Gage	Weight (psf)	I_D (in.^{4})	S_P (in.^{3})	S_N (in.^{3})	Allowable Support Reaction (PLF)
Toris 7A	20/20	5.6	10.04	2.31	1.66	803
	18/18	7.5	13.83	3.49	2.59	1343
	16/16	9.5	17.80	4.82	3.68	2062
Toris 7	20/20	5.7	10.68	2.36	1.77	803
	18/18	7.6	14.71	3.56	2.75	1343
	16/16	9.6	18.94	4.92	3.91	2062

*Minimum end support bearing length = 3" (See note 5 below)

Hanger Load Capacities

Deck Type	Gage	Hanger Type	Design Values				Fire Sprinkler Support with Riverts	
			Without Rivets		With Rivets			
			LRFD ΦP_n (lbs)	ASD P_n/Ω (lbs)	LRFD ΦP_n (lbs)	ASD P_n/Ω (lbs)	Max. Pipe Dia. (in)	Rod Dia. (in)
Toris 7(A)	20/20	3/8" Ankore (ANK38)	168	105	698	436	4	3/8
	18/18		252	157	1,357	848	4	3/8
	16/16		346	216	2,180	1,362	4	3/8

NOTES:
1. Resitance Factors, Φ, and Safety Factors, Ω, have been calculated in accordance with AISI S100-16, Chapter K.
2. The structural design professional is responsible to ensure the additional point loads do not exceed the load carrying capacity of the roof deck.
3. Consult EPIC Hanger Installation instructional sheets for detailed information on hanger assemblies with and without rivets.
4. The hangers are limited to static vertical tension loading only.
5. Where hanger spacing is less than 24 inches along the same rib, the combined load to all hangers shall be less than or equal to a single hanger design strength.
6. Sprinkler pipe installations shall comply with NFPA 13.
7. Ends of deck sheets must be fastened to supports at every cell.
8. Do not place hangers at side laps.
9. Do not overtighten nut on hanger rod as this will spread rib and lessen capacity (Finger tight plus 1/2 turn).
10. Hangers have been reviewed by IAMPO for compliance with the IBC, LABC and CBC.

WARNING: FAILURE TO ADHERE TO THE ABOVE NOTES MAY CAUSE HANGERS TO PULL OUT OF DECK RIBS!

Toris 7A & Toris 7 Load Table Uniform Total Service Load (Dead and Live), PSF

Deck Type	No. spans	Gage	Span Length Center to Center of Supports (ft.)														
			16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Toris 7A	1	20/20	100/161	94/134	89/113	85/96	80/82	76/68	73/56	70/47	64/40	59/34	55/29	–	–	–	–
		18/18	168/222	158/185	149/156	141/132	134/114	127/93	115/78	106/65	97/55	89/46	83/40	77/34	71/30	–	–
		16/16	258/285	243/238	229/200	214/170	193/146	175/120	159/100	146/84	134/70	123/60	114/51	106/44	98/38	92/33	86/29
Toris 7	1	20/20	100/171	94/143	89/120	85/102	80/88	76/72	73/60	70/50	66/42	60/36	56/31	–	–	–	–
		18/18	168/236	158/197	149/166	141/141	134/121	128/100	118/83	108/69	99/58	91/50	84/42	78/36	73/31	68/27	–
		16/16	258/304	243/253	229/213	217/181	197/155	179/128	163/106	149/89	137/75	126/64	116/54	108/47	100/40	94/35	87/31

If higher loads or longer spans are required, contact EPIC Metals.

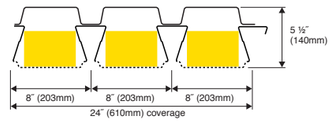
NOTES: 1. Loads are based on ASD Design.
2. Uniform load values listed on the left side of the box, 100/50, are governed by stress or web crippling and the values listed on the right side, 100/50, are governed by deflection.
3. The deflection criteria used for generating the tables above were L/240 or 1" maximum. The Engineer of Record shall calculate the allowable uniform load if a different deflection criteria is required.
4. Stress governed values assume a maximum allowable stress of 24 ksi.
5. Minimum end support bearing lengths are shown above. If shorter bearing lengths are used, check safe support reaction table on page 19.

Toris 5.5(A) Roof Deck Ceiling System Technical Tables

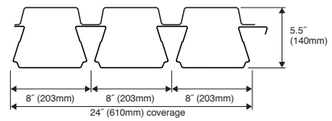
SPANS
13'–27'

ACOUSTIC (TORIS 5.5A) **NON-ACOUSTIC** (TORIS 5.5)

Toris 5.5A*



Toris 5.5*



*U.S. Patent Number D721,826
Canadian Patent Number 151767

Toris 5.5(A) Approvals

IAPMO evaluation report 0226

Toris 5.5A Noise Reduction Coefficients

Deck Type	Absorption Coefficients						NRC
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
Toris 5.5A	.41	1.15	1.00	1.00	.93	.75	1.00

In accordance with ASTM C423 and E795. Consult EPIC Metals for other test results and individual reports.

The NRC is the average of the absorption coefficients at 250, 500, 1000, and 2000 Hz., rounded off to the nearest .05.

Toris 5.5A & Toris 5.5 Section Properties (per foot of width)

Deck Type	Gage	Weight (psf)	I_D (in.^{4})	S_P (in.^{3})	S_N (in.^{3})	Allowable Support Reaction (PLF)
Toris 5.5A	20/20	5.1	5.72	1.65	1.22	803
	18/18	6.8	7.85	2.40	1.86	1343
	16/16	8.7	10.27	3.26	2.60	2062
Toris 5.5	20/20	5.2	6.08	1.68	1.30	803
	18/18	6.9	8.35	2.45	1.98	1343
	16/16	8.8	10.93	3.33	2.77	2062

*Minimum end support bearing length = 3" (See note 5 below)

Hanger Load Capacities

Deck Type	Gage	Hanger Type	Design Values				Fire Sprinkler Support with Riverts	
			Without Rivets		With Rivets			
			LRFD ΦP_n (lbs)	ASD P_n/Ω (lbs)	LRFD ΦP_n (lbs)	ASD P_n/Ω (lbs)	Max. Pipe Dia. (in)	Rod Dia. (in)
Toris 5.5(A)	20/20	3/8" Ankore (ANK38)	168	105	698	436	4	3/8
	18/18		252	157	1,357	848	4	3/8
	16/16		346	216	2,180	1,362	4	3/8

NOTES:
1. Resitance Factors, Φ, and Safety Factors, Ω, have been calculated in accordance with AISI S100-16, Chapter K.
2. The structural design professional is responsible to ensure the additional point loads do not exceed the load carrying capacity of the roof deck.
3. Consult EPIC Hanger Installation instructional sheets for detailed information on hanger assemblies with and without rivets.
4. The hangers are limited to static vertical tension loading only.
5. Where hanger spacing is less than 24 inches along the same rib, the combined load to all hangers shall be less than or equal to a single hanger design strength.
6. Sprinkler pipe installations shall comply with NFPA 13.
7. Ends of deck sheets must be fastened to supports at every cell.
8. Do not place hangers at side laps.
9. Do not overtighten nut on hanger rod as this will spread rib and lessen capacity (Finger tight plus 1/2 turn).
10. Hangers have been reviewed by IAMPO for compliance with the IBC, LABC and CBC.

WARNING: FAILURE TO ADHERE TO THE ABOVE NOTES MAY CAUSE HANGERS TO PULL OUT OF DECK RIBS!

Toris 5.5A & Toris 5.5 Load Table Uniform Total Service Load (Dead and Live), PSF

Deck Type	No. spans	Gage	Span Length Center to Center of Supports (ft.)														
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Toris 5.5A	1	20/20	124/171	115/137	107/111	100/92	91/76	81/64	73/55	66/47	60/39	55/32	50/27	–	–	–	–
		18/18	207/235	192/188	171/153	150/126	133/105	119/88	106/75	96/64	87/53	79/44	73/37	67/31	61/26	–	–
		16/16	309/307	266/246	232/200	204/165	180/137	161/116	144/98	130/84	118/69	108/58	99/48	91/41	83/35	77/30	–
Toris 5.5	1	20/20	124/182	115/145	107/118	100/97	93/81	83/68	74/58	67/50	61/41	56/34	51/29	–	–	–	–
		18/18	207/250	192/200	174/162	153/134	136/112	121/94	109/80	98/69	89/56	81/47	74/39	68/33	63/28	–	–
		16/16	315/327	272/262	237/213	208/175	184/146	164/123	148/105	133/90	121/74	110/61	101/51	93/43	85/37	79/31	73/27

If higher loads or longer spans are required, contact EPIC Metals.

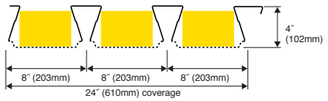
NOTES: 1. Loads are based on ASD Design.
2. Uniform load values listed on the left side of the box, 100/50, are governed by stress or web crippling and the values listed on the right side, 100/50, are governed by deflection.
3. The deflection criteria used for generating the tables above were L/240 or 1" maximum. The Engineer of Record shall calculate the allowable uniform load if a different deflection criteria is required.
4. Stress governed values assume a maximum allowable stress of 24 ksi.
5. Minimum end support bearing lengths are shown above. If shorter bearing lengths are used, check safe support reaction table on page 19.

Toris 4(A) Roof Deck Ceiling System Technical Tables

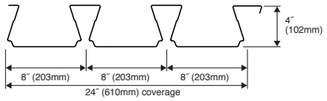
SPANS
14′–24′

ACOUSTIC (TORIS 4A) **NON-ACOUSTIC** (TORIS 4)

Toris 4A*



Toris 4*



*U.S. Patent Number D663,045
Canadian Patent Number 144931

Toris 4(A) Approvals

IAPMO evaluation report 0226
Class 1-60, 1-75, 1-90 rated per
Factory Mutual Standard 4451

Toris 4A Noise Reduction Coefficients

Deck Type	Absorption Coefficients						NRC
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
Toris 4A	.33	.93	1.01	.90	.89	.67	.95

In accordance with ASTM C423 and E795. Consult EPIC Metals for other test results and individual reports.

The NRC is the average of the absorption coefficients at 250, 500, 1000, and 2000 Hz., rounded off to the nearest .05.

Toris 4A & Toris 4 Section Properties (per foot of width)

Deck Type	Gage	Weight (psf)	I_D (in.^{4})	S_P (in.^{3})	S_N (in.^{3})	Allowable Support Reaction (PLF)	
						End*	Int.*
Toris 4A	20	3.3	2.38	0.75	0.77	639	1507
	18	4.3	3.21	1.22	1.17	1081	2491
	16	5.5	4.10	1.63	1.56	1676	3796
Toris 4	20	3.4	2.53	0.77	0.82	639	1507
	18	4.4	3.42	1.24	1.24	1081	2491
	16	5.6	4.36	1.66	1.66	1676	3796

*Minimum end and interior support bearing lengths (See note 5 below):
End = 1.5″ Interior = 4″

Hanger Load Capacities

Deck Type	Gage	Hanger Type	Design Values				Fire Sprinkler Support with Riverts	
			Without Rivets		With Rivets			
			LRFD ΦP_n (lbs)	ASD P_n/Ω (lbs)	LRFD ΦP_n (lbs)	ASD P_n/Ω (lbs)	Max. Pipe Dia. (in)	Rod Dia. (in)
Toris 4(A)	20	⅜″ Ankore (ANK38)	168	105	698	436	4	⅜
	18		252	157	1,357	848	4	⅜
	16		346	216	2,180	1,362	4	⅜

NOTES:
1. Resitance Factors, Φ, and Safety Factors, Ω, have been calculated in accordance with AISI S100-16, Chapter K.
2. The structural design professional is responsible to ensure the additional point loads do not exceed the load carrying capacity of the roof deck.
3. Consult EPIC Hanger Installation instructional sheets for detailed information on hanger assemblies with and without rivets.
4. The hangers are limited to static vertical tension loading only.
5. Where hanger spacing is less than 24 inches along the same rib, the combined load to all hangers shall be less than or equal to a single hanger design strength.
6. Sprinkler pipe installations shall comply with NFPA 13.
7. Ends of deck sheets must be fastened to supports at every cell.
8. Do not place hangers at side laps.
9. Do not overtighten nut on hanger rod as this will spread rib and lessen capacity (Finger tight plus 1/2 turn).
10. Hangers have been reviewed by IAMPO for compliance with the IBC, LABC and CBC.

WARNING: FAILURE TO ADHERE TO THE ABOVE NOTES MAY CAUSE HANGERS TO PULL OUT OF DECK RIBS!

Toris 4A & Toris 4 Load Table Uniform Total Service Load (Dead and Live), PSF

Deck Type	No. spans	Gage	Span Length Center to Center of Supports (ft.)										
			14	15	16	17	18	19	20	21	22	23	24
Toris 4A	1	20	61/57	53/46	47/38	42/32	37/27	–	–	–	–	–	–
		18	100/77	87/62	76/51	68/43	60/36	54/31	–	–	–	–	–
		16	133/98	116/80	102/66	90/55	80/46	72/39	65/34	59/28	–	–	–
	2	20	63/137	55/111	48/92	43/77	38/65	34/55	31/47	28/39	25/32	23/27	–
		18	96/185	83/150	73/124	65/103	58/87	52/74	47/63	42/52	39/43	35/36	33/31
		16	127/236	111/192	98/158	86/132	77/111	69/94	62/81	57/67	52/55	47/46	43/39
	3	20	79/107	68/87	60/72	48 Foot Maximum Sheet Length							
		18	119/145	104/118	91/97								
		16	159/185	139/150	122/124								
Toris 4	1	20	63/61	55/49	48/41	43/34	38/28	–	–	–	–	–	–
		18	101/82	88/67	78/55	69/46	61/39	55/33	50/28	–	–	–	–
		16	136/104	118/85	104/70	92/58	82/49	74/42	66/36	60/29	–	–	–
	2	20	67/146	58/118	51/98	45/81	40/69	36/58	33/50	30/41	27/34	25/29	–
		18	101/197	88/160	78/132	69/110	61/93	55/79	50/68	45/56	41/46	38/39	34/33
		16	136/251	118/204	104/168	92/140	82/118	74/100	66/86	60/71	55/59	50/49	46/42
	3	20	84/114	73/93	64/76	48 Foot Maximum Sheet Length							
		18	127/154	110/125	97/103								
		16	169/197	148/160	130/132								

If higher loads or longer spans are required, contact EPIC Metals.

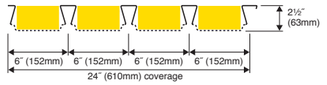
NOTES: 1. Loads are based on ASD Design.
2. Uniform load values listed on the left side of the box, 100/50 (↓), are governed by stress or web crippling and the values listed on the right side, 100/50 (↓), are governed by deflection.
3. The deflection criteria used for generating the tables above were L/240 or 1″ maximum. The Engineer of Record shall calculate the allowable uniform load if a different deflection criteria is required.
4. Stress governed values assume a maximum allowable stress of 24 ksi.
5. Minimum end and interior support bearing lengths are shown above. If shorter bearing lengths are used, check safe support reaction table on page 19.

Toris® **(A)** Roof Deck Ceiling System Technical Tables

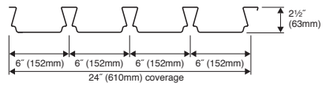
SPANS
6′–18′

ACOUSTIC (TORIS A) **NON-ACOUSTIC** (TORIS)

Toris A*



Toris*



*U.S. Patent Number D623,773
Canadian Patent Number 131349, 134371 and 134369

Toris (A) Approvals

IAPMO evaluation report 0226
Class 1-60, 1-75, 1-90 rated per
Factory Mutual Standard 4451

Toris A Noise Reduction Coefficients

Deck Type	Absorption Coefficients						NRC
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
Toris A	.18	.78	1.15	.94	.90	.80	.95

In accordance with ASTM C423 and E795. Consult EPIC Metals for other test results and individual reports.

The NRC is the average of the absorption coefficients at 250, 500, 1000, and 2000 Hz., rounded off to the nearest .05.

Toris A & Toris Section Properties (per foot of width)

Deck Type	Gage	Weight (psf)	I_D (in.^{4})	S_P (in.^{3})	S_N (in.^{3})	Allowable Support Reaction (PLF)	
						End*	Int.*
Toris A	20	2.7	0.73	0.47	0.42	950	1922
	18	3.6	0.98	0.63	0.58	1583	3176
	16	4.6	1.25	0.80	0.76	2429	4843
Toris	20	2.8	0.77	0.48	0.44	950	1922
	18	3.7	1.03	0.64	0.60	1583	3176
	16	4.7	1.31	0.81	0.78	2429	4843

*Minimum end and interior support bearing lengths (See note 5 below):
End = 1.5″ Interior = 3″

Hanger Load Capacities

Deck Type	Gage	Hanger Type	Design Values				Fire Sprinkler Support with Riverts	
			Without Rivets		With Rivets			
			LRFD ΦP_n (lbs)	ASD P_n/Ω (lbs)	LRFD ΦP_n (lbs)	ASD P_n/Ω (lbs)	Max. Pipe Dia. (in)	Rod Dia. (in)
Toris (A)	20	⅜″ Wedge Bolt (38WB250)	130	81	481	300	3	⅜
	18		222	139	634	396	4	⅜
	16		353	221	865	541	4	⅜

NOTES:
1. Resitance Factors, Φ, and Safety Factors, Ω, have been calculated in accordance with AISI S100-16, Chapter K.
2. The structural design professional is responsible to ensure the additional point loads do not exceed the load carrying capacity of the roof deck.
3. Consult EPIC Hanger Installation instructional sheets for detailed information on hanger assemblies with and without rivets.
4. The hangers are limited to static vertical tension loading only.
5. Where hanger spacing is less than 24 inches along the same rib, the combined load to all hangers shall be less than or equal to a single hanger design strength.
6. Sprinkler pipe installations shall comply with NFPA 13.
7. Ends of deck sheets must be fastened to supports at every cell.
8. Do not place hangers at side laps.
9. Do not overtighten nut on hanger rod as this will spread rib and lessen capacity (Finger tight plus 1/2 turn).
10. Hangers have been reviewed by IAMPO for compliance with the IBC, LABC and CBC.

WARNING: FAILURE TO ADHERE TO THE ABOVE NOTES MAY CAUSE HANGERS TO PULL OUT OF DECK RIBS!

Toris A & Toris Load Table Uniform Total Service Load (Dead and Live), PSF

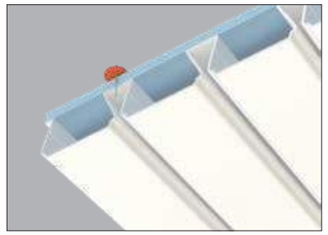
Deck Type	No. spans	Gage	Span Length Center to Center of Supports (ft.)												
			6	7	8	9	10	11	12	13	14	15	16	17	18
Toris A	1	20	209/222	153/140	118/94	93/66	75/48	62/36	52/28	–	–	–	–	–	–
		18	280/298	206/188	158/126	124/88	101/64	83/48	70/37	60/29	–	–	–	–	–
		16	356/380	261/239	200/160	158/113	128/82	106/62	89/47	76/37	65/30	–	–	–	–
	2	20	187/500	137/336	105/225	83/158	67/115	56/87	47/67	40/53	34/42	30/34	–	–	–
		18	258/500	189/452	145/303	115/212	93/155	77/116	64/90	55/71	47/56	41/46	36/38	32/32	–
		16	338/500	248/500	190/386	150/271	122/198	100/148	84/114	72/90	62/72	54/59	48/48	42/40	38/34
	3 or more	20	233/418	171/263	131/176	104/124	84/90	69/68	58/52	50/41	43/33	37/27	–	48 Foot Maximum Sheet Length	
		18	322/500	237/353	181/237	143/166	116/121	96/91	81/70	69/55	59/44	52/36	45/30		
		16	422/500	310/451	238/302	188/212	152/155	126/116	106/89	90/70	78/56	68/46	59/38		
Toris	1	20	213/234	157/147	120/99	95/69	77/51	63/38	53/29	–	–	–	–	–	–
		18	284/313	209/197	160/132	126/93	102/68	85/51	71/39	61/31	–	–	–	–	–
		16	360/398	264/251	203/168	160/118	130/86	107/65	90/50	77/39	66/31	–	–	–	–
	2	20	196/500	144/355	110/238	87/167	70/122	58/91	49/70	42/55	36/44	31/36	28/30	–	–
		18	267/500	196/475	150/318	119/223	96/163	79/122	67/94	57/74	49/59	43/48	38/40	33/33	–
		16	347/500	255/500	195/404	154/284	125/207	103/156	87/120	74/94	64/75	55/61	49/51	43/42	39/36
	3 or more	20	244/441	180/278	138/186	109/131	88/95	73/72	61/55	52/43	45/35	39/28	–	48 Foot Maximum Sheet Length	
		18	333/500	245/371	188/249	148/175	120/127	99/96	83/74	71/58	61/46	53/38	47/31		
		16	433/500	318/472	244/317	193/222	156/162	129/122	108/94	92/74	80/59	69/48	61/40		

If higher loads or longer spans are required, contact EPIC Metals.

NOTES: 1. Loads are based on ASD Design.
2. Uniform load values listed on the left side of the box, 100/50 (↓), are governed by stress or web crippling and the values listed on the right side, 100/50 (↓), are governed by deflection.
3. The deflection criteria used for generating the tables above were L/240 or 0.75″ maximum. The Engineer of Record shall calculate the allowable uniform load if a different deflection criteria is required.
4. Stress governed values assume a maximum allowable stress of 24 ksi.
5. Minimum end and interior support bearing lengths are shown above. If shorter bearing lengths are used, check safe support reaction table on page 19.

Bal Seal Engineering, Colorado Springs, Colorado
Toris 4A

Standard Features with Toris



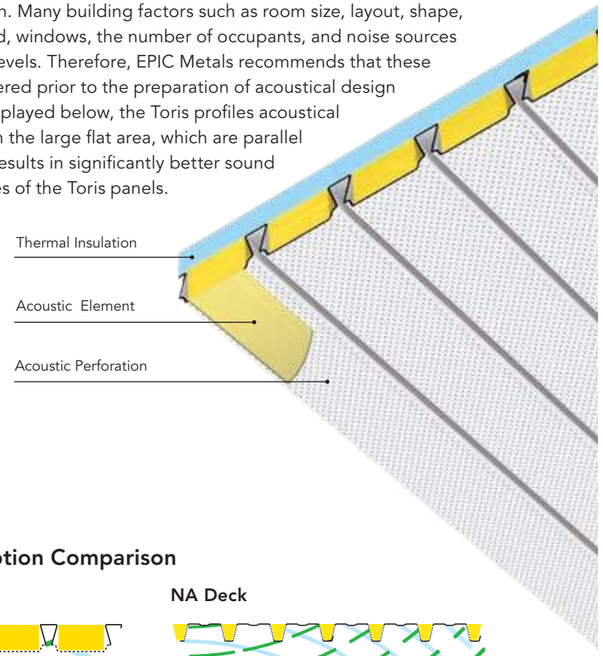
Conceals Fasteners
All of the Toris panels conceal the roofing system fasteners.

Sidelap
The dovetail ribs of the sidelaps conceal the fasteners.

Toris® Options

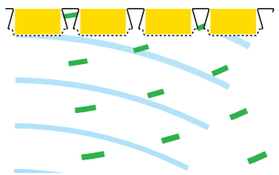
Toris' Superior Acoustic Properties

Acoustic roof and floor deck ceiling systems are specified as an economical means of reducing noise levels in building interiors, and offer an attractive appearance without adding an additional ceiling. NRC values are the noise absorption averages over a range of frequencies. The higher the NRC value, the greater the amount of noise that is absorbed over the frequency ranges. An NRC value of 1.00 would mean that 100% of the noise that strikes the panel is absorbed, whereas an NRC value of .60 would mean that only 60% of the sound that strikes the panel surface is absorbed and 40% of the sound is reflected back. Lower NRC values can contribute to creating reverberation (an echo effect) that makes speech less intelligible and can create a sense of noise amplification. Many building factors such as room size, layout, shape, materials specified, windows, the number of occupants, and noise sources also affect noise levels. Therefore, EPIC Metals recommends that these factors be considered prior to the preparation of acoustical design specifications. Displayed below, the Toris profiles acoustical perforations are in the large flat area, which are parallel to the floor. This results in significantly better sound absorbing qualities of the Toris panels.

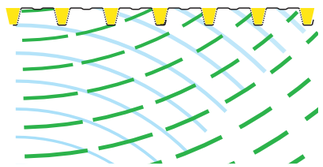


Sound Absorption Comparison

Toris A



NA Deck



Direct Sound
Reflected Sound

Skydeck®

Natural light makes spaces appear larger and reveals true colors in the interior of buildings. In the past, to incorporate skylights with a long-span roof deck ceiling system required that the skylight be framed with structural steel, detracting from the open appearance of the system. Skydeck with the Solatube® Daylighting System captures ambient light as well as direct light, enabling it to provide exceptional lighting even on cloudy days. Energy costs can be reduced in structures using Skydeck as a day-lighting technique. Skydeck can be an important contributor to achieving Leadership in Energy and Environmental Design (LEED®) points.

EPIC Metals' Skydeck specified to accept Solatube® Daylighting System, transfers up to 500% more daylight than other tubular skylight systems with the brightest, cleanest, and whitest natural light possible. This advantage is particularly significant in low-angle light conditions, such as during the early morning and late afternoon, and in the winter months when the sun is low on the horizon. Skydeck has minimal heat loss or gain between the interior and exterior because the Solatubes work like a dual glazed window.

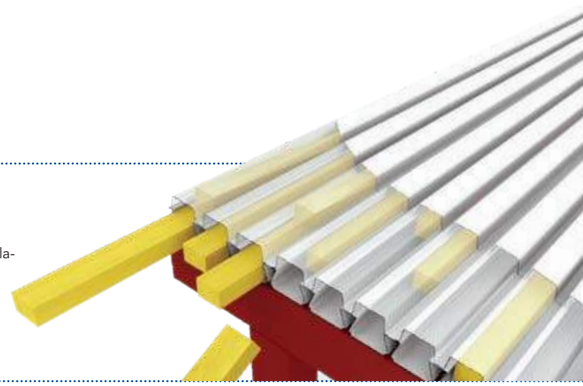
Toris with Skydeck Option
U.S. Patent Number 6,813,864

Windgard® Toris 7A & 5.5A

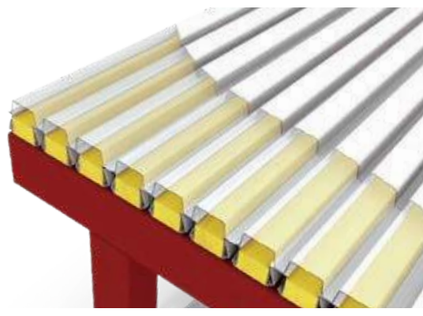
EPIC Metals' structural roof deck ceiling systems utilize acoustic elements to reduce interior noise and sound reverberation. Dislodged or missing acoustic elements can greatly reduce the system's effectiveness to control noise. Dislodging can occur during product transportation or installation in Toris 7A and Toris 5.5A.

EPIC Metals addresses this issue with Windgard, a system used in Toris 7A and Toris 5.5A to ensure that acoustic insulation stays in place from panel fabrication to final installation. The EPIC Windgard system has been laboratory tested to maintain acoustic element positions at wind speeds up to 105 mph. Windgard ensures the acoustic properties are preserved, delivering expected noise reduction coefficients and effectiveness.

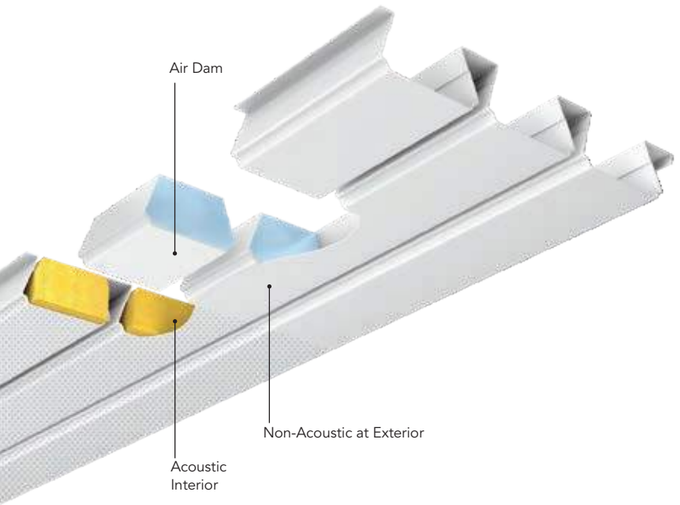
Without Windgard, acoustic insulation can shift or dislodge.



With Windgard, acoustic insulation remains in place.



Toris® Options & Features



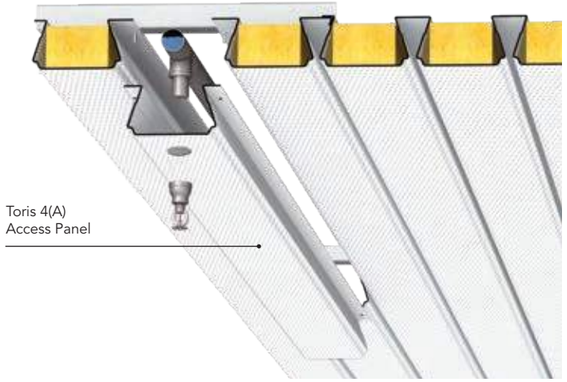
Air Dams

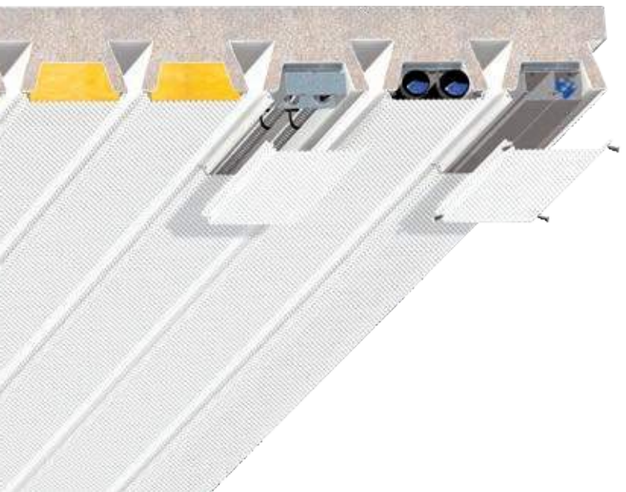
EPIC Metals understands the importance of reducing energy loss in buildings. This is the reason that EPIC pioneered the use of specially designed air dams to prevent air movement in roof and floor deck ceiling panels that cantilever outside of a building. Where these panels are partially inside the building and transition to the outside, a barrier is necessary to prevent the exterior unconditioned air from moving through the conditioned spaces.

EPIC Metals specially designed air dams to help reduce the building energy usage when roof or floor deck ceiling panels extend from the interior of a building to the exterior of the building.

Access Panel

With Toris 7(A), Toris 5.5(A), Toris 4(A) and Toris (A), it is possible to easily access utilities that have been located within the roof deck ceiling system. Access panels come in various sizes and configurations, are placed according to architectural drawings and are provided during the manufacturing process. The removable panels are fabricated to match the finish, size, and shape of the adjacent ceiling surface. The result is a clean, uninterrupted look while providing a simple and convenient access to hidden utilities. Toris (A) access panels lack the clearance for sprinkler lines but can accommodate other utilities.





Toris CA & 4CA Hidden Utilities Feature

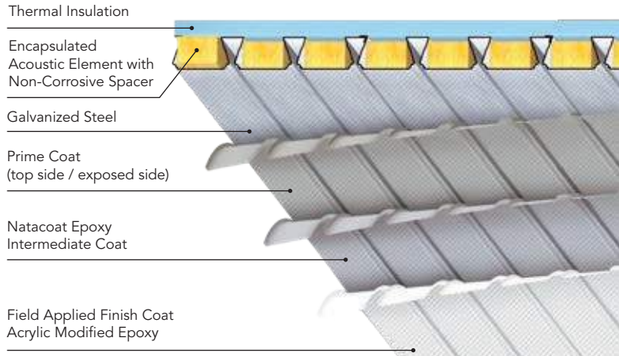
Toris Composite Floor Deck Ceiling Systems provide a concrete form for a structural floor while providing an acoustical/architectural ceiling underneath. This system was engineered to house various hidden utilities within the cells of the deck while providing access through removable panels along the system ribs. It is no longer necessary to expose electrical systems, wire ducts, sprinker pipes, or strut channels when designing a facility with multiple floors. Toris Composite Floors/Ceilings allow a consistent floor to floor aesthetic while providing architectural appeal.

Texas A&M University, Student Recreation Center, College Station, Texas, Toris 4A & Natacoat

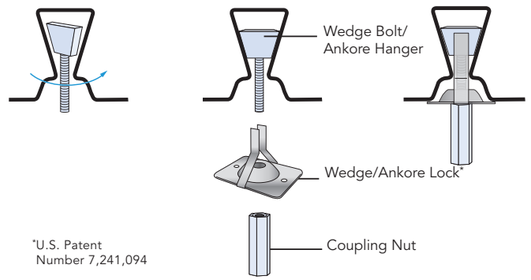
Natacoat®

Natatoriums create a highly humid and corrosive interior environment for building materials. EPIC Natacoat is an innovative, specialized coating that has been applied to protect long span, acoustic roof and floor deck ceiling systems in such harsh settings for over 20 years.

Prior to panel fabrication, all surfaces of the galvanized steel are degreased and cleaned by a chemical conversion coating before applying a primer to increase bonding capabilities. Following the prime coat, the panels are fabricated and the Natacoat specialized coating is applied to the ceiling surface. Natacoat is a factory-applied, oven-baked polyamide epoxy. The finish coat is applied after installation. Contact EPIC for special paint specifications for natatoriums or other high humidity applications.



Hanging System



*U.S. Patent Number 7,241,094

Insert the Toris hanger with the head parallel to the Toris deck. Rotate the hanger 90° and pull down to seat. After the hanger is seated, install the proper hanger lock and nut.

Hangers have been reviewed by IAMPO for compliance with the IBC, LABC and CBC.

Toris® Roof Deck Ceiling Systems
Specifications

Note: Omit underlined areas for non-acoustic applications

For the additional specification language covering factory reinforced openings to accommodate SkyDeck® for Solatube® skylights, contact EPIC Metals.

PART 1: GENERAL

1.1 SUMMARY

The requirements of this specification section include all materials, equipment, and labor necessary to furnish and install Toris 7A Acoustical, Toris 5.5A Acoustical, Toris 4A Acoustical or Toris A Acoustical Roof Deck System.

A. Panels shall serve as an acoustical ceiling and a structural roof deck as indicated on the contract drawings.

B. Acoustical panels shall provide an exposed bottom surface that is substantially flat. The narrow rib openings of the Roof Deck panels shall provide the appearance of a linear ceiling. Fasteners for sidelaps and overlying roofing materials shall be concealed within the depth of the dovetail shaped ribs.

C. Toris 7A, 5.5A or 4A Acoustical Roof Deck: Toris Ankore hanging devices that are specially configured to fit into the dovetail-shaped ribs of the Toris 7A, 5.5A or 4A Acoustical Roof Deck panels shall be available. These hanging devices shall be utilized wherever any related work is suspended from Toris 7A, 5.5A or 4A Acoustical Roof Deck. Toris Ankore hanging devices shall be furnished by the installer of the related work unless otherwise indicated.

Toris A Acoustical Roof Deck: Toris Wedge Bolt hanging devices that are specially configured to fit into the dovetail-shaped ribs of the Toris A Acoustical Roof Deck panels shall be available. These hanging devices shall be utilized wherever any related work is suspended from Toris A Acoustical Roof Deck. Toris Wedge Bolt hanging devices shall be furnished by the installer of the related work unless otherwise indicated.

1.2 RELATED WORK

The following related work is not part of this specification section:

A. Structural Steel: Supplementary framing.

B. Roofing: Other than structural roof deck and accessories. Installation of acoustic elements.

C. Painting: Preparation for and application of field painting.

D. Mechanical: Attachments to Roof Deck.

E. Electrical: Attachments to Roof Deck.

1.3 SUBMITTALS

Submit the following items in accordance with the conditions of the contract and appropriate specification sections:

A. Product data for Roof Deck and hanging devices including material types, dimensions, finishes, load capacities, and noise reduction coefficients.

B. Erection drawings for Roof Deck and related accessory items showing profiles and material thicknesses, layout, anchorage, and openings as dimensioned on the structural drawings.

1.4 REFERENCE STANDARDS

A. Section Properties: Shall be computed in accordance with the American Iron and Steel Institute (AISI) *Specification for Design of Cold-Formed Steel Structural Members.*

B. Welding: Shall comply with applicable provisions of the *American Welding Society (AWS) D1.3 Structural Welding Code – Sheet Steel.*

C. Noise Reduction Coefficients: Shall be verified by the results of sound absorption tests conducted in accordance with the ASTM C423 and E795. A minimum NRC of 1.00 shall be provided for Toris 7A and Toris 5.5A. A minimum NRC of 0.95 shall be provided for Toris 4A and Toris A. Copies of the Sound Absorption test shall be submitted upon request.

1.5 QUALITY ASSURANCE

A. Toris 4A Acoustical or Toris A Acoustical Roof Deck shall have been tested and approved by Factory Mutual Research Corporation for use in Class 1 insulated steel deck roof construction without the use of DensDeck® as a fire barrier.

B. Toris 4A Acoustical or Toris A Acoustical Roof Deck shall be listed in the FM Approval Guide. All bundles shall bear the appropriate FM approved label.

DensDeck® is a registered trademark owned by Georgia-Pacific Gypsum LLC.

PART 2: PRODUCTS

2.1 MANUFACTURER

A. In accordance with the requirements of this specification section, provide products manufactured by EPIC Metals, Rankin, PA.

B. Substitutions: (Under Provisions of Division 01) Not permitted.

2.2 MATERIALS

A. Roof Deck panels shall be cold-formed from steel sheets conforming to ASTM A653, Grade 40 or equal, having a minimum yield strength of 40,000 psi.

B. Before forming, the steel sheets shall have received a hot-dip protective coating of zinc conforming to ASTM A924, Class G60 or G90.

Toris 7A and Toris 5.5A Primer Paint Option—The bottom ceiling surface of the panel shall be prime painted at the factory after forming and welding. Before painting, the galvanized steel shall be chemically cleaned and coated with a pretreatment followed by a coat of manufacturer's standard white prime paint and then oven-cured. Compatibility of field applied finish paint shall be the responsibility of the painting contractor.

Toris 4A and Toris A Primer Paint Option—Prior to forming, galvanized steel shall be chemically cleaned and pre-treated followed by an oven-cured epoxy primer and a second coat of oven-cured polyester primer paint applied to both sides in the manufacturer's standard color of off-white. Compatibility of field applied finish paint with factory applied primer paint shall be the responsibility of the painting contractor.

Toris 4A and Toris A Finish Paint Option—Prior to forming, galvanized steel shall be chemically cleaned and pre-treated followed by an oven-cured epoxy primer and a second coat of oven-cured polyester paint applied to both sides. After factory painting is complete, a plastic removable film shall be applied to the bottom surface of the panels to protect paint finish during manufacturing, shipping, and handling. The protective film is to be removed by the erector prior to installation.

Paint Option—For specialized painting systems that are recommended for Natatoriums and other high humidity applications, contact EPIC Metals.

C. The minimum uncoated thickness of material supplied shall be within 5% of the design thickness.

2.3 FABRICATION

A. Toris 7A Acoustical Roof Deck shall have continuous dovetail shaped ribs spaced 8˝ on center. The profile shall be 7˝ deep.

Toris 5.5A Acoustical Roof Deck shall have continuous dovetail shaped ribs spaced 8˝ on center. The profile shall be 5.5˝ deep.

Toris 4A Acoustical Roof Deck panels shall have continuous dovetail-shaped ribs spaced 8˝ on center. The profile shall be 4˝ deep.

Toris A Acoustical Roof Deck panels shall have continuous dovetail-shaped ribs spaced 6˝ on center. The profile shall be 2.5˝ deep.

B. The design thickness and minimum section properties shall be indicated on the contract drawings.

C. Roof Deck panels shall have positive registering sidelaps that can be fastened by welds or screws.

D. Acoustical Roof Deck panels shall be fabricated with perforated holes. Perforated areas shall be located in the areas between the dovetail-shaped ribs.

2.4 ACCESSORIES

A. Where panels continue from the interior of the building through to the exterior of the building (for example as a cantilever canopy): the panels will be perforated on the interior and not perforated on the exterior, air dams will be provided to block the movement of conditioned air from the interior of the building to the exterior. Air dam assembly shall have an allowable air infiltration of less than 0.02 cfm/ft^2 at 1.57 lb/ft^2

Toris 4A Acoustical or Toris A Acoustical Roof Deck will be supplied with factory assembled EpicTjoints® to provide a thermal break between panels that span from the interior to the exterior of the building. The EpicTjoints shall have been tested in accordance with ASTM C1363.

B. Wedge Bolt hanging devices (which include Wedge Locks) or Ankore hanging devices (which include Ankore Locks) shall be installable and relocatable along the length of the interior ribs of the Acoustical Roof Deck panels. Manufacturer's product data shall be consulted for minimum spacing, load capacities, and proper installation procedure of the Wedge Bolt or Ankore Hanging devices.

C. Sump pans, ridge, valley, transition, and eave plates shall be provided per manufacturer's standards.

D. Manufacturer's standard profile closures shall be provided as indicated on the contract drawings.

E. Acoustic elements shall be provided for installation above the perforated holes in the bottom flat area between the dovetail-shaped ribs. To facilitate field painting of the perforated surfaces, the sound absorbing elements shall be supported above the surface on corrosion resistant spacers. Sound absorbing elements and spacers shall be furnished under this specification section for installation by others for Toris 4A and Toris A.

Toris 7A and Toris 5.5A Acoustic sound-absorbing elements shall be factory installed. The acoustic elements will be supported above the bottom panel be either individual stand-offs or continuous mesh to avoid plugging the perforated holes when field painting.

F. Toris 7A Acoustical, Toris 5.5A Acoustical, Toris 4A Acoustical and Toris A Acoustical panels requiring access openings shall be shown on the structural or architectural drawings. Openings shall be shop-fabricated in the panel area between ribs, 8˝ wide for Toris 7A, Toris 5.5A or Toris 4A Acoustical and 6˝ wide for Toris A Acoustical. Access covers shall match the finish and profile of the adjacent deck surface, including perforations.

PART 3: EXECUTION

3.1 GENERAL

Roof Deck panels and accessories shall be installed in strict accordance with the manufacturer's approved erection drawings, installation instructions, the *Steel Deck Institute (SDI) Manual for Construction with Steel Deck*, and all applicable safety regulations.

3.2 BEFORE INSTALLATION

A. The supporting frame and other work relating to the Acoustical Roof Deck shall be examined to determine if this work has been properly completed.

B. All components of the Acoustical Roof Deck System shall be protected from significant damage during shipment and handling. If storage at the jobsite is required, bundles or packages of these materials shall be elevated above the ground, sloped to provide drainage, and protected from the elements with a ventilated waterproof covering.

3.3 INSTALLATION

A. Bundles or packages of Acoustical Roof Deck System components shall be located on supporting members in such a manner that overloading of any individual members does not occur.

B. Before being permanently fastened, Acoustical Roof Deck panels shall be placed with ends accurately aligned and adequately bearing on supporting members. Proper coverage of the Acoustical Roof Deck panels shall be maintained. Care must be taken by the erector to maintain uniform spacing of the bottom rib opening (equal to the openings in the profiled sheet) at the sidelaps. Consistent coverage shall be maintained so that panels located in adjacent bays will be properly aligned.

C. Field cutting of the Acoustical Roof Deck panels shall be performed in a neat and precise manner. Only those openings shown on the structural drawings shall be cut. Other openings shall be approved by the structural engineer and cut by those requiring the opening.

D. Acoustical Roof Deck panels shall be fastened to all supporting members with ¾˝ diameter puddle welds at a nominal spacing of 8˝ on center or less as indicated on the manufacturer's erection drawings.

E. Mechanical fasteners may be substituted for puddle welds to permanently fasten Acoustical Roof Deck panels to supporting members. The mechanical fastener manufacturer shall provide documentation as to the equivalent load capacity and proper installation procedure for each type of fastener being used.

F. Sidelaps of Acoustical Roof Deck panels shall be fastened by welds or screws at a spacing of 36˝ on center or less as indicated on the manufacturer's erection drawings. Sides of Acoustical Roof Deck panels that are located at perimeter edges of the building shall be fastened to supporting members at a spacing of 36˝ on center or less as indicated on the manufacturer's erection drawings.

G. Sump pans, ridge, valley, transition, eave plates, and supplied reinforcement for small openings shall be fastened as indicated on the manufacturer's erection drawings.

3.4 AFTER INSTALLATION

A. Construction loads that could damage the Acoustical Roof Deck such as heavy concentrated loads and impact loads shall be avoided. Planking shall be used in all high traffic areas.

B. Cleaning the bottom surface of the Acoustical Roof Deck for field painting shall be the responsibility of the painting contractor.

C. Galvanized coatings that are significantly damaged shall be repaired. Appropriate galvanized repair paint shall be used, and the paint manufacturer's application instructions shall be followed.

Toris®
Safe Support Reaction Tables

Safe Support Reaction Tables for End and Interior Supports (PLF)

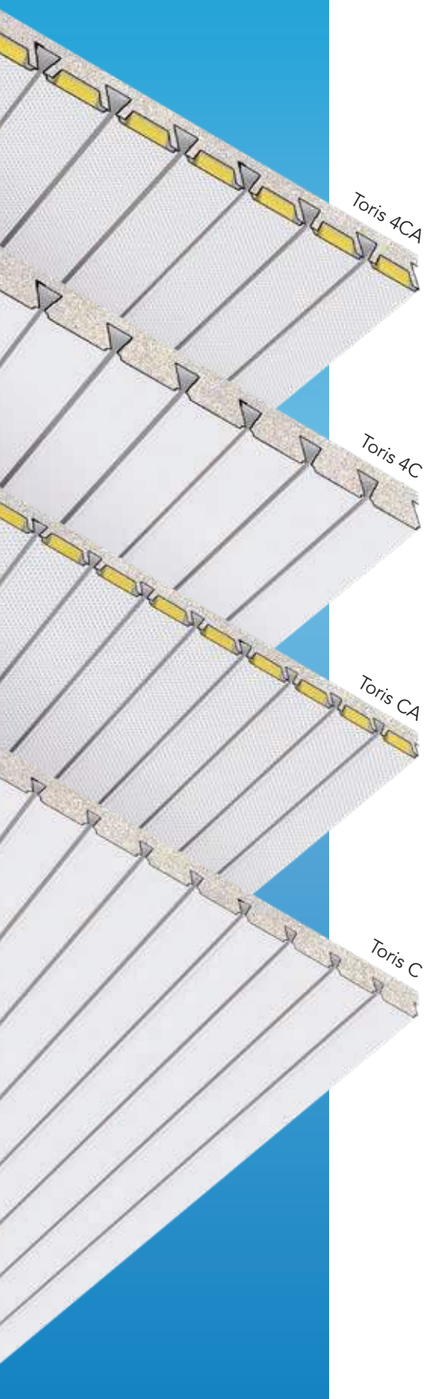
Deck Type	Gage	Length of Bearing							
		end				int.			
		1˝	1.5˝	2˝	3˝	3˝	4˝	5˝	6˝
Toris 7(A)	20	566	639	700	803	1378	1507	1622	1725
Toris 5.5(A)	18	965	1081	1179	1343	2287	2491	2670	2832
Toris 4(A)	16	1506	1676	1820	2062	3500	3796	4056	4292
	20	842	950	1041	1193	1922	2103	2262	2406
Toris (A)	18	1413	1583	1726	1966	3176	3458	3707	3932
	16	2181	2429	2637	2987	4843	5252	5612	5938

Simple span: ER = 0.50WL
Double Span: ER = 0.375WL
IR = 1.25WL

Clinica Family Health - Lafayette, Lafayette, Colorado, Toris 5.5A

Toris®
Composite Floor Deck Ceiling Systems

Toris Composite Floor Deck Ceiling Systems combine the structural advantages of a flat slab with the time and cost saving advantages of a permanent form. Due to the dovetail rib shape, the slab can support greater loading than a typical reinforced concrete slab of the same depth. The shape of the profile also supplies a simple, economical, and permanent hanging system. The Toris Floor Deck additionally furnishes the total positive reinforcing for the composite slab and serves as a permanent form for the concrete. See page 22 or 23 for unprotected U.L. fire resistance ratings.



Hanging System

Toris 4C(A) and Toris C(A) dovetail ribs provide a simple, economical, and permanent means for hanging piping, ducts, and other mechanical and utility components. Toris hangers are inserted parallel to the ribs and can be placed continuously, spaced across the width of the profile. Hangers can be installed as they are needed, and can be relocated, removed or reused at any time during the life of the building.

Code Compliance

Hangers have been reviewed by IAMPO for compliance with the IBC, LABC and CBC.

U.L. Approved Pipe Hangers for Fire Protection Systems

Toris hangers have been rated under *U.L. #203—Pipe Hanger Equipment for Fire Protection Service.* Wedge Bolts and Ankores can be used in accordance with the *National Fire Protection Association Standards For Installation of Sprinkler Systems (NFPA 13).*

Superior Fire Ratings

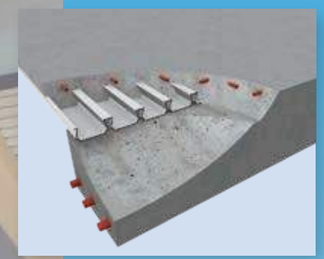
The Toris 4CA and Toris CA Acoustical Composite Floor Deck Ceiling Systems have efficient unprotected fire ratings (see page 22 and 23).

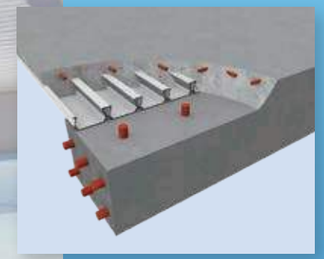
Toris 4C Composite Floor Deck fire ratings under U.L. Design Numbers D980 and Toris C Composite Floor Deck fire ratings under U.L. Design Number D971 are superior to fire ratings of generic composite floor decks. In most instances, the fire ratings of Toris C Composite Floor Deck slabs require from ½˝ - 1 ¼˝ less slab depth than generic profile slabs.

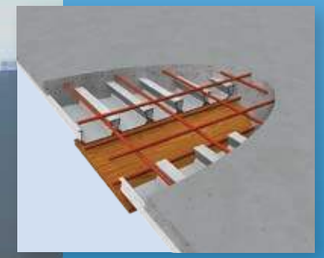
For the unprotected fire ratings shown on page 22 and 23, no spray-applied fireproofing is required on the deck.


Hogan Assessment Systems Headquarters, Tulsa, Oklahoma
Toris 4CA


Steel Beam


Reinforced Concrete Beam


Precast Beam

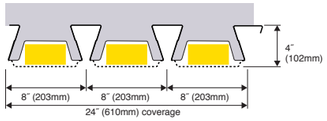

Slab Beam

Toris® 4CA & 4C Composite
Floor Deck Ceiling System Technical Tables

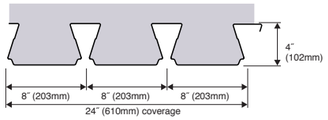
SPANS
10′–32′

ACOUSTIC (TORIS 4CA) **NON-ACOUSTIC** (TORIS 4C)

Toris 4CA



Toris 4C



Hanger Load Capacities

Deck Type	Gage	Hanger Type	Minimum Concrete Strength (psi)	Minimum Concrete Slab Thickness (in)	Design Values		Fire Sprinkler Support	
					LRFD ΦP_n (lbs)	ASD P_n/Ω (lbs)	Max. Pipe Dia. (in)	Rod Dia. (in)
Toris 4CA	20 18 16	⅜″ Ankore (ANK38)	3,000	6	1,633	1,021	4	⅜
Toris 4C	20 18 16	⅜″ Ankore (ANK38)	3,000	6	2,440	1,525	4	⅜

NOTES:
1. Resitance Factors, Φ, and Safety Factors, Ω, have been calculated in accordance with AISI S100-16, Chapter K.
2. The structural design professional is responsible to ensure the additional point loads do not exceed the load carrying capacity of the floor deck.
3. Consult EPIC Hanger Installation instructional sheets for detailed information on hanger assemblies.
4. The hangers are limited to static vertical tension loading only.
5. Sprinkler pipe installations shall comply with NFPA 13.
6. Ends of deck sheets must be fastened to supports at every cell.
7. Do not place hangers at side laps.
8. Do not overtighten nut on hanger rod as this will spread rib and lessen capacity (Finger tight plus ½ turn).
9. Hangers have been reviewed by IAMPO for compliance with the IBC, LABC and CBC.

WARNING: FAILURE TO ADHERE TO THE ABOVE NOTES MAY CAUSE HANGERS TO PULL OUT OF DECK RIBS!

Toris 4CA Noise Reduction Coefficients*

Absorption Coefficients						NRC
125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	
.33	.84	.87	.92	.83	.79	.85

* In accordance with ASTM C423 and E795. Consult EPIC Metals for other test results and individual reports. The NRC is the average of the absorption coefficients at 250, 500, 1000, and 2000 Hz., rounded off to the nearest .05.

Toris 4CA Fire Ratings (U.L. Design Number D980)

Restrained Fire Rating	Total Slab Depth (in.)	Type and Density of Concrete (pcf)
1 hour	6.5	RW (147)
1 hour	6	LW (110)
1½ hours	7	RW (147)
1½ hours	6	LW (110)
2 hours	7.5	RW (147)
2 hours	6.25	LW (110)
3 hours	8.25	RW (147)
3 hours	7	LW (110)

NOTE: Toris 4CA can achieve the loads shown on page 24 with the fire ratings indicated above.

RW = Regular Weight Concrete
LW = Lightweight Concrete

Toris 4C Fire Ratings (U.L. Design Number D980)

Restrained Fire Rating	Total Slab Depth (in.)	Type and Density of Concrete (pcf)
1½ hours	6	RW (147)
1½ hours	6	LW (110)
2 hours	6.5	RW (147)
2 hours	6	LW (110)
3 hours	7.5	RW (147)
3 hours	6.5	LW (110)

NOTE: Toris 4C can achieve the loads shown on page 25 with the fire ratings indicated above.

RW = Regular Weight Concrete
LW = Lightweight Concrete

Suggested Temperature and Shrinkage Reinforcement

Slab Depth (in.)	Welded Wire Fabric Mesh
6–7	6 x 6 – W1.4 x W1.4
7½ – 9	6 x 6 – W2.5 x W2.5

See U.L. Fire Resistance Directory for temperature and shrinkage reinforcement of fire rated assemblies. U.L. Fire Rated Slabs require 6 x 6 – W1.4 x W1.4 mesh.

Toris 4CA & Toris 4C Section Properties

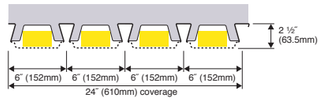
Deck Type	Gage	Weight (psf)	A_S (in.^{2})	I_D (in.^{4})	S_P (in.^{3})	S_N (in.^{3})
Toris 4CA	20	4.7	1.39	2.70	0.88	0.98
	18	5.8	1.70	3.52	1.32	1.29
	16	6.9	2.03	4.41	1.73	1.64
Toris 4C	20	3.4	0.98	2.53	0.77	0.82
	18	4.4	1.30	3.42	1.24	1.24
	16	5.6	1.65	4.36	1.66	1.66

Toris® CA & C Composite
Floor Deck Ceiling System Technical Tables

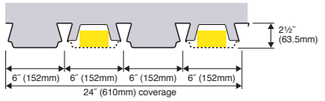
SPANS
6′–24′

ACOUSTIC (TORIS CA, CA50%) **NON-ACOUSTIC** (TORIS C)

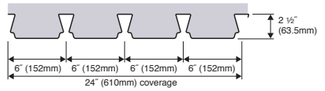
Toris CA



Toris CA 50%



Toris C



Hanger Load Capacities

Deck Type	Gage	Hanger Type	Minimum Concrete Strength (psi)	Minimum Concrete Slab Thickness (in)	Design Values		Fire Sprinkler Support	
					LRFD ΦP_n (lbs)	ASD P_n/Ω (lbs)	Max. Pipe Dia. (in)	Rod Dia. (in)
Toris CA	20 18 16	⅜″ Wedge Bolt (38WB250)	3,000	4.5	838	524	6	⅜
Toris C	20 18 16	⅜″ Wedge Bolt (38WB250)	3,000	4.5	2,291	1,432	8	⅜

NOTES:
1. Resitance Factors, Φ, and Safety Factors, Ω, have been calculated in accordance with AISI S100-16, Chapter K.
2. The structural design professional is responsible to ensure the additional point loads do not exceed the load carrying capacity of the floor deck.
3. Consult EPIC Hanger Installation instructional sheets for detailed information on hanger assemblies.
4. The hangers are limited to static vertical tension loading only.
5. In cases where the supported fire sprinkler pipe exceeds 4″ in diameter, a ⅜″ to ½″ increaser coupling nut and ½″ rod shall be used.
6. Sprinkler pipe installations shall comply with NFPA 13.
7. Ends of deck sheets must be fastened to supports at every cell.
8. Do not place hangers at side laps.
9. Do not overtighten nut on hanger rod as this will spread rib and lessen capacity (Finger tight plus ½ turn).
10. Hangers have been reviewed by IAMPO for compliance with the IBC, LABC and CBC.

WARNING: FAILURE TO ADHERE TO THE ABOVE NOTES MAY CAUSE HANGERS TO PULL OUT OF DECK RIBS!

Toris CA Noise Reduction Coefficients*

Type	Absorption Coefficients						NRC
	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	
100% A	.15	.67	.86	.88	.91	.81	.85
50% A**	.21	.68	.74	.75	.54	.40	.70

* In accordance with ASTM C423 and E795. Consult EPIC Metals for other test results and individual reports. The NRC is the average of the absorption coefficients at 250, 500, 1000, and 2000 Hz., rounded off to the nearest .05.

** Estimates

Toris CA Fire Ratings (U.L. Design Number D971)

Restrained Fire Rating	Total Slab Depth (in.)	Type and Density of Concrete (pcf)
1 hour	6.25	RW (147)
1 hour	5	LW (110)
1½ hours	6.75	RW (147)
1½ hours	5.5	LW (110)
2 hours	7	RW (147)
2 hours	5.75	LW (110)
3 hours	7.75	RW (147)
3 hours	6.75	LW (110)

NOTE: Toris CA can achieve the loads shown on page 26 with the fire ratings indicated above

RW = Regular Weight Concrete
LW = Lightweight Concrete

Toris C Fire Ratings (U.L. Design Number D971)

Restrained Fire Rating	Total Slab Depth (in.)	Type and Density of Concrete (pcf)
1 hour	4.5	RW (147)
1 hour	4.5	LW (110)
1½ hours	5	RW (147)
1½ hours	4.5	LW (110)
2 hours	5.5	RW (147)
2 hours	4.75	LW (110)
3 hours	6.75	RW (147)
3 hours	5.5	LW (110)

NOTE: Toris C can achieve the loads shown on page 27 with the fire ratings indicated above

RW = Regular Weight Concrete
LW = Lightweight Concrete

Suggested Temperature and Shrinkage Reinforcement

Slab Depth (in.)	Welded Wire Fabric Mesh
4	6 x 6 – W1.4 x W1.4
4½ – 5	6 x 6 – W2.1 x W2.1
5½ – 8	6 x 6 – W2.9 x W2.9

See U.L. Fire Resistance Directory for temperature and shrinkage reinforcement of fire rated assemblies. U.L. Fire Rated Slabs require 6 x 6 – W1.4 x W1.4 mesh.

Toris CA & Toris C Section Properties

Deck Type	Gage	Weight (psf)	A_S (in.^{2})	I_D (in.^{4})	S_P (in.^{3})	S_N (in.^{3})
Toris CA	20	4.3	1.26	0.99	0.64	0.46
	18	5.2	1.52	1.25	0.81	0.61
	16	6.1	1.80	1.51	0.99	0.78
Toris C	20	2.8	0.83	0.77	0.48	0.44
	18	3.7	1.10	1.03	0.64	0.60
	16	4.7	1.39	1.31	0.81	0.78

Toris® 4CA & 4C Composite
Floor Deck Ceiling System Technical Tables

Toris 4CA Composite Floor Deck Systems

	Slab Depth and Weight	Design Thickness (in.)	Maximum Clear Span Without Shoring (ft.-in.)			Uniform Service Load Capacity (LRFD), psf														
						Simple Span Condition (See Note 2)											Continuous Span Condition (Negative Moment Reinforcement REQUIRED. See Note 3)			
			Single Span	Double Span	Triple Span	10′0″	11′0″	12′0″	13′0″	14′0″	15′0″	16′0″	17′0″	18′0″	20′0″	22′0″	24′0″	26′0″	28′0″	30′0″	32′0″
3 ksi Regular Weight Concrete (147 pcf)	6″ 50 PSF	0.0358	14-8	15-7	G	360	324	294	268	247	198	155	121	94	56	–	–	41	–	–	–
		0.0474	16-3	17-9	G	388	349	317	290	266	212	166	131	102	61	–	–	46	–	–	–
		0.0600	17-2	19-10	G	364	328	297	271	249	227	179	140	110	67	–	–	50	–	–	–
	6.5″ 56 PSF	0.0358	13-11	14-10	15-4	400	341	280	233	195	165	140	119	102	74	42	–	53	–	–	–
		0.0474	15-10	16-11	G	400	400	365	334	307	268	211	167	132	81	47	–	62	–	–	–
		0.0600	16-8	19-0	G	400	381	345	316	290	268	226	179	142	88	52	–	68	43	–	–
	7″ 62 PSF	0.0358	13-4	14-3	14-9	400	386	317	263	221	187	159	135	116	85	57	–	61	46	–	–
		0.0474	15-5	16-3	G	400	400	387	323	272	231	198	170	146	105	63	–	81	53	–	–
		0.0600	16-3	18-3	G	400	400	393	360	331	305	281	224	179	114	70	–	88	58	–	–
	7.5″ 68 PSF	0.0358	12-9	13-8	14-2	400	400	356	296	248	210	178	152	130	96	71	42	69	53	–	–
		0.0474	15-1	15-8	G	400	400	400	362	305	259	222	191	165	124	83	48	91	70	44	–
		0.0600	15-10	17-7	G	400	400	400	400	371	343	318	276	222	143	91	54	113	77	50	–
	8″ 75 PSF	0.0358	12-3	13-1	13-8	400	400	396	329	276	234	199	170	146	108	80	57	77	59	45	–
		0.0474	14-9	15-1	15-7	400	400	400	400	340	289	247	213	184	138	105	64	102	81	59	–
		0.0600	15-6	16-11	G	400	400	400	400	400	347	299	258	224	171	115	71	129	98	66	41
	8.5″ 81 PSF	0.0358	11-10	12-3	13-3	400	400	400	364	305	258	220	188	161	120	89	65	86	66	50	–
		0.0474	14-5	14-7	15-1	400	400	400	400	375	319	273	235	204	153	117	83	114	90	71	49
		0.0600	15-3	16-5	G	400	400	400	400	400	384	330	285	248	189	143	91	143	115	85	56
	9″ 87 PSF	0.0358	11-5	11-6	12-10	400	400	400	399	335	284	242	207	178	132	98	72	95	74	56	41
		0.0474	14-2	14-2	14-8	400	400	400	400	400	351	300	259	224	169	129	98	126	99	78	61
		0.0600	14-11	15-11	G	400	400	400	400	400	400	362	314	273	208	161	114	156	127	102	73
3 ksi Light Weight Concrete (110 pcf)	6″ 39 PSF	0.0358	16-2	17-1	G	368	332	302	239	184	142	111	86	67	–	–	–	–	–	–	–
		0.0474	17-4	19-5	G	396	357	325	259	200	155	121	95	74	43	–	–	–	–	–	–
		0.0600	18-3	21-9	G	372	336	305	280	216	169	132	104	81	48	–	–	–	–	–	–
	6.5″ 44 PSF	0.0358	15-6	16-4	G	400	327	270	225	190	161	138	111	87	52	–	–	–	–	–	–
		0.0474	16-10	18-8	G	400	400	374	324	251	196	154	121	95	58	–	–	44	–	–	–
		0.0600	17-9	20-11	G	400	390	355	325	270	212	167	132	104	64	–	–	49	–	–	–
	7″ 48 PSF	0.0358	14-11	15-9	G	400	371	306	256	216	183	157	135	111	68	40	–	52	–	–	–
		0.0474	16-5	18-0	G	400	400	370	310	263	224	192	153	121	75	45	–	58	–	–	–
		0.0600	17-4	20-1	G	400	400	400	370	334	263	208	165	132	83	50	–	64	42	–	–
	7.5″ 53 PSF	0.0358	14-4	15-2	15-9	400	400	344	287	242	206	177	152	132	87	53	–	68	44	–	–
		0.0474	16-1	17-4	G	400	400	400	348	295	252	217	188	151	96	59	–	75	50	–	–
		0.0600	16-11	19-5	G	400	400	400	400	383	322	256	204	164	105	66	–	83	56	–	–
	8″ 58 PSF	0.0358	13-10	14-9	15-2	400	400	383	320	271	230	197	170	147	109	68	40	83	58	–	–
		0.0474	15-9	16-9	G	400	400	400	388	329	281	242	209	182	120	76	46	95	65	42	–
		0.0600	16-7	18-10	G	400	400	400	400	391	335	289	249	201	131	84	52	104	72	48	–
	8.5″ 62 PSF	0.0358	13-4	14-3	14-9	400	400	400	355	299	255	219	189	163	124	86	53	92	73	49	–
		0.0474	15-5	16-3	G	400	400	400	400	364	311	268	232	202	148	96	60	118	82	56	–
		0.0600	16-3	18-3	G	400	400	400	400	400	370	320	278	243	161	105	67	129	91	62	40
	9″ 67 PSF	0.0358	12-11	13-10	14-4	400	400	400	390	329	281	241	208	180	137	105	67	102	81	63	40
		0.0474	15-2	15-10	G	400	400	400	400	400	342	295	256	223	171	118	76	130	102	71	47
		0.0600	16-0	17-9	G	400	400	400	400	400	400	352	306	268	195	130	85	157	113	79	53

No Shoring Shoring Required in Shaded Areas

COMPOSITE SLAB DESIGN NOTES:

1 Design is based on ANSI/SDI Standard for Composite Steel Floor Decks.
2. Simple span conditions for composite design assume no continuity of negative moments. Slab cracking at supports must be considered by the EOR for serviceability design.
3. Continuous span conditions are based on continuity over interior supports which requires appropriate negative moment reinforcing steel over supports.
4. Deflection limit of the composite slab is L/360 under total load.
5. Loads appearing in shaded areas require shoring. Do not exceed unshored spans shown above.
6. Composite slab spans are center-to-center of supports.
7. All loads are assumed to be statically applied. For dynamic Loads Consult EPIC Metals.
8. Slab weight has already been subtracted from the Uniform Service Load Capacity (LRFD) values shown above.

DECK DESIGN AS A WET CONCRETE FORM:

A. Maximum clear spans without shoring are based on the Steel Deck Institute recommendations for sequential loading and using LRFD methods. The table is based on 0.6Fy steel yield stress and deflection limits of L/180 or 0.75″, whichever is less.
B. Construction loads are 20 psf uniform loading or 150 lb concentrated load at midspan per SDI recommendations. If heavier construction loads or less form deflection is required, reduce spans or use temporary shoring.
C. Runways and planking is recommended during wet concrete placement.
D. Minimum bearing length is 1.5″ at end supports and 4″ at interior supports.
E. Listed slab weights include weight of 16 gage deck.
F. The slump of the concrete will influence the amount of water/cement leakage. Cleanup of the exposed ceiling surface will be required for leakage.
G. 48 foot max sheet length (recommended).
H. For temporary shoring of architecturally exposed ceilings: It is recommended to use extra wide shoring support bearing surface and/or to reduce the maximum clear span shoring distances shown in the above table so that permanent indentations to the deck/ceiling (under the shoring supports) do not occur.
I. The determination of the time for removal of supporting shores may be controlled by the presence of construction loads or deflection limitations. The removal of shores may have to occur after the concrete has reached its full compressive strength f′c, modules Ec and stiffness, particularly in those instances where the construction loads may be as high as the specified live load. If shoring is removed too early, more significant deflection may occur and may even result in permanent damage. The strength and stiffness of the concrete during the various stages of construction should be substantiated by job-constructed and job-cured test specimens (cylinders). See ACI 318-99 (Chapter 6).

Toris 4C Composite Floor Deck Systems

	Slab Depth and Weight	Design Thickness (in.)	Maximum Clear Span Without Shoring (ft.-in.)			Uniform Service Load Capacity (LRFD), psf														
						Simple Span Condition (See Note 2)											Continuous Span Condition (Negative Moment Reinforcement REQUIRED. See Note 3)			
			Single Span	Double Span	Triple Span	10′0″	11′0″	12′0″	13′0″	14′0″	15′0″	16′0″	17′0″	18′0″	20′0″	22′0″	24′0″	26′0″	28′0″	30′0″	32′0″
3 ksi Regular Weight Concrete (147 pcf)	6″ 67 PSF	0.0358	11-10	12-7	13-0	362	324	293	267	216	163	123	92	67	–	–	–	–	–	–	–
		0.0474	15-0	15-5	15-11	385	346	313	285	246	187	143	108	81	41	–	–	–	–	–	–
		0.0600	15-11	17-9	G	355	318	287	261	239	211	162	124	94	50	–	–	–	–	–	–
	6.5″ 74 PSF	0.0358	11-5	12-2	12-7	383	308	250	205	169	141	117	98	81	49	–	–	–	–	–	–
		0.0474	14-8	14-10	15-4	400	398	361	329	301	243	187	144	110	61	–	–	42	–	–	–
		0.0600	15-7	17-1	G	400	371	335	305	279	257	211	164	126	72	–	–	51	–	–	–
	7″ 80 PSF	0.0358	11-0	11-9	12-2	400	346	281	231	191	159	133	111	93	64	–	–	41	–	–	–
		0.0474	14-4	14-5	14-10	400	400	377	312	261	220	186	158	135	84	44	–	61	–	–	–
		0.0600	15-3	16-7	G	400	400	383	349	320	295	268	210	165	98	54	–	73	43	–	–
	7.5″ 86 PSF	0.0358	10-8	11-5	11-9	400	385	314	258	214	178	149	125	105	73	49	–	48	–	–	–
		0.0474	13-10	13-11	14-5	400	400	400	349	292	246	209	177	151	111	64	–	78	51	–	–
		0.0600	14-11	16-1	G	400	400	431	393	361	332	307	265	209	129	76	–	99	62	–	–
	8″ 92 PSF	0.0358	10-4	11-0	11-5	400	400	348	286	238	198	166	169	117	82	56	–	54	–	–	–
		0.0474	13-5	13-6	14-0	400	400	400	386	324	273	232	198	169	124	87	46	88	67	40	–
		0.0600	14-8	15-7	G	400	400	400	400	400	351	300	258	223	165	101	57	123	85	52	–
	8.5″ 98 PSF	0.0358	10-0	10-5	11-1	400	400	382	315	262	219	184	154	130	92	63	42	61	43	–	–
		0.0474	13-0	13-2	13-7	400	400	400	400	357	301	256	219	187	138	101	65	99	75	56	–
		0.0600	14-6	15-2	15-8	400	400	400	400	400	387	331	285	246	186	131	78	137	108	72	42
	9″ 104 PSF	0.0358	9-9	9-11	10-10	400	400	400	345	287	240	202	170	143	102	71	47	68	48	–	–
		0.0474	12-8	12-10	13-3	400	400	400	400	391	330	281	240	206	152	112	82	109	84	63	46
		0.0600	14-3	14-9	15-3	400	400	400	400	400	400	364	313	271	205	155	102	152	120	95	60
3 ksi Light Weight Concrete (110 pcf)	6″ 52 PSF	0.0358	13-4	14-0	14-6	373	336	292	219	165	125	94	71	52	–	–	–	–	–	–	–
		0.0474	16-1	17-1	G	397	357	324	252	191	146	111	84	63	–	–	–	–	–	–	–
		0.0600	17-0	19-8	G	366	329	299	273	217	167	128	98	75	40	–	–	–	–	–	–
	6.5″ 56 PSF	0.0358	12-10	13-6	14-0	376	304	249	206	172	145	122	95	71	–	–	–	–	–	–	–
		0.0474	15-9	16-7	G	400	400	374	318	243	188	145	112	85	47	–	–	–	–	–	–
		0.0600	16-7	19-0	G	400	383	348	318	247	212	165	128	99	57	–	–	–	–	–	–
	7″ 61 PSF	0.0358	12-5	13-1	13-7	400	341	279	232	194	163	138	117	95	53	–	–	–	–	–	–
		0.0474	15-5	16-1	G	400	400	368	307	259	220	184	144	112	65	–	–	47	–	–	–
		0.0600	16-3	18-5	G	400	400	397	363	334	266	208	163	128	77	–	–	57	–	–	–
	7.5″ 66 PSF	0.0358	12-0	12-9	13-2	400	380	312	259	216	182	155	132	112	72	–	–	53	–	–	–
		0.0474	15-1	15-7	G	400	400	400	343	289	245	210	180	143	86	49	–	65	–	–	–
		0.0600	16-0	17-11	G	400	400	400	400	376	328	259	205	162	100	59	–	77	48	–	–
	8″ 70 PSF	0.0358	11-8	12-5	12-10	400	400	345	287	240	203	172	147	125	92	54	–	65	43	–	–
		0.0474	14-10	15-2	15-8	400	400	400	380	321	273	233	201	173	111	66	–	85	55	–	–
		0.0600	15-9	17-5	G	400	400	400	400	400	345	296	252	201	128	78	44	100	66	40	–
	8.5″ 75 PSF	0.0358	11-4	12-1	12-6	400	400	380	316	265	224	190	162	139	102	71	–	73	55	–	–
		0.0474	14-8	14-9	15-3	400	400	400	400	353	301	258	222	192	139	86	50	108	73	45	–
		0.0600	15-6	17-0	G	400	400	400	400	445	380	327	283	246	159	101	61	126	86	56	–
	9″ 79 PSF	0.0358	11-0	11-9	12-2	400	400	400	400	346	290	245	209	178	153	113	83	53	81	62	46
		0.0474	14-4	14-5	14-11	400	400	400	400	387	330	283	244	211	160	109	66	119	93	61	–
		0.0600	15-3	16-7	G	400	400	400	400	400	400	359	311	271	194	126	79	155	109	73	47

No Shoring Shoring Required in Shaded Areas

COMPOSITE SLAB DESIGN NOTES:

1 Design is based on ANSI/SDI Standard for Composite Steel Floor Decks.
2. Simple span conditions for composite design assume no continuity of negative moments. Slab cracking at supports must be considered by the EOR for serviceability design.
3. Continuous span conditions are based on continuity over interior supports which requires appropriate negative moment reinforcing steel over supports.
4. Deflection limit of the composite slab is L/360 under total load.
5. Loads appearing in shaded areas require shoring. Do not exceed unshored spans shown above.
6. Composite slab spans are center-to-center of supports.
7. All loads are assumed to be statically applied. For dynamic Loads Consult EPIC Metals.
8. Slab weight has already been subtracted from the Uniform Service Load Capacity (LRFD) values shown above.

DECK DESIGN AS A WET CONCRETE FORM:

A. Maximum clear spans without shoring are based on the Steel Deck Institute recommendations for sequential loading and using LRFD methods. The table is based on 0.6Fy steel yield stress and deflection limits of L/180 or 0.75″, whichever is less.
B. Construction loads are 20 psf uniform loading or 150 lb concentrated load at midspan per SDI recommendations. If heavier construction loads or less form deflection is required, reduce spans or use temporary shoring.
C. Runways and planking is recommended during wet concrete placement.
D. Minimum bearing length is 1.5″ at end supports and 4″ at interior supports.
E. Listed slab weights include weight of 16 gage deck.
F. The slump of the concrete will influence the amount of water/cement leakage. Cleanup of the exposed ceiling surface will be required for leakage.
G. 48 foot max sheet length (recommended).
H. For temporary shoring of architecturally exposed ceilings: It is recommended to use extra wide shoring support bearing surface and/or to reduce the maximum clear span shoring distances shown in the above table so that permanent indentations to the deck/ceiling (under the shoring supports) do not occur.
I. The determination of the time for removal of supporting shores may be controlled by the presence of construction loads or deflection limitations. The removal of shores may have to occur after the concrete has reached its full compressive strength f′c, modules Ec and stiffness, particularly in those instances where the construction loads may be as high as the specified live load. If shoring is removed too early, more significant deflection may occur and may even result in permanent damage. The strength and stiffness of the concrete during the various stages of construction should be substantiated by job-constructed and job-cured test specimens (cylinders). See ACI 318-99 (Chapter 6).

Toris® CA & C Composite
Floor Deck Ceiling System Technical Tables

Toris CA Composite Floor Deck Systems

	Slab Depth and Weight	Design Thickness (in.)	Maximum Clear Span Without Shoring (ft.-in.)			Uniform Service Load Capacity (LRFD), psf														
						Simple Span Condition (See Note 2)										Continuous Span Condition (Negative Moment Reinforcement REQUIRED. See Note 3)				
			Single Span	Double Span	Triple Span	6′0″	8′0″	10′0″	12′0″	14′0″	15′0″	16′0″	17′0″	18′0″	19′0″	20′0″	16′0″	18′0″	20′0″	22′0″	24′0″
3 ksi Regular Weight Concrete (147 pcf)	4.5″ 40 PSF	0.0358	12-8	12-8	12-8	400	341	237	175	96	71	52	–	–	–	–	131	81	49	–	–
		0.0474	13-4	13-4	13-8	400	400	336	189	105	78	57	41	–	–	–	142	88	54	–	–
		0.0600	13-11	14-10	15-4	400	400	337	201	112	84	62	45	–	–	–	152	95	58	–	–
	5″ 46 PSF	0.0358	12-2	12-2	12-2	400	391	272	199	135	101	76	56	40	–	–	147	109	72	43	–
		0.0474	12-10	12-10	13-0	400	400	386	259	146	111	83	62	45	–	–	197	125	79	48	–
		0.0600	13-5	14-1	14-7	400	400	387	276	157	119	90	67	49	–	–	205	134	85	52	–
	5.5″ 52 PSF	0.0358	11-10	11-10	11-10	400	400	307	230	162	136	106	80	59	43	–	173	129	97	63	–
		0.0474	12-5	12-5	12-5	400	400	400	288	198	151	115	88	66	48	–	214	161	110	70	42
		0.0600	13-0	13-5	13-11	400	400	400	337	211	162	124	95	72	53	–	226	181	118	76	46
	6″ 58 PSF	0.0358	11-4	11-4	11-4	400	400	342	257	188	158	134	109	83	62	45	200	149	113	86	54
		0.0474	12-1	12-1	12-1	400	400	400	332	233	197	155	119	91	69	51	247	186	143	96	61
		0.0600	12-8	12-11	13-4	400	400	400	375	277	214	166	129	99	76	57	246	214	149	104	67
	6.5″ 64 PSF	0.0358	10-10	10-10	10-10	400	400	378	283	215	181	153	130	111	85	64	229	171	129	99	75
		0.0474	11-9	11-9	11-9	400	400	400	378	265	225	192	157	122	94	72	268	213	163	127	84
		0.0600	12-4	12-5	12-10	400	400	400	400	315	269	216	170	133	103	79	267	232	197	139	92
	7″ 71 PSF	0.0358	10-5	10-5	10-5	400	400	400	309	242	204	173	148	126	108	87	257	193	146	112	86
		0.0474	11-6	11-6	11-6	400	400	400	400	299	253	216	186	159	124	97	288	240	184	143	112
		0.0600	12-1	12-1	12-4	400	400	400	400	355	303	260	217	172	136	106	288	250	219	174	122
	7.5″ 77 PSF	0.0358	10-1	10-1	10-1	400	400	400	336	265	228	193	165	141	121	104	272	215	163	125	96
		0.0474	11-3	11-3	11-3	400	400	400	400	333	282	241	207	179	155	126	308	267	206	160	125
		0.0600	11-10	11-10	11-11	400	400	400	400	396	337	289	250	217	173	138	308	267	235	195	155
3 ksi Light Weight Concrete (110 pcf)	4.5″ 31 PSF	0.0358	13-6	13-6	13-6	400	341	237	127	69	50	–	–	–	–	–	94	58	–	–	–
		0.0474	14-2	14-5	14-10	400	400	261	138	76	56	41	–	–	–	–	103	64	–	–	–
		0.0600	14-9	16-2	G	400	400	280	149	82	61	44	–	–	–	–	112	69	42	–	–
	5″ 36 PSF	0.0358	13-0	13-0	13-0	400	391	272	175	97	73	54	–	–	–	–	132	82	51	–	–
		0.0474	13-8	13-9	13-10	400	400	354	190	107	80	60	44	–	–	–	144	91	56	–	–
		0.0600	14-3	15-5	15-11	400	400	378	204	115	87	65	48	–	–	–	154	98	61	–	–
	5.5″ 41 PSF	0.0358	12-7	12-7	12-7	400	400	307	226	133	101	76	57	42	–	–	168	113	72	45	–
		0.0474	13-3	13-3	13-7	400	400	400	254	145	111	84	64	47	–	–	194	124	80	50	–
		0.0600	13-10	14-9	15-3	400	400	400	271	273	119	91	69	52	–	–	207	134	86	55	–
	6″ 45 PSF	0.0358	12-3	12-3	12-3	400	400	342	257	176	135	103	79	60	44	–	195	148	98	63	–
		0.0474	12-11	12-11	13-1	400	400	400	318	192	148	114	88	67	50	–	239	165	108	70	44
		0.0600	13-6	14-2	14-8	400	400	400	353	206	159	123	95	73	55	41	256	177	117	77	49
	6.5″ 50 PSF	0.0358	11-11	11-11	11-11	400	400	378	283	211	175	136	105	81	62	46	224	169	130	85	55
		0.0474	12-7	12-7	12-7	400	400	400	363	247	192	149	116	90	69	53	273	208	142	95	62
		0.0600	13-2	13-8	14-2	400	400	400	400	265	206	161	126	98	76	58	278	229	154	103	68
	7″ 54 PSF	0.0358	11-8	11-8	11-8	400	400	400	309	238	202	173	136	107	83	64	234	192	148	112	74
		0.0474	12-4	12-4	12-4	400	400	400	400	291	243	191	150	118	92	72	281	235	182	124	83
		0.0600	12-10	13-3	13-8	400	400	400	400	334	261	206	163	128	101	79	300	262	197	134	91
	7.5″ 59 PSF	0.0358	11-4	11-4	11-4	400	400	400	336	265	227	194	167	136	107	84	240	209	165	129	97
		0.0474	12-1	12-1	12-1	400	400	400	400	325	277	238	189	150	119	94	287	250	205	157	108
		0.0600	12-7	12-10	13-3	400	400	400	400	383	325	258	205	163	130	103	321	281	243	170	118

No Shoring Shoring Required in Shaded Areas

COMPOSITE SLAB DESIGN NOTES:

1 Design is based on ANSI/SDI Standard for Composite Steel Floor Decks.
2. Simple span conditions for composite design assume no continuity of negative moments. Slab cracking at supports must be considered by the EOR for serviceability design.
3. Continuous span conditions are based on continuity over interior supports which requires appropriate negative moment reinforcing steel over supports.
4. Deflection limit of the composite slab is L/360 under total load.
5. Loads appearing in shaded areas require shoring. Do not exceed unshored spans shown above.
6. Composite slab spans are center-to-center of supports.
7. All loads are assumed to be statically applied. For dynamic Loads Consult EPIC Metals.
8. Slab weight has already been subtracted from the Uniform Service Load Capacity (LRFD) values shown above.

DECK DESIGN AS A WET CONCRETE FORM:

A. Maximum clear spans without shoring are based on the Steel Deck Institute recommendations for sequential loading and using LRFD methods. The table is based on 0.6Fy steel yield stress and deflection limits of L/180 or 0.75″, whichever is less.
B. Construction loads are 20 psf uniform loading or 150 lb concentrated load at midspan per SDI recommendations. If heavier construction loads or less form deflection is required, reduce spans or use temporary shoring.
C. Runways and planking is recommended during wet concrete placement.
D. Minimum bearing length is 1.5″ at end supports and 3″ at interior supports.
E. Listed slab weights include weight of 16 gage deck.
F. The slump of the concrete will influence the amount of water/cement leakage. Cleanup of the exposed ceiling surface will be required for leakage.
G. 48 foot max sheet length (recommended).
H. For temporary shoring of architecturally exposed ceilings: It is recommended to use extra wide shoring support bearing surface and/or to reduce the maximum clear span shoring distances shown in the above table so that permanent indentations to the deck/ceiling (under the shoring supports) do not occur.
I. The determination of the time for removal of supporting shores may be controlled by the presence of construction loads or deflection limitations. The removal of shores may have to occur after the concrete has reached its full compressive strength f′c, modules Ec and stiffness, particularly in those instances where the construction loads may be as high as the specified live load. If shoring is removed too early, more significant deflection may occur and may even result in permanent damage. The strength and stiffness of the concrete during the various stages of construction should be substantiated by job-constructed and job-cured test specimens (cylinders). See ACI 318-99 (Chapter 6).

Toris C Composite Floor Deck Systems

	Slab Depth and Weight	Design Thickness (in.)	Maximum Clear Span Without Shoring (ft.-in.)			Uniform Service Load Capacity (LRFD), psf														
						Simple Span Condition (See Note 2)										Continuous Span Condition (Negative Moment Reinforcement REQUIRED. See Note 3)				
			Single Span	Double Span	Triple Span	6′0″	8′0″	10′0″	12′0″	14′0″	15′0″	16′0″	17′0″	18′0″	19′0″	20′0″	16′0″	18′0″	20′0″	22′0″	24′0″
3 ksi Regular Weight Concrete (147 pcf)	4.5″ 55 PSF	0.0358	9-10	10-0	10-4	400	360	238	153	79	54	–	–	–	–	–	109	64	–	–	–
		0.0474	11-7	11-7	12-0	400	400	347	178	92	65	44	–	–	–	–	131	76	41	–	–
		0.0600	12-5	13-2	13-7	400	400	351	200	106	76	53	–	–	–	–	148	87	49	–	–
	5″ 61 PSF	0.0358	9-5	9-7	9-11	400	400	280	181	117	84	59	–	–	–	–	130	93	55	–	–
		0.0474	11-1	11-2	11-6	400	400	369	243	135	99	71	49	–	–	–	177	113	66	–	–
		0.0600	12-1	12-8	13-1	400	400	400	279	153	113	82	58	40	–	–	205	129	77	43	–
	5.5″ 67 PSF	0.0358	9-0	9-3	9-6	400	400	321	209	141	116	89	63	43	–	–	151	109	79	46	–
		0.0474	10-7	10-9	11-1	400	400	400	281	188	140	104	76	53	–	–	206	153	98	57	–
		0.0600	11-9	12-2	12-7	400	400	400	347	211	159	119	88	64	44	–	226	179	112	68	–
	6″ 73 PSF	0.0358	8-8	8-11	9-2	400	400	356	239	162	134	111	92	66	46	–	173	125	91	66	–
		0.0474	10-3	10-4	10-8	400	400	400	321	222	186	144	108	80	57	–	236	175	132	85	49
		0.0600	11-6	11-9	12-2	400	400	400	386	280	214	164	124	93	68	48	247	213	155	98	59
	6.5″ 79 PSF	0.0358	8-5	8-7	8-11	400	400	391	270	183	152	126	105	88	69	48	196	142	104	76	55
		0.0474	9-10	10-0	10-4	400	400	400	363	251	211	178	147	112	83	60	267	199	150	114	73
		0.0600	11-3	11-4	11-9	400	400	400	400	322	272	216	167	128	97	72	267	231	197	135	86
	7″ 85 PSF	0.0358	8-1	8-4	8-7	400	400	400	301	205	170	142	119	99	82	68	219	160	117	86	62
		0.0474	9-7	9-8	10-0	400	400	400	400	281	236	200	170	145	114	86	288	223	168	128	98
		0.0600	10-11	11-0	11-5	400	400	400	400	360	305	260	217	169	131	100	288	248	217	172	117
	7.5″ 92 PSF	0.0358	7-11	8-1	8-4	400	400	400	333	227	189	158	132	111	92	77	242	177	131	96	70
		0.0474	9-3	9-5	9-9	400	400	400	400	311	262	222	189	161	138	116	308	247	187	143	109
		0.0600	10-7	10-8	11-1	400	400	400	400	399	338	289	248	214	171	133	308	266	233	192	150
3 ksi Light Weight Concrete (110 pcf)	4.5″ 42 PSF	0.0358	10-11	11-1	11-5	400	360	233	120	61	42	–	–	–	–	–	87	49	–	–	–
		0.0474	12-6	12-10	13-3	400	400	269	139	72	51	–	–	–	–	–	102	59	–	–	–
		0.0600	13-3	14-6	15-0	400	400	301	156	83	59	42	–	–	–	–	116	69	–	–	–
	5″ 47 PSF	0.0358	10-6	10-8	11-0	400	400	275	169	90	65	45	–	–	–	–	125	74	42	–	–
		0.0474	12-2	12-4	12-9	400	400	357	193	105	77	55	–	–	–	–	144	88	51	–	–
		0.0600	12-11	14-0	14-6	400	400	400	216	119	88	64	46	–	–	–	162	100	60	–	–
	5.5″ 51 PSF	0.0358	10-1	10-3	10-7	400	400	318	209	125	93	68	48	–	–	–	153	106	64	–	–
		0.0474	11-11	11-11	12-4	400	400	400	260	145	108	80	59	42	–	–	196	123	76	44	–
		0.0600	12-7	13-6	14-0	400	400	400	290	163	123	92	69	50	–	–	220	139	87	53	–
	6″ 56 PSF	0.0358	9-9	9-11	10-3	400	400	356	239	165	127	95	70	51	–	–	176	130	90	54	–
		0.0474	11-6	11-6	11-11	400	400	400	316	193	147	111	84	62	44	–	235	165	105	65	–
		0.0600	12-4	13-1	13-6	400	400	400	377	217	166	127	96	72	53	–	259	186	120	76	46
	6.5″ 61 PSF	0.0358	9-5	9-7	9-11	400	400	391	270	187	157	127	96	72	52	–	199	148	112	76	45
		0.0474	11-1	11-2	11-7	400	400	400	357	250	192	148	113	86	64	47	266	201	140	91	56
		0.0600	12-1	12-8	13-1	400	400	400	400	279	216	167	129	99	75	56	281	241	159	104	67
	7″ 65 PSF	0.0358	9-1	9-4	9-8	400	400	400	302	209	176	149	127	97	73	54	223	166	125	95	64
		0.0474	10-9	10-10	11-3	400	400	400	399	280	238	190	148	114	88	66	297	225	173	120	78
		0.0600	11-10	12-4	12-9	400	400	400	400	352	274	214	168	131	102	78	303	264	204	137	91
	7.5″ 70 PSF	0.0358	8-10	9-1	9-5	400	400	400	334	232	195	165	141	120	97	74	247	184	140	106	81
		0.0474	10-5	10-7	10-11	400	400	400	400	311	264	226	188	147	115	89	324	250	192	150	103
		0.0600	11-8	12-0	12-5	400	400	400	400	393	335	268	212	168	132	103	324	283	248	175	119

No Shoring Shoring Required in Shaded Areas

COMPOSITE SLAB DESIGN NOTES

1 Design is based on ANSI/SDI Standard for Composite Steel Floor Decks.
2. Simple span conditions for composite design assume no continuity of negative moments. Slab cracking at supports must be considered by the EOR for serviceability design.
3. Continuous span conditions are based on continuity over interior supports which requires appropriate negative moment reinforcing steel over supports.
4. Deflection limit of the composite slab is L/360 under total load.
5. Loads appearing in shaded areas require shoring. Do not exceed unshored spans shown above.
6. Composite slab spans are center-to-center of supports.
7. All loads are assumed to be statically applied. For dynamic Loads Consult EPIC Metals.
8. Slab weight has already been subtracted from the Uniform Service Load Capacity (LRFD) values shown above.

DECK DESIGN AS A WET CONCRETE FORM:

A. Maximum clear spans without shoring are based on the Steel Deck Institute recommendations for sequential loading and using LRFD methods. The table is based on 0.6Fy steel yield stress and deflection limits of L/180 or 0.75″, whichever is less.
B. Construction loads are 20 psf uniform loading or 150 lb concentrated load at midspan per SDI recommendations. If heavier construction loads or less form deflection is required, reduce spans or use temporary shoring.
C. Runways and planking is recommended during wet concrete placement.
D. Minimum bearing length is 1.5″ at end supports and 3″ at interior supports.
E. Listed slab weights include weight of 16 gage deck.
F. The slump of the concrete will influence the amount of water/cement leakage. Cleanup of the exposed ceiling surface will be required for leakage.
G. For temporary shoring of architecturally exposed ceilings: It is recommended to use extra wide shoring support bearing surface and/or to reduce the maximum clear span shoring distances shown in the above table so that permanent indentations to the deck/ceiling (under the shoring supports) do not occur.
H. The determination of the time for removal of supporting shores may be controlled by the presence of construction loads or deflection limitations. The removal of shores may have to occur after the concrete has reached its full compressive strength f′c, modules Ec and stiffness, particularly in those instances where the construction loads may be as high as the specified live load. If shoring is removed too early, more significant deflection may occur and may even result in permanent damage. The strength and stiffness of the concrete during the various stages of construction should be substantiated by job-constructed and job-cured test specimens (cylinders). See ACI 318-99 (Chapter 6).

Toris® C(A) & 4C(A) Composite Floor Deck Ceiling Systems
Specifications

Notes: Omit underlined areas for non-acoustic applications.

PART 1: GENERAL

1.1 SUMMARY

The requirements of this specification section include all materials, equipment and labor necessary to furnish and install Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck System.

A. Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck shall serve as permanent metal form and total positive reinforcement for concrete floor slabs as indicated on the contract drawings.

B. Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck shall provide an exposed bottom surface that is substantially flat. The narrow rib openings of the Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels shall provide the appearance of a linear ceiling. Sidelap fasteners shall be concealed within the depth of the dovetail-shaped ribs.

C. Toris 4CA Acoustical Floor Deck: Toris 4C Ankore hanging devices (supplied with ankore locks) that are specially configured to fit into the dovetail-shaped ribs of the Toris 4CA Acoustical Roof Deck panels shall be available. These hanging devices shall be utilized wherever any related work is suspended from Toris 4CA Acoustical Roof Deck. Toris 4C Ankore hanging devices shall be furnished by the installer of the related work unless otherwise indicated.

   Toris CA Acoustical Floor Deck: Toris C Wedge Bolt hanging devices (supplied with Wedge Locks) that are specially configured to fit into the dovetail-shaped ribs of the Toris CA Acoustical Composite Floor Deck panels shall be available. These hanging devices shall be utilized whenever any related work is suspended from an Toris CA Acoustical Composite Floor Deck slab. Toris CA Acoustical Wedge Bolt hanging devices shall be furnished by the installer of the related work unless otherwise indicated.

1.2 RELATED WORK

The following related work is not part of this specification section:

A. Cast-In-Place Concrete: Concrete fill, welded wire fabric, reinforcing steel, and temporary shoring.

B. Structural Steel: Supplementary framing and shear studs.

C. Fireproofing: Preparation for and application of fireproofing to supporting steel members.

D. Ceilings: Attachments to Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck.

E. Painting: Preparation for and application of field painting.

F. Mechanical: Attachments to Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck.

G. Electrical: Attachments to Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck.

1.3 SUBMITTALS

Submit the following items in accordance with the conditions of the contract and appropriate specification sections:

A. Product data for Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck and Toris 4C or Toris C hanging devices including material types, dimensions, finishes, load capacities, and U.L. fire resistance ratings.

B. Erection drawings for Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck and related accessory items showing profiles and material thicknesses, layout, anchorage, openings as dimensioned on the structural drawings, and shoring requirements.

1.4 REFERENCE STANDARDS

A. Section Properties: Shall be computed in accordance with the *American Iron and Steel Institute (AISI) Specification for the Design of Cold-Formed Steel Structural Members.*

B. Welding: Shall comply with applicable provisions of *American Welding Society (AWS) D1.3 Structural Welding Code-Sheet Steel.*

C. Fire Resistance Classification: Shall be acceptable for use in *Underwriters Laboratories Fire Resistance Design No. D980* (Toris 4CA Acoustical) or *Underwriters Laboratories Fire Resistance Design No. D971* (Toris CA Acoustical). All Toris 4CA Acoustical and Toris CA Acoustical Composite Floor Deck panels used in rated fire resistance designs shall bear the appropriate U.L. classification marking.

D. Cast-In-Place Concrete: Shall be in accordance with applicable sections of chapters 3, 4, and 5 of *American Concrete Institute (ACI) 318 Building Code Requirement for Reinforced Concrete*. Minimum compressive strength shall be 3000 psi. Admixtures containing chloride salts shall not be used. Additionally, all concrete constituents including but not limited to aggregates, sand, and water shall be closely monitored to assure that the chlorides do not exceed the limits proscribed in ACI 318.

E. Noise Reduction Coefficient: Shall be verified by the results of sound absorption tests conducted in accordance with ASTM C423 and E795. A minimum NRC of 0.85 shall be provided (100% acoustic). Copies of the sound absorption test shall be submitted upon request.

PART 2: PRODUCTS

2.1 MANUFACTURER

A. In accordance with the requirements of this specification section, provide products manufactured by EPIC Metals, Rankin, PA.

B. Substitutions: (Under Provisions of Division 01) Not permitted.

2.2 MATERIALS

A. Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck ceiling panels shall be cold-formed from steel sheets conforming to ASTM A653, Grade 40 and Grade 33 or equal, having a minimum yield strength of 40,000 psi and 33,000 psi.

B. Before forming, the steel sheets shall have received a hot-dip protective coating of zinc conforming to ASTM A924, Class G60 or G90.

   Primer Paint Option—Prior to forming, galvanized steel shall be chemically cleaned and pre-treated followed by (on the ceiling surface) an oven-cured epoxy primer and a second coat of oven-cured polyester primer paint applied in the manufacturer's standard color of off-white. Compatibility of field applied finish paint with factory applied primer paint shall be the responsibility of the painting contractor.

   Finish Paint Option—Prior to forming, galvanized steel shall be chemically cleaned and pre-treated followed by (on the ceiling surface) an oven-cured epoxy primer and a second coat of oven-cured polyester paint. After factory painting is complete, a plastic removable film shall be applied to the bottom surface of the panels to protect paint finish during manufacturing, shipping, and handling. The protective film is to be removed by the erector prior to installation.

   Paint Option—For specialized painting systems that are recommended for Natatoriums and other high humidity applications, contact EPIC Metals.

C. The minimum uncoated thickness of material supplied shall be within 5% of the design thickness.

2.3 FABRICATION

A. Toris 4CA Acoustical Composite Floor Deck panels shall have continuous dovetail-shaped ribs spaced 8˝ on center. The profile shall be 4˝ deep.

   Toris CA Acoustical Composite Floor Deck panels shall have continuous dovetail-shaped ribs spaced 6˝ on center. The profile shall be 2.5˝ deep.

B. The design thickness and minimum section properties shall be indicated on the contract drawings.

C. Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels shall have full depth positive registering sidelaps that can be fastened together by welds or screws.

D. Whenever possible, Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels shall be fabricated to provide a minimum three span condition.

E. Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels shall be fabricated from sections formed with dovetail-shaped ribs. The sections shall be perforated in the areas between the dovetail-shaped ribs as indicated on the contract drawings. All perforated areas shall be covered with "cap" sections formed from galvanized steel sheets and factory attached to the underlying perforated sections. The combination of these sections shall form units that contain cavities suitable for sound absorbing elements.

2.4 ACCESSORIES

A. Toris 4C Ankore hanging devices (which include Ankore locks) or Toris C Wedge Bolt hanging devices (which include Wedge Locks) shall be installable and relocatable anywhere along the length of the interior ribs of the Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels.

B. Column closures, end closures, and side closures shall be provided as required by the manufacturer's standards.

C. Manufacturer's standard flexible or metal type rib profile closures shall be provided as indicated on the contract drawings.

D. Slab edge forms of 10 gage or less material thickness shall be provided as indicated on the contract drawings.

E. Reinforcement for small openings that are shown on the structural drawings and do not require supplementary framing shall be provided based on the manufacturer's recommendations.

F. Acoustic elements shall be factory installed above the perforated holes in the bottom flat area between the dovetail-shaped ribs. To facilitate field painting of the perforated surfaces, the sound absorbing elements shall be supported above the surface on corrosion resistant spacers. Sound absorbing elements and spacers shall be factory installed.

PART 3: EXECUTION

3.1 GENERAL

Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels and accessories shall be installed in strict accordance with the manufacturer's approved erection drawings, installation instructions, the *Steel Deck Institute (SDI) Manual for Construction with Steel Deck*, and all applicable safety regulations.

3.2 BEFORE INSTALLATION

A. The need for temporary shoring shall be investigated. Shoring tables published by the manufacturer shall be consulted to determine if shoring will be required. Unshored spans shall be reduced if greater construction loads are anticipated or if less deflection of the deck as a form is allowable.

B. The supporting frame and other work relating to Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck shall be examined to determine if this work has been properly completed. Temporary shoring, if required, shall be in place prior to installation of Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels.

C. All components of the Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck System shall be protected from significant damage during shipment and handling. If storage at the jobsite is required, bundles or packages of these materials shall be elevated above the ground, sloped to provide drainage, and protected from the elements with a ventilated waterproof covering.

3.3 INSTALLATION

A. Bundles or packages of Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck System components shall be located on supporting members in such a manner that overloading of any of the individual members does not occur. Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels shall not be placed on concrete supporting members until after the members have adequately cured or properly designed formwork is in place.

B. Before being permanently fastened, Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels shall be placed with ends accurately aligned and adequately bearing on supporting members or formwork. Proper coverage of the Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels shall be maintained. Care must be taken by the erector to maintain uniform spacing of the bottom rib opening (equal to the openings in the profiled sheet) at the sidelaps.

C. Field cutting of Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels shall be performed in a neat and precise manner. Only those openings shown on the structural drawings shall be cut. Other openings shall be approved by the structural engineer and cut by those requiring the opening.

D. Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels shall be fastened to all supporting members with ¾˝ diameter puddle welds at a nominal spacing of 8˝ on center or less as indicated on the manufacturer's erection drawings.

E. Sidelaps of Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels shall be fastened together by welds or screws at a spacing of 36˝ on center or less as indicated on the manufacturer's erection drawings. Sides of Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels that are located at perimeter edges of the building shall be fastened to supporting members at a spacing of 36˝ on center or less as indicated on the manufacturer's erection drawings.

F. Column closures, end closures, side closures, rib closures, slab edge forms, and supplied reinforcement for small openings shall be fastened as indicated on the manufacturer's erection drawings.

G. Shear studs may be substituted for puddle welds to permanently fasten Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels to steel supporting members. The shear stud manufacturer shall provide instructions for welding studs through Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck.

H. Mechanical fasteners may be substituted for puddle welds to permanently fasten Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck panels to supporting members. The mechanical fastener manufacturer shall provide documentation as to the equivalent load capacity and proper installation procedure for each type of fastener being used.

3.4 WORK BY OTHER TRADES

A. The slump of the concrete will determine the amount of concrete leakage and cleanup that will be required to the ceiling surface. On all projects some cleanup of the ceiling surface will be required.

3.5 AFTER INSTALLATION

A. Construction loads that could damage the Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck such as heavy concentrated loads and impact loads shall be avoided. Planking shall be used in all high traffic areas.

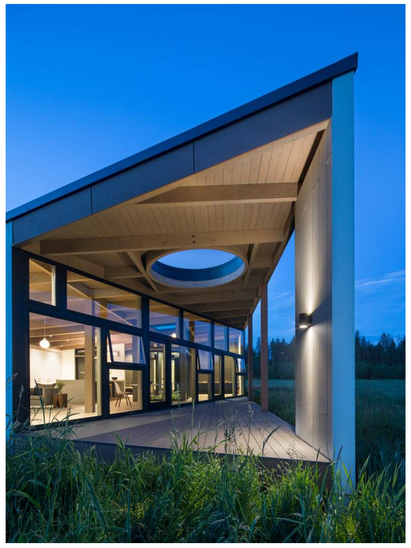
B. Prior to placement of concrete, the top surface of Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck shall be cleaned of all debris, grease, oil, and other foreign substances. Cleaning the bottom surface of the Toris 4CA Acoustical or Toris CA Acoustical Composite Floor Deck for field painting shall be the responsibility of the painting contractor.

C. Galvanized coatings that are significantly damaged shall be repaired. An appropriate galvanized repair paint shall be used, and the paint manufacturer's application instructions shall be followed.

D. The determination of the time for removal of supporting shores may be controlled by the presence of construction loads or deflection limitations. The removal of shores may have to occur after the concrete has reached its full compressive strength f'c, modules Ec and stiffness, particularly in those instances where the construction loads may be as high as the specified live load. If shoring is removed too early, more significant deflection may occur and may even result in permanent damage. The strength and stiffness of the concrete during the various stages of construction should be substantiated by job-constructed and job-cured test specimens (cylinders). See ACI 318-99 (Chapter 6).

3.6 PROTECTION

When the Toris 4C or Toris C Composite Floor Slab is used in an exterior application (such as a balcony) the Toris 4C or Toris C steel deck shall be adequately protected by field priming and painting with a rust inhibitive paint or by stuccoing the deck. The surface of the concrete shall also be adequately sealed. The composite deck provides the positive reinforcement for the slab; therefore, the finish on the steel deck must be specified by the architect and engineer for the environment it will be used in to protect the steel deck for the life of the structure.



BROOK ARCHITECTURE

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PRECEDENT IMAGERY

PBC KELLS PARK FIELD HOUSE 2417
714, 724, 726 N KEDZIE AVE
Chicago, IL 60612









Design Milestone Review Comments Register

Public Building Commission · Richard J. Daley Center · 50 West Washington, Room 200 · Chicago, Illinois 60602 · Tel: (312) 744-3090 · Fax: (312) 744-8005

Project Name:	FY24 PROJECT		KELLS PARK FIELDHOUSE
Project Number:	11340	Review Team	User Agency (CPS): Heather Gleason (HG), Jennifer Bulin-Larson (JBL), Michael Lange (ML)
Design Milestone:	50% Schematic Design		PBC: Kerl LaJeune (KL), Ray C Giderof (RCG), Jose Barajas (JB), Deeta E Bernstein (DEB), Paulo Hernandez (PH), Randy Williams (RW), Miriam Gutierrez (MG), Justin Cafferty (JC), Mary Ann Van Hook (MAVH), Mary Cavanaugh (MC)
Enter Design Phase Issuance Here			User Agency Consultants:
Date Documents Issued to Review Team:			
2/4/2025			
Date Comments Issued to AOR:			
----------	REV0 (Outstanding per Prior Phase - Ocre)		
----------	REV1 (Yellow)		
----------	REV2 (Blue)		
Date Comments returned to PBC:			
---------	FINAL Submittal for Milestone Meeting		PBC Consultants (Environmental Manager): Ryan LaDieu (RLD)
---------	REV1 for Reconciliation and Record		PBC Consultants (DA Technical Reviewers): TBD
			PBC Consultants (Environmental & Others): AECOM Technical Services

Design Team	DESIGN ARCHITECT (DA) TEAM
	Design Architect: Brook Architecture (BA)
	Structural Engineer: K2N Crest
	Landscape/Civil Architect: Terra Engineering
	Mech/Elec. Engineer: Bailey Edward (BE)
	Environmental: SMNGA A ltd.
	Cost Estimator: RLB
	ARCHITECT OF RECORD (AOR) TEAM
	Architect of Record: TBD
	Design Lead: TBD
	LEED Consultant: TBD
	Civil Engineer: TBD
	Landscape Architect: TBD
	Structural Engineer: TBD
	Mech/Elec. Engineer: TBD
	Commissioning Agent: TBD

RESPONSE TO ACTION REQUIRED
A. AGREE FULLY, WILL COMPLY
B. AGREE PARTIALLY, EXCEPT AS NOTED
C. DISAGREE FULLY, REASONS NOTED
D. COMMENT HAS BEEN SUPERCEDED BY DESIGN DEVELOPMENTS
E. OTHER, PROVIDE EXPLANATION

Milestone Register Statement: The purpose of the Milestone Register Matrix ("Matrix") is to provide guidance, confirm Project requirements for compliance with User Agency standards, including specifications, guidelines, etc., for use by the Design Team. The intent of the exercise is for the Design Team to utilize the Matrix to support development of design documents throughout the project from planning, design to construction documents phases. The Matrix is not intended to direct the Design Team's means and methods for design and engineering elements, including detailing and overall standard of care. The Design Team is solely responsible and will be held accountable for the standard of care. Items designated as "Open" or "Closed" are either part of the documents or will be incorporated and developed as part of subsequent design milestones. Determination of designated (A through E) response actions required in the Matrix are intended to provide current status for tracking purposes but is not intended as a precursor to ongoing development of future design milestones. The team acknowledges that the Matrix provides value to the project and is beneficial in the continued QA/QC.

ITEM #	DISCIPLINE	DWG # / SPEC. SECTION #	BY	COMMENTS	BY	RESPONSES	ACTION REQUIRED (A/B/C/D/E)	CURRENT STATUS (Open/Closed)	
	GENERAL								
1	Sustainability	Project Desription	DEB	With TIF funding, expect project to need to meet current Chicago Sustainable Development Policy Matrix requirements, in addition to min LEED Silver. Design team should develop an approach that meets both sets of requirements in the most efficient way possible. Note this may mean envelope enhancements and LEED Gold.	SMNG	Yes, this was identified and discussed at a previous milestone, we are requesting a follow-up sustainability meeting to help establish the preferred path to meeting the COC Sustainability Policy with or without LEED Gold, we acknowledge the minimum LEED Silver requirement for PBC projects.	A	Closed	
2	Envelop	Description	JBL	"The fenestration…will allow grat visibility to the fieldhouse, playground and existing park."	BA	Spelling will be corrected.	A	Closed	
3	Land Acquisition	Zoning	JBL	The Pak District has NOT assumed ownership as of yet.	SMNG	Noted, we were informed last week CPD will not take over ownership until after SRP/NFR work is completed. Will work with PBC prior to transfer to understand the permit pathway; typically land ownership is required for DOB permits, a pathway utilizing MOU may be required and will need to be managed by PBC and selected DB after tranfser. The DA is taking the project to SD only.	A	Closed	
4	Materials	Building interior	JBL	Needs to be further reviewed by CPD	BA	Noted	A	Closed	
5	Glazing	2/7 updated floor plans test fits	NS	Further review of the east wall (glazing) of the gymnasium is needed. This is shown in the elevation as all glass and while a strong design gesture, it is misaligned with the actual use within the gym (we usually have padding around the walls of gym due to the sports and activities occurring within the space).	BA	The east wall glazing is Kalwall, modeled after what has been done on previous CPD projects. The over-run of the court has also been increased to accommodate the consideration of laminated / insulated glass on the east façade, will review with CPD. Design inspiration is Keating Sports Center	E	Open	
6	Envelope	2/7 updated floor plans test fits	NS	Precedent imagery for the most part looks nice, strong lines with neutral colors.	BA	Noted	A	Closed	
7	Zoning Code/Building Analysis	Site Plan	MAVH	Confirm Building Setbacks with Zoning Analysis-Relative to Alleys and Kedzie Avenue/Street and Sidewalk	BA	Setbacks have been reviewed and discussed extensively at design meetings, after site consolidation as POS setback relief will be requested on two yards to within 50% of setback requirement.	A	Closed	
8	50% Code Analysis	Site Plan	MAVH	Confirm /Update-Floor Plan indicates "Playground"-Correct; Confirm with Zoning/Code Analysis/Alley Setbacks	BA	Will comply	A	Closed	
9	Scope Package	Plan Layout	MAVH	Documents to be updated with Dates,Page Numbers and Drawing Index of Package Componets	BA	Will comply	A	Closed	
10	Project description	Site Plan	MG	Please ensure that all glazing is following CPD Bird Safe building design guidelines	BA	Will comply, it will be up to DB to develop final bird-safe strategy post transfer.	A	Closed	
	Civil								
11	Civil	Civil Narrative	DEB	Evaluate balancing the cut / fill - using any cut on site? Is this possible with this program?	MB	Approximate earthwork quantities and balancing will be evaluated once topographic survey is complete and detailed site grading is designed.	A	Closed	
12	Civil	Civil Narrative	DEB	Clarify strategy for retention and volume control - will permeable playground surface provide this or is this really about subsurface detention tank?	MB	Volume control will be accounted for in an aggregate stone layer beneath permeable playground surfacing. The tank will only account for detention requirements.	A	Closed	
13	Civil	Civil Narrative 3.a and b.	DEB	Address Heat Island Reduction in paving selection	BA	Will review	A	Closed	
14	Civil	Small Gym/Option 1	MAVH	Existing Park Site-Review for Demolition and Site Development -Confirm Building Setbacks from Alley Street and Playground Adjacency /Scope	BA	Setbacks have been reviewed and discussed extensively at design meetings, after site	A	Closed	
15	Zoning Code/Building Analysis	Site plan - Large Gym	MAVH	Confirm Building Zoning Requirements /Entries and Exits/Setbacks	BA	Setbacks have been reviewed and discussed extensively at design meetings, after site	A	Closed	
16	Civil	Civil Narrative1.c.iv	MG	Temporary seeding at all stockpiles - should there be a time limit or size noted rather than noting that all stockpiles need to seeded. Think language is too vague and would contribute to added costs.	MB	Temporary seeding must be in place until final stabilization.	E	Open	
	Landscaping								

17	Playground	Site Plan	JBL	Playground access from Kedzie?	SL	CPD has directed us to provide playground access from the plaza and not directly from Kedzie	D	Closed	
18	Landscaping	Site Plan	JBL	Layout - assume no footings allowed over water storage?	SL	Yes. Any playground features will be surfance mounted to the top of the storage tank	A	Closed	
19	Playground	Site Plan	JBL	Fall zones? Is that a slide at the top edge? Swings? Can they be rotated 90, with fall zone over water storage?	SL	These are placeholders - not the actual equipment. We are soilciating vendors now for playground concepts	E	Open	
20	Playground	Description	JBL	"soft scape playground". Not certain this has been determined fully	SL	Noted	A	Closed	
21	Playground	Design Narrative	JBL	Poured-in-place surfacing. Not yet determined	SL	Noted	A	Closed	
22	Playground	Design Narrative	JBL	Playground shal also meet all current ASTM and CPSC guidelines.	SL	Noted	A	Closed	
23	Project Summary	Site Plan	MAVH	Confirm Summary -"Parking Lot" or Parking Spaces - Zoning Implications?	BA	Parking of 1:3 for FTE is required for staff only. Final plan has not been selected but preliminary zoning review w/ DPD will be taken either by the DA or subsequently by the DB team to receive comments and make any appropriate adjustments.	A	Closed	
24	Demo	Site Plan	MAVH	Confirm Site Demolition relative to Removal of Existing Trees etc.	SL	Once more accurate survey is available, we will confirm zoning limits	A	Closed	
25	Landscaping	Site Plan	MAVH	Review/Confirm Option for Permeable surfacing and Detention Tank below Playground	SL	Civil is reviewing options	A	Closed	
26	Utilities	Site Plan	MAVH	Review/Comfirm OUC/EFP Permits Requirements for Site	BA	Permits for OUC/EFP will occur post transfer from DA to DB after SD.	A	Closed	
27	Landscaping	Site Plan	MG	Confirm that city does not have plans to replace/plant any trees in the project areas	SL	We'll confirm with the city regarding any plans to replace/plant trees in the project areas and update accordingly.	A	Closed	
28	Landscaping	Site Plan	MG	Ensure that gator bags are included, as newly planted trees would require more watering that established trees.	SL	Noted	A	Closed	
	Architecture								
29	Envelope	Arch narrative p 18/80	DEB	Exterior enclosure should support best possible energy efficiency. Set reasonably aggressive project EUI goals for long term energy efficiency and better overall performance - Improve on R-20 walls / R-40 roof.	BA	Team will balance first cost and energy efficiency, pursuant to weekly meetings CPD does not wish to significantly increase budget for long-term energy pay off. Further energy efficiency evaluation will occur post transfer from DA to DB after the SD phase.	B	Closed	
30	Envelope	Arch narrative p 18/80	DEB	Roofing - set high reflectivity requirement for roof .	BA	Will note / require white reflective coating.	A	Closed	
31	Envelope	PR-0.4	DEB	Consider how south facing gym windows are protected from high angle summer sun. Also, how can Kalwall east elevation energy efficiency be	BA	Will be reviewed, however further development will occur post SD transfer to DB.	A	Closed	
32	Envelope	Toris system	DEB	What is best R- value that can be obtained from this system.	BA	Toris is a BOD metal deck, it is part of a roof system and the deck itself is not contributing to the energy efficiency. The roof will be designed to meet or exceed energy code requirements when modeling and budget information has been obtained.	E	Open	
33	Gymnasium	2/7 updated floor plans test fits	NS	Is a gym office needed? If so, I would suggest switching the 100 SF storage room in concept 1 or a portion of the storage in concept 2, out for a gym office. Not sure this is needed for the concept with the smaller gym, but would definitely suggest including a gym office in the concept with the larger gym	BA	CPD has directed that a gym office is not needed for a small gym.	E	Open	
34	Storage	2/7 updated floor plans test fits	NS	Option 2 shows no storage access directly from gym, this should be revised.	BA	Revised in 2/20 updated floor plans test fits	A	Closed	
35	Access	2/7 updated floor plans test fits	NS	Suggest swapping the electrical room and telecom room in both options so that an external building door to the electrical room can be provided.	BA	It is ok to access the electric via the telcom, will confirm if accessing telcom via electric is permitted	E	Open	
36	Access	2/7 updated floor plans test fits	NS	Access to the mechanical room should not be through the storage room (both for keying reasons and typically our storage rooms get very filled	BA	Revised in 2/20 updated floor plans test fits	A	Closed	
37	Storage	2/13 updated floor plans test fits	JBL	Storage access should be provided from the gym, not the hallway	BA	Revised in 2/20 updated floor plans test fits	A	Closed	
38	Office	Building interior	JBL	Admin office, add visibility to play area and park as well to narrative	BA	Revised in 2/7 updated floor plans rest fits, will update narrative.	A	Closed	
39	Exterior Enclosure	Plan Layout	MAVH	Consider LEED and Glass Areas relative to Gymnasium and Glare	BA	Will review	A	Closed	
40	Doors and Windows	Plan Layout	MAVH	Review Options and requirements for Security with CPD	BA	Will review, some development by DB post-SD transfer.	B	Closed	
41	Roofing	Plan Layout	MAVH	Review/Scupper and Downspout Option with CPD/Security/Maintenance	BA	CPD standard is to utilize roof scupper boxes to downspouts that are collected in cast-iron hubs that are extended 8' above grade. CPD only permits internal drains with special approval. Much of this will be developed post SD by the DB.	E	Open	
42	Gymnasium	Narrative	MAVH	Confirm Interior Wall Material relative to cost and Lifespan/Graffity	BA	Will comply	A	Closed	
43	Interior Doors	Plan Layout	MAVH	Interior Doors to have Firelite Vision Panels for Security	BA	Will comply	A	Closed	
44	Collapsible Bleachers	Plan Layout	MAVH	Review Mounting/Structural in wall support	BA	Will comply, some development on details like this will occur after SD transfer by DB.	B	Closed	
45	Equipment Storage	Plan Layout	MAVH	Easily Accessible /Review Height of Doors	BA	CPD has directed us to provide standard height, overhead doors.	A	Closed	
46	Toilet Rooms/Lockers	Plan Layout	MAVH	Confirm Locations relative to Visual and Security Isues/Select Readily available Wall/Ceiling/ Floor Materials/Fixtures (Availability /Lead Times)	BA	Will review	A	Closed	
47	Glazing Guard	Plan Layout	MAVH	Review option of Clerestory /Glazing/Guards with CPD	BA	Will comply	A	Closed	
48	Fixtures	Plan Layout	MAVH	Confirm Fixture Types-hand dryers/Paper Towels Dispensers with CPD	BA	Will comply	A	Closed	
49	Clubrooms/Storage	Plan Layout	MAVH	Lockable Storage /Closets -Confirm with CPD size and items to be Stored	BA	Will comply	A	Closed	
50	Glazing Guard	Plan Layout	MAVH	Operable Windows/Guards?	BA	CPD has directed us to provide window guards at operable windows only. Will review if operable windows are needed.	E	Open	
51	Visitor/ Public Spaces	Plan Layout	MAVH	Walk off Entry mat(Depressed slab?)	BA	Will likely utilize thin-profile walk-off mat that avoids slab depression, ultimately this will be further developed by DB post SD transfer.	B	Closed	
52	Materials	Plan Layout	MAVH	Review/Confirm Floor/Wall /Ceiling Materials with CPD Specifications	BA	Will comply	A	Closed	
53	Drinking Fountains	Plan Layout	MAVH	Drinking Fountains or Water Cooler? (Requires Power and water)	BA	Will confirm	A	Closed	
54	Low Voltage	Plan Layout	MAVH	Confirm Phone and Data Options	BA	Will comply	A	Closed	
55	Administrative Office	Plan Layout	MAVH	Requires Visibility to Gym Entry/ Toilet Room Entry/ Exterior Doors/Playground -Review Plans Accordingly	BA	Plans developed with CPD input, there is a visual supervision priority on entrance, playground and lobby, not all spaces can be visible from the reception. CPD has directed that views of the main entrances are priority.	C	Closed	
56	Building Services/Electrical	Plan Layout	MAVH	Review Location with Security and incoming Service Locations /CPD	BA	CPD reviewing this milestone submission, will discuss any concerns that are expressed.	E	Open	
57	Building Services/Mechanical	Plan Layout	MAVH	Review Location with Security/CPD	BA	CPD reviewing this milestone submission, will discuss any concerns that are expressed.	E	Open	

58	Building Services/Staff Pantry	Plan Layout	MAVH	Confirm Adjacent Priorities	BA	CPD reviewing this milestone submission, will discuss any concerns that are expressed.	E	Open
59	Building Services/Janitor Closet	Plan Layout	MAVH	Does this require Storage of any kind?	BA	Will confirm	A	Closed
60	Bleachers	Design Narrative (p.19)	MC	Fieldhouse- are bleachers motorized?	BA	Bleachers 4 rows or less are typically manual, backboards will be motorized.	C	Closed
61	Locker Rooms	Design Narrative (p.19)	MC	Locker rooms- have you considered a poured epoxy or rubber floor?	BA	This locker room is just for storing personal affects - not for showering or extensive water.	C	Closed
62	Exterior Enclosure	Plan Layout	MG	Please ensure that all glazing is following CPD Bird Safe building design guidelines	BA	Will comply, final selected strategy to be further developed after SD transfer to DB.	B	Closed
63	Collapsible Bleachers	Plan Layout	MG	Bottom of bleachers should be closed off to ensure trash is not collected underneath. Also, consider how janitorial staff would clean under	BA	Will comply, final selected strategy to be further developed after SD transfer to DB.	B	Closed
64	Visitor/ Public Spaces	Design Narrative	MG	Ensure that drinking fountains are meeting CPD Specifications, i.e. electric, filtered, etc.	BA	Will do, final selection to be further developed after SD transfer to DB.	B	Closed
65	Building Services/Janitor Closet	Design Narrative	MG	Should there be FRP panels around the sinks rather than just unpainted CMU	BA	Will add tile, stainless panel, or solid surface in the immediate are at mop basin.	A	Closed
	Mechanical							
66	Fans	Mechanical Narrative	DEB	Consider if high volume low velocity fans can be used in this gym.	BE	HVLS fans are an option to destratify the air in the gymnasium. In this setting these fans become targets and are often damaged. They tend to cause a strobing effect with the lights.	B	Closed
67	Mechanical	Mechanical Narrative - Item 4	DEB	Sshould be looking at HVAC systems in coordination with the HVAC system whn talking about energy efficiency and sustainability	BE	Will review.	A	Closed
68	Mechanical	MEP narrative	DEB	HVAC and Plumbing narrative refer to LEED scorecard - it does not appear to be included in the package.	BA	Will make LEED scorecard available - still need to conduct sustainability workshop to set priorities and sustainability approach.	B	Closed
69	Mechanical	Mechanical Narrative	MAVH	Provide Design for Readily Availble Systems to Maintain Schedule	BA	At SD we are not selecting equipment at a detailed level, the DB will work with PBC and CPD in final selection after SD milestone transfer.	C	Closed
	Electrical							
70	Electrical	Electrical Narrative	MAVH	Consider Readily Available Systems and Equipment	BE	We will make sure that electrical systems and equipment to be used shall be industry standard and should be available at reasonable lead times.	A	Closed
	Structural							
71	Strucutral	Design Narrative (p.17)	MC	Building exterior, superstructure option 1- steel columns and load bearing CMU. If CMU is load-bearing, steel columns are not needed. If steel superstructure used, CMU acts as an enclosure only. Needs to be coordibated with structural narrative.	K2N	Our preliminary calculations indicate that the concentrated loads are too large for the CMU and will require a steel frame (beams and columns) in the wall. The CMU at the gym walls would be non-load bearing. The architectural narrative will be revised.	A	Closed
72	Strucutral	Design Narrative (p.18)	MC	Building exterior, superstructure option 1A- have you considered a wood deck such as CLT (cross-laminated timber)?	BA	We have identified a metal deck and laminated timber assembly that complies with fire rating requirements, however we will consider CLT as it offers longer spans and may be more attractive	E	Open
73	Strucutral	Design Narrative (p.18)	MC	Exterior enclosure wall A options do not align with options listed in structural narrative.	K2N	We will add the CMU with cement board option to the structural narrative.	A	Closed
74	Strucutral	Structural Options- plans	MC	Structural drawings call for steel columns and beams within the exterior wall. This solution has the potential to compromise the R-value and thermal continuity of the exterior envelope and creates "fussy" details that can be avoided if the structure is seperate from the exterior envelope.	BA	In development, agree that exterior CMU walls may be able to replace columns on perimeter simplifying detailing.	B	Closed
75	Strucutral	Structural Narrative	MAVH	Update upon Building Design Progress/Code Requirements/Footing Design/Foundation relative to existing Conditions and Soils Report	BA	Will comply	A	Closed
76	Strucutral	Structural Narrative	MAVH	Update upon Building Design Progress/Code Requirements/Footing Design/Foundation relative to existing Conditions and Soils Report	BA	Will comply	A	Closed
77	Wall Systems	Plan Layout	MAVH	Review with CPD -Utilize readily available Materials/Structural System- consistent with Project Schedule and Sustainable Material Options	K2N	Ok	A	Closed
	Accessibility							
78	Accessibility	Site Plan	MAVH	Review Building Location and Adjacency to Sidewalks/Playground/ Alleys/Streets	BA	Will comply	A	Closed
79	Accessibility	Plan Layout	MAVH	Confirm Assesible Exiting	BA	Will comply	A	Closed
	Plumbing							
80	Plumbing	Plumbing narrative	DEB	Design target plumbing fixtures will mostly support sustainability waster use reduction goals. Lavs at 0.1 GPM seems too low. Is there precedent? Design doesn't appear to include showers.	BE	There are manufacturers that make 0.1 GPM lavatory faucets, but possibly not for metered type faucets. Narrative updated to indicate for 0.25 GPM lavatory faucets. Brook Architecture was directed not to provide a design with showers.	A	Closed
81	Plumbing	2/7 updated floor plans test fits	NS	Club rooms should have sinks included.	BE	Brook Architecture was directed to provide one sink in one club room, Architectural plan will be updated. MEP Narrative will be updated.	A	Closed
	Fire Protection							
-								
	Environmental							
-								
	Dept: Safety & Security							
82	Security Desk	Plan Layout	MAVH	Locate Office with Direct Visibility to various spaces includign Gym Entry and Exits/Toilet Rooms/Entries/Storage	BA	Plans developed with CPD input, there is a visual supervision priority on entrance, playground and lobby, not all spaces can be visible from the reception. CPD has directed that views of the main entrances are priority.	C	Closed
83	Security Desk	Plan Layout	MG	Ensure that security desk areas are properly fitted with electrical and any low voltage needs.	BA	Will do, note this is 50% SD and subsequent details such as this will be further developed post-transfer to DB after SD.	B	Closed
	Dept: Arts & Theatre							
-								
	Dept: Athletics							
84	Storage	Plan Layout	MAVH	Review size and Storage Options of Equipment Specified by CPD	BA	Will request CPD review.	A	Closed
	ITS - Communications							
-								
	Environmental							
-								
	END OF REVIEW COMMENTS							

PROJECT DEVIATIONS / PROPRIETARY LOG

Design Phases Only (Cncpt, SD, DD, 60%CD, 90%CD, 100%CD)

Project Deviation/Proprietary Log Statement: The log's intent is to provide design modifications that do not follow, the latest applicable, User Agency guidelines, standards, and specifications. Providing this information is largely used primarily during the design phases of a project and identified by members of the Design Team. A key component is to provide enough information deemed applicable for the User Agency's approval for the deviation being sought after. Known impacts to schedule, cost adds or efficiencies, and scope impact should also be identified for reference in the decision-making process.

ITEM #	DISCIPLINE	DWG # / SPEC. SECTION #	DEVIATION DESCRIPTION (References, Links, Data, etc.)	REASON FOR PROJECT DEVIATION (Identify: pros/cons, cost add/deduct, and schedule impacts)	APPROVAL & DATE	(DESIGN PHASE)
1					Yes/No, #/#/##	#%DD
2						
3						
4						
5						
6						
7						
8						
9						
	END OF PROJECT DEVIATIONS LOG					

LESSONS LEARNED LOG

Design Phases Only (Cncpt, SD, DD, 60%CD, 90%CD, 100%CD)

Lessons Learned Log Statement: Its intent is to provide a log of items that may have impact to the project and determined as for program-wide use for PBC projects. The log is further to capture and share knowledge about what has worked well and what could have been done differently during the planning, design, construction, and delivery of a project. As a commitment to management excellence and opportunities for learning objectives, the log will offer ongoing tracking based on actual experiences or projected. Sharing the lessons from the log amongst constituents prevents from repeating the same challenges but will provide for an opportunity to take advance of best practices. The Owner (PBC), User Agency, Design Team (DA & AOR), General Contractor, Design Builder, Construction Manager (CM) call all participate in contributing to the log.

ITEM #	DISCIPLINE	DWG # / SPEC. SECTION #	LESSONS LEARNED DESCRIPTION (References, Links, Data, etc.)	RESOLUTION OR NEXT STEPS	USER AGENCY STANDARDS IMPACT	PROJECT STATUS (DESIGN / CONSTR)
1						
2						
3						
4						
5						
6						
7						
8						
9						
	END OF LESSONS LEARNED LOG					

PROJECT VALUE ENGINEERING LOG

Design Phases Only (Cncpt, SD, DD, 60%CD, 90%CD, 100%CD)

Value Engineering Log Statement: Value engineering is a systematic, organized approach to providing necessary functions in a project at the lowest cost. Value engineering promotes the substitution of materials and methods with less expensive alternatives, without sacrificing functionality. It is focused solely on the functions of various components and materials, rather than their physical attributes. There is an understanding that some value engineering proposals may impact the standards, guidelines or specifications of the User Agency and will require confirmation prior to proceeding with the change.

ITEM #	PROJECT DESIGN PHASE	DWG # / SPEC. SECTION #	DESCRIPTION (References, Links, Data, etc.)	IMPACT OF PROJECT VALUE ENGINEERING (IDENTIFY IF USER AGENCY STANDARDS AND/OR GUIDELINES ARE AFFECTED - DEVIATION IMPACT)	RECOMMENDATION	ROM COST IMPACT
1						
2						
3						
4						
5						
6						
7						
8						
9						
	END OF VALUE ENGINEERING LOG					

COMMERCIAL & INDUSTRIAL SERVICE APPLICATION

ComEd An Exelon Company | powering lives

DIRECTIONS: Please save a copy of this form to your computer by selecting "**FILE/SAVE AS**" before entering text and numbers. Then fill in your information electronically and select "**SAVE**." Note that this form requires Adobe Reader® version 11.0 or greater to function properly. Download the most recent version of Adobe Reader® at **http://get.adobe.com/reader**.

APPLICATION PROCESS

Below is the process to receive any type of electric service from ComEd:

1 Establish or Verify Your Account

If you have an existing ComEd account please enter the number in the "Existing ComEd Account #" field. If this is a new service and you need to establish a ComEd account you must provide a SSN (Residential) or TaxID (Commercial) for account setup by calling ComEd at 1-866-639-3532 (1-866-New-Elec). If this information is not provided, you can continue your submission, but a customer service representative will have to contact you before your application can be processed.

2 Complete and Submit Service Application

Please work with a licensed electrical professional to complete your application. You have two options for submitting your information:

Preferred Method: Enter your information directly into the **New Business Portal** online form. You will immediately receive a confirmation number for tracking your project status.

Alternative Method: You may email your completed pdf application to **ServiceApplications@ComEd.com**.

3 Coordinate with Project Lead

You will be assigned a ComEd Project Lead who will determine how we can best meet your electric service needs and will contact you to learn more about your project. If needed, the assigned Project Lead will meet you at the project site to take measurements and evaluate equipment. They will create an agreement, a summary of any applicable charges, and diagrams depicting the service and will mail or email the documents to you.

4 Service Authorization

Review all documents provided by your ComEd Project Lead, sign and return them to your representative along with payment, if applicable, to authorize work to begin.

5 "Service Need" Date Determination

The "start work" and "service need" dates will be negotiated with you and every effort will be made to meet your "preferred service" date. Delays in submitting the necessary documentation or changes to the project may adversely impact the "service need" date.

6 "Service Need" Date Confirmation

Four weeks prior to the "start work" date, your ComEd representative will contact you to confirm whether work can begin. If the work cannot begin, the "start work" and "service need" dates will be adjusted accordingly. The new dates will be subject to ComEd's workload and resource availability.

7 Final Inspection

Two weeks prior to the "start work" date, ComEd will perform an on-site inspection to verify the site is ready for work to begin. If the site is not ready, ComEd will let you know what needs to be done to make the site ready. ComEd reserves the right to reschedule the "start work" and "service need" dates based on the work required to make the site ready.

GENERAL SERVICE NOTES

- Unanticipated events such as severe weather or other emergencies may delay the "start work" or meeting the "service need" date. ComEd will make every attempt to notify you as soon as it becomes aware of such delays.
- Like any other business, ComEd is obligated to obtain all necessary permits before beginning work. Promptly returning accurate and complete documents can help expedite this process.
- The "service need" date may be impacted depending on the amount of offsite work ComEd may need to perform.
- If ComEd crews are required to work outside of normal weekday hours, overtime labor charges will apply.
- For more information about the ComEd New Business process, please go to: ComEd.com/NewBusiness

NEW, REVISED AND TEMPORARY SERVICE NOTES

- The date service that is provided may be impacted depended on the existing capacity of the area.
- Some municipalities may require separate Fire Pump and Emergency services. Please remember to include these services on your New Service application if applicable.
- You may be required to provide easements and space on your property, or inside your building for ComEd equipment.

METERING NOTES

Please be aware that the ComEd System Meter department must approve the installation of main electrical panels and all associated new electrical equipment that are rated greater or equal to 1,200 amps & any service that is greater than 600 volts.

To obtain approval, email the following documents to **SWBD.Approvals@ComEd.com**:

- ☐ The ComEd Service Application (completely filled out)
- ☐ A PDF of the existing or planned electrical/power system one-line diagram which illustrates the meter current transformer cabinet, switchgear, power panels and disconnect switch sequence.
- ☐ A PDF diagram* of the physical equipment which you plan to install (e.g.. meter current transformer cabinet, switchgear and/or power panels).
- ☐ One line drawings for multi-unit buildings must show the location and amount of meters cabinets on each floor for approval.

Allow the ComEd System Meter department *10 business days* to review and return your drawings.

All customer-submitted plans/drawings must be stamped *ComEd* approved before service can be provided.

Individual residential units are treated as separate customers requiring separate metering per the ComEd rate book (ComEd.com/Rates).

A diagram must be provided for* **each *switchboard needing approval. These diagrams may be found in your project's electrical plans and manufacturer's specifications. Confer with your electrical contractor, architect or engineer. Always include the name of the equipment manufacturer and model number in the title block.*

OTHER

Please note that all customers now have a choice of electric suppliers, electric rates, metering option, etc. For more information, visit our website at **ComEd.com/Choice** or call our Business Solutions at 1-877-426-6331 (1-877-4-ComEd-1).

COMMERCIAL & INDUSTRIAL LOAD INFORMATION

FORM TO BE COMPLETED BY QUALIFIED ELECTRICAL PROFESSIONAL

SITE & BUILDING INFORMATION

PROJECT NAME	PROJECT TYPE	EXISTING COMED ACCOUNT #
PBC Kells Park Field House	Other	

SITE ADDRESS	CITY	ZIP CODE
	Chicago	

REQUESTED SERVICE

☑ Permanent ☐ Temporary

UNIT TYPE (IF APPLICABLE)

☐ Residential ☑ Commercial

RESIDENTIAL # OF UNITS	TOTAL RESIDENTIAL SQ. FOOTAGE	COMMERCIAL # OF UNITS	TOTAL COMMERCIAL SQ. FOOTAGE
n/a	n/a	1	13,038

HOURS OF NORMAL OPERATION

Start: ☐ AM ☐ PM End: ☐ AM ☐ PM ☐ 24-hour

EQUIPMENT AND VOLTAGE

PREFERRED SERVICE EQUIPMENT TYPE

☐ Underground ☑ Overhead ☐ Vault/High-rise ☐ Outdoor Lighting

SERVICE VOLTAGE

☐ 120/240V 1-phase 3-wire ☑ 120/240V 3-phase 4-wire ☐ 120/208V 3-phase 4-wire ☐ 277/480V 3-phase 4-wire

☐ 480V 3-phase 3-wire (B-phase grounded, not allowed in Chicago) ☐ 480V 3-phase 3-wire (ungrounded, req. special equipment & approval)

☐ 4kV ☐ 12kV ☐ 34kV ☐ Other:

SWITCH INFORMATION (if more than one, please attach the following information per switch)

SWITCH NAME	# TOTAL SWITCHES FOR PROJECT	# SWITCHES IDENTICAL TO THIS APP
MDP-1	1	

SWITCH LOCATION, IF KNOWN	SWITCH SIZE (AMPS)	SIZE OF CONDUCTOR
Electrical Room	800A	4 #600 KCMIL

SWITCH RATING (%)	NUMBER OF SECONDARY SETS	CONDUCTOR MATERIAL
100%	2	☑ CU ☐ AL

COMMERCIAL & INDUSTRIAL LOAD INFORMATION

FORM TO BE COMPLETED BY QUALIFIED ELECTRICAL PROFESSIONAL

PROJECT NAME	
	PBC Kells Park Field House
SWITCH NAME	
	MDP-1

LOAD INFORMATION (all loads should be shown in kW, with a power factor of .85 used for conversion from KVA)

CATEGORY	DESCRIPTION	I-PHASE CONNECTED LOAD	I-PHASE DIVERSIFIED CAPACITY*	3-PHASE CONNECTED LOAD	3-PHASE DIVERSIFIED CAPACITY*
Lighting	General Lighting	23.2	29		
Appliances	Gas-Fired Water Heater	3.4	3.4		
Receptacle	Gen. Receptacles	15	11.73		
Process Heat	N/A				
Water Heat	N/A				
Motors**	Pumps	2	2		
HVAC/Heating	(Assumed smaller that cooling)				
HVAC/Cooling	(Assumed Larger than heating)			54.4	54.4
Ventilation-All Year	Fans	4.4	4.4		
Other	Electric Vehicle Chargers	11.5	14.4		
Total		59.5	64.9	54.4	54.4

**Diversify connected load per Chicago Electrical Code in the City of Chicago and applicable areas, diversify per National Electrical Code in all other areas.*

***Please provide mechanical switchboard schedule.*

COMMERCIAL & INDUSTRIAL LOAD INFORMATION

FORM TO BE COMPLETED BY QUALIFIED ELECTRICAL PROFESSIONAL

PROJECT NAME
PBC Kells Park Field House
SWITCH NAME
MDP-1

MOTOR INFORMATION

EQUIPMENT TYPE	QTY	VOLTAGE	HP	STARTING AMPS	FULL LOAD AMPS	STARTER TYPE	STARTER FLA COEFFICIENT	# OF STARTS PER DAY	NEMA CODE	POSITION IN STARTING SEQUENCE
VENTILATION	9	230/1P	.5	20	2.9	Full Volt	2.5		G	
HVAC/COOLING	6	230/3P	10	42	28	VFD	1.2		G	
PUMPS	4	120/1P	.5	40	9.8	Full Volt	2.5		G	

Please provide mechanical switchboard schedule.

WELDER INFORMATION

DESCRIPTION	QTY	VOLTAGE	SIZE (KVA)	TYPE	FULL LOAD AMPS	P.F. AT PEAK	STARTER FLA COEFFICIENT	WELDS PER MINUTE	CYCLES PER WELD	HOUR PER DAY USE
N/A										

Please fill out welder table if welder load required.

COMMERCIAL & INDUSTRIAL PROJECT INFORMATION

SITE INFORMATION

PROJECT NAME		CONTACT NAME	
PBC Kells Park Field House			
SITE ADDRESS		**CITY**	**ZIP CODE**
CONTACT EMAIL	**CONTACT PHONE**	**TOTAL NUMBER OF SERVICE ENTRANCE LOCATIONS**	
		1	
ELECTRICAL PERMIT #	**DATE OF GROUNDBREAKING**	**TOTAL NUMBER OF SWITCHES (Points of Service)**	
DATE COMED CAN BEGIN WORK	**PREFERRED SERVICE DATE**	**TOTAL NUMBER OF METERS REQUESTED**	
		1	

BUSINESS INFORMATION

LEGAL NAME OF ENTITY (ELECTRIC CONSUMER)	TAX I.D.	EXISTING COMED ACCOUNT #

☐ Corporation ☐ Partnership ☐ Sole Proprietor ☐ Other:

PRINCIPLE(S) to sign agreements for service, easements, etc.

PROPERTY OWNER	PHONE
BUILDING OWNER	**PHONE**
BUILDING MANAGER	**PHONE**

COMMERCIAL & INDUSTRIAL PROJECT INFORMATION

PROJECT NAME
PBC Kells Park Field House

MAILING ADDRESS FOR AGREEMENTS

COMPANY	EMAIL	PHONE	FAX

ADDRESS	CITY	STATE	ZIP CODE

MAILING ADDRESS FOR ELECTRIC BILLS

COMPANY	EMAIL	PHONE	FAX

ADDRESS	CITY	STATE	ZIP CODE

PROJECT CONTACTS

CONSULTING ENGINEER	FIRM NAME

ADDRESS	CITY	STATE	ZIP CODE

EMAIL	PHONE	FAX

GENERAL CONTRACTOR	FIRM NAME

ADDRESS	CITY	STATE	ZIP CODE

EMAIL	PHONE	FAX

COMMERCIAL & INDUSTRIAL PROJECT INFORMATION

PROJECT NAME
PBC Kells Park Field House

ELECTRICAL CONTRACTOR		FIRM NAME	
ADDRESS	CITY	STATE	ZIP CODE
EMAIL	PHONE	FAX	

OTHER	ROLE	FIRM NAME	
ADDRESS	CITY	STATE	ZIP CODE
EMAIL	PHONE	FAX	

REQUIRED DOCUMENTS

The following documents may be required (items are required for non-overhead services):

- Plat of Survey with legal description of property (for easement, if required)
- Site Plan showing building relative to property lines and elevation information for multi-story buildings – mark service entrance location(s)
- Civil drawings (showing water, sewer, gas, phone, electric, pavement, grading, etc.)
- Complete electrical drawings and/or load detail sheets

INFORMATION PROVIDED BY

SIGNATURE	PRINT NAME	DATE

Submit your information via the New Business Portal online form or email your completed pdf application to ServiceApplications@ComEd.com.

COMMERCIAL & INDUSTRIAL CUSTOMER METER CHECKLIST

The following must be complete before any meters can be set (Check all that apply)

GENERAL REQUIREMENTS

- ☐ If applicable, a permit must be obtained prior to ComEd notification and/or approval.
- ☐ All fittings must have a CECHA stamp to receive ComEd approval. Fittings must be located in a ComEd approved location.
- ☐ All meter sockets must be clearly identified with unit number, fire pump, building meter, etc. on the fitting.
- ☐ All units must be clearly identified, using the final unit number, designation and/or address on the unit's breaker panel.
- ☐ All load wires must be landed and terminated between the meter socket and unit panels.
- ☐ All new and existing services must have required grounds.
- ☐ One line drawings for multi-unit buildings must show the location and amount of meters cabinets on each floor for approval.
- ☐ Individual residential units are treated as separate customers requiring separate metering per the ComEd rate book (ComEd.com/Rates).
- ☐ No empty meter fittings allowed; if meter housing will not be used, please remove meter connection hardware and secure with blank metal face plate.

SINGLE-PHASE METERING

- ☐ A fifth jaw is required at the nine o'clock position of the socket for "WYE" (120/208v) services.
- ☐ If there is no bypass handle provided on the socket, jumping studs/horns are required on the line and load connectors of the meter fitting. Meter fitting(s) must be proper height. Service attachment (I-plate) must be installed in proper location and must be within minimum and maximum height clearances.
- ☐ Trees on private property must be trimmed and/or removed as needed by the customer to allow service drop installation.

THREE-PHASE SELF-CONTAINED METERING

- ☐ All three-phase, 120/240V, four-wire, self-contained meter installations (200 Amps.or less), the high phase must be attached on the right side of the fitting and clearly identified within the meter fitting and at the weatherhead.
- ☐ All phases and the neutral must be clearly identified.
- ☐ An integrated bypass lever is required for all three-phase, self-contained meter fittings.

THREE-PHASE TRANSFORMER-RATED METERING

- ☑ High phase must be in the center positon in all current-transformer cabinet installations.
- ☐ Please make sure the switchgear size, estimated demand load and voltages have been provided to the Project Engineer. Also, an approved wiring harness must be provided in all current-transformer cabinet installations (per ComEd requirements) when the meter fitting is on the CT cabinet door.

For metering standards and dimensions, please see ComEd's Service and Meter Requirements on the ComEd website at: ComEd.com/Redbook or ComEd.com/MeteringRequirements.

3.G.II Schematic Design Deliverables Checklist

Public Building Commission of Chicago | Richard J. Daley Center | 50 West Washington Street, Room 200 | Chicago, Illinois 60602 | (312) 744-3090 | pbcchicago.com

Project Name: Kells Park 100SD

This document is a tool for the User Agency in preparing design submittals to the PBC. This checklist contains the PBC's expectations of actions and documents that the User Agency and their design team, to take or prepare prior to the completion of the phase for which this document is issued. The appropriate design team member is to check off each item in acknowledgement of its completion or, if not completed, indicate in "Req'd % Complete" the extent to which it is complete, and describe discrepancies in the "Comments" column. Reviewers may then comment on what work they know to expect via the checklist, and level of completion via the User Agencies notes. This document does not alleviate contractual obligations of either the User Agency/PBC design team or the reviewers.

DOCUMENTS	Scale (Min) in. / ft.	Req'd % Complete	AOR	AOR % Complete	Review Information Required	Comments
General				AS OF 03/14		
Project Schedule			☐		Confirmation of design and construction schedule	
			☐		Establish appearance and review schedule for Zoning and Chicago Dept. of Planning & Development	
Cost Estimate			☐		Cost estimate with comparisons, revisions and updated probable costs for the building and the site preparation. Provide alternates in the rough order of magnitude if base costs are exceeded. Base cost must be achievable with acceptance of reasonable alternates.	
Title Sheet			☐		Project name and address, project directory with all consultants	
			☐		User agency, PBC ID and logo (on all drawings)	
Design Team Directory		100%	☐	100	Identify and submit directory of contacts from all professional services firms involved	BA
RFCs			☐		Request for Clarification compilation and log	
Conceptual Design Review Comments			☐		Incorporate reviewer, User agency and or PBC PM comments into the subsequent phase of the contract documents	
Utilities		90%	☐	100	Off-site work identified, utilities and easements identified	contingent upon the status of the survey
Specifications			☐		Outline specifications or amended CPS Master Specifications Table of Contents. Any special sections required for project, with Table of Contents	
			☐		Confirm that specifications are without conflict	
Approvals		50%	☐	TBD	Submit formal sign-off drawings, with Dept. Head signatures, approving general layout of various departments within project. Provide supporting documentation, including meeting minutes and drawing notations.	PBC/Park District
Other:						

SCHEMATIC DESIGN DELIVERABLES

DOCUMENTS	Scale (Min) in. / ft.	Req'd % Complete	AOR	AOR % Complete	Review Information Required	Comments
Space Program			☐		Comparison of design program to project requirement conceptual design document	
			☐		Identify any special environmental, systems or equipment requirements	
Building Area Diagrams and Area Calculations			☐		Calculations for gross and usable square footage, enclosed volume and exterior surface area of the building envelope	
LEED			☐		Facilitate and document LEED Charrette. Provide target LEED scorecard and minutes from Charrette.	
			☐		Provide LEED Project Evaluation Matrix with narratives describing strategies to achieve each credit	
			☐		Record of application submittal to USGBC.	
			☐		Initial energy simulation model using the DOE2 Modeling Software	
Preliminary Reviews			☐		Conduct and document reviews with CDOT, MOPD, Fire Prevention and other regulatory agencies	
			☐		Determine involvement of Landmarks or IHPA	
Zoning Analysis			☐		Provide a zoning analysis package for review	
			☐		Verify any required amendments to the public right of way	
Updated Code Analysis Package			☐		Occupancy classification	
			☐		Construction type	
			☐		Fire resistance requirements	
			☐		Occupant load by area and floor	
			☐		Travel distances	
			☐		Exit types, units and widths	
			☐		Loading berths and parking requirements	
Civil Engineering						
Survey		100%	☐	100	Boundary survey and topographical (if available). Note "FOR REFERENCE ONLY"	PBC
Basis of Design Narrative			☐		Description of systems, criteria, grading analysis (import/export), surface drainage and retention, water availability and conservation, other sustainability issues, sub-surface investigation recommendations and City requirements	
Site Plan		75%	☐	100	Storm Water analysis and Management Plan	TE
		10%	☐	0	Grading/drainage plan	TE
		95%	☐	100	Storm water release calculations and discharge rate	TE
			☐		Identify non-piped stormwater management opportunities.	
			☐		Acknowledgement of receipt of off-site requirements meeting minutes with CDOT round table	

SCHEMATIC DESIGN DELIVERABLES

DOCUMENTS	Scale (Min) in. / ft.	Req'd % Complete	AOR	AOR % Complete	Review Information Required	Comments
Utilities			☐		Identify existing utilities and resolve to be reused, re-routed, abandoned.	
Landscape Design						
Basis of Design Narrative			☐		Description of design approach and criteria, plant selections, irrigation, soil preparation requirements	
Architecture						
Basis of Design Narrative			☐		Design approach and philosophy, general description of buildings and materials, important design factors, community issues, sustainability measures	
Architectural Site Plan		25%	☐	100	Buildings, playground areas, future buildings	BA
			☐		Scope and Limits of Work, off-site improvements, property lines, easements and finish elevations (including floor)	
			☐		Relevant topographical features, grading concepts, property elevations at corners and spot elevations as required.	
			☐		Driveways, streets, parking, receiving areas, curb cuts, access points, walks, future street widening	
			☐		Existing landscape features, planting concepts, storm water retention or detention areas	
			☐		Identify any areas of future expansion	
Floor Plans	1/8	25%	☐	100	Room names and square footages, doors and windows, special finishes. Identify the various major areas, core areas and their relationships	BA
			☐		Cabinets, furniture and equipment to show function, capacity	
			☐		Structural bay spacing and column centerlines	
			☐		Stairs, ramps, elevators, major structural elements	
			☐		Equipment rooms (mechanical, power, data), major shafts and chases	
	¼	10%	☐	0	Develop enlarged plans of special or feature areas	
			☐		Develop interior elevations of special or feature areas	
Roof Plans	1/8	10%	☐	100	Identify roof systems, deck, membrane flashing and drainage technique and indicate overall combined heat transfer coefficient at wall/envelope	
Exterior Elevations	1/8		☐		Show exterior building elevations identifying proposed shell finishes (includes all exterior surfaces, doors and windows)	
Wall Sections		20%	☐	90	Show preliminary exterior wall sections indicating location of openings, and overall thermal transfer value for each element of the exterior wall /envelope	missing transfer value on elevations

SCHEMATIC DESIGN DELIVERABLES

DOCUMENTS	Scale (Min) in. / ft.	Req'd % Complete	AOR	AOR % Complete	Review Information Required	Comments
Building Sections	1/8	10%	☐		Indicate room names. Show floor-to-floor dimensions, interstitial ceiling space dimensions, ceiling heights, atriums, vaulted spaces, balconies and bridged spaces. Note adequate clearances for proposed mechanical systems.	
Building Performance Goals		60%	☐	100	Determine envelope performance goals, incorporating thermal, lighting, acoustical and daylighting, etc. strategies	BA/SMNGA
Structural Engineering						
Basis of Design Narrative			☐		Description of systems, bearing conditions, load criteria, foundation-engineering report reference (or geotechnical investigation recommendations)	
Soil Borings			☐		Procure geotechnical services, determine locations and have soil borings completed.	
Floor and Roof Plans	1/8	10%	☐	100	Preliminary structural floor and roof plans with overall dimensions and floor elevations	K2N
			☐		Identify structural system and provide preliminary sizes for all main structural members. Diagrammatic layout of structural elements. Indicate design criteria (loads)	
Building Sections		10%	☐	100	Main building sections depicting proposed structural systems. Investigate thickness of ceiling and roof structural system for adequate clearance for proposed mechanical and electrical systems.	K2N/BA/BE
			☐		Analysis of comparative systems with recommendations. Indicate provisions for future expansion	
Code Analysis			☐		Conduct code search and analysis with recommendations	
HVAC						
Basis of Design Narrative			☐		Description of systems, criteria, special energy and sustainability issues, envelope criteria, possible phasing	
			☐		Existing mechanical systems and components analyzed	
			☐		Analysis of comparative systems with recommendations. Indicate provisions for future expansion	
Code Analysis			☐		Conduct code search and analysis with recommendations	
Plumbing & Fire Protection						
Basis of Design Narrative			☐		Description of systems and criteria, fixture types, general loads, gas, domestic and fire water, sanitary waste, water availability, on and off-site drainage provisions	
			☐		Analysis of comparative systems with recommendations.	

SCHEMATIC DESIGN DELIVERABLES

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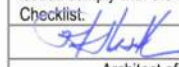
					Indicate provisions for future expansion	
Code Analysis			☐		Conduct code search and analysis with recommendations	
Electrical						
Floor Plans			☐		Floor plans showing all major electrical equipment locations	
Basis of Design Narrative			☐		Description of all electric power related systems, including emergency power, computer power, equipment types, etc.	
			☐		Analysis of comparative systems for light and power distribution, emergency systems, telephone and data distribution and any special systems, with recommendations. Indicate provisions for future expansion of systems	
			☐		Preliminary one-line electrical distribution diagrams. Indicate preliminary location of service entry, switchboards, motor control centers, panels, transformers and emergency generator	
			☐		Description of all signal systems, including fire alarm, intrusion alarm, CCTV/audio surveillance systems, PA/intercom, autonomous PA/sound system (gym, auditorium, athletic fields, multi-purpose rooms and large instruction rooms), TV distribution (copper or fiber optic), clock system, classroom sound enhancement system	
			☐		Description of lighting system in typical areas, indicating fixture types and lighting controls	
			☐		Indicate measures and strategies to achieve maximum LEED credits	
			☐		Typical classroom plan (lighting, power and data outlets) Other special conditions including communication, fire alarm and technology. (8.5x11 or 11x17 bound with Basis of Design)	
			☐		Estimated Load(s)	
			☐		Coordinate with Com Ed, BOE, Telephone, Cable Co.	
Acoustical Consultant		100%	☐		Preliminary site evaluation for background noise levels (special consideration).	
Food Service		25%	☐		Basis of Design, criteria, descriptive material of other design disciplines as may be needed by the size and complexity of the project	
Graphics & Signage		25%	☐			
Theater Consultant		25%	☐			
Kitchen Consultant		25%	☐			
Documents for review						
Hard files			☐		Issue bound copies for distribution (see distribution list for	

SCHEMATIC DESIGN DELIVERABLES

DOCUMENTS	Scale (Min) in. / ft.	Req'd % Complete	AOR	AOR % Complete	Review Information Required	Comments
					amount)	
Electronic Files			☐		pdf files for all submittals (CDs)	
AOR Acknowledgement:	It is acknowledged that use of this checklist does not relieve AOR of contractual obligations regarding project phase deliverables and otherwise.					
Project name:						
Certification: This is to certify that the design documents as issued comply with the elements of this Design Checklist.  03/14/2025 Architect of Record/Date	**Comments:**					

BROOK

ARCHITECTURE

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