APRIL 12, 2023

=

FRANK J DUNN POOL DECOMMISSIONING PRINCE ALBERT, SK

PREPARED FOR:
SASKRIVERS SCHOOL DIVISION

HDA ENGINEERING

Table of Contents

1.0 Executive Summary

1.1 Introduction

HDA Engineering (Mechanical), Prakash Consulting (Structural) and PWA Engineering (Electrical) were hired to conduct a review of the site and identify the potential scope to decommission the pool and associated equipment while ensuring the facility can be maintained in a dormant state for future recapitalization and renovation. The intent of the decommissioning scope is to minimize decommissioning by ensuring that any existing equipment and services that may be reused when the space is recapitalized are identified to remain while removing all material associated with the pool that would hinder future recapitalization.

Refer to the Appendices for the detailed reports on decommissioning scope from each of the three disciplines.

1.2 Scope and Budget

Structural Scope Summary

The structural scope includes the patching/repairing of any penetrations created when removing pool systems as well as installing new flooring over the pool basins to facilitate future space use.

Mechanical Scope Summary

The mechanical scope includes removal of all mechanical equipment serving the pools as well as any associated piping and distribution. Note that the pool deck drain piping, which is connected to the sanitary system, is being left in place to accommodate future renovations. The existing HVAC systems will be retained and modified to ensure the space is heated and ventilated without heating excessive volumes of outside air.

Electrical Scope Summary

The electrical scope includes disconnection of all powered pool equipment and removal of the associated wiring as well as field devices including starters, lights control panels etc.

Budget

The following provides the budgets for each discipline, including an estimate of 18% for overhead and profit:

Item	Base Price	Base Price with 18% Overhead and Profit
Structural Scope	$235,000.00	$277,300.00
Mechanical	$72,881.36	$86,000.00
Electrical Scope	$12,711.86	$15,000.00
General Contractor Supervision	10%	$10,100.00
	Sub-Total	**$388,400.00**
Construction Contingency	15%	$58,260.00
Design and Construction Administration Fees	12.60%	$56,279.16
	Total	**$502,939.16**

=

APPENDIX A
STRUCTURAL REPORT

PRAKASH

PRAKASH CONSULTING LTD
STRUCTURAL ENGINEERS

April 12, 2023
2023-045

HDA Engineering Ltd.
2334 8th Avenue
Regina, SK
S4P 1G3

Re: Frank J. Dunn Pool – Decommissioning
Prince Albert, SK

As you requested, a site review was performed on March 16, 2023. The purpose of the review relates to the expected decommissioning of the lap pool and dive tank. This letter and accompanied sketches outline the requirements to structurally infill these two areas with a solid floor. This area is to compliment the mechanical and electrical reports and original drawings circa 1974.

The intent of the decommissioning is to create/install a new floor system, at the level of the existing concrete floor. The following list describes the related work and procedures to create this new floor and is intended for a proposed methodology:

- Work completed in conjunction with mechanical demolition of piping.
- Remove all floor mounted equipment and tiles adjacent. Grind anchors flush with concrete.
- Remove drain, scupper covers, bodies, and tile 300mm around each including mortar down to original concretes.
- Remove 300mm of tile and mortar vertical and horizontal typical perimeter of pool and tank, down to original concrete including surface for column and beam attachment.
- Remove hot tub, demo tile and concrete walls. Remove all tile and mortar from walls and floor within 300mm of vertical and horizontal surfaces.
- Form underside and fill all piping, holes and slab penetrations with non-shrink grout and trowel flush.
- Layout of new structure to mirror existing foundation spacing. New columns to be located above pile locations as per plan.
- Adjust column height following profile and slope of pool floors. Remove tile and mortar from 600x600 area at each column and beam bearing.

Proposed Floor System

- 166mm concrete r/w 10M @ 406 on center E/W Top
- 76mm x 1.22mm th. high bond metal deck, HB306, 2 spans minimum.
- Structural steel wide flange beams with 114 long sheer studs @ 300 on center and columns as per plan bolted to walls and slab.
- Perimeter steel angle bolted to wall, L102x102x6.4
- Floor and structure to be designed for minimum live load of 7.2kPa (150psf) superimposed dead load of 1.5kPa (31psf), not to limit future development of this area.
- All connections to be bolted minimum 4 bolt connections steel to steel, 6 anchors steel to concrete , 4 base plate anchor bolts shim and grout to concrete floor.
- Temporary bracing required during erection.

PRAKASH

PRAKASH CONSULTING LTD
STRUCTURAL ENGINEERS

April 12, 2023
2023-045

- Intent is to pour new floor flush with the pool perimeter in anticipation that when all tile and mortar is removed in the future finish topping can be added.

Structural Budget

The following budget includes demolition, site preparation, mobilization, supply and installation of metal deck and structural steel, reinforcing steel, concrete supply place and finish.

Budget: $265,000.00

.1 This estimate is not a guaranteed cost of the construction as only tenders received from Contractors based on final working drawings and specifications will indicate the cost of construction.
.2 This estimate does not include contingencies. Contingencies and Contractor profit will vary up to 15%.
.3 The cost estimate does not include applicable taxes such as PST & GST.
.4 Recommended Engineering Fees 12.6% of Construction Cost.

We trust this letter meets your request and approval. If you require further information, please contact the writer.

Regards,

PRAKASH CONSULTING LTD.

Martin Kiffiak, P.Eng.
MK/jf

PROFESSIONAL ENGINEER
M.A.T. KIFFIAK
MEMBER 11861
23 04 12
YR. MN. DAY
SASKATCHEWAN

Attached: Proposed Structural Plans: S0.0, S2.0, S2.1, S2.2

ASSOCIATION OF PROFESSIONAL ENGINEERS & GEOSCIENTISTS OF SASKATCHEWAN
CERTIFICATE OF AUTHORIZATION
PRAKASH CONSULTING LTD.
NUMBER C1366
PERMISSION TO CONSULT HELD BY:

DISCIPLINE	SASK. REG. No.	SIGNATURE
CIVIL	11861	

MAIN FLOOR NOTES:
FOR GEODETIC ELEVATION = 100'–0" SEE ARCH DWGS.

T/O CONCRETE FLOOR ELEV. = 100'–0" U.N.O.
T/O STEEL FRAMING ELEV. – 99'–5½" U.N.O.

MAIN FLOOR LOADING:

L.L. 7.2 kPa FLOOR AREAS
D.L. 1.5 kPa SUPERIMPOSED INCLUDES P.L.

FLOOR SLAB CONSTRUCTION:

166 SLAB ON METAL DECK:
- 166mm SLAB REINFORCED W/
  - 10M @ 406mm o.c. E.W. TOP
- ON 76mm DP. x 1.22mm TH. HB306 HIGHBOND METAL DECK
- ADDITIONAL REINFORCEMENT AS INDICATED ON PLAN
- STRUCTURAL FLOOR FRAMING AS PER PLAN

L102x102x6.4 AROUND PERIMETER, BOLT TO CONCRETE WITH 16ø WEDGE ANCHORS @ 406mm o.c.

NOTATION "E.D" REFER TO EDGE DISTANCE FROM CENTRELINE OF BEAM TO FACE OF PERIMETER ANGLE

COMPOSITE BEAM NOTES:

- ALL COMPOSITE MEMBERS TO HAVE 19ø x 114mm LG. NELSON STUDS, TYP. U.N.O.
- PLATES AT BEARING, REFER TO DETAIL –/–

STUD PLACEMENT:

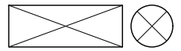
- STUDS ARE TO BE FIELD WELDED WITHIN THE DECK FLUTES AND PLACED IN THE FLUTE NEAREST MID–SPAN OF THE BEAM. PLACE ONE STUD PER FLUTE FOR THE LENGTH OF THE BEAM. ANY REMAINING STUDS TO BE PLACED ONCE PER FLUTE BEGINNING AT MID–SPAN.

GENERAL NOTES:

1. MECHANICAL PENETRATIONS & SIZE SHOWN FOR COORDINATION PURPOSES ONLY. REFER TO MECH. DWGS. FOR LOCATIONS AND SIZES.
2. GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS WITH ARCH. DWGS. PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO PROVIDE THE REQUIRED BOLTED PLATE FOR ALL STRUCTURAL MEMBERS FRAMING INTO GRADE BEAMS. REFER TO BOLTED PLATE SCHEDULE FOR PLATE SIZES & NUMBER OF STUDS.
4. ADJUST EMBEDDED PLATE AND/OR NELSON STUD LOCATIONS AS REQUIRED TO AVOID BASE PLATE ANCHOR BOLTS / REINFORCING; EMBEDDED CORNER PLATE(S) DESIGNED BY STEEL SUPPLIER.

MAIN FLOOR LEGEND:

- INDICATES MECHANICAL OPENINGS, COORDINATE WITH MECH. DWGS. FOR SIZE AND LOCATION

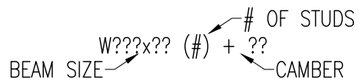


- INDICATES FLOOR DRAIN LOCATIONS, TO BE DEMO.

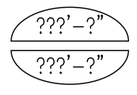
- INDICATES TYP. SKIMMER LOCATIONS, TO BE DEMO.

- INDICATES METAL DECK SIZE, TYPE AND SPAN DIRECTION. H/B = HIGH BOND DECKING

- INDICATES BEAM SIZE, NUMBER OF STUDS AND CAMBER (IF APPLICABLE)



- INDICATES BEAM ELEVATION:
  INDICATES T/O STEEL
  INDICATES U/S OF STEEL



- INDICATES A CHANGE IN THE ELEVATION FROM THE ESTABLISHED T/O STEEL ELEVATION NOTED ABOVE

- INDICATES PLUMBING SERVICE CORE LOCATIONS, COORDINATE OPENING NUMBER, SIZE AND LOCATION WITH MECH.

- INDICATES AREA OF TILE / MORTAR TO BE DEMO.

PRAKASH
PRAKASH CONSULTING LTD
STRUCTURAL ENGINEERS
#4–210 15TH STREET EAST
PRINCE ALBERT, SK S6V 1G2
T 306 922 2101 F 306 763 0212

PRELIMINARY
NOT FOR
CONSTRUCTION

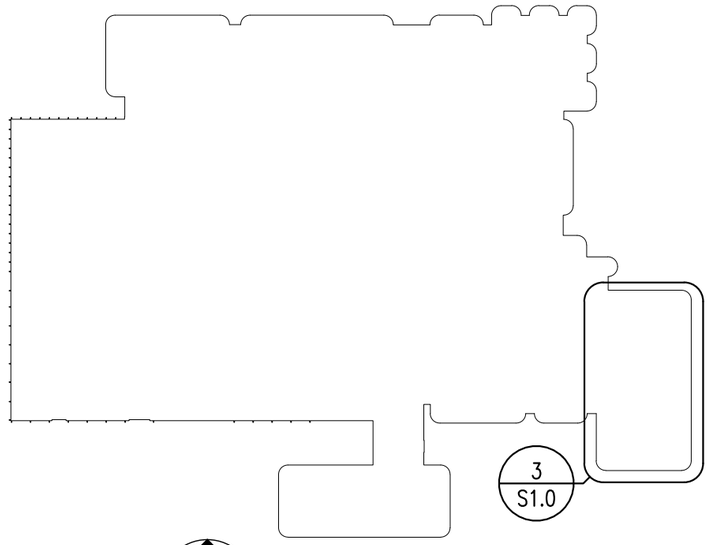
Project Name
FRANK J. DUNN POOL
DECOMMISSIONING
665 28 STREET EAST
PRINCE ALBERT, SK

No.	Revision/Issue	Date

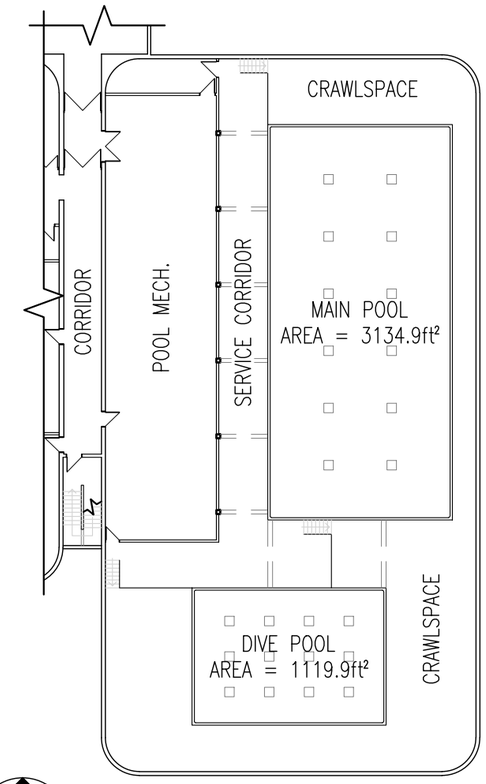
Drawing Name
MAIN FLOOR NOTES,
MAIN FLOOR LEGEND,
& GENERAL NOTES

Project	Drawn by	Check by
2023-045	WHG	MAK
Date: APR. 03, 2023	Sheet No.	
Scale: AS NOTED	S0.0	

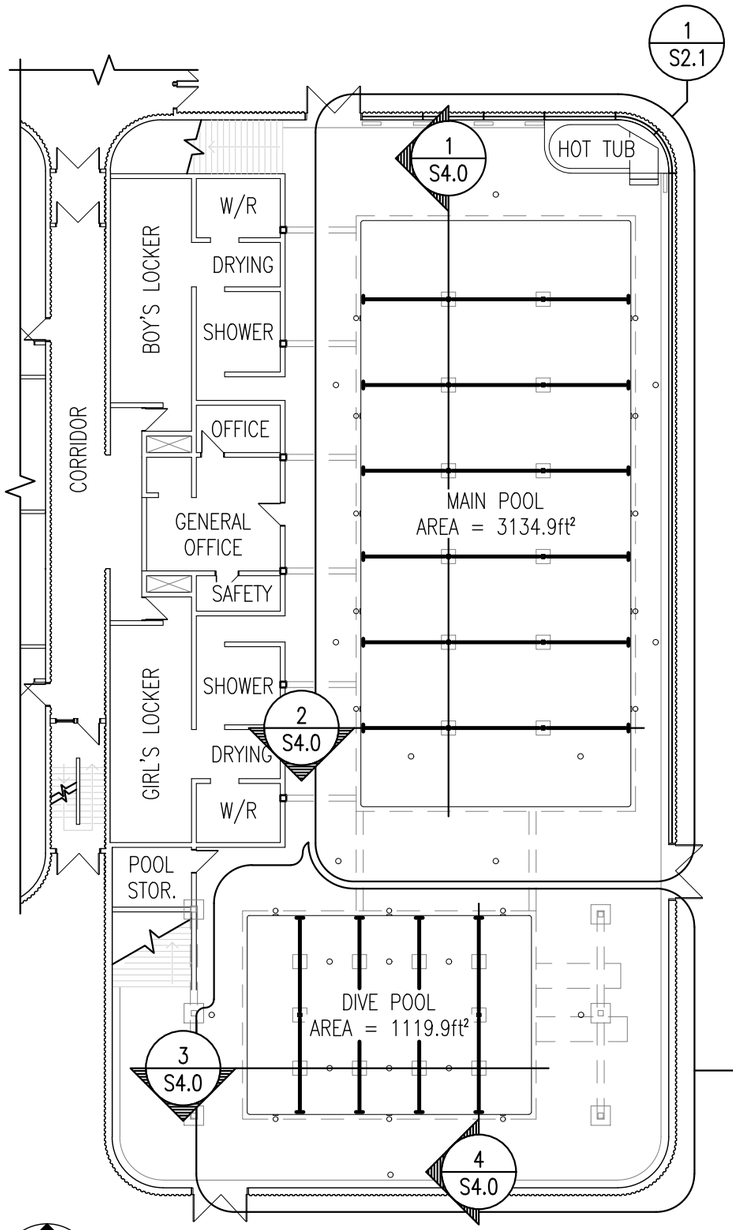
17x11 Date Plotted: Apr 12, 2023 - 10:39:07 am



1 KEY PLAN
N.T.S.



2 POOL BASEMENT PLAN
1/32" = 1'-0"



3 POOL MAIN FLOOR PLAN
3/64" = 1'-0"

PRAKASH
PRAKASH CONSULTING LTD
STRUCTURAL ENGINEERS
#4–210 15TH STREET EAST
PRINCE ALBERT, SK S6V 1G2
T 306 922 2101 F 306 763 0212

PRELIMINARY
NOT FOR
CONSTRUCTION

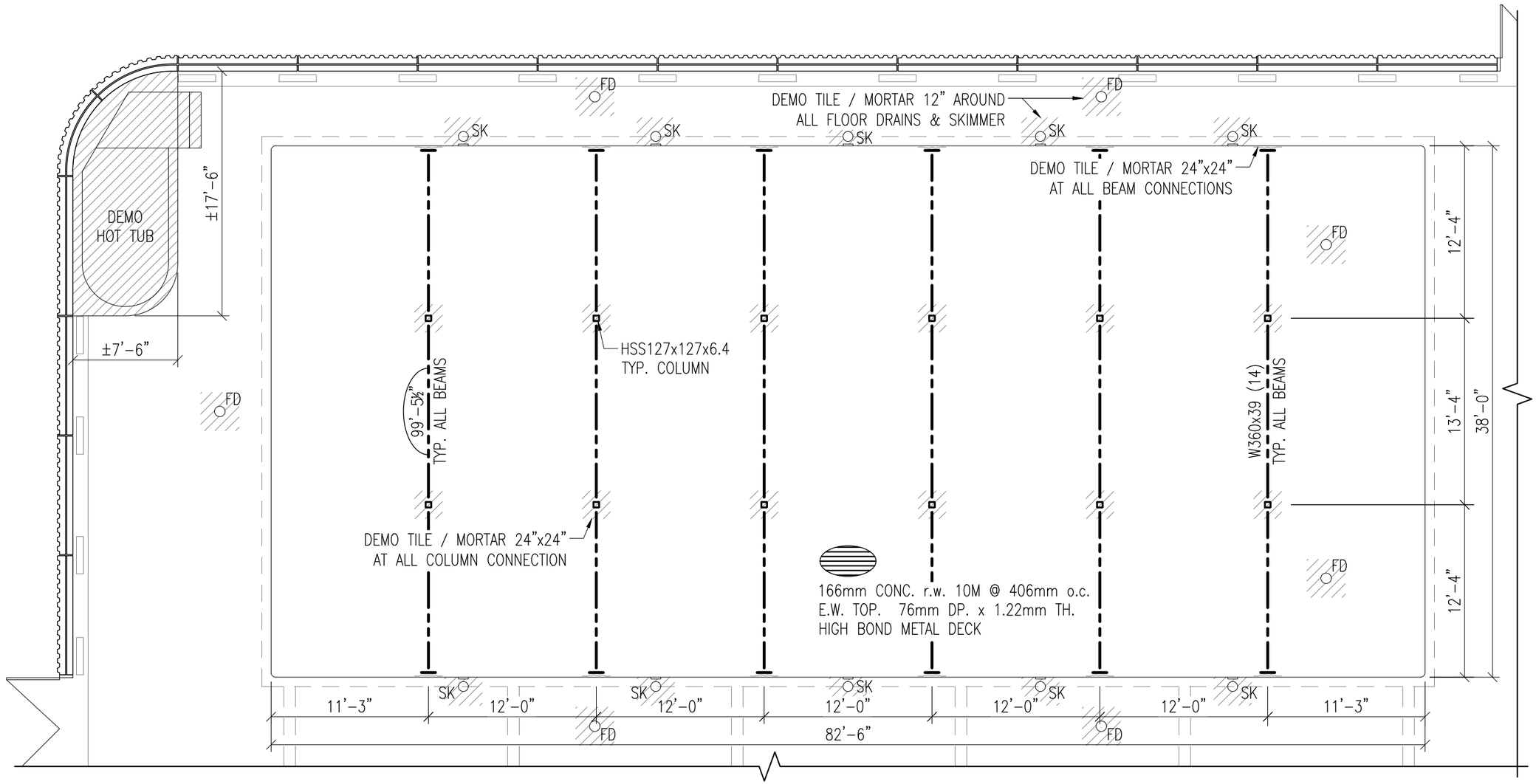
Project Name
FRANK J. DUNN POOL
DECOMMISSIONING
665 28 STREET EAST
PRINCE ALBERT, SK

No.	Revision/Issue	Date

Drawing Name
OVERALL FLOOR
PLANS

Project	Drawn by	Check by
2023-045	WHG	MAK
Date: APR. 03, 2023	Sheet No.	
Scale: AS NOTED	S2.0	

17x11 Date Plotted: Apr 12, 2023 - 10:39:11 am



1 MAIN POOL PROPOSED PLAN

1/8" = 1'-0"

PRAKASH

PRAKASH CONSULTING LTD
STRUCTURAL ENGINEERS

#4–210 15TH STREET EAST
PRINCE ALBERT, SK S6V 1G2
T 306 922 2101 F 306 763 0212

PRELIMINARY NOT FOR CONSTRUCTION

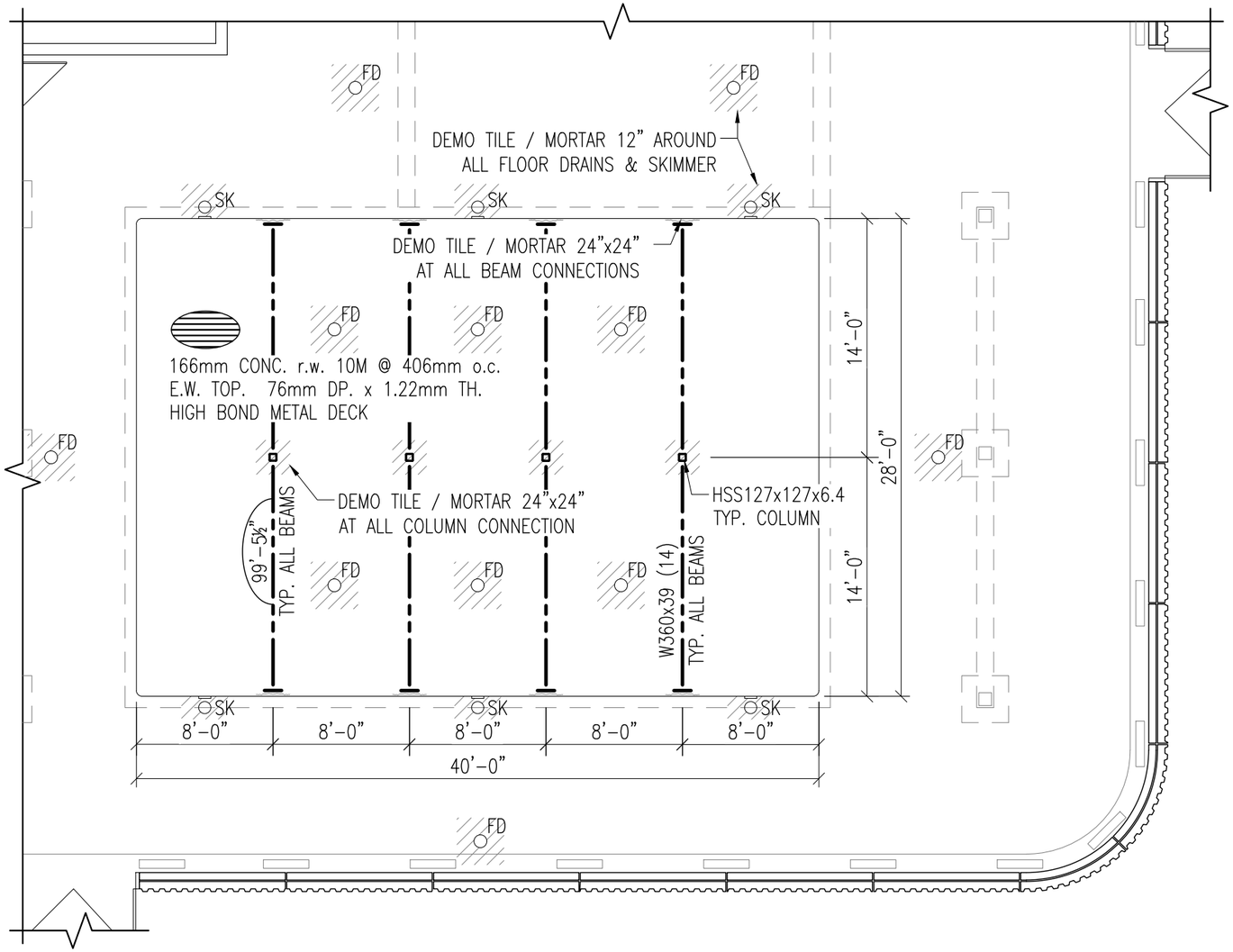
Project Name
FRANK J. DUNN POOL
DECOMMISSIONING
665 28 STREET EAST
PRINCE ALBERT, SK

No.	Revision/Issue	Date

Drawing Name
MAIN POOL PROPOSED PLAN

Project	Drawn by	Check by
2023-045	WHG	MAK
Date: APR. 03, 2023	Sheet No.	
Scale: AS NOTED	S2.1	

17x11 Date Plotted: Apr 12, 2023 - 10:39:16 am



1 DIVE POOL PROPOSED PLAN

1/8" = 1'-0"

PRAKASH

PRAKASH CONSULTING LTD
STRUCTURAL ENGINEERS

#4–210 15TH STREET EAST
PRINCE ALBERT, SK S6V 1G2
T 306 922 2101 F 306 763 0212

PRELIMINARY NOT FOR CONSTRUCTION

Project Name
FRANK J. DUNN POOL
DECOMMISSIONING
665 28 STREET EAST
PRINCE ALBERT, SK

No.	Revision/Issue	Date

Drawing Name
DIVE POOL PROPOSED PLAN

Project	Drawn by	Check by
2023-045	WHG	MAK
Date: APR. 03, 2023	Sheet No.	
Scale: AS NOTED	S2.2	

17x11 Date Plotted: Apr 12, 2023 - 10:39:21 am

=

APPENDIX B
MECHANICAL REPORT

APRIL 12, 2023

=

MECHANICAL DESIGN REPORT
FRANK J DUNN POOL
DECOMMISSIONING
PRINCE ALBERT, SK

PREPARED FOR:
SASKRIVERS SCHOOL DIVISION

HDA ENGINEERING

1.0 Mechanical Scope

1.1 Introduction

HDA Engineering conducted a review of the site in question as well as the existing drawings in order to identify the potential mechanical pool decommissioning scope and associated equipment and systems while ensuring the facility can be maintained in a dormant state for future renovations. Existing equipment and services that could be reused when the space is recapitalized are identified to remain. The review included the site investigation and a meeting with the operator to confirm scope priorities.

1.2 Pool Decommissioning Scope

1.2.1 Mechanical Room and Associated Service Spaces

Overview

The mechanical room houses most of the pool equipment as well as the incoming water service from the Carlton Comprehensive School, the steam supply from the school and the main air handling unit. The pool equipment and most of the associated piping is exposed, although there are some lines buried below the slab.

Scope

All of the mechanical pool equipment will be removed in its entirety, this includes the following:

- Exhaust Fan EF-42 – Chlorine Room Exhaust
- Heat Exchanger C-1 (Pool Heating)
- Heat Exchanger C-2 (Pool Heating)
- Pump P-1 (Diving Tank Supply)
- Pump P-2 (Diving Tank Filter)
- Pump P-3 (Diving Tank Chlorine
- Pump P-4 (Swimming Pool Suppl)
- Pump P-5 (Swimming Pool Filter))
- Pump P-6 (Swimming Pool Chlorine)
- Pump P-7 (Pool Heating Condensate)

- Swimming Pool DE Filters
- Dive Tank DE Filters
- Whirlpool Pump
- Whirlpool Filters
- Whirlpool Heat Exchanger
- Balance Tank
- Chlorine feeder systems

All of the associated exposed piping, fittings, valves, controls and accessories associated with the demolished equipment will also be removed in their entirety. Piping installed below slab will be capped and sealed at the floor and the lines abandoned in place.

The domestic tempered water heat exchanger and associated recirc pump will remain in place as well as the associated tempered distribution and recirc piping serving plumbing fixtures.

The domestic cold water and hot water distribution serving the plumbing fixtures will remain in place. The domestic hot water recirc pump and recirculation system serving the plumbing fixtures will remain in place.

The domestic steam to water heat exchanger will remain in place to accommodate future renovations.

The steam and condensate distribution will remain active and in place to serve the main AHU as well as the domestic heat exchanger. Steam and condensate piping from demolished equipment will be removed back to the nearest active main.

1.2.2 Pool and Diving Tank

Overview

The pool and diving tank are served from a supply distribution located within the crawlspace around the pool and from buried piping that is connected to supply outlets in the pool wall/floor.

The pool and diving tank are served from a drain distribution located within the crawlspace around the pool and from buried piping that is connected to scuppers on the pool wall and main drain in the pool floor.

There are pool deck drains located around the pools that connect to exposed PVC sanitary mains running in the crawlspace. The sanitary mains connect to a buried sanitary.

Scope

The pool drains will be removed from the walls and floor and the connection to the pool capped and sealed. All associated exposed piping will be removed in its entirety. The piping that is buried, will be capped at the exposed point, sealed and abandoned in place.

The pool supply outlets will be removed from the pool wall and floor with connection to pool capped and sealed. All associated exposed piping will be removed in its entirety. The piping that is buried, will be capped at the exposed point, sealed and abandoned in place.

The pool deck drains, which connect to sanitary, will be removed including their associated p-trap and capped at the floor. The associated sanitary drain line, which is in good condition will be abandoned in place to accommodate future renovations as a sanitary sewer.

1.2.3 Whirlpool

Overview

A whirlpool was added to the facility and is complete with supply and return systems.

Scope

The whirlpool and all associated equipment, piping, valves, fittings and accessories will be removed in their entirety to facilitate demolition of the Whirlpool.

1.2.4 Washrooms/Changerooms

Overview

There are two changerooms within the core of the pool building. Each changeroom consists of a locker area, washroom area, and shower area. There is also a single staff washroom located in the core. Soiled areas are exhausted by a dedicated exhaust fan located in the second floor mechanical room. Plumbing serving the washrooms is primarily located in the basement mechanical room.

Scope

The washrooms/changerooms and all associated plumbing fixtures will remain as is. All associated plumbing services, exhaust and heating will remain as is.

1.2.5 HVAC

Overview

The main air handling unit provides ventilation and heating for the pool area. The unit is comprised of a supply fan, steam heating coil, DX cooling coil economizer and remote

exhaust/return fan. Economizer dampers are in place to modulate the amount of exhaust, return and outside air. Supply air is ducted within the crawlspace to floor grilles on a raised ledge around the perimeter of the pool room.

Return air is ducted within a shaft from the second floor down to the AHU. The return air is connected to the outside air intake louver and exhaust fan discharge with a set of dampers that control the volume of outside air/ exhaust air versus return air.

The Pool exhaust fan, located in the second floor service space, draws air from the upper level of the pool from side wall intakes and discharges it to either the return or exhaust louver, as determined by the economizer dampers.

The occupied interior spaces, including the change rooms and the staff area are heated, ventilated and cooled from a dual duct system located in Carlton Comprehensive School. There are three zones of control, each with a dual duct mixing box controlled from the thermostat.

The change rooms and areas served by the Carlton Comprehensive dual duct system are exhausted with a common exhaust fan, located in the second floor service space.

Scope

The existing central air handling unit and associated exhaust fan will remain to provide heating and ventilation to the pool area. The associated steam heating coil and all associated piping, valves and accessories will remain as is. The floor grilles and return air grilles located in the space and all associated ductwork will remain as is.

The air handling unit and associated exhaust fan will be rebalanced to reduce airflow to suit heating only requirements. The existing controls will be modified to utilize the economizer dampers to reduce ventilation to provide minimal ventilation to the space.

The existing mixing boxes and associated distribution will remain as is to serve the interior zones. The thermostats will be adjusted to reduce requirements for heating/cooling.

The existing washroom exhaust fan will remain as is.

1.3 Budget

The following budget includes demolition of the noted mechanical systems that serve the pool functions as well as minor revisions to the HVAC system to maintain and protect the space:

Budget: $86,000.00

1. This estimate is not a guaranteed cost of the construction as only tenders received from Contractors based on final working drawings and specifications will indicate the cost of construction.
2. This cost estimate includes 18% overhead and profit for mechanical.

3. This cost estimate does not include applicable taxes such as PST & GST.
4. This cost estimate does not include fees for design and contract administration.
5. This estimate does not include any contingencies.

Ted Cooke P.Eng.

HDA Engineering Ltd.

=

APPENDIX C
ELECTRICAL REPORT

PWA ENGINEERING
CONSULTING ELECTRICAL ENGINEERS

ELECTRICAL DECOMMISIONING REPORT

Project: Frank Dunn Pool, Carlton High School, Prince Albert, SK

PWA#: 23-075

Date: March 28, 2023

On March 23, 2023 PWA Engineering toured the F.Dunn Pool in Prince Albert, SK to ascertain the impact of decommissioning the pool equipment from the area.

As the pool is currently a part of Carlton High School, it is desirous to retain the space all the while removing the pool equipment so that the space can be repurposed in the future.

Existing Equipment

The existing pool is serviced by two distribution arrangements; one 400Amp, 120/240V distribution as well as a 480V, 3 phase distribution. The 480V system supplies mainly pool pumps, supply and exhaust fans, and the UV disinfection system controller.

The 120/240, single phase equipment provides general power, lighting and some smaller pool pumps and equipment. A general understanding of what components are related to the pool operation/equipment are as follows:

1. Panel BB – Pool Systems panel, Mixer water pump, Pool Htg, Cond pump, Whirlpool Chemical control
2. Panel CC (Panel @ Pool Office) – Deck Main Overhead lights
3. Panel DD (Panel @ Pool Office) – Main Pool and Diving tank underwater lights, and other items.
4. Panel UU – Diving Tank lights, Pool Office Air conditioner.
5. Panel EE – This panel is completely empty and can be removed from the distribution line up.
6. Filter Pump (SPA) breaker disconnect.
7. Panel DD GFI Protection unit.
8. Panel DD Underwater light contactor
9. 2P20A, GFI protection Unit

Conclusions/Recommendations

To decommission the pool equipment, much of the 480V equipment wiring can be removed, with just the retaining of the air handling system connections. In regard to the 120/240V system, the above documented items will need to be disconnected and have their field devices removed such as lighting, pumps (and starters), UV Equipment, Control panels etc.

Electrical Budget:

It is estimated that the total probable electrical cost for above mentioned scope of work would be **$15,000.**

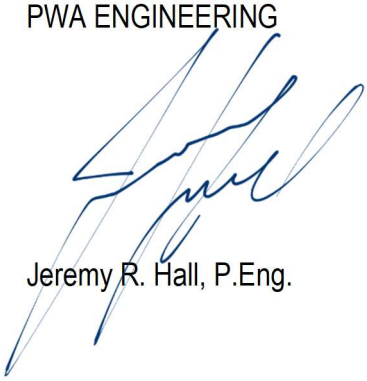
Notes:

.1 This estimate is not a guaranteed cost of the construction as only tenders received from Contractors based on final working drawings and specifications will indicate the cost of construction.

.2 This estimate includes contingencies for overhead and profit of 18%.

.3 The cost estimate does not include applicable taxes such as PST & GST.

Respectfully Submitted,
PWA ENGINEERING



Jeremy R. Hall, P.Eng.