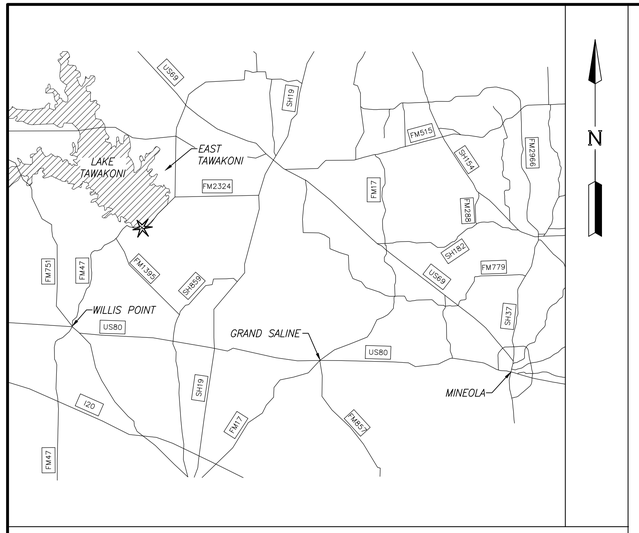
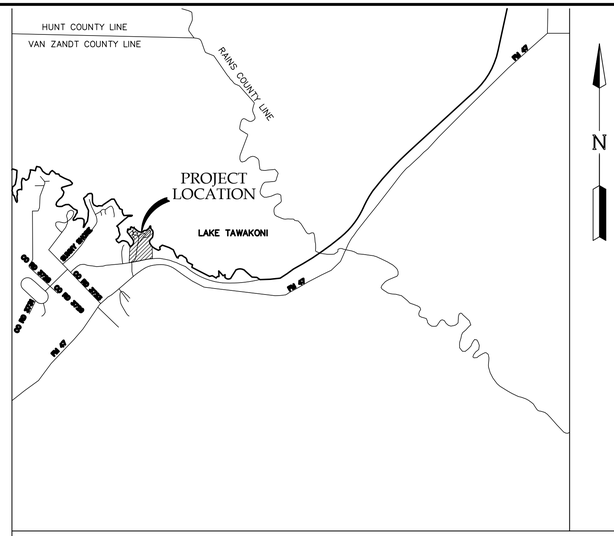


LOCATION MAP

SCALE: N.T.S.



VICINITY MAP

SCALE: N.T.S.

Sabine River Authority of Texas

CONSTRUCTION PLANS FOR

LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

VAN ZANDT COUNTY, TEXAS

JOB No. B883-1015D DATE : SEPTEMBER 2022

FIRM MAP# 48467C0050C
FLOOD INSURANCE MAP
PANEL 50 OF 650

APPROVED FOR CONSTRUCTION

BY: _____ **DATE:** _____

RECORD DRAWING

I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS

BY _____ DATE _____

TITLE _____

SHEET INDEX:

REGISTERED LANDSCAPE ARCHITECT
STATE OF TEXAS
09.08.2022

811 Know what's below. Call before you dig.

ONE-CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG
(713) 223-4567 (IN HOUSTON)
(NEW STATEWIDE NUMBER OUTSIDE HOUSTON)
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NOTE:
CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF EXISTING FACILITIES PRIOR TO STARTING CONSTRUCTION. CONTRACTOR TO IMMEDIATELY NOTIFY THE ENGINEER IF EXISTING LOCATION & ELEVATION DO NOT MATCH THESE PLANS.

OWNER: SABINE RIVER AUTHORITY
169 RCR 1480, Point, Texas 75472

CIVIL ENGINEER: **LJA Engineering, Inc.**
3600 W. Sam Houston Pkwy.
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

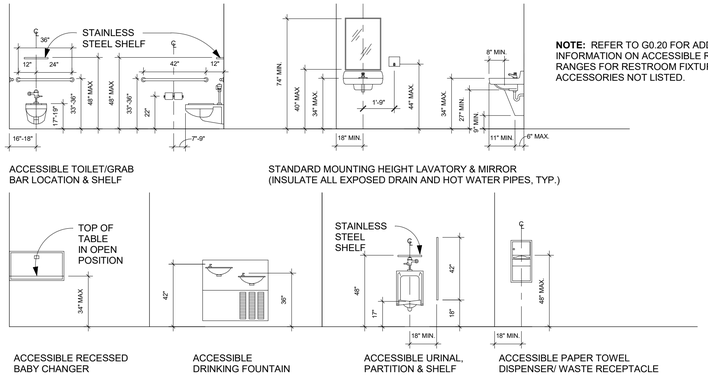
ARCHITECT: STUDIO RED ARCHITECTS
1320 McGowen, Houston, Texas 77004

STRUCTURAL ENGINEER: FRACTAL STRUCTURAL ENGINEERING
16365 Park Ten Pl Suite 325, Houston, TX 77084

MEP ENGINEER: SALAS O'BRIEN
10930 W Sam Houston Pkwy N #900
Houston, TX 77064

BID SET

PRIVATE PLANS – LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE; SABINE RIVER AUTHORITY OF TEXAS :B883-1015C



NOTE: REFER TO G0.20 FOR ADDITIONAL INFORMATION ON ACCESSIBLE REACH RANGES FOR RESTROOM FIXTURES & ACCESSORIES NOT LISTED.

ACCESSIBLE TOILET/GRAB BAR LOCATION & SHELF

STANDARD MOUNTING HEIGHT LAVATORY & MIRROR (INSULATE ALL EXPOSED DRAIN AND HOT WATER PIPES, TYP.)

ACCESSIBLE RECESSED BABY CHANGER

ACCESSIBLE DRINKING FOUNTAIN

ACCESSIBLE URINAL, PARTITION & SHELF

ACCESSIBLE PAPER TOWEL DISPENSER/ WASTE RECEPTACLE

RESTROOM FIXTURE & ACCESSORY MOUNTING HEIGHTS 1/4" = 1'-0" 15

TA-01 JUMBO-ROLL TOILET TISSUE DISPENSER
TA-02 WASTE RECEPTACLE
TA-03 SOAP DISPENSER
TA-04 GRAB BAR, 36" LENGTH
TA-05 GRAB BAR 42" LENGTH
TA-06 FRAMED MIRROR
TA-07 HIGH-SPEED AIR DRYER
TA-08 CUSTODIAL MOP AND BROOM HOLDER

TOILET ACCESSORIES 1/8" = 1'-0" 11

A. DIMENSIONS ARE SHOWN TO FINISHED FACE (GYPSUM BOARD) OF PARTITIONS, FACE OF CONCRETE OR CMU, AND CENTERLINE OF STRUCTURAL COLUMNS AND BEAMS. ALL "HOLD" OR "CLEAR" DIMENSIONS MUST BE MAINTAINED. DIMENSIONS ARE NOT ADJUSTABLE WITHOUT APPROVAL OF ARCHITECT. ALL PARTITIONS NOTED AS "ALIGN" ARE TO BE SMOOTH AND FLUSH WITH EXISTING OR ADJACENT CONSTRUCTION TO CREATE ONE CONTINUOUS SURFACE. DOORS ARE LOCATED 6 INCHES FROM FACE OF WALL, U.N.O. ALL HANDRAILS ARE 1-1/2" CLR FROM WALL FACE OR EDGE, U.N.O.

B. DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, ELEVATIONS, SECTIONS AND DETAILS.

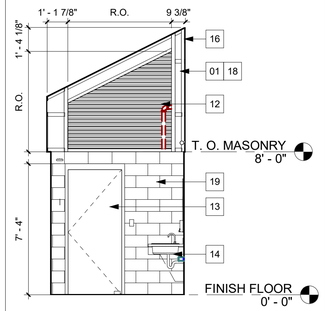
C. BLOCKING OR BRACING SHALL BE PROVIDED IN PARTITIONS AS REQUIRED FOR WALL-MOUNTED ITEMS. PROVIDE 6-INCH HIGH X 16 GA. BRACING SPANNING ACROSS THREE STUDS, MINIMUM FOR WALL CABINETS, SHELVING, MARKER BOARDS, GRAB BARS, SHOWER SEATS, HANDRAILS, ETC. ALL WOOD BLOCKING, GROUNDS, AND MISCELLANEOUS BLOCKING SHALL BE FIRE-RETARDANT TREATED IN ACCORDANCE WITH GOVERNING FIRE CODES.

D. MEMBRANE PROTECTION IS NOT REQUIRED AT STEEL ELECTRICAL BOXES WHERE NOT EXCEEDING 16 SQUARE INCHES IN AREA AND IF THE AGGREGATE AREA OF SEVERAL SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR EVERY 100 SQUARE FEET OF WALL OR CEILING AREA, AND WHERE BOXES ARE SEPARATED BY A HORIZONTAL DISTANCE OF 24 I NCHES WHEN ON OPPOSITE SIDES OF A WALL PER IBC SECTION 712.

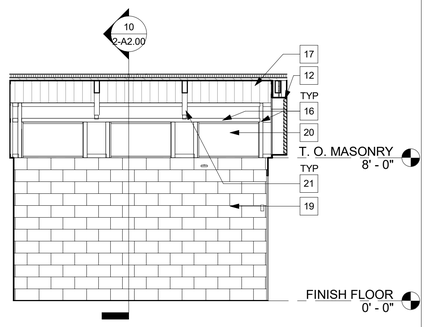
FLOOR PLAN GENERAL NOTES 07

01 EXTERIOR WALL
02 ROOFLINE ABOVE
03 PORCH SLAB RE: STRUCTURAL
04 STEEL COLUMN, PAINTED, RE: STRUCTURAL
05 INTERIOR CMU PARTITION TO 8'
06 INTERIOR LOAD-BEARING WALL CMU TO 8', WOOD STUD WALL TO DECK, RE: STRUCTURAL
07 FLOOR MOUNTED TOILET PARTITION
08 SCHED. SOLID SURFACE COUNTERTOP
09 DRINKING FOUNTAIN
10 DOWNSPOUT
11 SITE PAVING, RE: CIVIL
12 PREFIN. HVAC LOUVER, RE: MECH. FOR VENTILATION EQUIPMENT
13 SCHED. DOOR AND FRAME
14 SCHED. PLUMBING FIXTURE, RE: PLUMB.
15 SCHED. LIGHTING FIXTURE, RE: ELEC.
16 FIBER CEMENT BOARD BATTENS AT FIBER CEMENT BOARD WALL PANEL SEAMS. NAILED; FILL HOLE AND SAND FOR REQUIRED FINISH
17 TONGUE AND GROOVE WOOD WITH CLEAR SEALANT, RE: SPECS.
18 FIBER CEMENT BOARD WALL PANELS, PAINTED
19 CMU EXTERIOR WALL WITH SCHEDULED FINISH
20 FIXED ALUMINUM WINDOW WITH SCHEDULED GLAZING
21 TIMBER ROOF BEAM, RE: STRUCT.

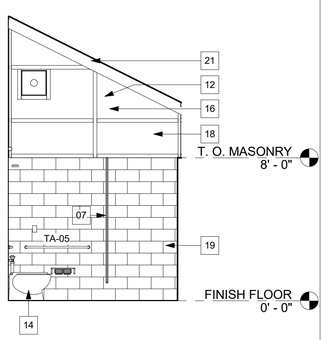
KEYNOTES 1/8" = 1'-0" 03



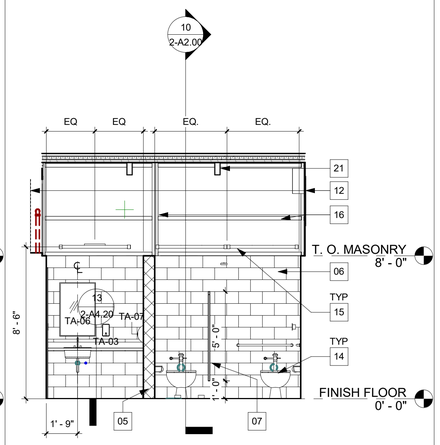
WOMENS - D 1/4" = 1'-0" 18



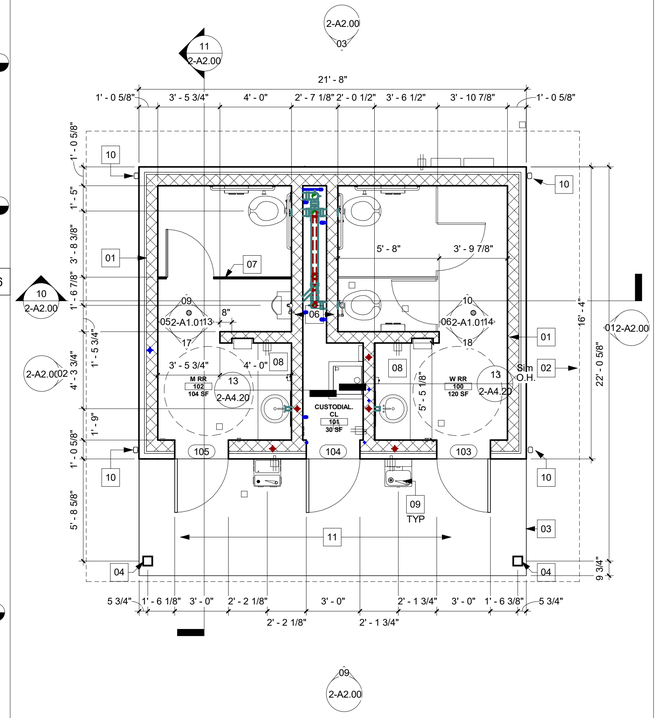
WOMENS - C 1/4" = 1'-0" 14



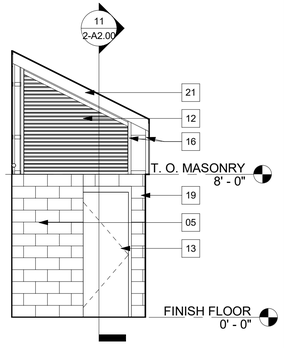
WOMENS - B 1/4" = 1'-0" 10



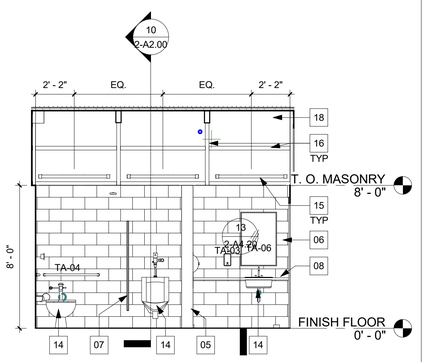
WOMENS - A 1/4" = 1'-0" 06



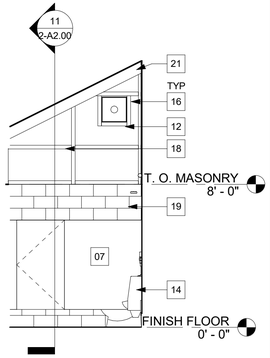
LEVEL 1 PLAN 1/4" = 1'-0" 01



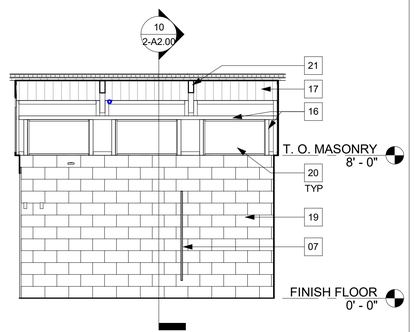
MENS - D 1/4" = 1'-0" 17



MENS - C 1/4" = 1'-0" 13



MENS - B 1/4" = 1'-0" 09



MENS - A 1/4" = 1'-0" 05

Issue

No.	Date	Description
0	09/08/2022	ISSUE FOR BID

09/08/2022

STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engeneers**
Stuctural Engineer	**Fractal Structural Engineering**
MEP Engineer	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, & LANDSCAPE

Drawing Name
LEVEL 1 PLAN

SRA Project Number
2001

Scale
As indicated

Drawing Number
2-A1.01

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A. SEE FLOOR PLAN FOR IN-GROUND LIGHTING, LOW WALL LIGHTING & UP-LIGHTING.

B. ALL DIMENSIONS SHALL BE TAKEN FROM FACE OF FINISHED SURFACES UNLESS OTHERWISE NOTED.

C. LIGHTING FIXTURES SHOWN ON THIS PLAN FOR LOCATION AND QUANTITY ONLY. REFER TO ELECTRICAL DRAWINGS FOR FIXTURE TYPE, CONDUIT, CIRCUITING AND SWITCHING INFORMATION.

D. MECHANICAL EQUIPMENT WHERE SHOWN IS FOR REFERENCE ONLY. REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR MORE INFORMATION.

REFLECTED CEILING PLAN GENERAL NOTES 1/8" = 1'-0" 08

A. AT THE JUNCTURE OF THE ROOF AND VERTICAL SURFACES, PARAPETS, ROOF EDGE, ROOF PENETRATIONS, ECT., FLASHING AND COUNTERFLASHING SHALL BE PROVIDED PER THE ROOF MANUFACTURER'S RECOMMENDATIONS AND, WHEN OF METAL, SHALL NOT BE LESS THAN NO. 24 GALVANIZED SHEET GAGE CORROSION-RESISTANT METAL. FLASHING AND COUNTERFLASHING SHALL BE PREFINISHED U.N.O.

B. REFER TO 2-A4.20 FOR TYPICAL ROOF DETAILS

ROOF PLAN GENERAL NOTES 1/8" = 1'-0" 04

TONGUE AND GROOVE CEILING, SEALED

WALL-MOUNTED SCONCE LIGHT

LINEAR WALL-MOUNTED SCONCE LIGHT

RCP LEGEND 1/8" = 1'-0" 07

01 STANDING SEAM METAL ROOF PANELS OVER CONT. ROOF UNDERLAYMENT
02 FIBER CEMENT FASCIA , PAINTED
03 PRE-FINISHED METAL GUTTER
04 PRE-FINISHED METAL DOWNSPOUT
05 RIDGE CAP
06 STEEL TRUSS, PAINTED; RE: STRUCTURAL
07 T&G WOOD DECK, SEALED RE: STRUCTURAL
08 WOOD RAFTER, SEALED; RE: STRUCTURAL
09 STRUCTURAL STEEL COLUMN, PAINTED
10 INTERIOR LOAD-BEARING WALL CMU TO 8', WOOD STUD WALL TO DECK, RE: STRUCTURAL
11 EXTERIOR WALL
12 FIXED LOUVER
13 SCHED. WINDOW
14 SCHED. LIGHT FIXTURE RE: ELECTRICAL DRAWINGS
15 SCHED.EXHAUST FAN RE: ELECTRICAL DRAWINGS
16 VENT THRU ROOF
17 RIDGE BEAM, SEALED

ROOF PLAN & RCP KEYNOTES 1/8" = 1'-0" 03

DRAINAGE CALCULATIONS

2012 IPC (SQUARE FEET CALCULATIONS)
TABLE 1106.2(1)

SIZE OF CIRCULAR VERTICAL CONDUCTORS AND LEADERS

ROOF AREA A= 340 SF 374 USED 8" PER HOUR
2" DIAMETER REQUIRED
2012 IPC (SQUARE FEET CALCULATIONS)
TABLE 1106.2(1)

SIZE OF RECTANGULAR VERTICAL CONDUCTORS AND LEADERS
2" x 3" PROVIDED

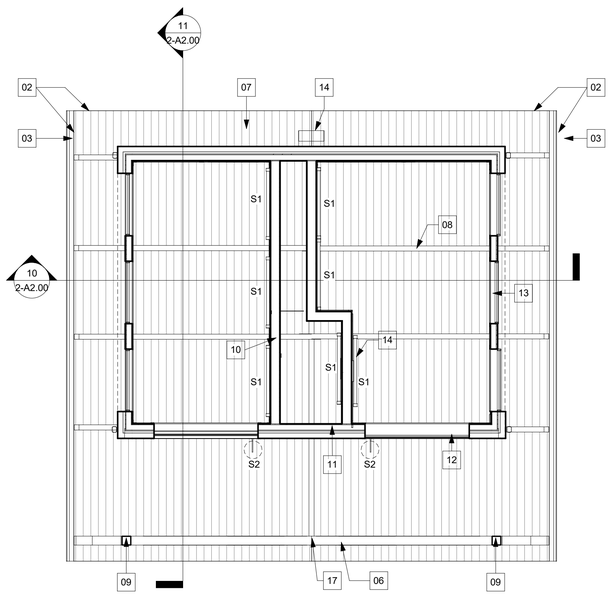
2018 IPC (GPM CALCULATIONS)
TABLE 1106.6

HORIZONTAL GUTTER SIZING

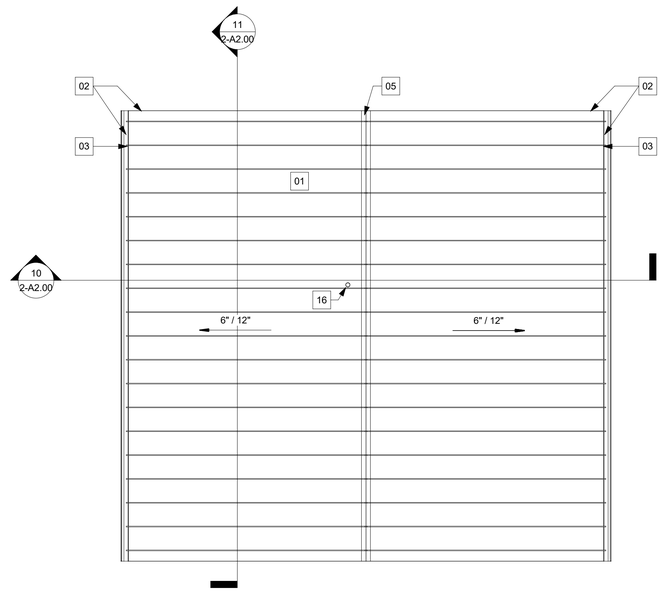
ROOF AREA A= 340 SF 374 USED 8" PER HOUR
X.0104 = 32 GPM REQUIRED

2.5 x 3" = 55 GPM CAPACITY
4"x 4" SQUARE PROVIDED

DRAINAGE CALCULATIONS 1/8" = 1'-0" 13



REFELECTED CEILING PLAN 1/4" = 1'-0" 05



ROOF PLAN 1/4" = 1'-0" 14

Issue

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STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engeneers**
Stuctural Engineer	**Fractal Structural Engineering**
MEP Engineer	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, & LANDSCAPE

Drawing Name
LEVEL 1 ROOF PLAN & REFLECTED CEILING PLAN

SRA Project Number
2001

Scale
As indicated

Drawing Number
2-A1.02

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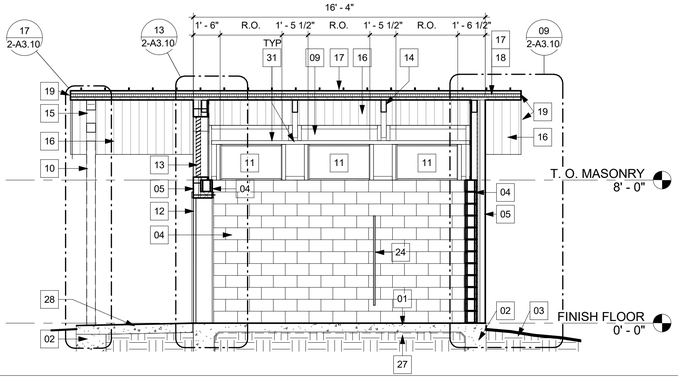
A. REFER TO WINDOW SCHEDULE AND SPECIFICATIONS FOR GLASS INFORMATION.

B. REFER TO SPECIFICATIONS FOR EXTERIOR FINISHES AND COLORS.

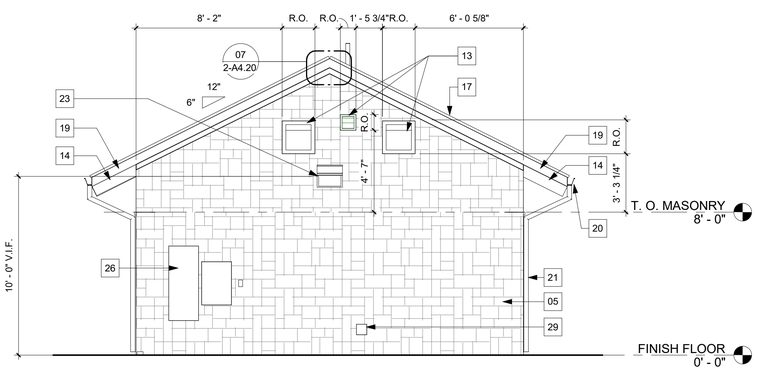
ELEVATION GENERAL NOTES 1/8" = 1'-0" 12

01	CONCRETE SLAB ON GRADE RE: STRUCTURAL
02	CONCRETE FOOTING RE: STRUCTURAL
03	FINISH GRADE RE: CIVIL
04	CMU MASONRY WALL WITH SCHED. FINISH
05	ANCHORED STONE VENEER
06	CAST STONE CAP WITH INTEGRAL DRIP EDGE
07	EXTERIOR WOOD WALL ASSEMBLY
08	INTERIOR LOAD-BEARING WALL WOOD STUD WALL TO DECK, RE: STRUCTURAL
09	FIBER CEMENT BOARD, PAINTED
10	STRUCTURAL STEEL COLUMN, SEALED, RE: STRUCT.
11	SCHEDULED WINDOW WITH INSULATED GLASS
12	SCHEDULED DOOR AND FRAME RE: DOOR SCHEDULE
13	FIXED LOUVER
14	NOM 3 X 8 WOOD RAFTER RE: STRUCT. CHAMFER RAFTER TAIL TO 2" MIN
15	STRUCTURAL STEEL TRUSS, PAINTED
16	T&G WOOD DECK, CLEAR SEALED FINISH, RE: STRUCTURAL
17	STANDING SEAM ROOF OVER SELF ADHERED UNDERLAYMENT
18	2" THK. COMPOSITE NAIL BASE INSULATED ROOF SHEATHING OVER 1/2" PLYWOOS SUBSTRATE
19	FIBER CEMENT FASCIA, PAINTED
20	PRE-FINISHED METAL GUTTER
21	PRE-FINISHED METAL DOWNSPOUT WITH SPLASH BLOCK AT GRADE
22	DRINKING FOUNTAIN
23	SCHED. LIGHT FIXTURE RE: ELECTRICAL DRAWINGS
24	TOILET PARTITION
25	CAST STONE SILL
26	ELECTRICAL EQUIPMENT, PAINTED. RE: ELECT.
27	CONTINUOUS VAPOR BARRIER
28	CIVIL PAVING RE: CIVIL
29	WALL HYDRANT, RE: PLUMB.
30	SCHED. PLUMBING FIXTURE, RE: PLUMB.
31	CEMENT BOARD BATTENS AT CEMENT BOARD WALL PANEL SEAMS. NAILED; FILL HOLE AND SAND FOR REQUIRED FINISH

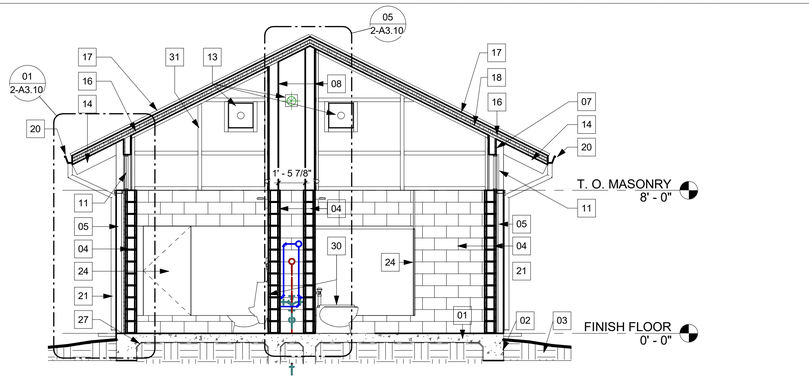
ELEVATION & SECTION KEYNOTES 04



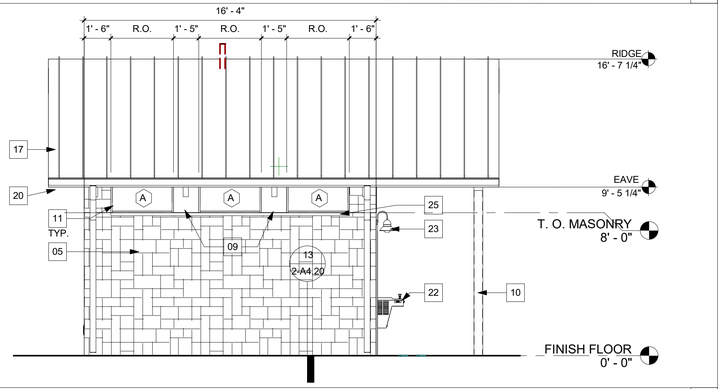
LONGITUDINAL SECTION 1/4" = 1'-0" 11



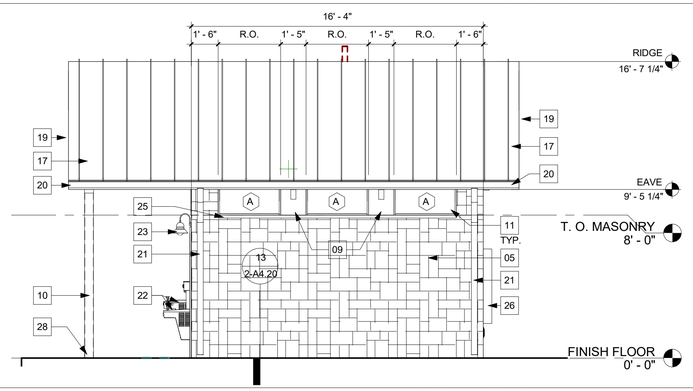
BACK ELEVATION 1/4" = 1'-0" 03



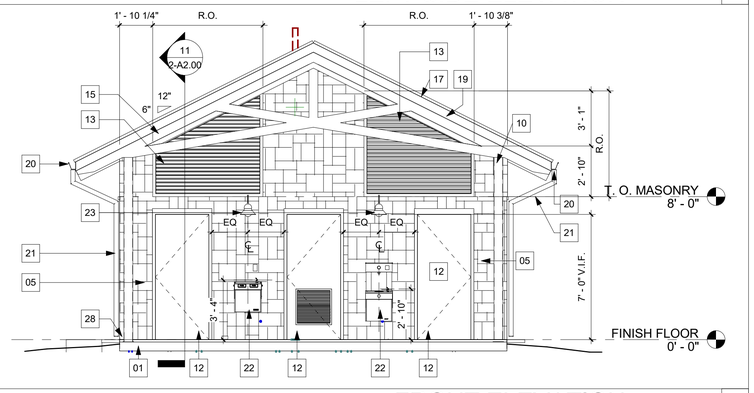
CROSS SECTION 1/4" = 1'-0" 10



LEFT SIDE ELEVATION 1/4" = 1'-0" 02



RIGHT SIDE ELEVATION 1/4" = 1'-0" 09



FRONT ELEVATION 1/4" = 1'-0" 01

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Issue

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STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
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Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name

LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, & LANDSCAPE

Drawing Name

BUILDING ELEVATIONS AND SECTIONS

SRA Project Number

2001

Scale

As indicated

Drawing Number

2-A2.00

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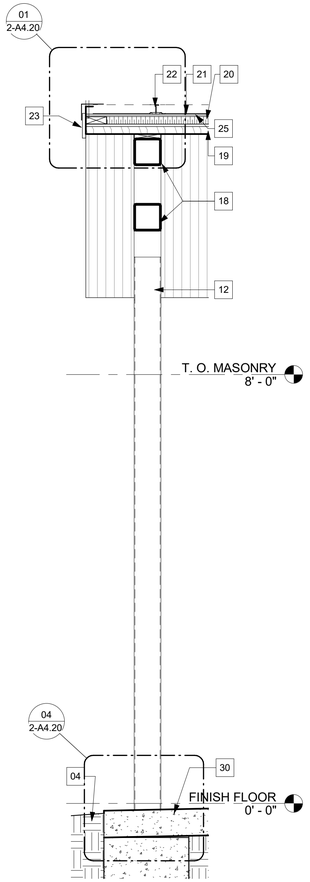
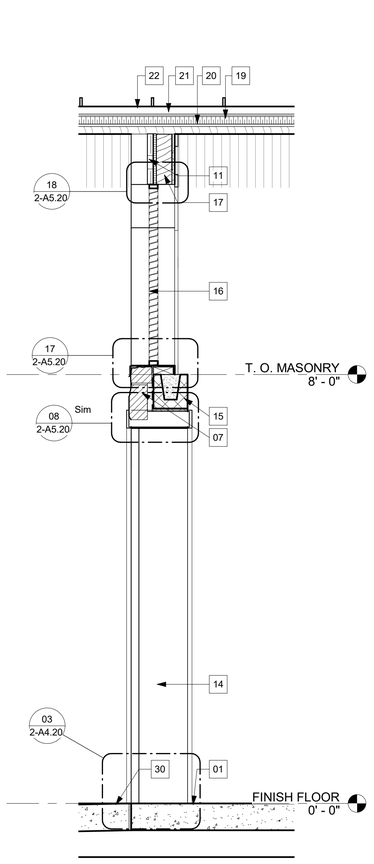
01 CONCRETE SLAB ON GRADE RE: STRUCTURAL	14 SCHEDULED DOOR RE: DOOR SCHEDULE	27 SCHEDULED PIPING, RE: PLUMB.
02 CONCRETE FOOTING RE: STRUCTURAL	15 CMU 8" HEADER	28 FIBER CEMENT BATTENS, NAILED. WITH SCHED. FINISH
03 CONTINUOUS UNDER SLAB VAPOR RETARDER	16 FIXED LOUVER	29 SCHED. LIGHT FIXTURE, RE: ELEC.
04 FINISH GRADE RE: CIVIL	17 NOM 3 X 8 WOOD RAFTER RE: STRUCT. CHAMFER RAFTER TAIL TO 3" MIN	30 CIVIL PAVING RE: CIVIL
05 8" THK. CMU MASONRY WALL, RE STRUCTURAL FOR REINFORCEMENT	18 STRUCTURAL STEEL TRUSS, PAINTED. RE: STRUCT.	31 2X BLOCKING
06 CONTINUOUS DAMPPROOFING	19 NOM 3" THK. T&G WOOD DECK, CLEAR SEALED FINISH RE: STRUCTURAL	
07 4" THK. STONE VENEER, PROVIDE HORIZONTAL REINFORCEMENT AT 2'-0" O.C.	20 1/2" PLYWOOD SUBSTRATE	
08 3" THK. CAST STONE CAP WITH INTEGRAL DRIP EDGE, MAINTAIN POSITIVE DRAINAGE	21 2" THK. COMPOSITE NAIL BASE INSULATED ROOF SHEATHING	
09 NOMINAL 2X4 WOOD STUDS @ 16" O.C.	22 STANDING SEAM ROOF OVER SELF ADHERED UNDERLAYMENT	
10 PLYWOOD WALL SHEATHING	23 FIBER CEMENT FASCIA, PAINTED	
11 FIBER CEMENT BOARD, PAINTED	24 PRE-FINISHED METAL GUTTER AND DOWNSPOUT	
12 STRUCTURAL STEEL COLUMN, PAINTED. RE: STRUCT.	25 CONT. WEATHER BARRIER	
13 SCHEDULED WINDOW WITH INSULATED GLASS	26 LOAD-BEARING INTERIOR WALL CMU TO 8', 2x6 STUD WALL W PLYWOOD SHEATHING ABOVE	

WALL SECTION KEYNOTES 1/8" = 1'-0" 04

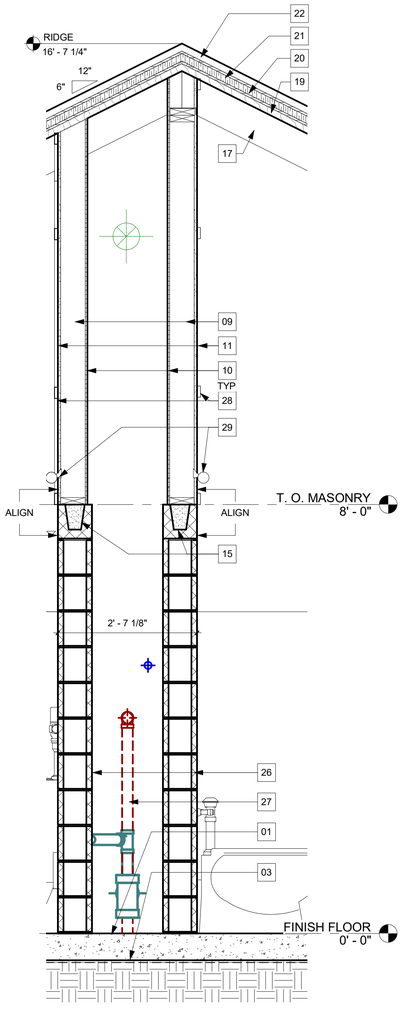


TRUSS WALL SECTION 3/4" = 1'-0" 17

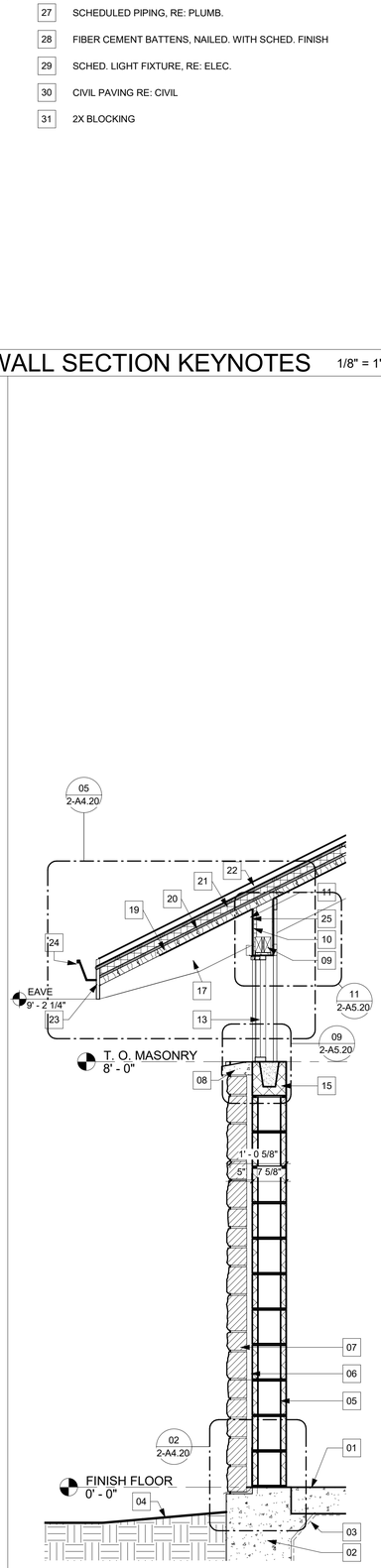


WALL SECT. @ PORCH 3/4" = 1'-0" 13

GABLE END 3/4" = 1'-0" 09



INTERIOR WALL 3/4" = 1'-0" 05



EAVE WALL SECTION 3/4" = 1'-0" 01

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Issue

No.	Date	Description
0	09/08/2022	ISSUE FOR BID

09/08/2022

STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engeneers**
Stuctural Engineer	**Fractal Structural Engineering**
MEP Engineer	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name

LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, & LANDSCAPE

Drawing Name

WALL SECTIONS, EXTERIOR ENVELOPE DETAILS

SRA Project Number

2001

Scale

As indicated

Drawing Number

2-A3.10

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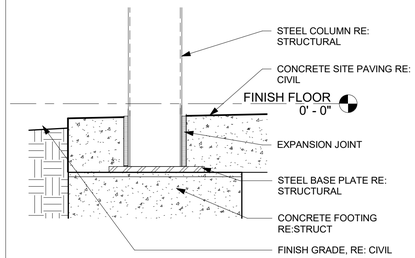
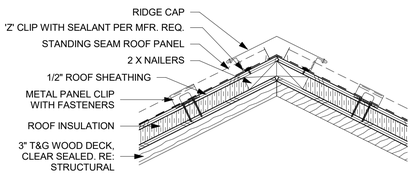
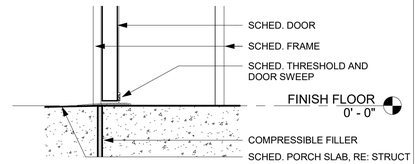


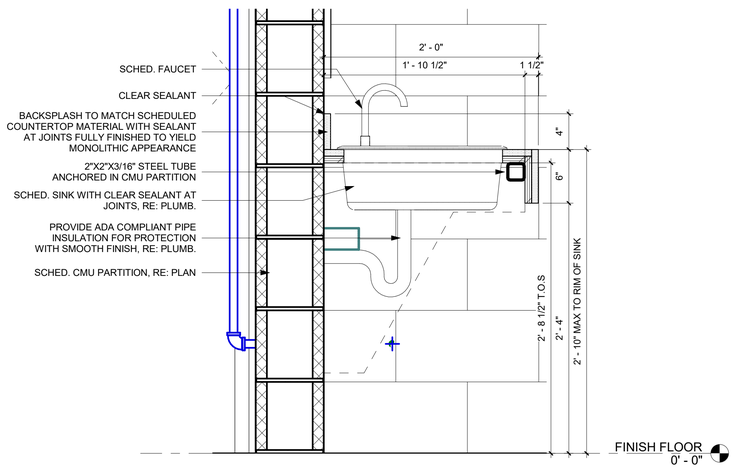
COLUMN BASE 1 1/2" = 1'-0" | 04



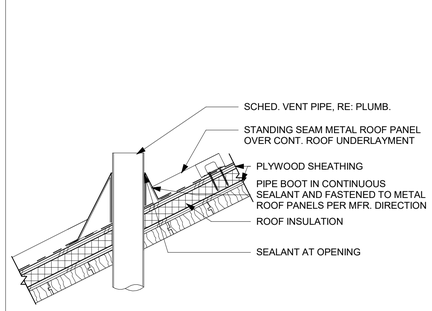
RIDGE CAP DETAIL 1 1/2" = 1'-0" | 07



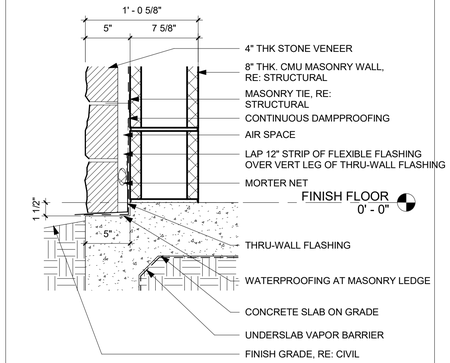
BASE DETAIL AT PORCH 1 1/2" = 1'-0" | 03



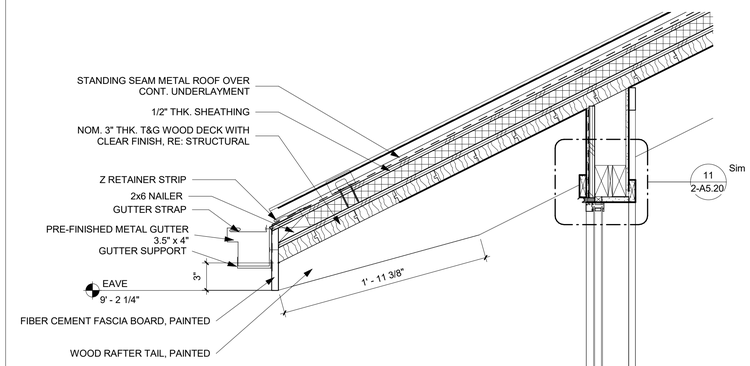
SINK SECTION 1 1/2" = 1'-0" | 13



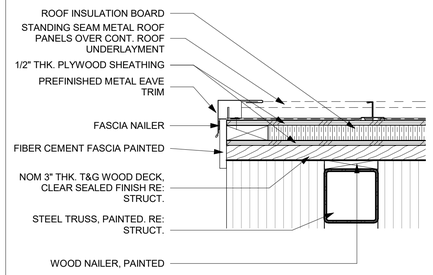
VENT THRU ROOF 1 1/2" = 1'-0" | 06



BASE DETAIL 1 1/2" = 1'-0" | 02



EAVE DETAIL 1 1/2" = 1'-0" | 05



RAKE EAVE 1 1/2" = 1'-0" | 01

Issue

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09/08/2022

STUDIO RED ARCHITECTS

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MEP Engineer	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, & LANDSCAPE
Drawing Name
DETAILS

SRA Project Number
2001
Scale
1 1/2" = 1'-0"
Drawing Number
2-A4.20

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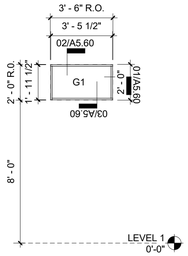
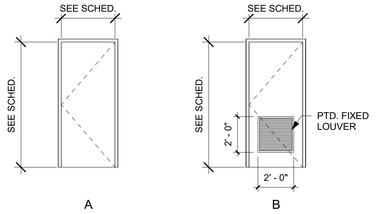


TYPE A

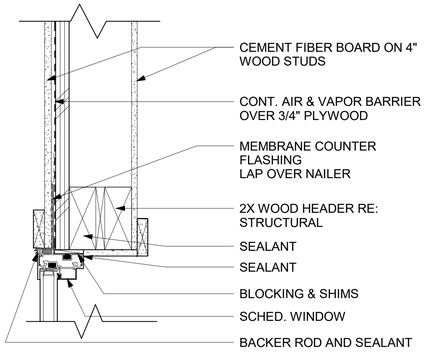
WINDOW SCHEDULE 1/4" = 1'-0" 20



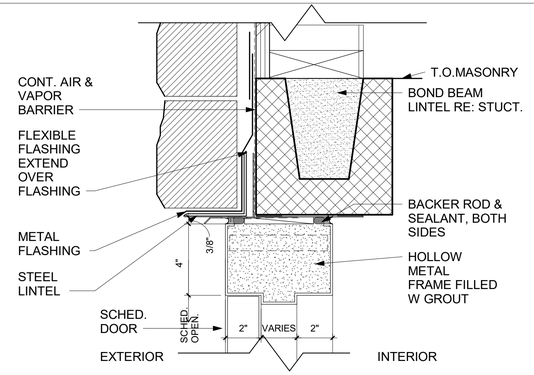
DOOR TYPE 1/4" = 1'-0" 16

LOCATION			DOOR						FRAME									
												DETAILS						
MARK	FROM ROOM: NAME	TO ROOM: NAME	WIDTH	HEIGHT	THICKNESS	MATERIAL	TYPE MARK	FINISH	FRAME MATERIAL	FRAME TYPE	FRAME FINISH	HEAD	JAMB	SILL	FIRE RATING	HARDWARE	REMARKS	Level
103	W RR	PORCH	3' - 0"	7' - 0"	0' - 1 3/4"	HM	A	PT	HM	A	PT	08/2-A5.20	07/2-A5.20	06/2-A5.20	-			SLAB
104	CUSTODIAL. CL	PORCH	3' - 0"	7' - 0"	0' - 1 3/4"	HM	B	PT	HM	A	PT	08/2-A5.20	07/2-A5.20	06/2-A5.20	-			SLAB
105	M RR	PORCH	3' - 0"	7' - 0"	0' - 1 3/4"	HM	A	PT	HM	A	PT	08/2-A5.20	07/2-A5.20	06/2-A5.20	-			SLAB

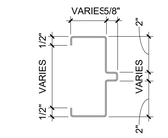
DOOR SCHEDULE N.T.S. 05



WINDOW HEAD DETAIL 3" = 1'-0" 11

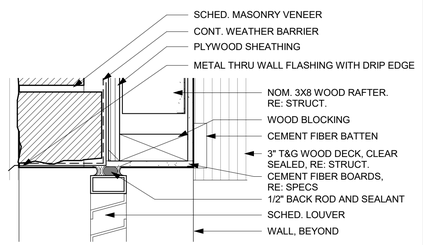


DOOR HEAD 3" = 1'-0" 08

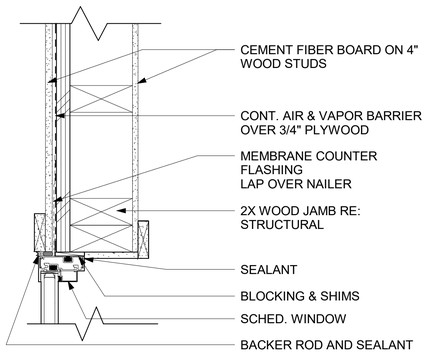


1
HOLLOW METAL DOOR FRAME

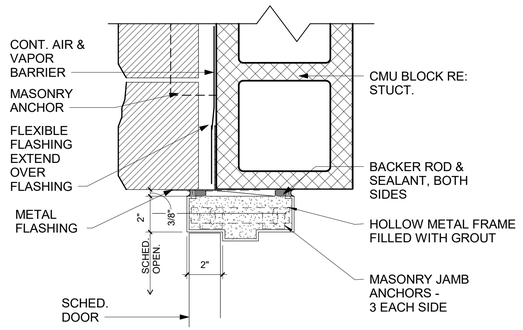
DOOR FRAMES 3" = 1'-0" 04



LOUVER HEAD DETAIL 3" = 1'-0" 18



WINDOW JAMB DETAIL 3" = 1'-0" 10



DOOR JAMB 3" = 1'-0" 07

1. ALL NEW HARDWARE SHALL COMPLY WITH THE ACCESSIBILITY REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, T.A.S., AND ALL LOCAL AUTHORITY REGULATIONS.

2. COMPLY WITH LOCAL APPLICABLE CODES WITH RESPECT TO FIRE RATING OF DOORS, FRAMES AND RELATED HARDWARE.

3. SUBMIT DOOR SHOP DRAWINGS, A DETAILED HARDWARE & KEYING SCHEDULE & FINISH HARDWARE SAMPLES TO ARCHITECT FOR REVIEW & APPROVAL PRIOR TO ORDERING MATERIALS.

4. LOCATED ALL DOORS, HINGE SIDE, 6" FROM ADJACENT WALL UNLESS NOTED OTHERWISE.

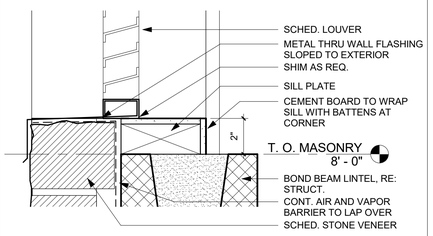
5. ALL LOCKSETS ARE TO BE KEYED SEPARATELY WITH MASTER KEY PROVIDED UNLESS NOTED OTHERWISE. CONFIRM KEYING SCHEME WITH OWNER.

6. ALL DOORSTOPS TO BE FLOOR MOUNTED UNLESS NOTED OTHERWISE. ALL HARDWARE SIMILARLY MOUNTED TO BE INSTALLED AFTER THE INSTALLATION OF THE FINISHED FLOOR MATERIAL.

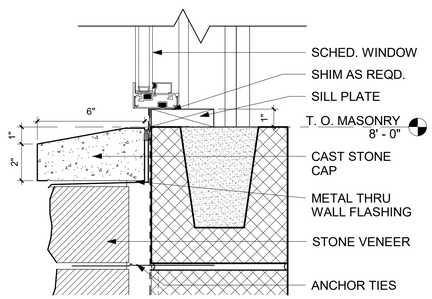
7. PAIRS OF DOORS WILL REQUIRE APPLICABLE ASTRAGALS, FLUSH BOLTS AND COORDINATORS, UNLESS NOTED OTHERWISE. RE: DOOR HARDWARE SCHEDULE FOR MORE INFORMATION.

8. UNDERCUT DOORS ARE REQUIRED TO CLEAR FINISH FLOORING MATERIAL BY 1/4". ALL RATED DOORS SHALL BE ORDERED TO CLEAR FINISH FLOORING MATERIAL BY 1/4".

DOOR SCHED. NOTES 1/8" = 1'-0" 03



LOUVER AT OPENING 3" = 1'-0" 17

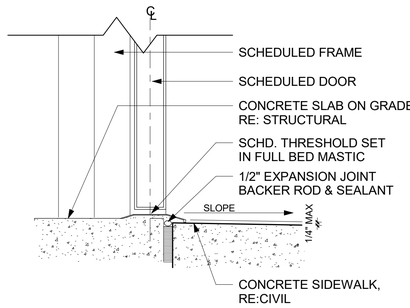


WINDOW SILL DETAIL 3" = 1'-0" 09

A. STOREFRONT JOINTS ARE 1/2" MIN. AT HEAD & JAMB, 3/4" MIN. AT SILL.

WNDW SHED. GENERAL NOTES 02

G1 - 1" INSULATED, LOW-E



DOOR SILL 3" = 1'-0" 06

WNDW SCHED. LEGEND 1/8" = 1'-0" 01

Issue

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STUDIO RED ARCHITECTS

PROJECT TEAM

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Civil Engineer	**LJA Engeneers**
Stuctural Engineer	**Fractal Structural Engineering**
MEP Engineer	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name

LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, & LANDSCAPE

Drawing Name

SCHEDULES, DOOR AND WINDOW TYPES

SRA Project Number **2001**

Scale **As indicated**

Drawing Number

2-A5.20

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STRUCTURAL NOTES

A. GENERAL

1. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL DETERMINE THE SCOPE OF THE STRUCTURAL WORK FOR BIDDING AND CONSTRUCTION FROM THE CONTRACT DOCUMENTS TAKEN AS A WHOLE. DUE CONSIDERATION SHALL BE GIVEN TO OTHER STRUCTURAL WORK OR WORK RELATED TO THE STRUCTURE, INCLUDING NECESSARY COORDINATION DESCRIBED OR IMPLIED BY THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL AND LANDSCAPE DRAWINGS.

2. THE STRUCTURAL NOTES ARE INTENDED FOR USE IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR INFORMATION SUPPLEMENTAL TO THESE DRAWINGS.

3. THE STRUCTURE HAS BEEN DESIGNED FOR THE IN-SERVICE LOADS ONLY. METHODS, PROCEDURES, AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING DETAILS AND ACCURACY OF THE WORK; FOR CONFIRMING AND CORRELATING ALL QUANTITIES, DIMENSIONS AND EXISTING CONDITIONS; AND FOR PERFORMING WORK IN A SAFE AND SECURE MANNER PER OSHA AND DOSH STANDARDS.

5. WHERE CONFLICTS EXIST AMONG VARIOUS PARTS OF THE STRUCTURAL AND ARCHITECTURAL DRAWINGS, GENERAL NOTES AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN. REPORT ANY DISCREPANCY TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBERS.

6. CONDITIONS DESCRIBED BY DETAILS, SECTIONS, NOTES AND SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS SHALL ALSO APPLY TO SIMILAR CONDITIONS NOT SPECIFICALLY INCLUDED. IF CONDITIONS ARE FOUND NOT TO BE APPLICABLE, THE STRUCTURAL ENGINEER OF RECORD AND ARCHITECT SHALL BE NOTIFIED BEFORE PROCEEDING WITH WORK.

7. THE REPRODUCTIVE USE OF THE STRUCTURAL CONTRACT DOCUMENTS OR ELECTRONIC FILES AS STRUCTURAL SHOP DRAWING DOCUMENTS BY THE CONTRACTOR OR SUB-CONTRACTORS IS AT THEIR OWN RISK. FRACTAL LLC ASSUMES NO LIABILITY AS THE RESULT OF THE REPRODUCTIVE USE OF THE STRUCTURAL CONTRACT DOCUMENTS FOR SHOP DRAWINGS.

8. SCALES NOTED ON THE DRAWINGS ARE FOR GENERAL REFERENCE ONLY. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED BY DIRECT SCALING OF THE DRAWINGS.

9. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL RESULTING REVISIONS TO THE STRUCTURAL SYSTEM OR OTHER TRADES AS A RESULT OF ACCEPTANCE OF CONTRACTOR PROPOSED ALTERNATIVES OR SUBSTITUTIONS.

10. STRUCTURAL MEMBERS HAVE BEEN LOCATED AND DESIGNED TO ACCOMMODATE THE MECHANICAL EQUIPMENT AND OPENINGS SPECIFIED BY THE MECHANICAL CONSULTANT. ANY SUBSTITUTIONS RESULTING IN REVISIONS TO THE STRUCTURE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH FRACTAL LLC.

11. PRINCIPAL OPENINGS IN THE STRUCTURE ARE INDICATED ON THE CONTRACT DOCUMENTS. REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR SLEEVES, CURBS, INSERTS, ETC. NOT HEREIN INDICATED. OPENINGS IN SLABS WITH A MAXIMUM SIDE DIMENSION OR DIAMETER OF 10 INCHES OR LESS SHALL NOT REQUIRE ADDITIONAL FRAMING OR REINFORCEMENT, UNLESS NOTED OTHERWISE. THE LOCATION OF SLEEVES OR OPENINGS IN STRUCTURAL MEMBERS SHALL BE SUBMITTED TO FRACTAL LLC FOR REVIEW.

12. ARCHITECTURAL ITEMS OR PREFABRICATED ITEMS SHOWN ON THE STRUCTURAL DRAWINGS ARE REFERENCED FOR GENERAL COORDINATION PURPOSES ONLY.
    A. TYPICAL REFERENCED ARCHITECTURAL ITEMS INCLUDE BUT MAY NOT BE LIMITED TO: DRAINS, DRAIN TILES, FINISHES, DOORS, WINDOWS AND ITEMS FOR THERMAL AND MOISTURE PROTECTION. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR MATERIAL REQUIREMENTS AND EXACT PLACEMENT OF SUCH ITEMS.
    B. TYPICAL REFERENCED PREFABRICATED ITEMS INCLUDE BUT MAY NOT BE LIMITED TO: STAIRS, HANDRAILS, CURTAIN WALL/STOREFRONT SYSTEMS, AWNINGS, CANOPIES, PREFABRICATED FRAMING AND COLD FORMED STEEL FRAMING. SUCH SYSTEMS SHALL BE DESIGNED, FURNISHED AND INSTALLED AS REQUIRED BY OTHERS.

13. PERIODIC SITE OBSERVATION BY FRACTAL LLC IS SOLELY FOR THE PURPOSE OF BECOMING GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE WORK COMPLETED AND DETERMINING, IN GENERAL, IF THE WORK, WHEN FULLY COMPLETED, WILL BE IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO KEEP THE OWNER REASONABLY INFORMED ABOUT THE PROGRESS AND QUALITY OF THE COMPLETED WORK.

B. FOUNDATION AND SLAB ON GRADE

1. THE SUBSURFACE INFORMATION AND FOUNDATION DESIGN ARE BASED ON A REPORT PREPARED BY ETTL ENGINEERS & CONSULTANTS INC., PROJECT NUMBER G5378-20, DATED APRIL 06, 2020. THE CONTRACTOR SHALL PERFORM EXCAVATIONS, FOOTING CONSTRUCTION, AND PREPARATION OF THE SUBGRADE UNDER THE SLAB ON GRADE IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT AND THE PROJECT SPECIFICATIONS.

2. THE FOUNDATION (SPREAD FOOTINGS) FOR THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING ALLOWABLE SOIL BEARING PRESSURES AT A MINIMUM BEARING DEPTH OF APPROXIMATELY TWO (2) FEET BELOW EXISTING GRADE AT THE TIME THAT THE GEOTECHNICAL REPORT WAS PREPARED:

NET DEAD PLUS SUSTAINED LIVE LOAD............2,000 PSF
TOTAL LOAD..2,660 PSF

3. DRILLED PIERS SHALL BE EXCAVATED, CLEANED, REINFORCED AND THE CONCRETE SHALL BE PLACED ON THE SAME DAY. DRILLED PIERS WITH LESS THAN 2'-0" CLEAR BETWEEN BELLS OR SHAFTS SHALL BE EXCAVATED AND CONCRETE PLACED A MINIMUM OF 24 HOURS APART. IF BELLS CANNOT BE FORMED WITHOUT CAVING OF THE SOIL, THE ARCHITECT, GEOTECHNICAL ENGINEER AND FRACTAL LLC SHALL BE NOTIFIED BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.

4. EXCAVATIONS FOR FOOTINGS SHALL BE CLEANED AND HAND TAMPED TO A UNIFORM SURFACE. FOOTING EXCAVATIONS SHALL HAVE THE SIDES AND BOTTOMS TEMPORARILY LINED WITH 6 MIL VISQUEEN IF PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HOURS OF THE EXCAVATION OF THE FOOTING.

5. FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION, WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT SHALL BE REPORTED TO THE ARCHITECT, GEOTECHNICAL ENGINEER AND FRACTAL LLC BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.

6. REINFORCEMENT PLACEMENT SEQUENCE FOR FOOTINGS IS NOTED ONLY FOR MAJOR REINFORCEMENT BAR LAYERS. IN SPREAD FOOTINGS AND MATS THE CONTRACTOR SHALL SEQUENCE ALL OTHER BAR PLACEMENTS AS REQUIRED TO CONFORM TO THE CONTRACT DOCUMENTS.

7. GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT AND FRACTAL LLC., 48 HOURS PRIOR TO PLACEMENT OF CONCRETE IN THE FOOTINGS.

8. SUBGRADE UNDER SLABS ON FILL SHALL HAVE A PLASTICITY INDEX BETWEEN 7 AND 15 PERCENT AND SHALL BE PREPARED, PLACED, AND COMPACTED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT.

9. THE FOUNDATION EXCAVATIONS AND FLOOR SUBGRADE SHALL BE PROPERLY COMPACTED AND FREE OF STANDING WATER, MUD, AND FROZEN SOIL.

10. A VAPOR BARRIER WITH A PERFORMANCE EQUIVALENT TO A 15 MIL STEGOWRAP SHALL BE PLACED BENEATH THE SLAB ON GRADE.

11. WHERE THE SLAB IS TO RECEIVE SENSITIVE ARCHITECTURAL FLOOR FINISHES, ALL JOINTS IN THE SLAB CONSTRUCTION SHALL BE PLACED TO ALIGN WITH JOINTS IN THE FLOOR FINISHES.

12. THE SLAB ON GRADE SHALL HAVE CONSTRUCTION JOINTS OR CRACK CONTROL JOINTS AT EACH COLUMN LINE IN EACH DIRECTION. ADDITIONAL CRACK CONTROL JOINTS SHALL BE PROVIDED USING THE FOLLOWING GUIDELINES: (SEE S3.00 FOR ADD'L DETAILS AND REINFORCEMENT)
    A. NO AREA BOUNDED BY CONTROL JOINTS SHALL CONTAIN MORE THAN 225 SQUARE FEET.
    B. THE SPACING OF THE JOINTS SHALL NOT EXCEED 36 TIMES THE SLAB THICKNESS.
    C. MAXIMUM ASPECT RATIO (LENGTH/WIDTH) = 1.5.
    D. NO RE-ENTRANT CORNERS.

C. DESIGN CRITERIA

1. THE STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE WITH LOCAL AMENDMENTS.

2. THE DESIGN GRAVITY LOADS ARE AS FOLLOWS:

SUPERIMPOSED DEAD LOADS (INCLUDED BUT NOT LIMITED TO THE FOLLOWING):

MECHANICAL AND CEILING	10 PSF
BUILT UP ROOF	6 PSF
FINISHES	AS REQUIRED
MECHANICAL AND PIPING LOADS	AS NOTED ON PLANS

(THE CONTRACTOR SHALL DISTRIBUTE THE CONCENTRATED LOADS FROM PIPES, DUCTS AND CEILING TO THE STRUCTURAL MEMBERS IN SUCH A FASHION TO AVOID EXCEEDING SPECIFIED PERMISSIBLE VALUES. CASES WHERE THE PERMITTED DISTRIBUTED LOAD IS EXCEEDED SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.

LIVE LOADS:

ROOF	20 PSF
ROOF NET UPLIFT LOADING	15 PSF
PARTITIONS	20 PSF
OFFICE SPACE	50 PSF
LOBBIES, STAIRS & ASSEMBLY AREAS	100 PSDF
MECHANICAL EQUIPMENT AND PADS	ACTUAL WEIGHTS
LIGHT STORAGE	125 PSF

3. CONTRACTOR SHALL PROVIDE COMPLETE STRUCTURAL DESIGN OF STEEL FRAMED STAIRS, LANDING PLATFORMS, TREADS, HANDRAILS, GUARDS, BRACING, BRIDGING AND CONNECTIONS TO BUILDING STRUCTURE, PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS. CONTRACTOR SHALL SUBMIT CALCULATIONS AND SHOP DRAWINGS BEARING THE SEAL AND SIGNATURE OF THE RESPONSIBLE PROFESSIONAL ENGINEER.

4. HANDRAILS AND GUARDS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION 1607.7 AND TABLE 1607.1 OF THE INTERNATIONAL BUILDING CODE AS FOLLOWS:
    A. HANDRAIL ASSEMBLES AND GUARDS SHALL BE DESIGNED TO SUPPORT A LATERAL LOAD OF 50 POUNDS PER LINEAR FOOT (PLF) APPLIED IN ANY DIRECTION AT THE TOP AND TO TRANSFER THIS LOAD THROUGH THE SUPPORTS TO THE STRUCTURE.
    B. HANDRAIL ASSEMBLIES AND GUARDS SHALL BE DESIGNED TO SUPPORT A LOAD OF 200 lbs APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP. THESE LOADS NEED NOT BE ASSUMED TO ACT CUMULATIVELY WITH THOSE IN NOTE (A) ABOVE.
    C. INTERMEDIATE RAILS, BALUSTERS, AND PANEL FILLERS SHALL BE DESIGNED TO SUPPORT A HORIZONTALLY APPLIED NORMAL LOAD OF 50 POUNDS ON AN AREA EQUAL TO ONE SQUARE FOOT, INCLUDING OPENINGS AND SPACE BETWEEN RAILS. REACTIONS DUE TO THIS LOADING ARE NOT REQUIRED TO BE SUPERIMPOSED WITH THOSE IN NOTE (A) OR (B) ABOVE.

5. STAIR TREADS AND STRINGERS SHALL BE DESIGNED FOR A UNIFORM LOAD OF 100 PSF. INDIVIDUAL STAIR TREADS SHALL ALSO BE DESIGNED TO SUPPORT A 300 LB. LOAD ON A 4 SQUARE INCH AREA IN A POSITION THAT WILL CAUSE MAXIMUM STRESS.

6. FLOOR LIVE LOADS ARE REDUCED FOR SLAB SYSTEMS, BEAMS, GIRDERS, COLUMNS, PIERS, WALLS, AND FOUNDATIONS IN ACCORDANCE WITH SECTION 1607.9 OF THE INTERNATIONAL BUILDING CODE.

7. THE STRUCTURE HAS BEEN DESIGNED TO WITHSTAND THE WIND PRESSURES SPECIFIED IN CHAPTER 16, SECTION 1609, OF THE INTERNATIONAL BUILDING CODE, ACCORDING TO THE FOLLOWING INFORMATION:

ULTIMATE DESIGN WIND SPEED, V(ult)	115 MPH
WIND DIRECTIONALITY FACTOR	0.85
BUILDING CATEGORY	II
EXPOSURE CATEGORY	C
COMPONENTS AND CLADDING PRESSURES	SEE TABLE THIS SHEET

8. THE STRUCTURE HAS BEEN DESIGNED TO WITHSTAND THE SEISMIC FORCES SPECIFIED IN CHAPTER 16, SECTION 1613, OF THE INTERNATIONAL BUILDING CODE, ACCORDING TO THE FOLLOWING PARAMETERS:

MAPPED SPECTRAL ACCELERATIONS SHORT PERIODS	0.0 G
MAPPED SPECTRAL ACCELERATIONS LONG PERIODS	0.0 G
OCCUPANCY CATEGORY	II
SEISMIC IMPORTANCE FACTOR	1.0
SITE CLASS DEFINITION	B
SITE COEFICIENT FA	1.0
SITE COEFICIENT FV	1.0
SEISMIC DESIGN CATEGORY	A

9. THE FLOOR SYSTEM HAS BEEN DESIGNED TO WITHSTAND A CONCENTRATED LOAD OF 2000 POUNDS PLACED UPON ANY SPACE 2'-6" SQUARE, IN ACCORDANCE WITH SECTION 1607.4 OF THE IBC.

D. CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND ACI 301 "SPECIFICATION FOR STRUCTURAL CONCRETE".
2. CONCRETE SHALL HAVE NATURAL SAND FINE AGGREGATE AND NORMAL WEIGHT COARSE AGGREGATES CONFORMING TO ASTM C33, TYPE I PORTLAND CEMENT CONFORMING TO ASTM C150, AND SHALL HAVE THE FOLLOWING COMPRESSIVE STRENGTH (F'c) AT 28 DAYS.

DRILLED PIERS	3000 PSI
PIER CAPS AND PLINTHS	3000 PSI
GRADE BEAMS	3000 PSI
SLAB-ON-GRADE	3000 PSI
SLABS ON COMPOSITE STEEL DECK	4000 PSI

3. FLY ASH MAY BE USED AS A POZZOLAN TO REPLACE A PORTION OF THE PORTLAND CEMENT IN A CONCRETE MIX, SUBJECT TO THE APPROVAL OF THE GENERAL CONTRACTOR AND THE STRUCTURAL ENGINEER. FLY ASH, WHEN USED, SHALL CONFORM TO ASTM C618, TYPE C OR F. CONCRETE MIXES USING FLY ASH SHALL BE PROPORTIONED TO ACCOUNT FOR THE PROPERTIES OF THE SPECIFIC FLY ASH USED AND TO ACCOUNT FOR THE SPECIFIC PROPERTIES OF THE FLY ASH CONCRETE THUS RESULTING. THE RATIO OF THE AMOUNT OF THE FLY ASH TO THE TOTAL AMOUNT OF FLY ASH AND CEMENT IN THE MIX SHALL NOT EXCEED 25 PERCENT.

4. GROUT FOR BASE PLATES SHALL BE NONSHRINKABLE, NON-METALLIC CONFORMING TO ASTM C827, AND SHALL HAVE A SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS OF 5000 PSI. PREGROUTING OF BASE PLATES WILL NOT BE PERMITTED.

5. SLUMP TESTS SHALL BE MADE PRIOR TO THE ADDITION OF PLASTICIZERS. CONCRETE FOR THE PREPARATION OF TEST CYLINDERS SHALL BE TAKEN FROM THE HOSE END FOR CONCRETE PLACED BY PUMP.

6. WATER SHALL NOT BE ADDED TO THE CONCRETE AT THE JOBSITE UNLESS THE TOTAL WATER QUANTITY INCLUDING THE WATER ADDED AT THE JOBSITE DOES NOT EXCEED THE TOTAL WATER QUANTITY OF THE REVIEWED MIX DESIGN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE REQUIREMENTS OF THE CONCRETE SUPPLIER AND PUMPER TO MEET THIS REQUIREMENT AND TO ENSURE A PUMPABLE AND WORKABLE MIX. THE USE OF PLASTICIZERS, RETARDANTS, AND OTHER ADDITIVES SHALL BE AT THE OPTION OF THE CONTRACTOR SUBJECT TO THE APPROVAL OF FRACTAL LLC. FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER FOR THE PROPER USE OF ADDITIVES. THE USE OF CALCIUM CHLORIDE OR OTHER CHLORIDE BEARING SALTS IS NOT PERMITTED.

7. PLACE CONCRETE IN A MANNER SO AS TO PREVENT SEGREGATION OF THE MIX. DELAY FLOATING AND TROWELING OPERATIONS UNTIL THE CONCRETE HAS LOST SURFACE WATER SHEEN OR ALL FREE WATER. DO NOT SPRINKLE FREE CEMENT ON THE SLAB SURFACE. FINISHING OF SLAB SURFACES SHALL COMPLY WITH THE RECOMMENDATIONS OF ACI 302.1 AND 304.

8. PROVIDE CURING OF DECK IMMEDIATELY AFTER FINISHING. REFER TO THE SPECIFICATIONS FOR REQUIREMENTS. PROTECT THE CONCRETE SURFACE BETWEEN FINISHING OPERATIONS ON HOT, DRY, OR WINDY DAYS OR ANY TIME PLASTIC SHRINKAGE CRACKS COULD DEVELOP BY USING WET BURLAP, PLASTIC MEMBRANES, OR FOGGING. PROTECT CONCRETE DECK AT ALL TIMES FROM RAIN, HAIL, OR OTHER INJURIOUS EFFECTS.

9. THE CONTRACTOR SHALL SUBMIT FOR REVIEW A MIX DESIGN FOR THE PROPOSED CONCRETE. MIX DESIGNS SHALL BE IN COMPLIANCE WITH THE METHODS PERMITTED IN IBC AND PROJECT SPECIFICATIONS. THE CONTRACTOR SHALL NOT VARY FROM THE MIX DESIGN WITHOUT THE APPROVAL OF FRACTAL LLC.

10. DETAILING AND PLACING OF CONCRETE REINFORCEMENT BARS AND ACCESSORIES SHALL CONFORM TO THE RECOMMENDATIONS OF ACI SP-66 "DETAILING MANUAL" AND CRSI "MANUAL OF STANDARD PRACTICE".

11. MINIMUM CONCRETE COVER PROTECTION FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS (SEE ACI 318 SECTION 7.7 FOR CONDITIONS NOT NOTED):

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH...........................3 INCHES
CONCRETE EXPOSED TO EARTH OR WEATHER:
    #5 BARS AND SMALLER...1-1/2 INCHES
    ALL OTHER BARS...2 INCHES
CONCRETE NOT EXPOSED WEATHER OR IN CONTACT WITH GROUND:
    SLABS, WALLS, JOISTS (#11 BARS AND SMALLER)..3/4 INCHES
    SLABS, WALLS, JOISTS (ALL OTHER BARS)..1-1/2 INCHES
    BEAMS AND COLUMNS...1-1/2 INCHES

PROVIDE STANDARD BAR CHAIRS AND SPACERS AS REQUIRED TO MAINTAIN CONCRETE PROTECTION SPECIFIED.

12. CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60.

13. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. FABRIC SHALL BE SUPPLIED IN FLAT SHEETS. FABRIC SHALL BE LAPPED TWO MESH AT SPLICES.

14. REINFORCEMENT BARS SHALL NOT BE TACK WELDED, WELDED, HEATED, OR CUT UNLESS INDICATED ON THE CONTRACT DOCUMENTS OR REVIEWED BY THE STRUCTURAL ENGINEER.

15. WELDING OF REINFORCEMENT BARS, WHEN ACCEPTED BY THE STRUCTURAL ENGINEER, SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STANDARD D1.4. ELECTRODES FOR SHOP AND FIELD WELDING OF REINFORCEMENT BARS SHALL CONFORM TO ASTM A233, CLASS E90XX.

16. REINFORCEMENT DESIGNATED AS "CONTINUOUS" MAY BE SPLICED USING TYPE "B" SPLICES. REINFORCEMENT BAR SPLICE LENGTHS IN BEAMS WHICH ARE LOCATED AT THE CENTERLINE OF SUPPORTS FOR BOTTOM BARS AND AT MIDSPAN FOR TOP BARS MAY BE 36 BAR DIAMETERS, UNLESS NOTED OTHERWISE. PROVIDE STANDARD ACI HOOKS FOR TOP AND BOTTOM BARS AT DISCONTINUOUS ENDS OF ALL GRADE BEAMS.

17. HORIZONTAL FOOTING AND HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90- DEGREE BENDS AND EXTENSIONS, OR CORNER BARS OF EQUIVALENT SIZE LAPPED 36 BAR DIAMETERS, AT CORNERS AND INTERSECTIONS.

18. HORIZONTAL JOINTS WILL NOT BE PERMITTED IN CONCRETE CONSTRUCTION EXCEPT AS SHOWN ON THE CONTRACT DOCUMENTS. VERTICAL JOINTS MAY OCCUR AT CENTER OF SPANS AT LOCATIONS REVIEWED BY FRACTAL LLC.

19. CONSTRUCTION JOINTS BETWEEN FOOTINGS AND THE FLOOR SYSTEM THEY SUPPORT SHALL BE PREPARED BY ROUGHENING THE CONTACT SURFACE TO A FULL AMPLITUDE OF APPROXIMATELY 1/4 INCH, LEAVING THE CONTACT SURFACE CLEAN AND FREE OF LAITANCE.

20. PROVIDE 1- NO. 4 REINFORCEMENT BAR X 4'-0" AT RE-ENTRANT CORNERS AND AROUND RECTANGULAR HOLES IN SLABS UNLESS NOTED OTHERWISE. PLACE BAR DIAGONAL TO CORNER WITH 1" CLEARANCE FROM THE TOP AND THE SIDE OF THE SLAB AT THE CORNER.

21. CONDUIT, PIPES, AND SLEEVES EMBEDDED IN CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, CHAPTER 6.3.

E. STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC 360 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND THE AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".

2. CONTRACTOR SHALL FABRICATE AND ERECT STEEL IN ACCORDANCE WITH LATEST OSHA SAFETY REQUIREMENTS, INCLUDING 29 CFR PART 1926 SAFETY STANDARDS FOR STEEL ERECTION.

3. STRUCTURAL STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS UNLESS NOTED OTHERWISE ON THE CONTRACT DOCUMENTS:

WIDE FLANGE SHAPES (W)	ASTM A992,	GRADE 50 (50 KSI)
CHANNELS, AND ANGLES	ASTM A36	(36 KSI)
SQUARE AND RECTANGULAR TUBES (HSS)	ASTM A500	GRADE B (46 KSI)
ROUND TUBES (HSS)	ASTM A500	GRADE B (42 KSI)
STEEL PIPE	ASTM A53	GRADE B (35 KSI)
M, S AND MC SHAPES	ASTM A36	(36 KSI)
PLATES AND BARS	ASTM A36	(36 KSI)
ANCHOR BOLTS (ANCHOR RODS)	ASTM F1554 OR ASTM A307	(36 KSI)

4. THE DETAILS ON THESE DRAWINGS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF CONNECTIONS AND ARE NOT INTENDED TO CONVEY COMPLETE CONNECTION DESIGN. ALL CONNECTIONS, SPLICES AND ERECTION PIECES SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR'S STRUCTURAL ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT, UNLESS CONNECTIONS ARE INDICATED AS BEING FULLY DESIGNED IN THE STRUCTURAL DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED BEARING THE ENGINEER'S SEAL AND SIGNATURE. CALCULATIONS BEARING THE ENGINEER'S SEAL AND SIGNATURE SHALL BE AVAILABLE UPON REQUEST OF THE STRUCTURAL ENGINEER.

5. DESIGN ALL CONNECTIONS FOR FORCES INDICATED ON THE DRAWINGS. CONNECTION DESIGN FORCES INDICATED ON THE DRAWINGS ARE UNFACTORED U.N.O. WHERE THE REACTION IS OMITTED FROM THE DRAWINGS, DESIGN THE CONNECTION FOR ONE HALF OF THE MAXIMUM TOTAL UNIFORM LOAD AS DEFINED IN THE AISC STEEL CONSTRUCTION MANUAL 13TH EDITION, TABLE 3-6. MOMENT CONNECTIONS SHALL BE DESIGNED FOR THE FULL PLASTIC MOMENT OF THE BEAM IF THE MOMENT IS OMITTED FROM THE DRAWINGS.

6. STRUCTURAL STEEL CONNECTIONS FOR COMPOSITE BEAMS NOT DETAILED ON THE CONTRACT DOCUMENTS SHALL BE DETAILED IN ACCORDANCE WITH THE AISC STEEL CONSTRUCTION MANUAL 13TH EDITION. FOR COMPOSITE BEAMS, THE END REACTION OF THE BEAM SHALL BE OBTAINED BY MULTIPLYING ONE HALF OF THE MAXIMUM TOTAL UNIFORM LOAD AS DEFINED IN THE AISC STEEL CONSTRUCTION MANUAL 13TH EDITION, TABLE 3-6 BY THE FOLLOWING FACTOR:

W8 & W10.........	3.50	W21 & W24...........	2.40
W12 & W14.......	3.10	W27 & W30...........	2.00
W16 & W18.......	2.60	W33 & W36...........	1.90

7. NA

8. NA

9. NO CONNECTION SHALL CONSIST OF LESS THAN (2) 3/4" DIA. A325-N BOLTS OR WELDS DEVELOPING LESS THAN 12 KIPS. MINIMUM WELD SIZE SHALL BE 3/16" FILLET WELD.

10. DO NOT USE OVERSIZED OR SLOTTED HOLES FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

11. PRIOR TO DETAILING CONNECTIONS FOR STRUCTURAL STEEL, THE STEEL FABRICATOR SHALL SUBMIT FOR APPROVAL REPRESENTATIVE DETAILS AND CALCULATIONS FOR EACH TYPE OF STRUCTURAL STEEL CONNECTION TO BE UTILIZED. AFTER APPROVAL, THE CONNECTIONS MAY BE INCORPORATED INTO THE SHOP DRAWINGS.

12. WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STANDARD D1.1. ELECTRODES FOR SHOP AND FIELD WELDS SHALL CONFORM TO AWS A5.1 OR AWS A5.5, CLASS E70XX, LOW HYDROGEN.

13. SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED ON THE CONTRACT DOCUMENTS IS PROHIBITED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION, TYPE OF SPLICE AND CONNECTION TO BE MADE.

14. BEAMS SHALL BE CAMBERED UPWARD WHERE SHOWN ON THE CONTRACT DOCUMENTS. WHERE NO UPWARD CAMBER IS INDICATED, ANY MILL CAMBER SHALL BE DETAILED UPWARD IN THE BEAMS.

15. NO MISFABRICATED STRUCTURAL STEEL MAY BE ERECTED PRIOR TO REVIEW BY THE ENGINEER.

16. PENETRATIONS SHALL NOT BE CUT IN STRUCTURAL STEEL MEMBERS UNLESS SO INDICATED IN THE DRAWINGS OR AS REVIEWED BY THE ENGINEER.

17. HEADED CONCRETE ANCHORS SHALL BE NELSON OR KSM HEADED CONCRETE ANCHORS (OR ACCEPTABLE EQUAL), AND SHALL CONFORM TO ASTM A108, GRADES C-1010 THROUGH C-1020. ANCHORS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE STUD WELDING EQUIPMENT. WELDING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE NELSON STUD WELDING COMPANY OR THE KSM WELDING SYSTEMS COMPANY.

18. DEFORMED BAR ANCHORS (D.B.A.) SHALL BE NELSON OR KSM DEFORMED BAR ANCHORS (OR ACCEPTABLE EQUAL), AND SHALL BE MADE FROM COLD DRAWN WIRE PER ASTM A496 CONFORMING TO ASTM A108 WITH A MINIMUM YIELD STRENGTH OF 70 KSI. ANCHORS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE WELDING EQUIPMENT. WELDING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE NELSON STUD WELDING COMPANY OR THE KSM WELDING SYSTEMS COMPANY.

19. COMPOSITE BEAM SHEAR CONNECTORS SHALL BE NELSON STUD TYPE S3L AS MANUFACTURED BY THE NELSON STUD WELDING COMPANY, OR AN ACCEPTABLE EQUAL. STUDS SHALL BE MANUFACTURED OF COLD-DRAWN STEEL CONFORMING TO ASTM A108. STUDS SHALL BE 3/4" DIAMETER BY FOUR (4) INCHES LONG. CONNECTOR QUANTITIES INDICATED ON THE DRAWINGS HAVE BEEN BASED ON AN ULTIMATE SHEAR CAPACITY OF XXX KIPS PER STUD.

20. WHERE INDICATED ON THE DRAWINGS, STRUCTURAL STEEL MEMBERS, FABRICATIONS, AND WELDED ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION BY HOT DIP PROCESS IN ACCORDANCE WITH ASTM A123. WEIGHT OF ZINC COATING SHALL CONFORM TO THE REQUIREMENTS SPECIFIED UNDER "WEIGHT OF COATING" IN ASTM A123 OR ASTM A386, AS APPLICABLE. THE AFFECTED PORTIONS OF FIELD WELDED GALVANIZED ASSEMBLIES SHALL BE FIELD PAINTED WITH ZINC RICH CORROSION RESISTANT PAINT.

21. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL MEMBERS AND CONNECTIONS SHALL CONFORM WITH THE REQUIREMENTS OF THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS), SECTION 10, UNLESS MORE STRINGENT REQUIREMENTS ARE SHOWN OR SPECIFIED ELSEWHERE.

22. STRUCTURAL STEEL MEMBERS TO RECEIVE FIREPROOFING SHALL NOT BE PRIMED NOR PAINTED.FIREPROOFING MATERIAL THICKNESS SHALL BE INCREASED AS REQUIRED FOR STEEL MEMBERS NOT CONFORMING TO THE MINIMUM SIZES INDICATED IN THE U.L. FIRE RESISTANCE DIRECTORY-VOLUME 1 AND FOR STEEL MEMBERS DETERMINED UNRESTRAINED.

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Issue

No.	Date	Description
A	9/8/2022	ISSUE FOR BID

MARCO CANO
105906

STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LGA Engineering**
Stuctural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Engineer	**Consultant 4 Name**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE AND LANDSCAPE

Drawing Name
STRUCTURAL NOTES

SRA Project Number
2001

Scale
12" = 1'-0"

Drawing Number
1-S0.00

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A. CONCRETE MASONRY NOTES

1. MASONRY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ACI 530 "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY CONSTRUCTION" AND ACI 530.1 "SPECIFICATIONS FOR MASONRY STRUCTURES".
2. REFER TO ARCHITECT'S DRAWINGS FOR THE EXTENT OF MASONRY WALLS. NON-LOADBEARING WALLS MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS.
3. CONCRETE MASONRY CONSTRUCTION SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (F'M) OF 1500 PSI ON THE NET CROSS SECTIONAL AREA AT 28 DAYS.
4. MASONRY UNITS SHALL BE GRADE N, TYPE I LIGHT WEIGHT OR MEDIUM WEIGHT HOLLOW CONCRETE UNITS MEETING FIRE RATING REQUIREMENTS AND CONFORMING TO THE REQUIREMENTS OF ASTM C90. MASONRY UNITS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI ON THE NET AREA AT 28 DAYS, BUT NOT LESS THAN THE REQUIRED STRENGTH TO PRODUCE THE MINIMUM MASONRY STRENGTH (F'M). MASONRY UNITS SHALL NOT BE INSTALLED PRIOR TO ATTAINING THE REQUIRED 28 DAY STRENGTH.
5. MORTAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM C270, TYPE M OR S. TYPE M MORTAR SHALL BE USED IN BELOW GRADE APPLICATIONS AND SHALL OBTAIN AN AVERAGE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS. TYPE S MORTAR MAY BE USED IN ABOVE GRADE APPLICATIONS AND SHALL OBTAIN AN AVERAGE COMPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS. THE SAME MORTAR SHALL BE USED FOR BOTH WYTHES OF CAVITY WALL CONSTRUCTION.
6. GROUT SHALL CONFORM TO ASTM C476 AND SHALL HAVE A COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS.
7. REINFORCEMENT SHALL CONFORM TO THE STANDARDS SPECIFIED IN THE CONCRETE NOTES. REINFORCEMENT SHALL BE LAP SPLICED A MINIMUM OF 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
8. PROVIDE 2-#5 CONTINUOUS IN BOND BEAMS UNLESS INDICATED OTHERWISE. PROVIDE CORNER BARS OF EQUIVALENT SIZE LAPPED AT CORNERS AND INTERSECTIONS OF WALLS.
9. MASONRY CORES CONTAINING VERTICAL REINFORCEMENT SHALL BE GROUTED SOLID.
10. FOR LIFTS GREATER THAN 4 FEET, HIGH LIFT GROUTING TECHNIQUES SHALL BE UTILIZED.
11. PROVIDE 1-#5 VERTICAL AT ENDS, CORNERS, AND INTERSECTIONS OF WALLS.
12. REFER TO CMU WALL SCHEDULE AND DETAILS FOR TYPICAL WALL REINFORCEMENT.
13. CELLS TO BE GROUTED SHALL BE CLEAN AND FREE OF EXCESS MORTAR AND FOREIGN MATERIALS.
14. IN CONCRETE SUPPORTING MASONRY WALLS, EMBED DOWELS TO MATCH SIZE AND LOCATION OF VERTICAL MASONRY REINFORCEMENT.
15. LINTELS SHALL BEAR ON SUPPORTING WALLS A MIN. OF 8" AT EACH END. FOR CMU WALLS PROVIDE TWO GROUTED CORES EACH SIDE OF OPENING FULL HEIGHT OF WALL AND REINFORCE EACH OF THE GROUTED CORES WITH #5 VERTICAL EXTENDING FROM FOUNDATION TO THE POINT OF LATERAL SUPPORT FOR THE WALL ABOVE THE LINTEL LOCATION. UNLESS NOTED OTHERWISE THE FOLLOWING LINTELS MAY BE USED WHEN THE HEAD OF THE MASONRY OPENING BELOW FLOOR OR ROOF BEARING ELEMENTS IS A MINIMUM DISTANCE OF 75% OF THE LINTEL SPAN:

CLEAR SPAN	STEEL ANGLE LINTEL PER 4" MASONRY WYTHE	CMU LINTEL (PER CMU WYTHE) (Fm' = 1350 PSI)
0 - 4'-0"	L3 1/2" x 3 1/2" x 1/4"	8" DEEP W/1-#4 BOTTOM
4'-0" - 6'-0"	L5 x 3 1/2" X 5/16"	8" DEEP W/1-#5 BOTTOM
6'-0" - 8'-0"	L5 x 3 1/2" x 3/8"	16" DEEP W/1-#4 BOTTOM
8'-0" - 10'-0"	L6 x 3 1/2" x 1/2"	16" DEEP W/1-#5 BOTTOM

TEMPORARY SHORING OF LINTELS MUST BE PROVIDED UNTIL MASONRY HAS CURED. CONTROL JOINTS IN MASONRY SHALL NOT BE LOCATED WITH IN A DISTANCE EQUAL TO 50% OF THE LINTEL SPAN ADJACENT TO EACH SIDE OF THE OPENING.

16. HORIZONTAL JOINT REINFORCEMENT SHALL BE USED IN THE MASONRY CONSTRUCTION. SUCH JOINT REINFORCEMENT SHALL BE PLACED AT 8 INCHES ON CENTER VERTICALLY IN WALLS BELOW GRADE AND AT 16 INCHES ON CENTER VERTICALLY IN WALLS THAT ARE ABOVE GRADE. HORIZONTAL JOINT REINFORCEMENT SHALL BE HOHMANN & BARNARD TIE-2R ANCHOR SYSTEM, STAINLESS STEEL, FOR 8" CMU BLOCK.
17. CONTROL JOINTS SHALL BE PLACED IN THE MASONRY CONSTRUCTION SUCH THAT THE PANEL LENGTH TO HEIGHT RATIO OF THE WALL DOES NOT EXCEED 1.5, AND THAT THE MAXIMUM PANEL LENGTH OF WALL DOES NOT EXCEED 25 FEET. ADDITIONAL JOINTS SHALL BE PLACED WHERE ABRUPT CHANGES IN WALL SECTIONS OCCUR.

B. STRUCTURAL WOOD

1. DESIGN AND DETAILING OF WOOD FRAMING MEMBERS, CONNECTIONS AND ACCESSORIES SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AITC "TIMBER CONSTRUCTION MANUAL" AND THE AF&PA "NATIONAL DESIGN SPECIFICATIONS (NDS) FOR WOOD CONSTRUCTION".
2. ROOF AND FLOOR FRAMING LAYOUTS ARE PROVIDED TO ILLUSTRATE CONDITIONS OF CONSTRUCTION AND DO NOT NECESSARILY INDICATE SPECIFIC QUANTITIES OF MATERIALS OR COMPONENTS REQUIRED FOR CONSTRUCTION.
3. SAWN LUMBER FOR JOISTS, BEAMS 2 TO 4 INCHES THICK, AND POSTS SHALL BE VISUALLY GRADED SOUTHERN PINE DIMENSIONAL LUMBER, COMMERCIAL GRADE NO. 2. THE MINIMUM ALLOWABLE DESIGN VALUES SHALL BE AS SPECIFIED BY THE NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION.
4. SAWN LUMBER FOR WALLS SHALL BE VISUALLY GRADED SOUTHERN PINE OR DOUGLAS FIR DIMENSIONAL LUMBER, COMMERCIAL STUD GRADE. LOAD-BEARING WALL STUDS MAY BE END-JOINTED OR EDGE GLUED LUMBER (COMMONLY KNOWN AS FINGER JOINTED LUMBER). THE MINIMUM ALLOWABLE DESIGN VALUES SHALL BE AS SPECIFIED BY THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. SAWN TIMBERS SHALL BE TREATED AND FINISHED AS REQUIRED BY THE ARCHITECTURAL SPECIFICATIONS. WEATHER EXPOSED ENDS SHALL BE PRESSURE AND PRESERVATIVE TREATED.
5. PLYWOOD FOR ROOF SHALL BE 19/32" OR 5/8" THICK AND SHALL CONFORM TO STRUCTURAL 1 APA PS 1 RATED SHEATHING 48/24, EXPOSURE 1, CD VENEER GRADE, FACTORY MUTUAL APPROVED HIGH TEMPERATURE (HT) FIRE-RETARDANT, 48"x96" (MINIMUM). PLYWOOD SHALL BE TWO SPAN (MINIMUM) CONTINUOUS. FACE GRAIN SHALL BE PERPENDICULAR TO SUPPORTS WITH A STAGGERED LAY-UP. NAIL PLYWOOD TO SUPPORTING MEMBERS AS INDICATED IN DIAPHRAGM SCHEDULE ON SHEET SX.X. MINIMUM MODULUS OF ELASTICITY SHALL BE 1,800,000 PSI. CONTRACTOR SHALL VERIFY WITH THE FIRE-RETARDANT TREATMENT MANUFACTURER THAT THE NAILS TO BE USED FOR ROOF DECK ATTACHMENT ARE COMPATIBLE WITH THE FIRE-RETARDANT CHEMICALS USED IN THE TREATMENT OF THE PLYWOOD. CONTRACTOR SHALL SUBMIT DOCUMENTATION INDICATING THAT NAILS ARE COMPATIBLE WITH FIRE RETARDANT CHEMICALS.
6. PLYWOOD FOR FLOORS SHALL BE 1 1/8" THICK AND SHALL CONFORM TO STRUCTURAL 1 APA PS 1 RATED SHEATHING 48/24, EXPOSURE 1, CD VENEER GRADE, 48"x96" (MINIMUM), WITH TONGUE AND GROOVE EDGES. PLYWOOD SHALL BE TWO SPAN (MINIMUM) CONTINUOUS. FACE GRAIN SHALL BE PERPENDICULAR TO SUPPORTS WITH A STAGGERED LAY-UP. GLUE AND NAIL PLYWOOD TO SUPPORTING MEMBERS AS INDICATED IN DIAPHRAGM SCHEDULE ON SHEET SX.X. MINIMUM MODULUS OF ELASTICITY SHALL BE 1,800,000 PSI.
7. ORIENTED STRAND BOARD (OSB) FOR SHEARWALLS SHALL BE 15/32" OR 1/2" THICK AND SHALL CONFORM TO STRUCTURAL 1 APA PS 1 RATED SHEATHING 32/16, EXPOSURE 1, 48"x96" (MINIMUM). OSB SHALL BE FULL HEIGHT OF WALL FROM BOTTOM OF SILL PLATE TO TOP OF DOUBLE TOP PLATE. NAIL PLYWOOD TO SUPPORTING MEMBERS AS SHOWN IN SHEARWALL SCHEDULE. MINIMUM MODULUS OF ELASTICITY SHALL BE 1,800,000 PSI.
8. ALL LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED TESTING AGENCY THAT COMPLIES WITH DOC PS 20 OR EQUIVALENT.
9. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE TREATED LUMBER IN ACCORDANCE WITH THE AMERICAN WOOD PROTECTION ASSOCIATION (AWPA).
10. THE NUMBER OF STUDS AT BEARING POINTS OF HEADERS, BEAMS, AND TRUSS GIRDERS SHALL EXCEED THE NUMBER OF STUDS THE BEAM REPLACES BY TWO (HALF AT EACH END PLUS ONE STUD). THE CENTERLINE OF THE BEAM SHALL BE THE CENTERLINE OF THE SUPPORTING WALL STUDS UNLESS NOTED OTHERWISE ON PLAN. SEE HEADER SCHEDULE ON SHEET SX.X FOR ADDITIONAL INFORMATION.
11. ALL FLUSH BEAMS AND JOISTS TO BE SUPPORTED BY APPROVED HANGER.
12. INSTALL FULL-DEPTH SOLID BLOCKING AT JOIST AND RAFTER BEARING LOCATIONS. INSTALL ONE LINE OF SOLID BLOCKING OR CROSS BRIDGING AT 8'-0" O.C. MAX FOR ALL JOISTS AND RAFTERS.
13. AT ALL EXTERIOR STUD WALLS AND INTERIOR BEARING WALLS, INSTALL A CONTINUOUS LINE OF SOLID BLOCKING AT MID-HEIGHT OF THE WALL, BUT AT NO GREATER THAN 4'-0" ON CENTER.
14. INSTALL STANDARD THREE-STUD CORNER CONSTRUCTION AT INSIDE AND OUTSIDE CORNERS, PROVIDING NAILING SURFACES FOR SHEATHING. INSTALL BLOCKING AS REQUIRED. SEE SHEET SX.X FOR ADDITIONAL DETAILS.

C. PREFABRICATED METAL PLATE CONN. WOOD TRUSSES

1. WOOD TRUSSES SHALL BE DESIGNED TO CONFORM TO THE AF&PA "NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION" AND THE TRUSS PLATE INSTITUTE "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION".
2. THE TRUSS ENGINEER SHALL DESIGN THE TRUSSES AND GIRDER TRUSSES FOR THE FOLLOWING LOADS:

   ROOF LOADS: 20/10/0/10 (TCLL/TCDL/BCLL/BCDL)
   FLOOR LOADS: 40/10/0/10
   ROOF TERRACE: 60/10/0/10
   A. NET UPLIFT FOR ALL LOAD TYPES = 15 PSF
   B. SPECIAL LOAD CONSIDERATIONS, SUCH AS MECHANICAL UNITS, OVERFRAMING, ETC., SHALL BE ACCOUNTED FOR IN THE DESIGN.
   C. DEFLECTION LIMITS:
      MAXIMUM LIVE LOAD DEFLECTION: L/360
      MAXIMUM TOTAL LOAD DEFLECTION: L/240
3. THE TRUSS ENGINEER SHALL ACCEPT FULL RESPONSIBILITY FOR THE DESIGN. THE TRUSS ENGINEER SHALL PREPARE DESIGN CALCULATIONS AND DRAWINGS WHICH SHALL BE SEALED, SIGNED, AND DATED BY THE RESPONSIBLE STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED.
4. THE TRUSS ENGINEER SHALL INCLUDE DESIGN FOR INTERNAL CONNECTIONS AND CONNECTIONS BETWEEN TRUSSES AND OTHER STRUCTURAL MEMBERS AND ARCHITECTURAL SYSTEMS. TRUSS ENGINEER SHALL VERIFY THAT DETAILS OF CONNECTIONS SHOWN IN THESE DRAWINGS ARE APPROPRIATE FOR THE TRUSS DESIGN. IF NOT, PROPOSED REVISIONS TO DETAILS SHALL BE SUBMITTED TO THE ARCHITECT AND FRACTAL LLC FOR APPROVAL.
5. THE TRUSS ENGINEER SHALL BE RESPONSIBLE FOR ANY FIELD COORDINATION ISSUES WHICH MAY ARISE REGARDING THE TRUSSES, GIRDER TRUSSES, OPENINGS IN TRUSSES, AND CONNECTIONS OF TRUSSES.
6. TRUSS TYPES SHOWN ARE FOR GENERAL ORIENTATION ONLY. SOME TRUSS TYPES MAY OCCUR THAT ARE NOT SHOWN IN THESE DRAWINGS. THE TRUSS ENGINEER IS RESPONSIBLE FOR ENSURING THAT TRUSS SHAPES AND DIMENSIONS MATCH ARCHITECTURAL ROOF PLAN AND DETAILS.
7. THE MAXIMUM SPACING OF THE TRUSSES SHALL BE AS INDICATED IN THE STRUCTURAL PLANS. THE SELECTED SPACING SHALL BE COORDINATED WITH THE TRUSS ENGINEER, MECHANICAL ENGINEER, FABRICATOR, DECKING SUBCONTRACTOR, HVAC SUBCONTRACTOR, ELECTRICAL SUBCONTRACTOR, ERECTORS, DRYWALLER, AND ANY OTHER RELATED SUBCONTRACTORS.
8. PARTICULAR ATTENTION SHALL BE GIVEN TO HEEL HEIGHTS AND TOP CHORD SLOPES TO ENSURE THAT THE FASCIA DETAILS ARE CONSISTENT, ALIGNED, AND IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS. DETAILS HEREIN ARE BASED UPON THE USE OF 2X4 DIMENSIONAL LUMBER TOP AND BOTTOM CHORD MEMBERS. IF CHORD DEPTHS VARY FROM 2X4 DIMENSIONAL LUMBER TRUSS CONFIGURATION SHALL BE ADJUSTED AS REQUIRED.
9. THE MEMBER SIZE AND PROPERTIES FOR EACH MEMBER USED SHALL BE SHOWN, CLEARLY INDICATING WHERE EACH MEMBER IS BEING USED.
10. A SAMPLE SUBMITTAL OF THE TYPICAL TRUSS TYPES SHALL BE SUBMITTED FOR PRELIMINARY REVIEW PRIOR TO COMPLETION OF DESIGN CALCULATIONS AND DRAWINGS.
11. REFER TO THE STRUCTURAL NOTES FOR WOOD FRAMING NOTES.
12. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING:
    A. DIMENSIONED LAYOUT OF ALL THE TRUSSES, METAL GUSSET PLATES AND REQUIRED ACCESERIES.
    B. DETAILS SHOWING ALL THE REQUIRED CONNECTIONS.
    C. TOP AND BOTTOM CHORD DESIGN LOADS IN PLF.
    D. STRESS REDUCTION FACTORS USED FOR PLATES.
    E. SIZE, GAUGE, AND EXACT LOCATION OF PLATES.
    F. LUMBER SPECIES AND GRADES USED.
    G. STAMP AND SIGNATURE OF ENGINEER RESPONSIBLE FOR PREPARATION OF ALL TRUSS DESIGN AND LAYOUT DRAWING.
    H. CALCULATIONS AND DOCUMENTATION OF CONCENTRATED LOAD REQUIREMENTS.
    I. TRUSS BLOCKING REQUIREMENTS.
    J. INSTALLING SECURING, BRACING, ETC. OF ALL TRUSSES.
13. METAL GUSSET PLATES:
    A. PLATE DESIGN AND MANUFACTURE SHALL BE AS APPROVED BY ICC.
    B. CONNECTOR PLATES SHALL BE MANUFACTURED FROM MATERIAL CONFORMING TO ASTM A446, GRADE A, AND SHALL GALVANIZED IN ACCORDANCE WITH ASTM A525, COATING DESIGNATION G60. IN HIGHLY CORROSIVE ENVIRONMENTS OR WHERE FIRE RETARDANT LUMBER IS SPECIFIED, STAINLESS STEEL CONNECTOR PLATES SHALL BE USED.
    C. MANUFACTURER'S NAME OR TRADEMARK SHALL BE VISIBLE ON PLATES.

D. WOOD CONSTRUCTION CONNECTOR NOTES

1. ALL WOOD CONSTRUCTION CONNECTORS SHOWN SHALL BE SIMPSON STRONG-TIE CONNECTORS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, INC. (OR APPROVED EQUIVALENT). BEFORE SUBSTITUTING ANOTHER BRAND, CONFIRM LOAD CAPACITY BASED ON RELIABLE PUBLISHED TESTING DATA OR CALCULATIONS AND SUBMIT TO FRACTAL LLC FOR EVALUATION AND WRITTEN APPROVAL FOR SUBSTITUTION PRIOR TO INSTALLATION.
2. ALL SPECIFIED FASTENERS SHALL BE INSTALLED ACCORDING TO THE DETAILS AND THE MANUFACTURER'S INSTRUCTIONS. CONTACT FRACTAL LLC FOR FASTENERS NOT SHOWN. INCORRECT FASTENER QUANTITY, SIZE, TYPE, MATERIAL, OR FINISH MAY CAUSE THE CONNECTION TO FAIL. SUBSTITUTIONS ARE NOT PERMITTED WITHOUT THE PRIOR WRITTEN APPROVAL BY ENGINEER OF RECORD.
3. BOLT HOLES SHALL BE A MINIMUM OF 1/32" AND A MAXIMUM OF 1/16" LARGER THAT THE BOLT DIAMETER (PER THE NDS, SECTION 8.1.2.1).
4. INSTALL ALL SPECIFIED FASTENERS BEFORE LOADING THE CONNECTION.
5. FOLLOW PROPER WELDING PROCEDURES AND SAFETY PRECAUTIONS. WELDING SHOULD BE IN ACCORDANCE WITH AWS STANDARDS.
6. FOLLOW THE MANUFACTURER'S INSTRUCTIONS AT ALL TIMES AND USE THE APPROPRIATE SAFETY EQUIPMENT.
7. JOISTS SHALL BEAR COMPLETELY ON THE CONNECTOR SEAT, AND THE GAP BETWEEN THE JOIST END AND THE HEADER SHALL NOT EXCEED 1/8" PER ASTM TEST STANDARDS.
8. FOR HOLD DOWNS, ANCHOR BOLT NUTS SHALL BE FINGER-TIGHT PLUS 1/3 TO 1/2 TURN WITH A WRENCH, WITH CONSIDERATION GIVEN TO POSSIBLE FUTURE WOOD SHRINKAGE. CARE SHOULD BE TAKEN TO NOT OVER-TORQUE THE NUT.
9. UNLESS OTHERWISE NOTED, BOLTS AND NAILS SHALL NOT BE COMBINED. 8D, 10D, AND 16D SPECIFY COMMON NAILS.
10. BOLTS SHALL BE ASTM A307, GRADE A OR BETTER.
11. UNLESS OTHERWISE NOTED, BENDING STEEL IN THE FIELD MAY CAUSE FRACTURES AT THE BEND LINE. FRACTURED STEEL WILL NOT CARRY LOAD AND MUST BE REPLACED.
12. A FASTENER THAT SPLITS THE WOOD WILL NOT SUPPORT THE DESIGN LOAD. IF THE WOOD HAS A TENDENCY TO SPLIT, PRE-BORE HOLES TO 0.75 OF THE NAIL DIAMETER (NATIONAL DESIGN SPECIFICATION, 2.1.3.1).

E. WOOD FRAMING MINIMUM CONNECTION SCHEDULE

(REFER TO TABLE 2304.9.1 OF THE INTERNATIONAL BUILDING CODE FOR CONDITIONS NOT SHOWN)

	CONNECTION	NAILING
1.	JOIST TO SILL OR GIRDER, TOE NAIL	3-8D
2.	BRIDGING TO JOIST, TOE NAIL EACH END	2-8D
3.	SOLE PLATE TO JOIST OR BLOCKING, FACE NAIL	16D AT 16" O.C.
4.	TOP PLATE TO STUD, END NAIL	2-16D
5.	STUD TO SOLE PLATE	4-8D OR 2-16D
6.	DOUBLE STUDS, FACE NAIL	16D AT 24" O.C.
7.	DOUBLE TOP PLATES, FACE NAIL	16D AT 16" O.C.
8.	TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	2-16D
9.	CONTINUOUS HEADER, TWO PIECES	16D AT 16" O.C. ALONG EDGE
10.	CEILING JOISTS TO PLATE, TOE NAIL	3-8D
11.	CONTINUOUS HEADER TO STUD, TOE NAIL	4-8D
12.	CEILING JOISTS, LAPS OVER PARTITIONS, FACE NAIL	3-16D
13.	CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL	3-16D
14.	RAFTER TO PLATE, TOE NAIL	3-8D
15.	BUILT-UP CORNER STUDS	16D AT 24" O.C.
	BUILT-UP GIRDER AND BEAMS FACE NAIL AT TOP AND BOTTOM STAGGERED FACE NAILS AT ENDS AND AT EACH SPLICE	 20D AT 32" O.C. 2-20D
	WOOD STRUCTURAL PANELS AND PARTICLEBOARD[b] SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING) 1/2" AND LESS 19/32" TO 3/4" 7/8" TO 1" 1 1/8" TO 1 1/4"	 6D[c] OR 8D[d][e] 8D[c] OR 8D[d][e] 8D[c] OR 10D[d] OR 8D[d]
	SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERLAYMENT TO FRAMING) 3/4" AND LESS 7/8" TO 1" 1 1/8" TO 1 1/4"	 6D[e] 8D[e] 10D[d] OR 8D[e]

a. COMMON OR BOX NAILS MAY BE USED EXCEPT WHERE OTHERWISE STATED.
b. NAILS SPACED AT 6 INCHES ON CENTER AT EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS EXCEPT 6 INCHES AT SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SECTION 2305 IN THE IBC. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
c. COMMON OR DEFORMED SHANK.
d. COMMON.
e. DEFORMED SHANK

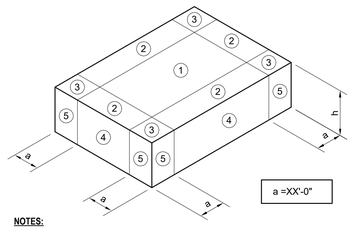
ULTIMATE DESIGN LOAD (psf) (115 MPH, Exp C)

ROOF

ZONE	0-10 sq ft	20-50 sq ft	50-100 sq ft	>100 sq ft	
1	+14.3, -34.03	+13.4, -33.1	+12.3, -31.99	+11.4, -31.15	
2	+14.3, -57.1	+13.4, -50.6	+12.3, -42.82	+11.4, -36.91	
3	+14.3, -85.94	+13.4, -70.14	+12.3, -51.25	+11.4, -36.91	

WALLS

ZONE	0-10 sq ft	20 sq ft	50 sq ft	100 sq ft	>500 sq ft
4	+35.3, -36.91	+33.7, -35.27	+31.6, -33.31	+30.0, -31.8	+26.3, -28.26
5	+35.3, -45.57	+33.7, -42.28	+31.6, -38.36	+30.0, -35.34	+26.3, -28.26



NOTES:

1. THE WIND PRESSURES SHOWN HERE, GIVEN IN POUNDS PER SQUARE FOOT (PSF), ARE ULTIMATE DESIGN LOADS AND DO NOT NEED TO BE FACTORED.
2. ALL COMPONENTS, CLADDING, FINISHES AND CONNECTIONS SHALL BE DESIGNED FOR WIND PRESSURES INDICATED FOR THE CORRESPONDING ZONE. CALCULATIONS AND/OR DESIGN DATA MUST BE AVAILABLE FOR REVIEW BY THE STRUCTURAL ENGINEER OF RECORD IF REQUESTED.
3. (0-10 SQ FT) EXAMPLE DENOTES EFFECTIVE WIND AREA.
4. + AND - SIGNS SIGNIFY PRESSURES ACTING TOWARD OR AWAY FROM SURFACES, RESPECTIVELY.
5. WIND PRESSURES FOR EFFECTIVE WIND AREAS BETWEEN THE SPECIFIED RANGES MAY BE DETERMINED BY INTERPOLATION. OTHERWISE, USE THE VALUE ASSOCIATED WITH THE LOWER EFFECTIVE AREA.
6. ALL PARAPETS SHALL BE DESIGNED IN ACCORDANCE WITH THE WIND PRESSURES DETERMINED FROM SECTION 30.9 OF ASCE 7-10.

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FRACTAL Project No.20-014-00
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Issue

No.	Date	Description
A	9/8/2022	ISSUE FOR BID

STATE OF TEXAS
MARCO CANO
105906
LICENSED
PROFESSIONAL ENGINEER

STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LGA Engineering**
Stuctural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Engineer	**Consultant 4 Name**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE AND LANDSCAPE
Drawing Name
STRUCTURAL NOTES

SRA Project Number
2001
Scale
12" = 1'-0"
Drawing Number
1-S0.01

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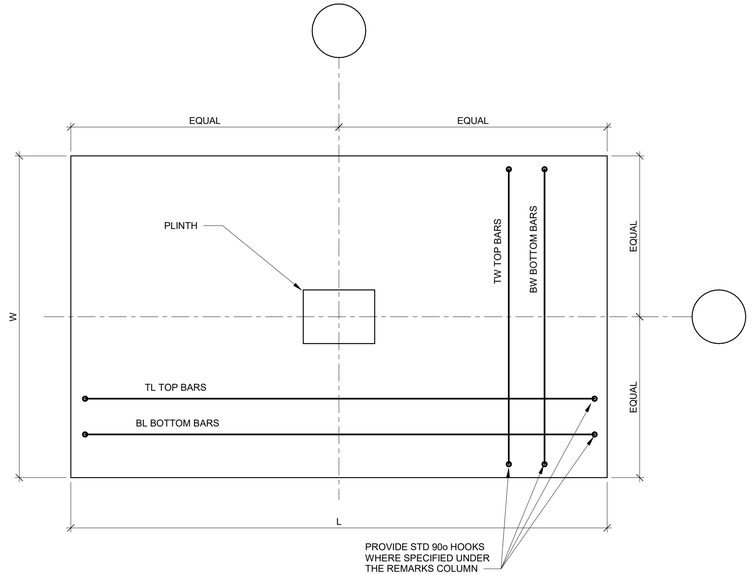
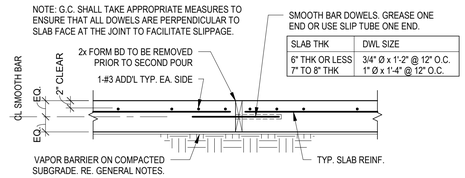
FOOTING SCHEDULE

FOOTING MARK	FOOTING DIMENSIONS			FOOTING REINFORCEMENT				REMARKS
	L	W	THK	BOTTOM BARS		TOP BARS		
				BL BARS	BW BARS	TL BARS	TW BARS	
F3	3'-0"	3'-0"	1'-6"	4 #6 BARS	4 #6 BARS			
F8	8'-0"	8'-0"	2'-0"	9 #7 BARS	9 #7 BARS			

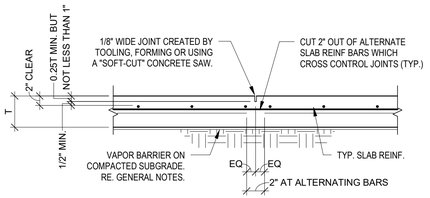


1 SPREAD FOOTING SCHEDULE

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



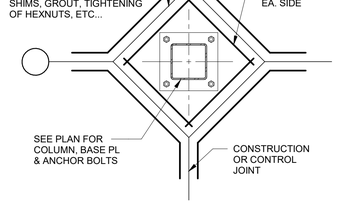
TYPICAL CONSTRUCTION JOINT



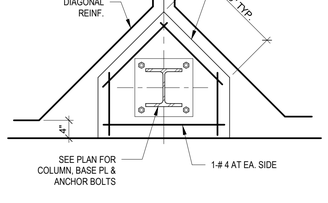
TYPICAL CONTROL JOINT

2 TYP. CONSTRUCTION/CONTROL JOINT

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



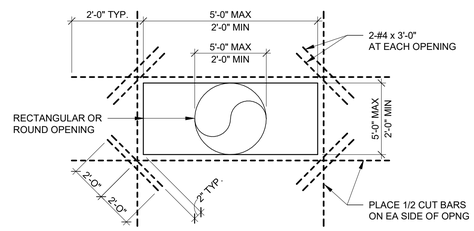
INTERIOR COLUMN



EXTERIOR COLUMN

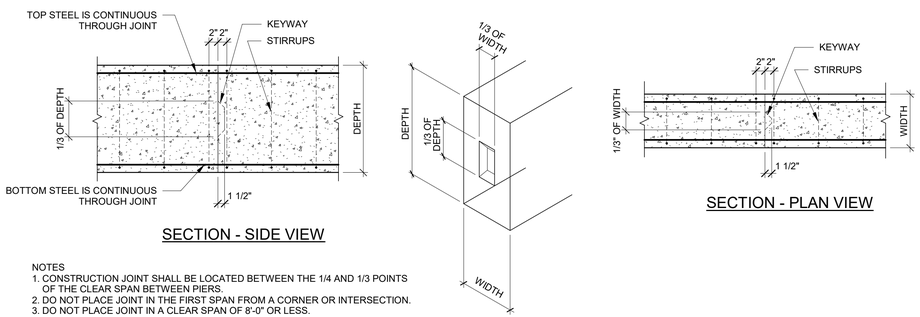
3 STANDARD SLAB ON GRADE COLUMN BLOCK OUT

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



6 OPENING IN SLAB ON GRADE

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



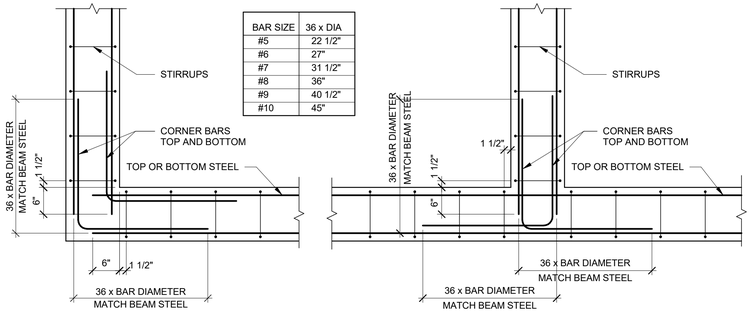
SECTION - SIDE VIEW

SECTION - PLAN VIEW

NOTES
1. CONSTRUCTION JOINT SHALL BE LOCATED BETWEEN THE 1/4 AND 1/3 POINTS OF THE CLEAR SPAN BETWEEN PIERS.
2. DO NOT PLACE JOINT IN THE FIRST SPAN FROM A CORNER OR INTERSECTION.
3. DO NOT PLACE JOINT IN A CLEAR SPAN OF 8'-0" OR LESS.

7 STANDARD CONCRETE BEAM CONSTRUCTION JOINT DETAIL

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



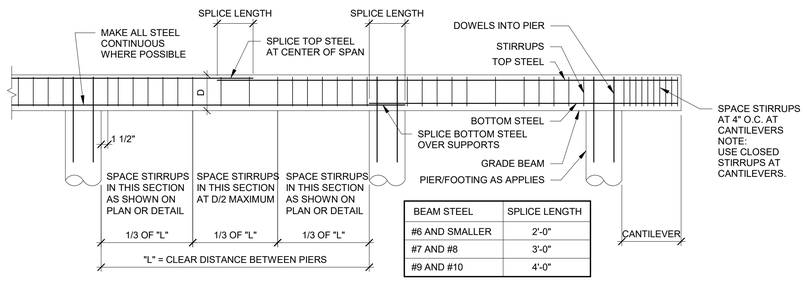
BAR SIZE	36 x DIA
#5	22 1/2"
#6	27"
#7	31 1/2"
#8	36"
#9	40 1/2"
#10	45"

PLAN AT CORNER

PLAN AT INTERSECTION

8 STANDARD GRADE BEAM/WALL CORNER BAR PLACEMENT

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



BEAM STEEL	SPLICE LENGTH
#6 AND SMALLER	2'-0"
#7 AND #8	3'-0"
#9 AND #10	4'-0"

9 TYP. GRADE BEAM REINFORCEMENT DETAIL

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

Issue

No.	Date	Description
A	9/8/2022	ISSUE FOR BID

STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LGA Engineering**
Stuctural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Engineer	**Consultant 4 Name**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE AND LANDSCAPE
Drawing Name
CONCRETE DETAILS

SRA Project Number
2001
Scale
3/4" = 1'-0"
Drawing Number
1-S3.00

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TENSION DEVELOPMENT LENGTH ('ℓd')

(FOR GRADE 60 UNCOATED BARS IN NORMAL WEIGHT CONCRETE)
(ADJUST TABULATED LENGTHS AS REQUIRED BY NOTES BELOW)

BAR SIZE	f'c= 3000 PSI		f'c= 4000 PSI		f'c= 5000 PSI		f'c= 6000 PSI		f'c= 7000 PSI		f'c= 8000 PSI	
	ℓd TOP	ℓd BOT	ℓd TOP	ℓd BOT	ℓd TOP	ℓd BOT	ℓd TOP	ℓd BOT	ℓd TOP	ℓd BOT	ℓd TOP	ℓd BOT
#3	1'-9"	1'-4"	1'-6"	1'-2"	1'-5"	1'-1"	1'-3"	1'-0"	1'-2"	1'-0"	1'-1"	1'-0"
#4	2'-4"	1'-10"	2'-1"	1'-7"	1'-10"	1'-5"	1'-8"	1'-3"	1'-7"	1'-2"	1'-5"	1'-1"
#5	3'-0"	2'-3"	2'-7"	2'-0"	2'-4"	1'-9"	2'-1"	1'-7"	2'-0"	1'-6"	1'-10"	1'-5"
#6	3'-7"	2'-9"	3'-1"	2'-4"	2'-9"	2'-1"	2'-6"	1'-11"	2'-4"	1'-10"	2'-2"	1'-8"
#7	5'-2"	4'-0"	4'-6"	3'-6"	4'-0"	3'-1"	3'-8"	2'-10"	3'-5"	2'-8"	3'-2"	2'-5"
#8	5'-11"	4'-7"	5'-2"	3'-11"	4'-7"	3'-6"	4'-2"	3'-3"	4'-0"	3'-1"	3'-8"	2'-10"
#9	6'-8"	5'-2"	5'-9"	4'-5"	5'-2"	4'-0"	4'-9"	3'-8"	4'-5"	3'-5"	4'-1"	3'-2"
#10	7'-6"	5'-10"	6'-6"	5'-0"	5'-10"	4'-6"	5'-4"	4'-1"	5'-0"	3'-10"	4'-7"	3'-7"
#11	8'-4"	6'-5"	7'-3"	5'-7"	6'-6"	5'-0"	5'-11"	4'-7"	5'-6"	4'-3"	5'-1"	3'-11"

NOTES:
1. TABULATED VALUES ARE APPLICABLE ONLY IF CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 'db', CLEAR COVER IS NOT LESS THAN 'db', AND STIRRUPS OR TIES THROUGHOUT 'ld' IS NOT LESS THAN CODE MINIMUM, OR CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 2"db' AND CLEAR COVER IS NOT LESS THAN 'db'. FOR OTHER CASES, MULTIPLY TABULATED VALUES BY 1.5.
2. 'TOP' BARS ARE HORIZONTAL REBARS WITH MORE THAN 12 IN OF FRESH CONCRETE CAST BELOW THE BARS AT THE DEVELOPEMENT LENGTH.
3. FOR LIGHT WEIGHT CONCRETE MULTIPLY THE TABULATED VALUES BY 1.3.
4. FOR EPOXY COATED BARS, MULTIPLY THE TABULATED VALUES BY 1.5 FOR BOT BARS, OR BY 1.3 FOR TOP BARS.
5. FOR REINFORCEMENT OTHER THAN GRADE 60, MODIFY THE TABULATED VALUES BY THE RATIO OF THE REINFORCEMENT YIELD STRENGTH DIVIDED BY 60 KSI.

10 TENSION DEVELOPMENT LENGTH TABLE

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

TENSION LAP SPLICES-CLASS B-TOP & BOT BARS

(FOR GRADE 60 UNCOATED BARS IN NORMAL WEIGHT CONCRETE)
(ADJUST TABULATED LENGTHS AS REQUIRED BY NOTES BELOW)

BAR SIZE	f'c= 3000 PSI		f'c= 4000 PSI		f'c= 5000 PSI		f'c= 6000 PSI		f'c= 7000 PSI		f'c= 8000 PSI	
	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT
#3	2'-4"	1'-9"	2'-0"	1'-6"	1'-10"	1'-5"	1'-8"	1'-4"	1'-7"	1'-4"	1'-5"	1'-4"
#4	3'-1"	2'-4"	2'-8"	2'-1"	2'-5"	1'-10"	2'-2"	1'-8"	2'-1"	1'-7"	1'-11"	1'-5"
#5	3'-10"	3'-0"	3'-4"	2'-7"	3'-0"	2'-4"	2'-9"	2'-1"	2'-7"	2'-0"	2'-4"	1'-10"
#6	4'-8"	3'-7"	4'-0"	3'-1"	3'-7"	2'-9"	3'-3"	2'-6"	2'-11"	2'-4"	2'-10"	2'-2"
#7	6'-9"	5'-2"	5'-10"	4'-6"	5'-3"	4'-0"	4'-9"	3'-8"	4'-6"	3'-5"	4'-2"	3'-2"
#8	7'-9"	5'-11"	6'-8"	5'-2"	6'-0"	4'-7"	5'-5"	4'-2"	5'-1"	3'-11"	4'-9"	3'-8"
#9	8'-8"	6'-8"	7'-6"	5'-9"	6'-9"	5'-2"	6'-2"	4'-9"	5'-9"	4'-5"	5'-4"	4'-1"
#10	9'-10"	7'-6"	8'-6"	6'-6"	7'-7"	5'-10"	6'-11"	5'-4"	6'-6"	5'-0"	6'-0"	4'-7"
#11	10'-11"	8'-4"	9'-5"	7'-3"	8'-5"	6'-6"	7'-8"	5'-11"	7'-2"	5'-6"	6'-8"	5'-1"

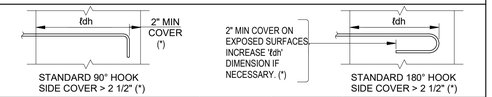
NOTES:
1. TABULATED VALUES ARE APPLICABLE ONLY IF CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 'db', CLEAR COVER IS NOT LESS THAN 'db', AND STIRRUPS OR TIES THROUGHOUT 'ld' IS NOT LESS THAN CODE MINIMUM, OR CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 2"db' AND CLEAR COVER IS NOT LESS THAN 'db'. FOR OTHER CASES, MULTIPLY TABULATED VALUES BY 1.5.
2. 'TOP' BARS ARE HORIZONTAL REBARS WITH MORE THAN 12 IN OF FRESH CONCRETE CAST BELOW THE BARS AT THE DEVELOPEMENT LENGTH.
3. FOR LIGHT WEIGHT CONCRETE MULTIPLY THE TABULATED VALUES BY 1.3.
4. FOR EPOXY COATED BARS, MULTIPLY THE TABULATED VALUES BY 1.5 FOR BOT BARS, OR BY 1.3 FOR TOP BARS.
5. FOR REINFORCEMENT OTHER THAN GRADE 60, MODIFY THE TABULATED VALUES BY THE RATIO OF THE REINFORCEMENT YIELD STRENGTH DIVIDED BY 60 KSI.
6. FOR CLASS 'A' SPLICE USE SAME AS TENSION DEVELOPMENT LENGTH.

11 TENSION LAP SPLICE LENGTH TABLE

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

'ℓdh' TENSION DEVELOPMENT LENGTH (EMBEDMENT LENGTH) FOR STANDARD END HOOKS

(FOR GRADE 60 UNCOATED BARS IN NORMAL WEIGHT CONCRETE)
(ADJUST TABULATED LENGTHS AS REQUIRED BY NOTES BELOW)



BAR SIZE	f'c= 3000 PSI	f'c= 4000 PSI	f'c= 5000 PSI	f'c= 6000PSI	f'c= 7000 PSI	f'c= 8000 PSI
	ℓdh	ℓdh	ℓdh	ℓdh	ℓdh	ℓdh
#3	6"	6"	6"	6"	6"	6"
#4	8"	7"	6"	6"	6"	6"
#5	10"	9"	8"	7"	7"	6"
#6	1'-0"	10"	9"	9"	8"	7"
#7	1'-2"	1'-0"	11"	10"	9"	9"
#8	1'-4"	1'-2"	1'-0"	11"	10"	10"
#9	1'-6"	1'-3"	1'-2"	1'-1"	1'-0"	11"
#10	1'-8"	1'-5"	1'-4"	1'-2"	1'-1"	1'-0"
#11	1'-10"	1'-7"	1'-5"	1'-4"	1'-3"	1'-1"

NOTES:
1. (*) WHEN EITHER SIDE OR END COVER IS SMALLER THAN THESE NUMBERS, MULTIPLY 'ldh' BY 1.4.
2. FOR LIGHT WEIGHT CONCRETE MULTIPLY THE TABULATED VALUES BY 1.3.
3. FOR EPOXY COATED BARS MULTIPLY THE tABULATED VALUES BY 1.2.
4. FOR REINFORCEMENT OTHER THAN GRADE 60, MODIFY THE TABULATED VALUES BY THE RATION OF THE REINFORCEMENT YIELD STRENGTH DIVIDED BY 60 KSI.

12 STANDARD HOOK DEVELOPMENT LENGTH TABLE

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

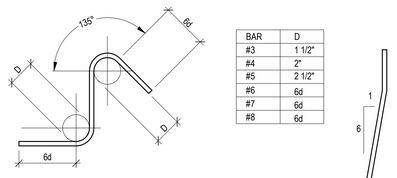
COMPRESSION DEVELOPMENT LENGTH ('ℓc') AND COMPRESSION LAP SPLICES (Ⓒ)

(FOR GRADE 60 & 75 UNCOATED BARS IN NORMAL WEIGHT CONCRETE-f'c=3000 PSI MIN)

BAR SIZE	GRADE 60		GRADE 75	
	'ℓc'	Ⓒ	'ℓc'	Ⓒ
#3	1'-0"	1'-0"	1'-0"	1'-5"
#4	1'-0"	1'-3"	1'-2"	1'-10"
#5	1'-2"	1'-7"	1'-6"	2'-4"
#6	1'-5"	1'-11"	1'-9"	2'-9"
#7	1'-8"	2'-3"	2'-1"	3'-3"
#8	1'-10"	2'-6"	2'-4"	3'-8"
#9	2'-1"	2'-10"	2'-8"	4'-2"
#10	2'-4"	3'-3"	2'-11"	4'-8"
#11	2'-7"	3'-7"	3'-3"	5'-2"
#14	3'-2"		3'-11"	
#18	4'-2"		5'-3"	

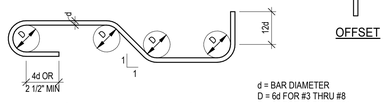
13 COMPRESSION DEVELOPMENT LENGTH TABLE

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



FOR STIRRUPS AND TIES

BAR	D
#3	1 1/2"
#4	2"
#5	2 1/2"
#6	6d
#7	6d
#8	6d



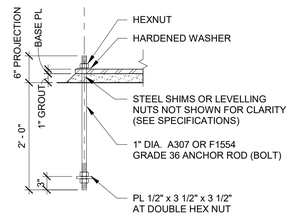
FOR REINFORCING BARS

d = BAR DIAMETER
D = 6d FOR #3 THRU #8
D = 8d FOR #9 THRU #11

OFFSET

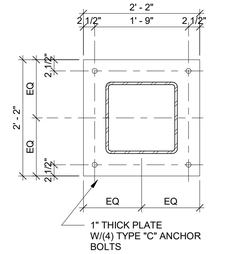
14 BAR BENDING

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



ANCHOR ROD TYPE C

AT BRACES



HSS16x16 COL.

(TYPICAL)

17 BASE PLATE AND ANCHOR BOLTS DETAILS

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

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FRACTAL Project No.20-014-00
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Issue

No.	Date	Description
A	9/8/2022	ISSUE FOR BID

STATE OF TEXAS — MARCO CANO — 105906 — LICENSED — PROFESSIONAL ENGINEER

STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LGA Engineering**
Stuctural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Engineer	**Consultant 4 Name**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE AND LANDSCAPE

Drawing Name
CONCRETE DETAILS

SRA Project Number
2001

Scale
3/4" = 1'-0"

Drawing Number
1-S3.01

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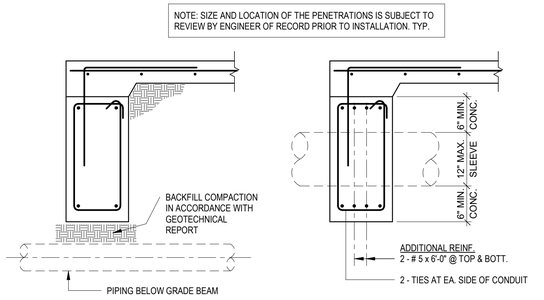
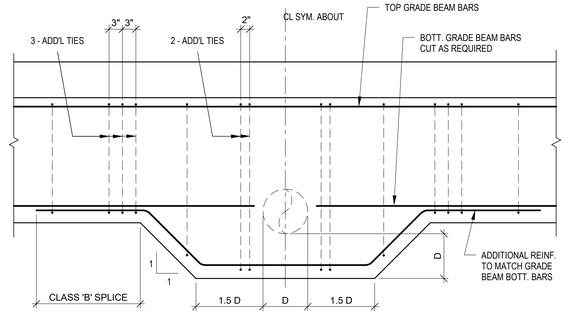


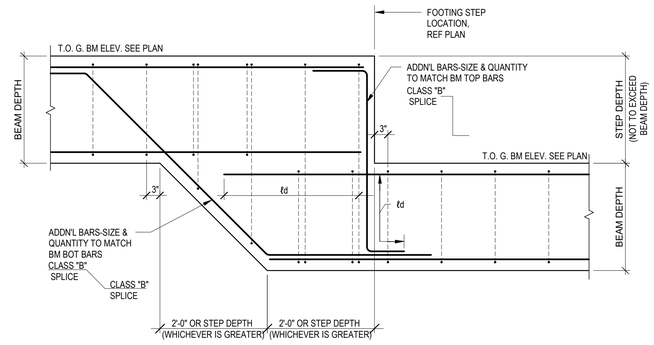
A - CONDUIT BELOW GRADE BEAM C - CONDUIT THRU GRADE BEAM



A - CONDUIT CLOSE TO BOTTOM OF GRADE BEAM

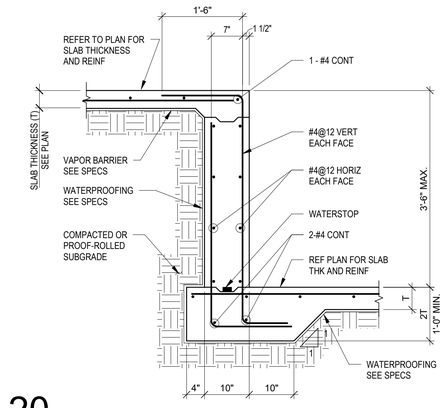
18 PIPE AND CONDUIT PENETRATION THRU GRADE BEAM

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



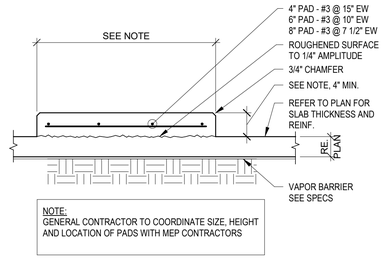
19 TYP. STEP DOWN AT GRADE BEAM

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



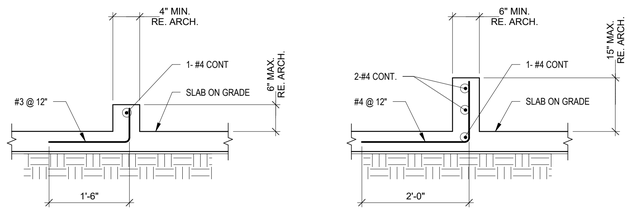
20 TYP. STEP IN SLAB > 2'-0"

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



21 CONCRETE PADS FOR MEP EQUIPMENT

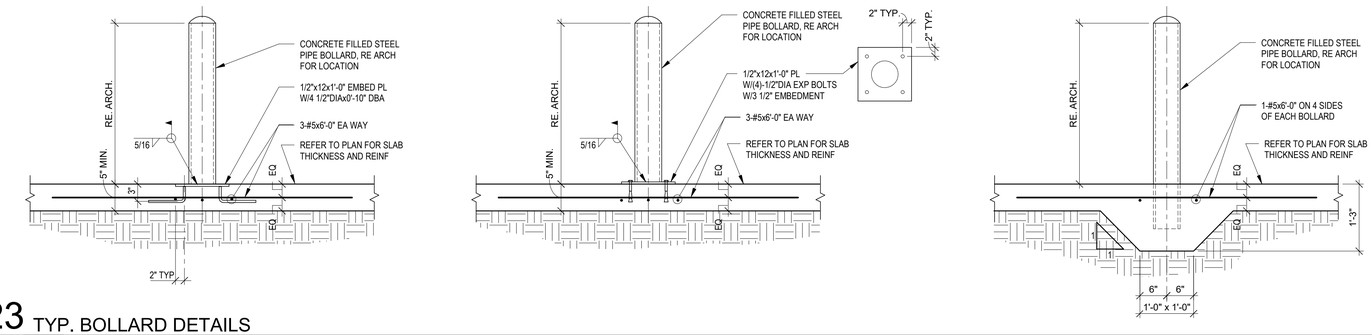
SCALE: 3/4" = 1'-0"



CURB LESS THAN 6" CURB GREATER THAN 6" BUT LESS THAN 15"

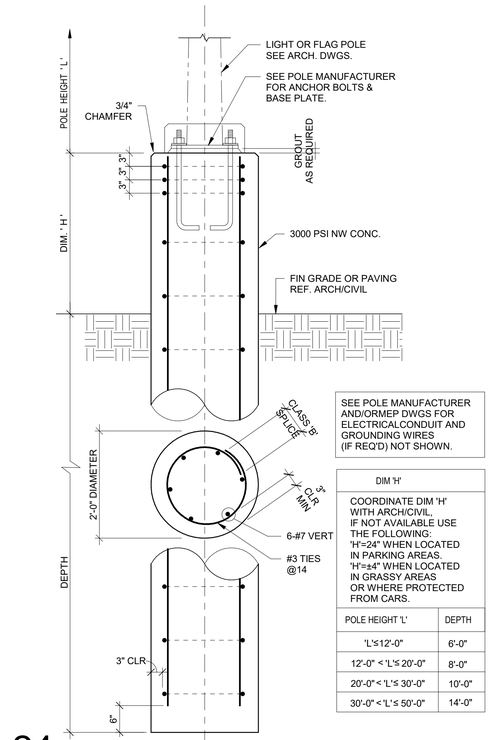
22 TYP. CURB DETAILS

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



23 TYP. BOLLARD DETAILS

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



SEE POLE MANUFACTURER AND/ORMEP DWGS FOR ELECTRICALCONDUIT AND GROUNDING WIRES (IF REQ'D) NOT SHOWN.

DIM 'H'
COORDINATE DIM 'H' WITH ARCH/CIVIL, IF NOT AVAILABLE USE THE FOLLOWING: 'H'=24" WHEN LOCATED IN PARKING AREAS. 'H'=±4" WHEN LOCATED IN GRASSY AREAS OR WHERE PROTECTED FROM CARS.

POLE HEIGHT 'L'	DEPTH
'L'≤12'-0"	6'-0"
12'-0" < 'L'≤ 20'-0"	8'-0"
20'-0" < 'L'≤ 30'-0"	10'-0"
30'-0" < 'L'≤ 50'-0"	14'-0"

24 TYP. LIGHT AND FLAG POLE FOUNDATION

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

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Drawing Name
CONCRETE DETAILS

SRA Project Number
2001

Scale
3/4" = 1'-0"

Drawing Number
1-S3.02

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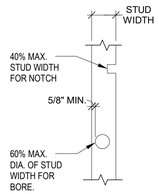
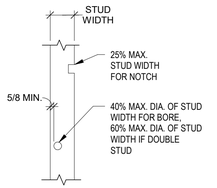


NON-BEARING STUDS



EXT. AND BEARING STUDS

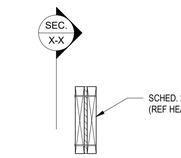
NOTH/BORE % OF STUD DEPTH	2X4	2X6	2X8
25%	7/8"	1 3/8"	1 7/8"
40%	1 3/8"	2 1/8"	3"
60%	2"	3 1/4"	4 1/2"

NOTES:

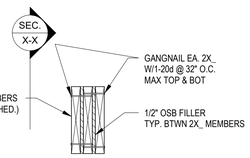
1. NOTCHING AND BORING NOT TO OCCUR IN SAME STUD SECTION.
2. NO OMORE THAN 2 SUCCESSIVE DOUBLE STUDS MAY HAVE 60% MAX. BORED HOLES.
3. TOP AND BOTTOM PLATE HOLE, CUT OR NOTCH THAT IS 50% OR MORE OF WIDTH MUST BE REPAIRED USING 16 GA. (MIN.) METAL TIE THAT IS AT LEAST 1 1/2" WIDE (SECTION 2308.9.8 IBC) IF WALL IS A SHEAR WALL IT MUST BE REPAIRED USING HARDY FRAME SADDLE (HFS).

1 TYPICAL STUD NOTCHING/BORING

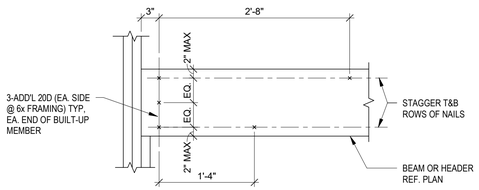
SCALE: 1" = 1'-0"



@ 2x4 WALL FRAMING



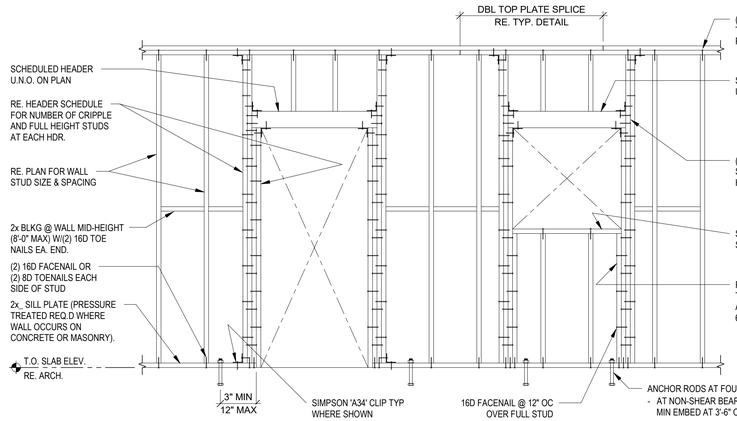
@ 2x6 WALL FRAMING



SECTION X - X

2 TYPICAL BUILT UP MEMBER NAILING

SCALE: 1" = 1'-0"



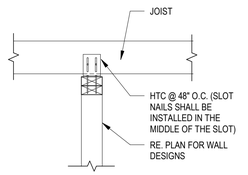
SILL PL SCHEDULE (@ WINDOW)	
OPENING WIDTH	SILL PL SIZE
< 6'-0"	(1) 2X_
6'-0" TO 8'-0"	(2) 2x_
8'-0" TO 10'-0"	(3) 2x_

NOTES:

1. HEADERS, KINGSTUDS AND OTHER REFERENCES NOTED ON PLAN GOVERN OVER TYPICAL DETAILS.
2. REFERENCE PLANS AND SHEET S4.02 FOR ADDITIONAL INFORMATION AND REQUIREMENTS AT SHEAR WALL LOCATIONS.
3. REFERENCE X/SX.X FOR TYPICAL BUILT-UP MEMBER NAILING.

A TYPICAL EXTERIOR AND INTERIOR BEARING WALL FRAMING

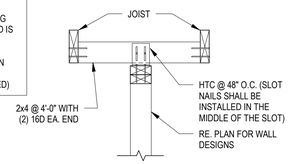
SCALE: 1" = 1'-0"



PERPENDICULAR TO JOISTS

NOTE:

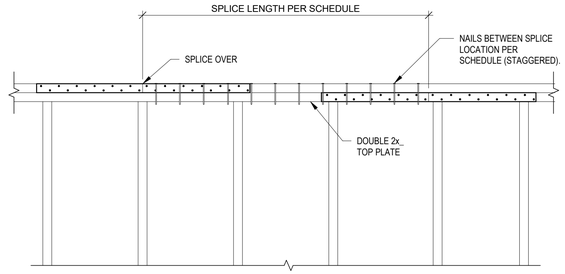
DO NOT INSTALL NON-BEARING PARTITIONS UNTIL DEAD LOAD IS IN PLACE. (AT ROOF CONSTRUCTION AND WHERE DEFLECTION SPACE HAS BEEN PROVIDED FOR THIS REQUIREMENT MAY BE WAIVED)



PARALLEL TO JOISTS

3 TYP. NON-BEARING WALL TOP PLATE ANCHORAGE

SCALE: 1" = 1'-0"

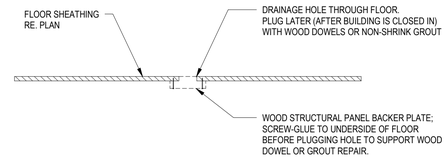


NOTE:
1. DO NOT SPLICE TOP PLATES WITHIN 6'-0" OF ENDS OF TIMBER SHEAR WALLS.
2. THIS DETAIL APPLIES AT ALL WALLS.

LENGTH OF PLATE (BETWEEN PERP. WALL)	SPLICE LENGTH MINIMUM	NAIL ALONG SPLICE LENGTH
OVER 30'	4'-0"	27-16D
BETWEEN 20' AND 30'	2'-8"	18-16D
LESS THAN 20'	1'-4"	10-16D

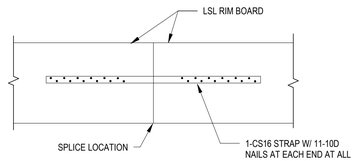
4 TYPICAL TOP PLATE SPLICE DETAIL

SCALE: 1" = 1'-0"



5 DRAINAGE HOLE THROUGH FLOOR

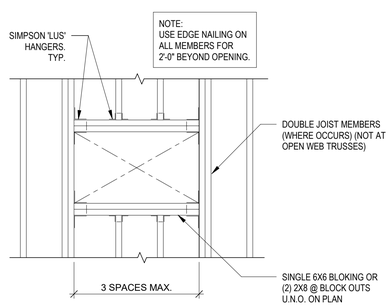
SCALE: 1" = 1'-0"



NOTE:
DO NOT SPLICE RIM BOARD WITHIN 1'-0" FROM AN OPENING OR OVER AN OPENING.

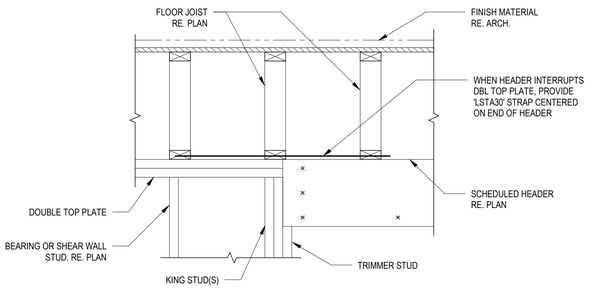
6 TYPICAL LSL RIM SPLICE

SCALE: 1" = 1'-0"



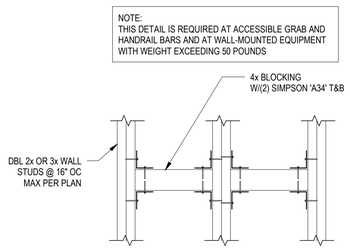
7 TYPICAL FRAMING AT ROOF OPENING

SCALE: 1" = 1'-0"



8 ADDITIONAL STRAPPING AT DEEP HEADERS

SCALE: 1" = 1'-0"



9 TYPICAL BACKING FRAMING

SCALE: 1" = 1'-0"

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Landscape Engineer	**Consultant 4 Name**

KEY PLAN

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LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE AND LANDSCAPE

Drawing Name
WOOD SHEETS

SRA Project Number
2001

Scale
1" = 1'-0"

Drawing Number
1-S7.00

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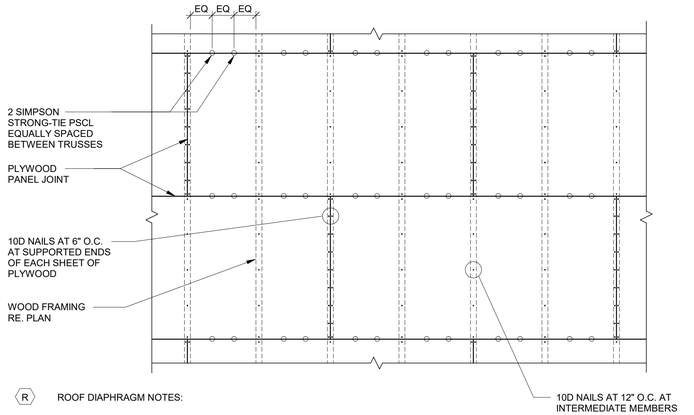
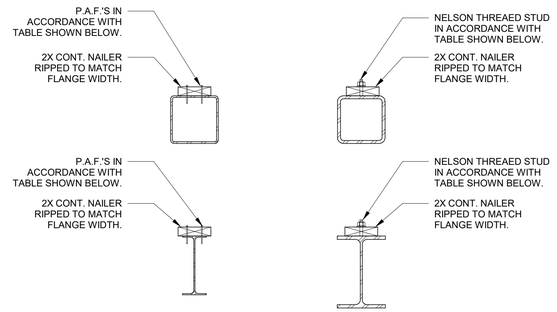


R ROOF DIAPHRAGM NOTES:

1. PLYWOOD SHALL BE 5/8" OR 19/32" THICK STRUCTURAL 1 GRADE PLYWOOD.
2. PLYWOOD JOINTS SHALL BE STAGGERED.
3. NAILS SHALL BE 10D X 2 1/8" (MINIMUM) TO ACHIEVE 1 1/2" MIN. PENETRATION.
4. 6" NAIL SPACING AT PLYWOOD PANEL EDGES (EDGE NAILING).
5. 12" NAIL SPACING AT INTERMEDIATE FRAMING MEMBERS.
6. NAILS SHALL BE COMMON. GALVANIZED NAILS SHALL BE HOT-DIPPED OR TUMBLED.
7. PLYWOOD PANELS SHALL BE INSTALLED AS SHOWN IN 2012 IBC TABLE 2306.3.1, CASE 2, 3, 4, 5, OR 6.
8. FRAMING SPACING SHALL BE AS SPECIFIED ON THE PLANS, IN NO CASE SHALL THE SPACING EXCEED 24".
9. PLYWOOD PANEL EDGES SHALL BEAR ON THE FRAMING MEMBERS AND BUTT ALONG THEIR CENTER LINES.
10. NAILS SHALL BE PLACED NOT LESS THAN 3/8" IN FROM THE PLYWOOD PANEL EDGE.
11. NAILS SHALL BE FIRMLY DRIVEN INTO THE FRAMING MEMBERS BUT NOT OVERSHOT.
12. REFER TO SHEET S1.01 FOR ADDITIONAL PLYWOOD /OSB NOTES.

1 ROOF DIAPHRAGM SCHEDULE

SCALE: 1" = 1'-0"



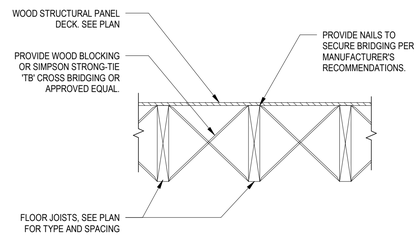
STEEL THINNER THAN 1/2" STEEL THICKER THAN 1/2"

NOTE: COUNTERSINK THE NELSON THREADED STUD AT LOCATIONS WHERE NUT IS CONFLICTING WITH ADJACENT ELEMENTS.

STEEL THICKNESS	SHEAR WALL LOCATIONS	NON-SHEAR WALL LOCATIONS
1/2" OR LESS	P.A.F.'S IN ACCORDANCE WITH SOLE OR SILL PLATE ANCHORAGE IN SHEAR WALL SCHEDULE.	.177" Ø P.A.F.'S @ 12" O.C. STAGGERED
GREATER THAN 1/2"	NELSON THREADED STUD IN ACCORDANCE WITH SOLE OR SILL PLATE ANCHORAGE IN SHEAR WALL SCHEDULE.	1/2" Ø NELSON THREADED STUD @ 48" O.C.

2 TYPICAL WOOD STUD TO STEEL CONNECTION

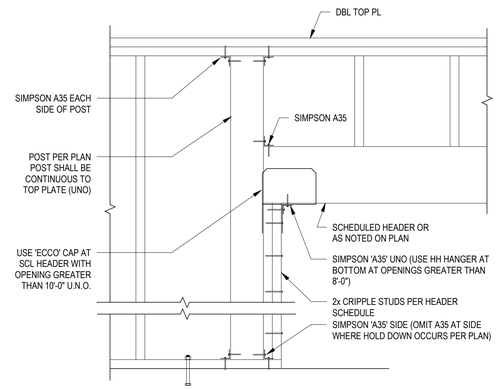
SCALE: 1" = 1'-0"



NOTES:
1. MAXIMUM SPACING OF BLOCKING OR BRIDGING SHALL BE 8'-0".
2. FOLLOW BRIDGING MANUFACTURER'S INSTALLATION INSTRUCTIONS.

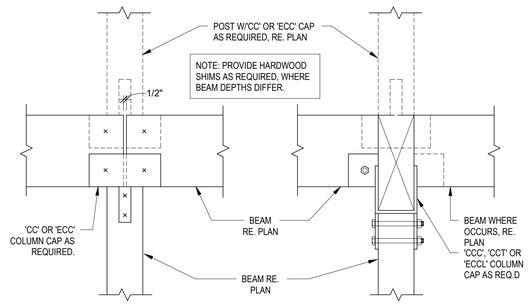
3 CROSS-BRIDGING @ 2x_ JOISTS

SCALE: 1" = 1'-0"



4 LONG SPAN HEADER TO POST CONNECTION

SCALE: 1" = 1'-0"



5 BEAM TO POST CONNECTION

SCALE: 1" = 1'-0"

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Issue

No.	Date	Description
A	9/8/2022	ISSUE FOR BID

STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LGA Engineering**
Stuctural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Engineer	**Consultant 4 Name**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE AND LANDSCAPE

Drawing Name
WOOD SHEETS

SRA Project Number
2001

Scale
1" = 1'-0"

Drawing Number
1-S7.01

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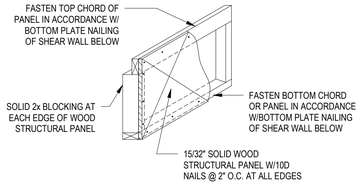
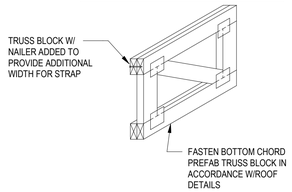
NOTE:
1. TRUSS BLOCK MAY CONSIST OF EITHER A WOOD STRUTURAL PANEL OR PREFAB TRUSS BLOCK - INSTALL AND FASTEN AS SHOWN (U.N.O.)
2. TOP CHORD OF WOOD STRUCTURAL PANEL TRUSS BLOCK MUST BE VERTICAL WHEN INSTALLED UNDER LOAD BEARING WALLS. OTHERWISE TOP CHORD MAY BE VERTICAL OR HORIZONTAL .
3. TRUSS MANUFACTURER TO DESIGN PREFAB TRUSS BLOCK FOR LATERAL FORCE AS NOTED BELOW.
4. FASTEN TRUSS BLOCK TO EACH TRUSS TOP AND BOTTOM CHORD W/ 2-10d TOENAILS.



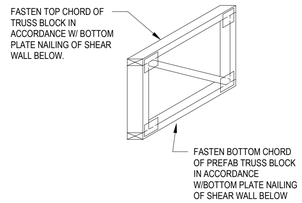
WOOD STRUCTURAL PANEL TRUSS BLOCK

NOTE:
TRUSS MANUFACTURER TO DESIGN PREFAB TRUSS BLOCK FOR 1.2 KIP LATERAL LOAD. (U.N.O.)



PREFAB ROOF TRUSS BLOCK

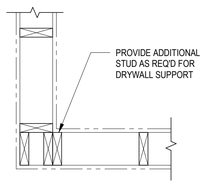
NOTE:
TRUSS MANUFACTURER TO DESIGN PREFAB TRUSS BLOCK FOR 2.2 KIP LATERAL LOAD. (U.N.O.)



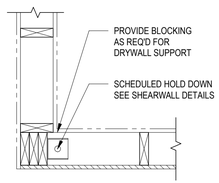
PREFAB FLOOR TRUSS BLOCK

1 TYPICAL TRUSS BLOCK DETAIL

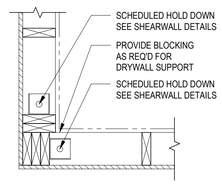
SCALE: 1" = 1'-0"



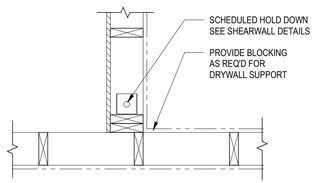
TYPICAL CORNER



CORNER W/ 1 HOLD DOWN



CORNER W/ 2 HOLD DOWNS



INTERSECTIOIN W/ 1 HOLD DOWN

2 PLAN DETAILS

SCALE: 1" = 1'-0"

SHEAR WALL SCHEDULE

SHEARWALL TYPE	SHEATHING APPLICATION	SHEATHING TYPE	NAIL SIZE	NAIL SPACING		DESIGN CAPACITY WIND OR SEISMIC
				EDGES	FIELD	
1	TWO SIDES	15/32" APA RATED STRUCTURAL 1 SHEATHING	10D	4"	12"	510 PLF PER SIDE 1,020 PLF TOTAL
TYPICAL EXT.	ONE SIDE (EXT.)	15/32" APA RATED STRUCTURAL 1 SHEATHING	10D	6"	12"	340 PLF

1. APPLY SHEATHING TO FACE OF WALL BY SYMBOL.
2. PROVIDE SOLID FULL-DEPTH BLOCKING AT ALL PANEL EDGES IN SHEAR WALLS. PLYWOOD JOINTS SHALL BE STAGGERED.
3. PROVIDE HOLD DOWNS AND MULTIPLE STUDS AT ENDS OF SHEAR WALLS PER HOLD DOWN SCHEDULE.
4. ALL 10d NAILS SHALL HAVE MINIMUM 1 1/2" PENETRATION PER TABLE 2306.4.1 IN THE IBC.
5. GALVANIZED NAILS SHALL BE HOT DIPPED OR TUMBLED.
6. NAILS SHALL BE PLACED NOT LESS THAN 3/8" IN FROM THE PLYWOOD PANEL EDGE.
7. NAILS SHALL BE FIRMLY DRIVEN INTO THE FRAMING MEMBERS BUT NOT OVERSHOT.
8. FRAMING AT ADJOINING PANEL EDGES SHALL BE 3 INCHES NOMINAL OR WIDER AND NAILS SHALL BE STAGGERED WHERE NAILS ARE SPACED 2 INCHES ON CENTER.
9. FRAMING AT ADJOINING PANEL EDGES SHALL BE 3 INCHES NOMICAL OR WIDER AND NAILS SHALL BE STAGGERED WHERE BOTH OF THE FOLLOWING CONDITIONS ARE MET: (1) 10d NAILS HAVING PENETRATION INTO FRAMING OF MORE THAN 1 1/2" AND (2) NAILS ARE SPACED 3 INCHES ON CENTER.
10. DESIGN CAPACITIES SHOWN FOR WALLS WITH DOUGLAS FIR-LAR OR SOUTHERN PINE FRAMING. FOR FRAMING OF OTHER SPECIES REFER TO TABLE 2306.4.1 IN THE IBC AND AF&PA NDS.
11. FOR SHEAR LOADS OF NORMAL OR PERMANENT LOAD DURATION AS DEFINED BY THE AF&PA NDS, THE VALUES IN THE TABLE ABOVE SHALL BE MULTIPLIED BY 0.63 OR 0.56, RESPECTIVELY.

3 SHEAR WALL SCHEDULE

SCALE: 1" = 1'-0"

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Drawing Name
WOOD SHEETS

SRA Project Number
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Scale
1" = 1'-0"

Drawing Number
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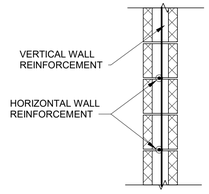


CMU SIZE	VERTICAL REINF.	HORIZONTAL REINF.
8"	#4@16" O.C.	RE: GEN. NOTES
4"	#4@16" O.C.	RE: GEN. NOTES

1 CMU WALL CONN. TO SLAB ON GRADE

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

DEVELOPMENT AND LAP SPLICE LENGTHS ('ld') (TENSION AND COMPRESSION)

GRADE 60 UNCOATED BARS IN CONCRETE MASONRY UNITS (CMU)

NOMINAL BLOCK SIZE	CMU ALLOWABLE COMPRESSIVE STRENGTH (f'm)	STEEL REINFORCEMENT BAR LOCATION	STEEL REINFORCEMENT BAR SIZE					
			ld-#3	ld-#4	ld-#5	ld-#6	ld-#7	ld-#8
6"	1500PSI	-	-	-	-	-	-	-
		CENTER	1'-4"	1'-9"	2'-8"	5'-1"	7'-1"	10'-11"
	2000PSI	-	-	-	-	-	-	-
		CENTER	1'-2"	1'-6"	2'-4"	4'-5"	6'-2"	9'-6"
	2500PSI	-	-	-	-	-	-	-
		CENTER	1'-4"	1'-4"	2'-1"	3'-11"	5'-6"	8'-6"
8"	1500PSI	EDGE*	1'-4"	1'-10"	2'-10"	5'-2"	7'-1"	10'-8"
		CENTER	1'-4"	1'-9"	2'-2"	3'-7"	5'-0"	7'-8"
	2000PSI	EDGE*	1'-2"	1'-7"	2'-5"	4'-6"	6'-2"	9'-3"
		CENTER	1'-2"	1'-6"	1'-10"	3'-2"	4'-4"	6'-7"
	2500PSI	EDGE*	1'-0"	1'-5"	2'-2"	4'-0"	5'-6"	8'-3"
		CENTER	1'-0"	1'-4"	1'-8"	2'-10"	3'-10"	5'-11"
10"	1500PSI	EDGE*	1'-4"	1'-10"	2'-10"	5'-2"	7'-1"	10'-8"
		CENTER	1'-4"	1'-9"	2'-2"	3'-4"	3'-10"	5'-11"
	2000PSI	EDGE*	1'-2"	1'-7"	2'-5"	4'-6"	6'-2"	9'-3"
		CENTER	1'-2"	1'-6"	1'-10"	2'-10"	3'-4"	5'-1"
	2500PSI	EDGE*	1'-0"	1'-5"	2'-2"	4'-0"	5'-6"	8'-3"
		CENTER	1'-0"	1'-4"	1'-8"	2'-7"	3'-0"	4'-7"
12"	1500PSI	EDGE*	1'-4"	1'-10"	2'-10"	5'-2"	7'-1"	10'-8"
		CENTER	1'-4"	1'-9"	2'-2"	3'-4"	3'-10"	5'-1"
	2000PSI	EDGE*	1'-2"	1'-7"	2'-5"	4'-6"	6'-2"	9'-3"
		CENTER	1'-2"	1'-6"	1'-10"	2'-10"	3'-4"	4'-5"
	2500PSI	EDGE*	1'-0"	1'-5"	2'-2"	4'-0"	5'-6"	8'-3"
		CENTER	1'-0"	1'-4"	1'-8"	2'-7"	3'-0"	3'-11"

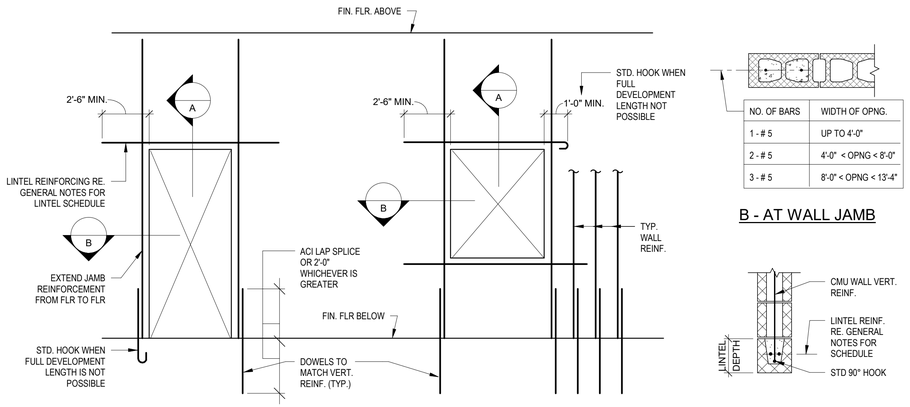
* STEEL REINFORCEMENT BARS AT 'EDGE' LOCATION SHALL HAVE 3/4" CLEAR COVER PROVIDED FROM INSIDE FACE OF BLOCK TO EDGE BAR (2 3/8" FROM OUTSIDE FACE OF BLOCK TO EDGE OF BAR) UNLESS DIMENSIONED OTHERWISE IN DRAWINGS.

NOTES:

1. REINFORCEMENT BARS USED IN MASONRY MAY NOT EXCEED #11. MECHANICAL COUPLERS WITH RATED STRENGTH OF AT LEAST 125% OF REINFORCEMENT BAR STRENGTH ARE REQUIRED AND MAY BE USED AT CONTRACTOR OPTION FOR #8 AND SMALLER BARS.
2. FOR STEEL REINFORCEMENT OTHER THAN GRADE 60, MULTIPLY TABULATED DEVELOPMENT AND LAP SPLICE LENGTHS BY THE RATIO OF THE REINFORCEMENT YIELD STRENGTH DIVIDED BY 60 KSI.
3. FOR EPOXY COATED STEEL REINFORCEMENT BARS MULTIPLY TABULATED DEVELOPMENT AND LAP SPLICE LENGTHS BY 1.5.
4. STEEL REINFORCEMENT NOTED ON DRAWINGS AS OCCURRING AT 'EACH FACE' (E.F.) OR LESS THAN HALF OF THE NOMINAL BLOCK WIDTH AWAY FROM THE OUTSIDE FACE OF BLOCK SHALL BE CONSIDERED TO BE LOCATED AT 'EDGE' IN ORDER TO DETERMINE DEVELOPMENT AND DEVELOPMENT LAP SPLICE LENGTHS IN TABLE ABOVE.
5. BARS SPLICED BY NON-CONTACT LAP SPLICES (C.L. TO C.L. DISTANCE > 2") SHALL BE SPACED TRANSVERSELY A DISTANCE NOT GREATER THAN 1/5 THE SCHEDULED LAP SPLICE LENGTH OR MORE THAN 8".
6. CONTACT ENGINEER OF RECORD IF VERTICAL BAR SPACING IS LESS THAN OR EQUAL TO GROUT COVER OVER BARS.
7. STANDARD HOOKS SHALL CONFORM TO:
   A. A 180-DEGREE TURN PLUS EXTENSION OF AT LEAST (4) BAR DIAMETERS BUT NOT LESS THAN 2 1/2" AT FREE END OF BAR.
   B. A 90-DEGREE TURN PLUS EXTENSION OF AT LEAST (12) BAR DIAMETERS AT FREE END OF BAR.
   C. FOR STIRRUP OR TIE ANCHORAGE ONLY, EITHER A 90-DEGREE OR A 135-DEGREE TURN PLUS AN EXTENSION OF AT LEAST (6) BAR DIAMETERS AT THE FREE END OF BAR.
8. MINIMUM DIAMETER OF BEND MEASURED ON THE INSIDE OF REINFORCING BATS, OTHER THAN STIRRUPS AND TIES SHALL BE NOT BE LESS THAN (6) BAR DIAMETERS FOR #3 - #8 BARS AND (8) BAR DIAMETERS FOR #9 - #11 BARS.

2 CMU REINF. LAP LENGTH SCHEDULE

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



ELEVATION

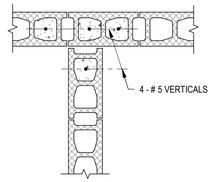
NO. OF BARS	WIDTH OF OPNG.
1 - # 5	UP TO 4'-0"
2 - # 5	4'-0" < OPNG < 8'-0"
3 - # 5	8'-0" < OPNG < 13'-4"

B - AT WALL JAMB

A - LINTEL SECTION

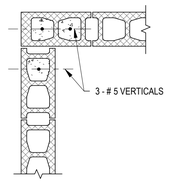
3 MIN. REINFORCEMENT AT CMU WALL OPENINGS

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



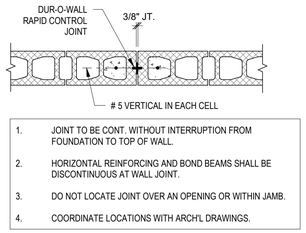
A - AT WALL INTERSECTION

HORIZONTAL JOINT REINFORCING NOT SHOWN FOR CLARITY, PROVIDE PREFABRICATED CORNER REINF.



B - AT WALL CORNER

HORIZONTAL JOINT REINFORCING NOT SHOWN FOR CLARITY, PROVIDE PREFABRICATED CORNER REINF.



1. JOINT TO BE CONT. WITHOUT INTERRUPTION FROM FOUNDATION TO TOP OF WALL.
2. HORIZONTAL REINFORCING AND BOND BEAMS SHALL BE DISCONTINUOUS AT WALL JOINT.
3. DO NOT LOCATE JOINT OVER AN OPENING OR WITHIN JAMB.
4. COORDINATE LOCATIONS WITH ARCH'L DRAWINGS.

C - AT WALL CONSTRUCTION JT

4 PLAN DETAILS OF INTERIOR CMU WALL

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

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KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE AND LANDSCAPE
Drawing Name
CMU DETAILS

SRA Project Number
2001
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3/4" = 1'-0"
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1-S8.00

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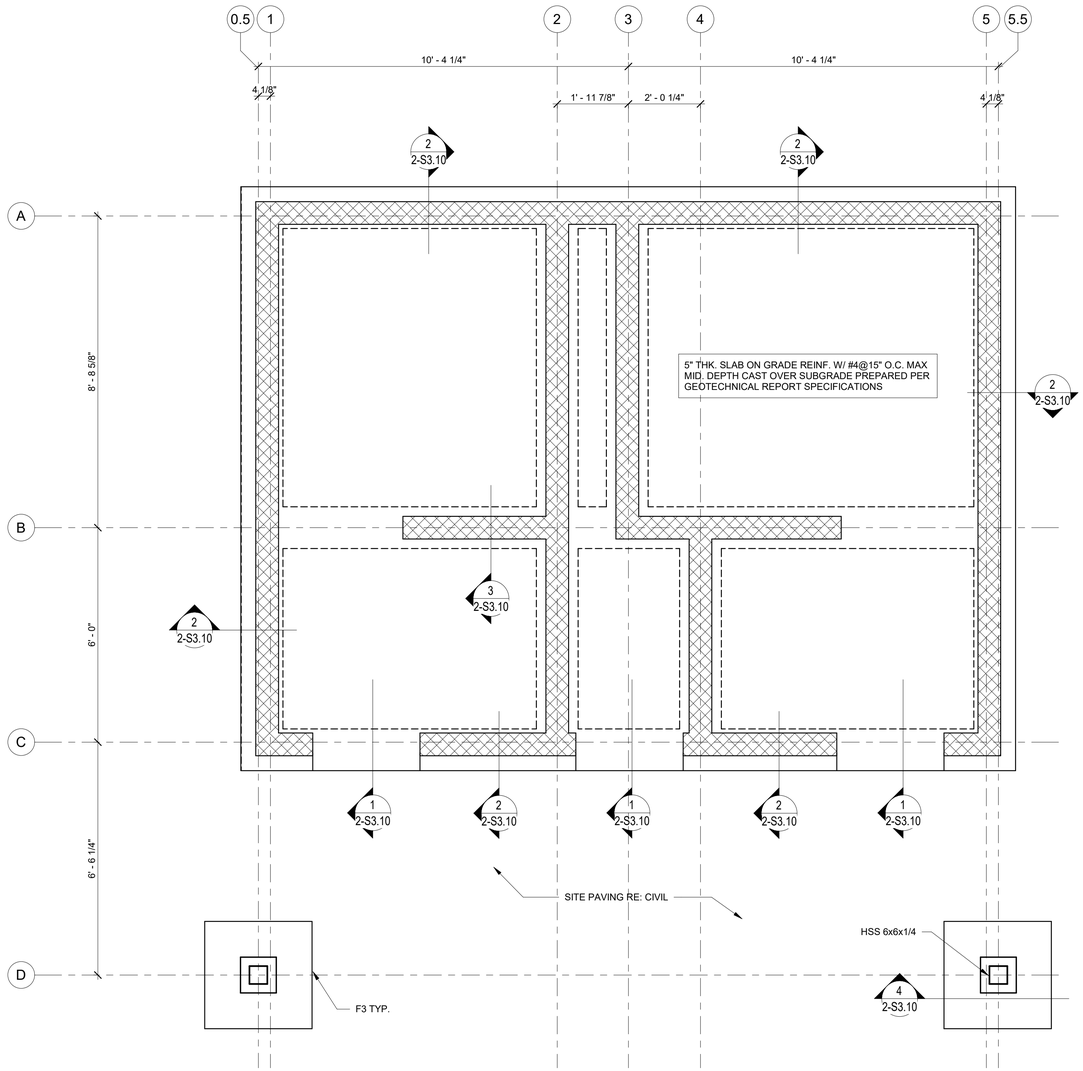

1 FOUNDATION PLAN

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

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KEY PLAN

Project Name

LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE AND LANDSCAPE

Drawing Name

RESTROOM FOUNDATION PLAN

SRA Project Number

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Scale

Drawing Number

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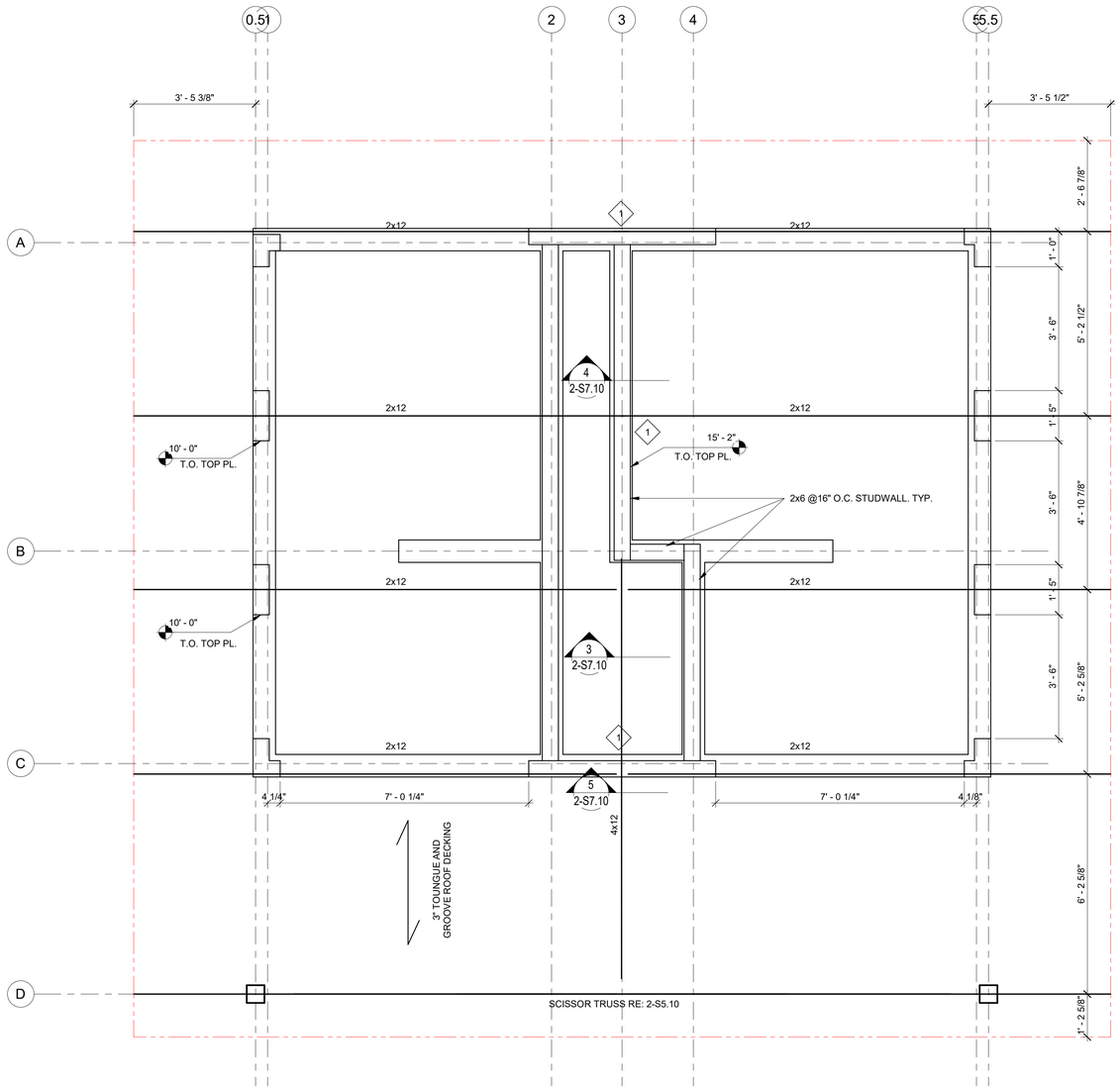

1 ROOF FRAMING PLAN

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

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KEY PLAN

Project Name

LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE AND LANDSCAPE

Drawing Name

RESTROOM ROOF FRAMING PLAN

SRA Project Number

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Drawing Number

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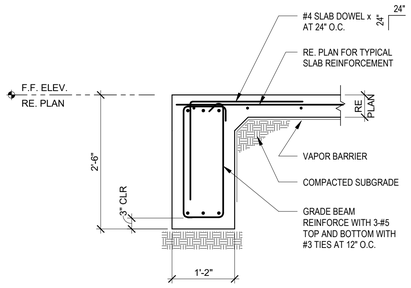
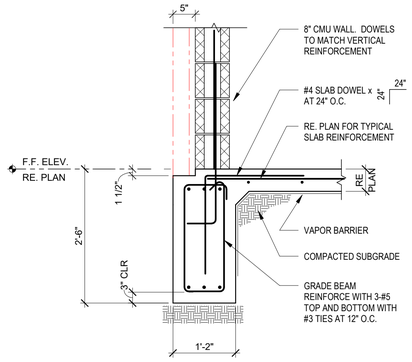


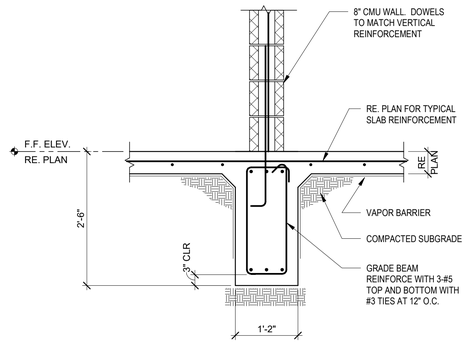
1 TYP. EXTERIOR GRADE BEAM

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



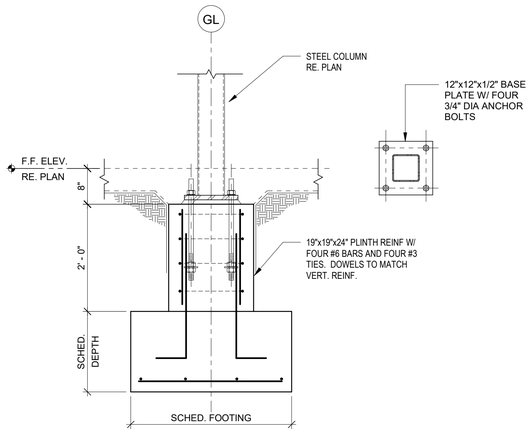
2 TYP. EXTERIOR GRADE BEAM

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



3 TYP. INTERIOR GRADE BEAM

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



4 FOOTING DETAIL

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

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Drawing Name

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SRA Project Number

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Drawing Number

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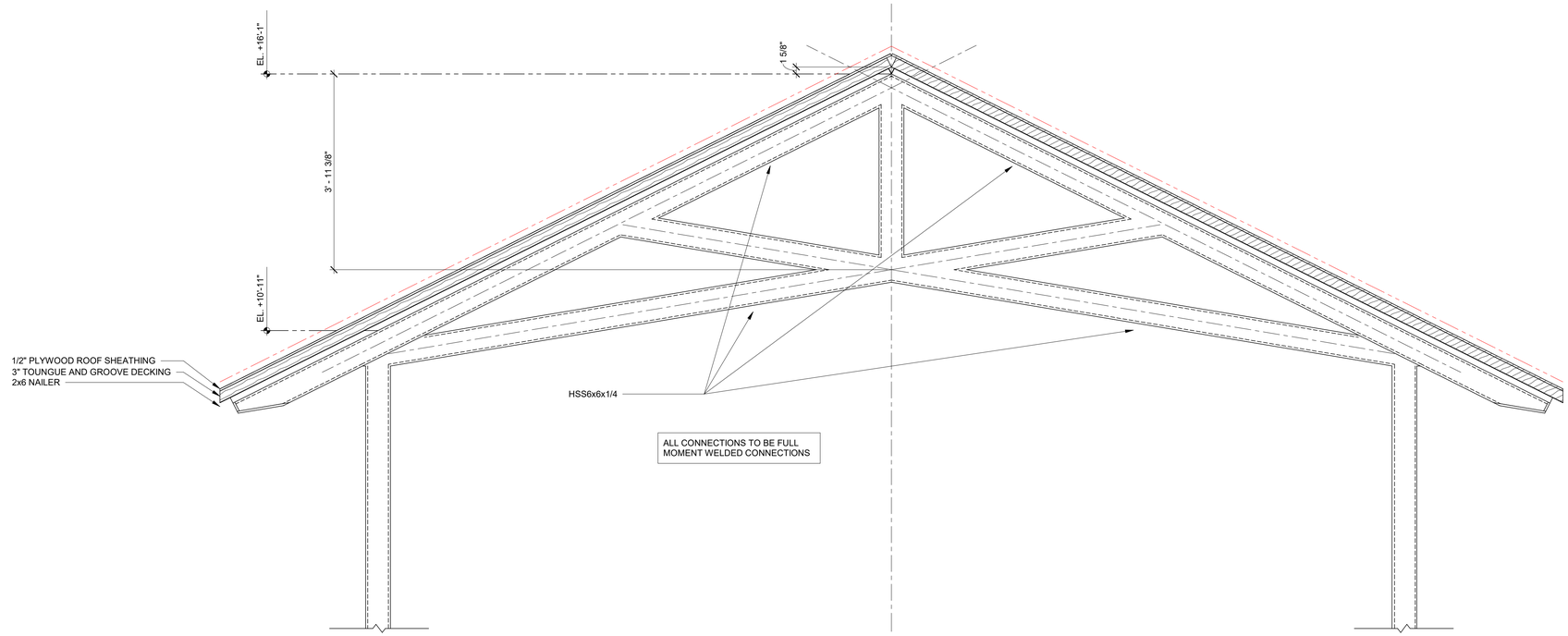

1 SCISSOR TRUSS

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

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Issue

No.	Date	Description
A	9/8/2022	ISSUE FOR BID

STATE OF TEXAS
MARCO CANO
105906
LICENSED
PROFESSIONAL ENGINEER

STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LGA Engineering**
Stuctural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Engineer	**Consultant 4 Name**

KEY PLAN

Project Name

LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE AND LANDSCAPE

Drawing Name

STEEL DETAILS

SRA Project Number

2001

Scale

Drawing Number

2-S5.10

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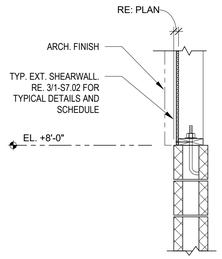
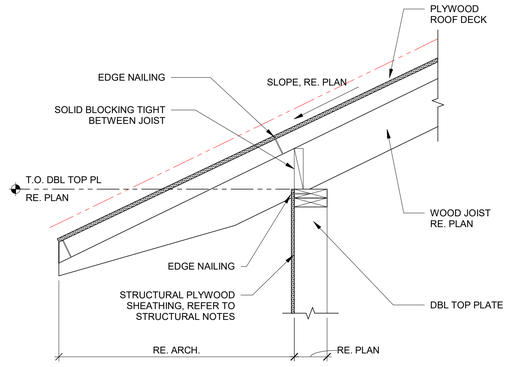


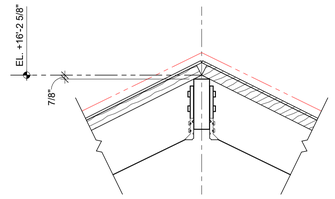
1 TYPICAL CMU TO STUDWALL DETAIL

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



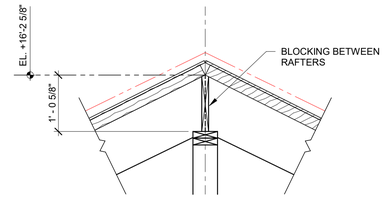
2 TYPICAL ROOF JOIST PERPENDICULAR TO WALL

SCALE: 1" = 1'-0"



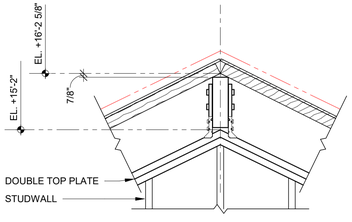
3 ROOF DETAIL

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



4 ROOF DETAIL

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



5 ROOF DETAIL

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

FRACTAL

Texas Firm Registration No. F-16958
FRACTAL Project No.20-014-00
16365 Park Ten Pl. Suite 325
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Drawing Name

FRAMING DETAILS

SRA Project Number

2001

Scale

Drawing Number

2-S7.10

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FAN

MARK	LOCATION	CFM	EXT. STATIC PRESSURE (IN. W.C.)	MAX. RPM	HORSE POWER (WATTS)	CURRENT CHARAC. V	P	F	LOCALLY SWITCHED BY	INTERLOCKED WITH	FAN TYPE	DRIVE TYPE	MANUFACTURER	MODEL NUMBER	REMARKS
EF-1	W RR 5	500	0.13	1,485	37.3	120	1	60	LIGHTS/TSTAT	-	PROPELLER	DIRECT	COOK	XPD	(3,4,5,6)
EF-2	M RR 6	500	0.13	1,485	37.3	120	1	60	LIGHTS/TSTAT	-	PROPELLER	DIRECT	COOK	XPD	(3,4,5,6)
EF-3	JAN. 7	75	0.30	815	31	120	1	60	LIGHTS/TSTAT	-	CEILING	DIRECT	COOK	GC	(1,2,5)

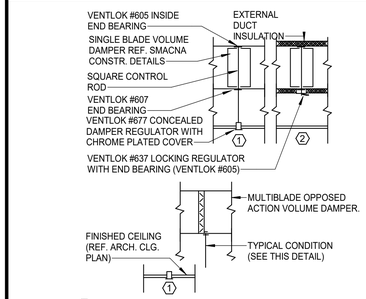
GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND UNIT IS 12 INCHES ON NON-SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. SUSPEND FAN FROM STRUCTURE WITH FOUR THREADED RODS AND UNISTRUT RUNNERS.
2. PROVIDE WITH FAN SPEED CONTROLLER, VIBRATION ISOLATION KIT, AND BACKDRAFT DAMPER.
3. PROVIDE WITH DISCONNECT.
4. PROVIDE WITH FAN SPEED CONTROLLER.
5. REFER TO ELECTRICAL DRAWINGS FOR HOW FAN IS CONTROLLED.
6. PROVIDE WITH INSECT SCREEN AND WEATHER HOOD.

SYMBOL LEGEND

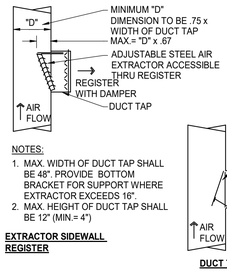
SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
1/A1	REVISION TAG
	NEW EQUIPMENT
DUCTWORK	
	SUPPLY AIR DUCTWORK
	RETURN AIR AND OUTSIDE AIR DUCTWORK
	EXHAUST AIR DUCTWORK
	FLEXIBLE DUCTWORK
	SUPPLY AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	EXHAUST AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	FIRE DAMPER (VERTICAL)
	SMOKE DAMPER (VERTICAL)
	COMBINATION FIRE & SMOKE DAMPER (VERTICAL)
	MANUAL BALANCING DAMPER (SEE DAMPER SCHEDULE)
M	MOTORIZED DAMPER (SEE DAMPER SCHEDULE)
SENSORS	
T	THERMOSTAT AND TEMPERATURE SENSOR
H	HUMIDISTAT
SD	SMOKE DETECTOR
HD	HEAT DETECTOR
AIR DEVICES	
	GRILLE SIZE TAG (REFER TO GRILLE SIZE LEGEND)
	SUPPLY AIR GRILLE WITH FOUR-WAY THROW
	SUPPLY AIR GRILLE WITH THREE-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY CORNER THROW
	SUPPLY AIR GRILLE WITH ONE-WAY THROW
	RETURN AIR GRILLE
	RETURN AIR GRILLE WITH SOUND BOOT
	EXHAUST AIR GRILLE
	SUPPLY AIR SIDEWALL GRILLE
	RETURN AIR SIDEWALL GRILLE
20X12	RETURN AIR OPENING ABOVE CEILING
SUBSCRIPTS AND ABREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BBS	BELOW BOTTOM OF STRUCTURE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
EA	EXHAUST AIR
FPM	FEET PER MINUTE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR

DUCTWORK CONSTRUCTION DETAILS



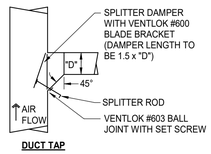
1 **DAMPER ABOVE INACCESSIBLE CEILING**

2 **DAMPER ABOVE LIFT-OUT CEILING**

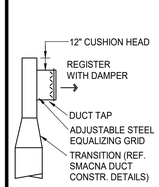


NOTES:
1. MAX. WIDTH OF DUCT TAP SHALL BE 48". PROVIDE BOTTOM BRACKET FOR SUPPORT WHERE EXTRACTOR EXCEEDS 16".
2. MAX. HEIGHT OF DUCT TAP SHALL BE 12" (MIN.= 4")

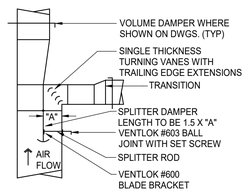
EXTRACTOR SIDEWALL REGISTER



DUCT TAP

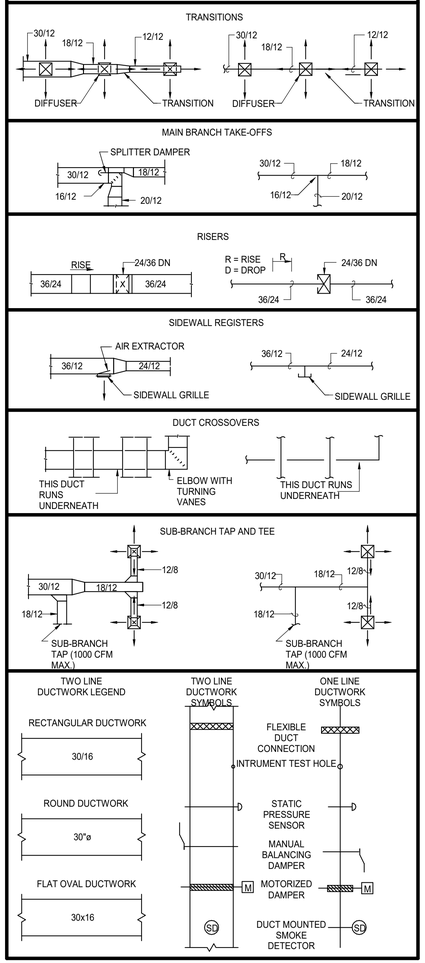


SIDEWALL REGISTER AT END OF DUCT



SPLITTER

DUCTWORK SYMBOLS LEGEND

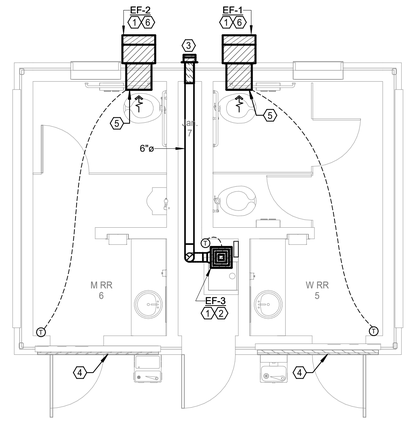


MECHANICAL GENERAL NOTES:

1. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEM.
2. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
3. ALL DUCT SIZES ARE INSIDE CLEAR, INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.

MECHANICAL KEYED NOTES:

1. VERIFY SERVICE CLEARANCE WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. SUSPEND WITH THREADED HANGER RODS ATTACHED TO UNISTRUT RUNNERS SECURED TO STRUCTURE. REFER TO MANUFACTURER FOR MORE DETAILS.
3. PROVIDE EXHAUST DUCTWORK WITH WALL CAP AS INDICATED.
4. INTAKE LOUVER PROVIDED BY ARCHITECT.
5. PROVIDE OPENING WITH 1/4" ALUMINUM WIRE MESH.
6. PROVIDE EXHAUST FAN WITH INSECT SCREEN AND WEATHER HOOD.



N

1 **MECHANICAL FLOOR PLAN - RESTROOM**
Scale: 1/4" = 1'-0"

Issue

No.	Date	Description
0	07/14/2021	BID SET
4	09/08/2022	ISSUE FOR BID

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
09/08/2022

STUDIO RED ARCHITECTS

PROJECT TEAM

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Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Stuctural Engineer	**Fractal Structural Engineering**
MEP Engineer	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 I Registration No. F-4111
2020-00593-00

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY - ARCHITECTURAL AND UTILITIES

Drawing Name
MECHACNICAL FLOOR PLAN - RESTROOM

SRA Project Number
2001

Scale
As indicated

Drawing Number
2-M2.01

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ELECTRICAL KEYED NOTES

1. JUNCTION BOX FOR CONNECTION OF HAND DRYER. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.
2. SITE ELECTRICAL SERVICE. REFER TO ONELINE.
3. LIGHT SWITCH SHALL BE INTERLOCKED WITH THERMOSTAT AND EXHAUST FAN USING SWITCHPACKS. COORDINATE WITH MECHANICAL PLANS AND MECHANICAL CONTRACTOR.
4. 4#6, 1#10G, 1"C. ROUTE UNDERGROUND PAST FOUNDATION.
5. COORDINATE FINAL CONNECTION WITH SITE PLANS
6. LIGHTING CONTROL CABINET 'LCR' REFER TO ELECTRICAL DETAIL SHEET.
7. RECEPTACLE FOR DRINKING FOUNTAIN. COORDINATE FINAL LOCATION WITH ARCHITECT/OWNER.
8. REFER TO ONELINE.
9. OCCUPANCY SENSOR IS WALL MOUNTED TO MINIMIZE VISIBILITY.

ELECTRICAL GENERAL NOTES

1. ALL JUNCTION BOXES, CONDUITS, AND WIRES SHALL BE SIZED PER NEC.
2. CONTRACTOR SHALL PROVIDE AN ACCURATELY TYPED PANEL BOARD SCHEDULE FOR EACH PANEL BOARD.
3. REFER TO ARCHITECTUAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT OF ALL LIGHTING FIXTURES SHOWN ON THIS DRAWING.
4. REFER TO DETAIL SHEET FOR SYMBOLS, ABBREVIATIONS, AND LIGHTING FIXTURE SCHEDULE.
5. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PROBLEMS PERTAINING TO CIRCUIT AVAILABILITY OR LOAD CAPACITY PRIOR TO INSTALLATION.
6. ALL EXTERIOR LUMINAIRES AND ELECTRICAL DEVICES SHALL BE LISTED AS WEATHERPROOF TYPE.
7. CONTRACTOR SHALL REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT AND SCHEDULES. CONTRACTOR SHALL PROVIDE ALL ELECTRICAL DISCONNECTS, BRANCH CIRCUITRY, CIRCUIT BREAKERS AND CONNECTIONS REQUIRED TO POWER EQUIPMENT.
8. ALL POWER/CONTROL WIRING SHALL BE PROVIDED IN CONDUITS. ALL CONDUIT RUNS SHALL BE INSTALLED IN A NEAT MANNER PERPENDICULAR/PARALLEL TO BUILDING COLUMNS/BEAMS AND PAINTED AS DIRECTED BY ARCHITECT.

SHORT CIRCUIT CALCULATIONS USING POINT-TO-POINT METHOD

EQUIPMENT	CONDUCTOR SIZE/TYPE	# OF CONDUCTORS PER PHASE IN PARALLEL	CONDUIT TYPE	LENGTH OF RUN	VOLTAGE L-L (VOLT)	AVAILABLE SYMMETRICAL FAULT CURRENT L-L (AMPS)	REMARKS
UTILITY XFMR	-	-	-	-	208V	21,300	
PANEL 'MDP'	#3/0CU	1	NON-MAGNETIC	0'	480V	21,300	
PANEL 'LR'	#2	1	NON-MAGNETIC	250'	208V	2,263	

WIRE SIZED AND PROVIDED BY OTHERS. SIZES SHOWN USED ONLY FOR SHORT CALCULATIONS. COORDINATE WITH SITE DESIGN AND FIELD VERIFY SIZING.

ELECTRICAL LOAD ANALYSIS 'MSB'

480V,3PH.,4W

LOAD DESCRIPTION	LOAD KVA
LIGHTING (CONNECTED) x 1.25 (NEC 215.2)	.2
RECEPTACLES (CONNECTED NEC 220.44)	(2)
1ST 10KVA @100% (NEC 220.44)	2
REMAINDER @50% (NEC 220.44)	0
MISCELLANEOUS (NEC 220)	19.1
HVAC - FANS, AHU'S (NEC 220)	1.8
25% LARGEST MOTOR (25HP) (NEC 430.24)	.2
TOTAL	23.3

23300 / (208*^(1/3)) = 64.7 AMPS
100 AMPS SERVICE PROVIDED

LINETYPE LEGEND

WORK BY OTHERS
NEW WORK

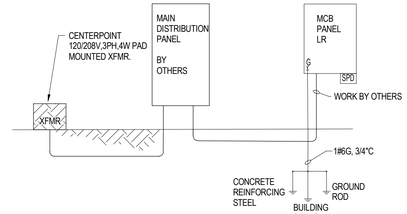
ALL ELECTRICAL EQUIPMENT, DEVICES, JUNCTION BOXES, OUTLETS, PANELS...ETC. SHALL BE PLACED ABOVE THE BASE FLOOD ELEVATION OR PROTECTED TO PREVENT WATER FROM ENTERING/ACCUMULATING WITHIN EQUIPMENT DURING FLOOD CONDITIONS.

ALL CONDUCTORS TO BE COPPER THHN/THWN 75 DEG C. INSULATION TYPE UNLESS SPECIFICALLY NOTED OTHERWISE.

VERIFY LOCATION OF ALL WIREWAYS, PANELS, ETC. WITH UTILITY COMPANIES/OWNER PRIOR TO INSTALLATION.

ALL EXTERIOR EQUIPMENT TO BE IN NEMA 3R ENCLOSURES

CONTRACTOR TO VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF THERE ARE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND THE ONE-LINE DIAGRAM SHOWN PRIOR TO COMMENCEMENT OF WORK.



4 ELECTRICAL ONE-LINE DIAGRAM
SCALE: NONE

LIGHTING FIXTURE SCHEDULE-RR

Type	Catalog Number: Manufacturer	Catalog Number: Model	Mount Type	Driver / Light Engine: Type	Wattage	Lumens	CRI	Color	Voltage	Remarks
E1	SURE-LITES	SELDWTA29BZSD	SURFACE	LED	2 W	100 lm	80	3000 K	120 V	EMERGENCY EGRESS FIXTURE WITH WET LOCATION LISTING.
S1	PARAMOUNT	PMC2-4-SF-UNV-4K-CRI83-47L-PZ-L7-LD-W5	SURFACE	LED	10 W	4692 lm	83	4000 K	120 V	VANDAL-RESISTANT SURFACE MOUNTED LINEAR.
S1E	PARAMOUNT	PMC2-4-SF-UNV-4K-CRI83-47L-PZ-L7-LD-W5-BBUR1	SURFACE	LED	10 W	4692 lm	83	4000 K	120 V	VANDAL-RESISTANT SURFACE MOUNTED LINEAR WITH EMERGENCY BATTERY PACKS.
S2	TROY RLM	RH14LED1840BB-C-3 3SL23BB-C	SURFACE	LED	18 W	1334 lm	90	4000 K	120 V	HEAVY-DUTY ALUMINUM SHADE WITH ARM

Branch Panel: LR

Location: BEHIND RESTROOM BUILDING
Supply From: RESTROOM XFMR
Mounting: Surface
Volts: 120/208 Wye
Phases: 3
Wires: 4
A.I.C. Rating: 10,000
Enclosure: NEMA 4XSS
Mains: 100A MCB

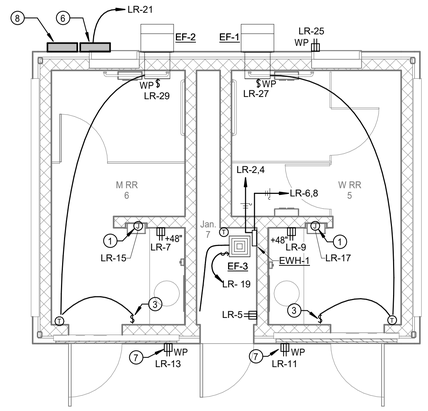
Phase in kVA

Note	CKT	Circuit Description	Wire	Breaker	A	B	C	Breaker	Wire	Circuit Description	CKT	Note
	1	Lighting Room 7, 6, 5	#12	20 1	0.1 / 4.5			2	60 #6	EWH-1	2	LF
	3	OUTDOOR Lighting	#12	20 1		0.1 / 4.5					4	
	5	Receptacles Jan. 7	#12	20 1			0.2 / 4.5	2	60 #6	EWH-1	6	LF
	7	Receptacles M RR 6	#12	20 1	0.2 / 4.5						8	
	9	Receptacles W RR 5	#12	20 1		0.2 / 0.0		1	20 --	Spare	10	--
	11	DRINKING FOUNTAIN	#12	20 1			0.5 / 0.0	1	20 --	Spare	12	--
	13	DRINKING FOUNTAIN	#12	20 1	0.5 / 0.0			1	20 --	Spare	14	--
GLF	15	Hand Dryer	#10	30 1		0.5 / 0.0		1	20 --	Spare	16	--
GLF	17	Hand Dryer	#10	30 1			0.5 / 0.0	--	-- --	Space	18	--
	19	EF-3	#12	20 1	0.6 / 0.0			--	-- --	Space	20	--
	21	Lighting Control Panel 'LCR'	#12	20 1		0.1 / 0.0		--	-- --	Space	22	--
--	23	Spare	--	20 1			0.0 / 0.0	--	-- --	Space	24	--
	25	Receptacles	#12	20 1	0.5 / 0.0						26	
	27	EF-1	#12	20 1		0.6 / 0.0		3	30 --	SPDL (IN NEMA4XSS ENCLOSURE)	28	--
	29	EF-2	#12	20 1			0.6 / 0.0				30	
			Total Load:		10.8 kVA	6.0 kVA	6.3 kVA					
			Total Amps:		91 A	50 A	53 A					

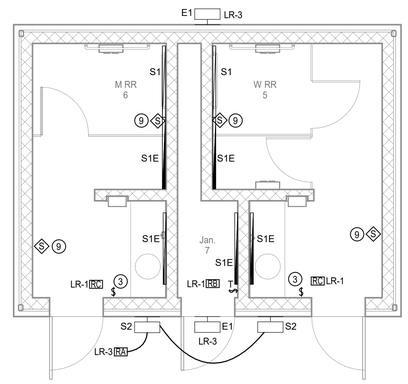
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	1.8 kVA	100.00%	1.8 kVA	
Lighting	0.2 kVA	125.00%	0.2 kVA	**Total Conn. Load:** 23.1 kVA
Miscellaneous	19.1 kVA	100.00%	19.1 kVA	**Total Est. Demand:** 23.1 kVA
Receptacles	2.0 kVA	100.00%	2.0 kVA	**Total Conn. Current:** 64 A
				Total Est. Demand Current: 64 A

Notes:

Abbrevations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE



2 ELECTRICAL POWER FLOOR PLAN - RESTROOM
Scale: 1/4" = 1'-0"
N



1 ELECTRICAL LIGHTING FLOOR PLAN - RESTROOM
Scale: 1/4" = 1'-0"
N

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Issue

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0	07/14/2021	BID SET
1	08/06/2021	ADDENDUM 02
4	09/08/2022	ISSUE FOR BID

STATE OF TEXAS
BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09/08/2022

STUDIO RED ARCHITECTS

PROJECT TEAM

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Civil Engineer	**LJA Engineering**
Stuctural Engineer	**Fractal Structural Engineering**
MEP Engineer	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

SALASO'BRIEN
[expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 I Registration No. F-4111
2020-00593-00

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY - ARCHITECTURAL AND UTILITIES

Drawing Name
ELECTRICAL FLOOR PLAN - RESTROOM

SRA Project Number
2001

Scale
1/4" = 1'-0"

Drawing Number
2-E1.01

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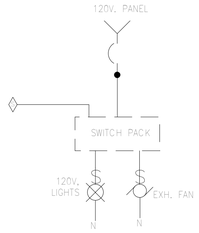
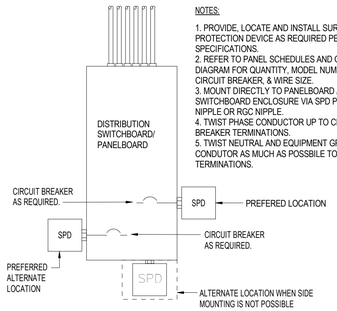


4 WIRING DETAIL FOR 120V EXHAUST

SCALE: NONE

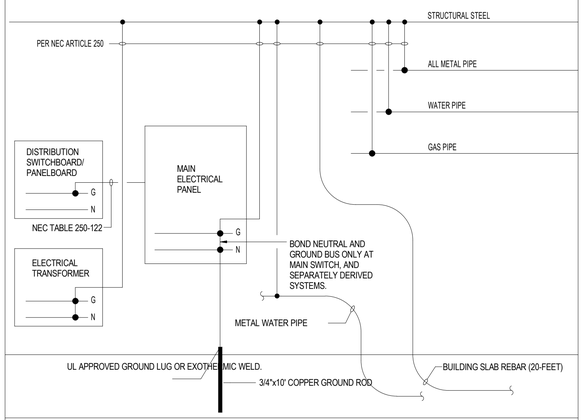


NOTES:

1. PROVIDE, LOCATE AND INSTALL SURGE PROTECTION DEVICE AS REQUIRED PER SPECIFICATIONS.
2. REFER TO PANEL SCHEDULES AND ONE-LINE DIAGRAM FOR QUANTITY, MODEL NUMBER, CIRCUIT BREAKER, & WIRE SIZE.
3. MOUNT DIRECTLY TO PANELBOARD / SWITCHBOARD ENCLOSURE VIA SPD PROVIDED NIPPLE OR RGC NIPPLE.
4. TWIST PHASE CONDUCTOR UP TO CIRCUIT BREAKER TERMINATIONS.
5. TWIST NEUTRAL AND EQUIPMENT GROUND CONDUTOR AS MUCH AS POSSBILE TO BUS TERMINATIONS.

3 SURGE PROTECTION DETAIL DEVICE

SCALE: NONE



2 GROUNDING DETAIL

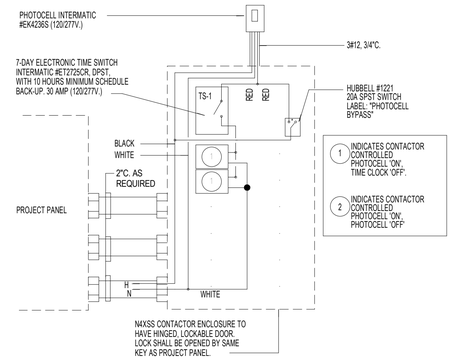
SCALE: NONE

LIGHTING CONTROL SCHEDULE

AREA / SWITCH DESIGNATION	LOW VOLTAGE SWITCH	SWITCH FUNCTION	LIGHTING CONTROLS	SENSOR TIMEOUT / BMCS FUNCTION	DAYLIGHT CONTROLS
RA	NO	ON-OFF PHOTOSENSOR/ SCHEDULE	LIGHTING CONTROL CABINET/OVERIDE	OPEN/CLOSE SCHEDULE(1)	NONE
RB	NO	ON-OFF	NONE	NONE	NONE
RC	NO	ON-OFF	OCCUPANCY(3)	10 MINUTES(2)	NONE

NOTE:
PER 2015 IECC C405, AREAS/ROOMS WHERE AUTOMATIC SHUTOFF FOR LIGHTING WOULD ENDANGER OCCUPANT SAFETY ARE EXEMPT FROM AUTOMATIC CONTROLS.

1. EXTERIOR CONNECTED LIGHTING POWER SHALL BE REDUCED BY NOT LESS THAN 30% FROM 12:00AM TO 6:00AM OR FROM 1 HOUR AFTER CLOSING TO 1 HOUR BEFORE OPENING.
2. SENSOR SHALL TURN ON LIGHTING FIXTURES AUTOMATICALLY TO 100%.
3. SENSORS SHALL BE MOUNTED TO THE WALLS TO MINIMIZE EXPOSED CONDUIT.



LIGHTING CONTROL CABINET SCHEDULE

CONTACTOR NO.	CIRCUIT NO.	CONTROL SOURCE	CONTACTOR LOCATION	LOAD(S) SERVED	120 V CONTROL CIRCUIT
C-1 (30A-2P CONTACTOR)	LR-1	PHOTOCELL ON/ TIME CLOCK OFF	RESTROOM BUILDING	RESTROOM FRONT LIGHTING	LR-4

NOTE: CONTRACTOR TO COORDINATE WITH OWNER FOR EXACT TIME-SCHEDULE PRIOR TO INSTALLATION. CONTRACTOR TO FIELD COORDINATE THE TOTAL NUMBER OF CONTACTORS NEEDED TO CONTROL NEW LOADS.

1 LIGHTING CONTROL CABINET DIAGRAM AND SCHEDULE

SCALE: NONE

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
	LIGHT FIXTURE
	FIXTURE ON EMERGENCY CIRCUIT
	LIGHT FIXTURE - WALL MOUNTED FIXTURE
	LIGHT FIXTURE - WALL MOUNTED FIXTURE ON EMERGENCY CIRCUIT
SWITCHES	
$	LINE VOLTAGE SINGLE POLE SWITCH
$T	6-HOUR TIMER SWITCH WITH NO HOLD
LIGHTING CONTROLS	
(S)	WALL MOUNTED OCCUPANCY SENSOR, AUTO ON TO 100% / AUTO OFF.
RX	LIGHTING CONTROL TAG. ZONES AS REQUIRED. X= DENOTES CONTROL SEQUENCE, REFER TO CONTROL SCHEDULE.
RECEPTACLES AND OUTLETS	
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
ELECTRICAL EQUIPMENT	
	ELECTRICAL DISTRIBUTION OR PANELBOARD
	DRY TYPE TRANSFORMER
CIRCUITING	
	CONDUIT
	CONDUIT BELOW FLOOR, SLAB, OR GRADE
	3/4"C. UNLESS OTHERWISE NOTED; LONG HATCH, NEUTRAL; SHORT HATCH, PHASE; "Z" HATCH OR HOOK, INSULATED GROUND. ARROW INDICATES HOMERUN.
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
⊢	INDICATES WALL MOUNTED DEVICE
●	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES
GENERAL NOTES:	
-ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF NEMA-4X MINIMUM.	

Issue

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0	07/14/2021	BID SET
4	09/08/2022	ISSUE FOR BID

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
09/08/2022

STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Stuctural Engineer	**Fractal Structural Engineering**
MEP Engineer	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

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Houston, Texas 77064
281.664.1900 I Registration No. F-4111
2020-00593-00

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY - ARCHITECTURAL AND UTILITIES

Drawing Name
ELECTRICAL DETAILS, LEGENDS, AND SCHEDULES

SRA Project Number
2001

Scale

Drawing Number
2-E2.01

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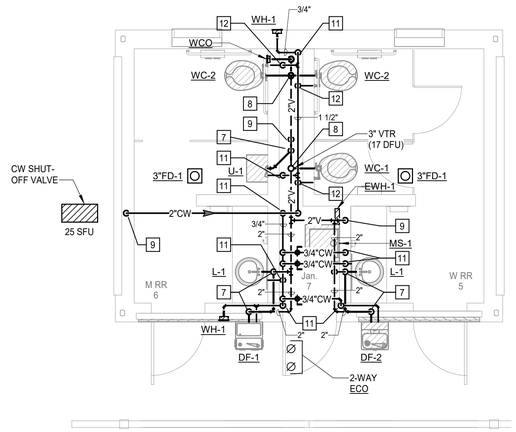
PLUMBING GENERAL NOTES

1. WITHIN THE EXISTING BUILDING, EXISTING WATER, WASTE AND VENT SERVICES ARE TO BE MODIFIED AS REQUIRED AND REUSED FOR THE INSTALLATION OF NEW AND/OR RELOCATED PLUMBING FIXTURES. REFER TO PLUMBING FLOOR PLANS FOR POINTS OF CONNECTION.
2. WITHIN THE EXISTING BUILDING, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW AND/OR RELOCATED PLUMBING FIXTURES, CLEANOUTS, AND UNDERSLAB WASTE AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING.
3. IN AREAS WHERE THE FLOOR SLAB IS REMOVED, CONTRACTOR SHALL ALSO REMOVE UNDERSLAB WASTE AND VENT PIPING WHICH SERVES FIXTURES DESIGNATED FOR REMOVAL. PRIOR TO ANY REMOVAL, FIELD VERIFY THAT LINES TO BE REMOVED DO NOT SERVE ANY EXISTING FIXTURES TO REMAIN OR NEW FIXTURES TO BE INSTALLED.
4. IN AREAS WHERE THE FLOOR SLAB IS NOT REMOVED, CONTRACTOR SHALL ABANDON IN PLACE ANY UNDERSLAB WASTE AND VENT PIPING NO LONGER NEEDED, UNLESS THE PIPING MUST BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION. IF NEW WORK DOES NOT NECESSITATE THEIR REMOVAL, CUT AND PLUG SUCH LINES BELOW SLAB, AND PATCH FLOOR TO MATCH EXISTING.
5. FIELD VERIFY EXACT LOCATION, SIZE, DEPTH, DIRECTION OF FLOW, CAPACITY, PIPE MATERIAL AND CONDITION OF EXISTING WASTE PIPING PRIOR TO BEGINNING CONSTRUCTION. ENSURE THAT PROPER CONNECTIONS TO AND EXTENSION OF SUCH UTILITIES CAN BE MADE.
6. WASTE LINES TO BE RE-USED OR RECONNECTED TO SHALL BE THOROUGHLY RODDED OUT AND FLUSHED TO ENSURE THEY ARE FREE FROM BLOCKAGES.
7. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING BELOW SLAB WITH COLUMN FOOTINGS, GRADE BEAMS, UNDERGROUND PLUMBING AND ELECTRICAL UTILITIES, AND OTHER SUB-SURFACE BUILDING ELEMENTS.
8. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
9. CONTRACTOR TO COORDINATE ALL REMODEL WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
10. COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
11. DO NOT ROUGH-IN FROM THESE DRAWINGS. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS.
12. CONTRACTOR TO FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
13. ALL WORK, METHODS AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE CITY BUILDING CODE, INSPECTION REGULATIONS AND ALL OTHER OFFICIALS HAVING JURISDICTION.
14. THE PROPER INSTALLATION OF NEW FIXTURES AND THE PROPER CONTINUED OPERATION OF EXISTING FIXTURES TO REMAIN SHALL DETERMINE THE EXTENT AND NATURE OF PLUMBING REMODEL WORK.
15. EACH VENT SHALL TERMINATE VERTICALLY NOT LESS THAN 6" ABOVE ROOF, MAINTAIN MINIMUM 10'-0" DISTANCE BETWEEN VENT TERMINALS THROUGH ROOF AND ALL FRESH AIR INTAKES, AND A MINIMUM 5'-0" FROM ANY EXTERIOR WALL.
16. PRIOR TO BEGINNING CONSTRUCTION, COORDINATE BUILDING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PROVIDE AS DIRECTED.
17. PROVIDE COLD WATER SHUT-OFF VALVE IN THE VERTICAL WHERE NOT ACCESSABLE TO HORIZONTAL ROUTINGS. IF VERTICAL SHUT-OFF VALVE IS USED AND IS INACCESSIBLE PROVIDE ACCESS PANEL AS REQUIRED.

PLUMBING KEYED NOTES:

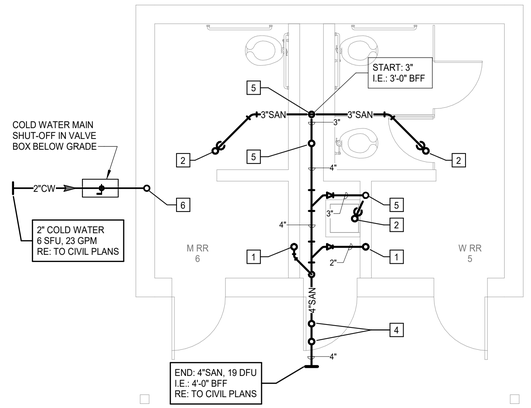
1. 2" WASTE FROM ABOVE.
2. 3" WASTE FROM ABOVE.
3. 4" WASTE FROM ABOVE.
4. FULL SIZE WASTE FROM CLEANOUT ABOVE.
5. 2" VENT UP.
6. 2" COLD WATER UP.
7. 2" WASTE DOWN, 2" VENT UP.
8. 4" WASTE DOWN, 2" VENT UP.
9. 2" VENT FROM BELOW.
10. 2" COLD WATER FROM BELOW.
11. 3/4" COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).
12. 1" COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).



N

2 PLUMBING FLOOR PLAN - RESTROOM

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



N

1 PLUMBING UNDERFLOOR PLAN - RESTROOM

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

Issue

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2020-00593-00

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY - ARCHITECTURAL AND UTILITIES

Drawing Name
PLUMBING FLOOR PLAN - RESTROOM

SRA Project Number
2001

Scale
As indicated

Drawing Number
2-P2.01

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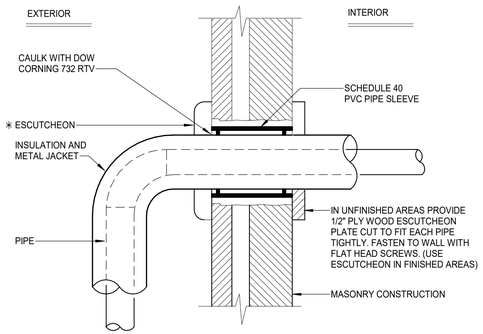
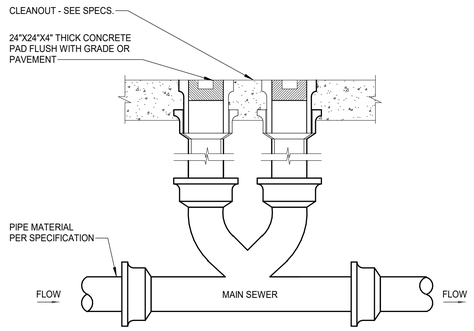


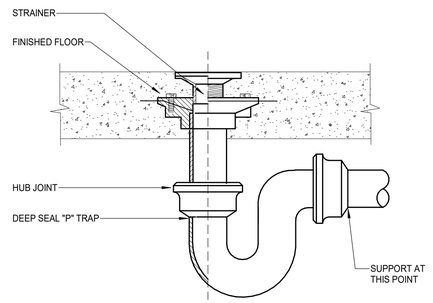
9 EXTERIOR WLL PENETRATION

SCALE: NONE



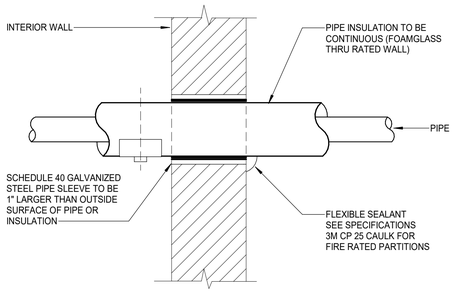
6 TWO-WAY EXTERIOR CLEANOUT

SCALE: NONE



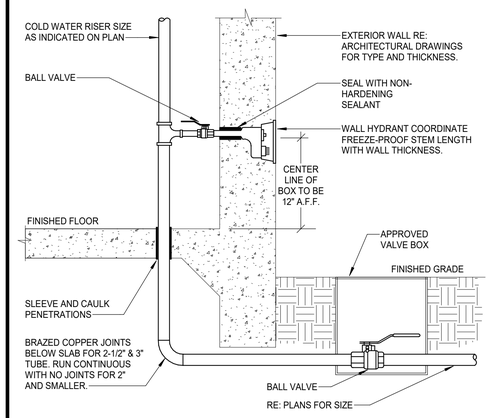
3 FLOOR DRAIN - TYPICAL

SCALE: NONE



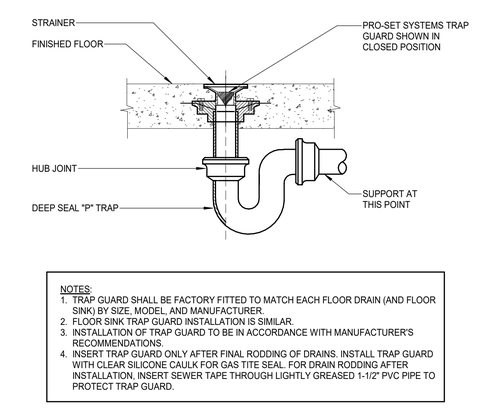
11 INTERIOR WALL PENETRATION

SCALE: NONE



8 DOMESTIC WATER ENTRY

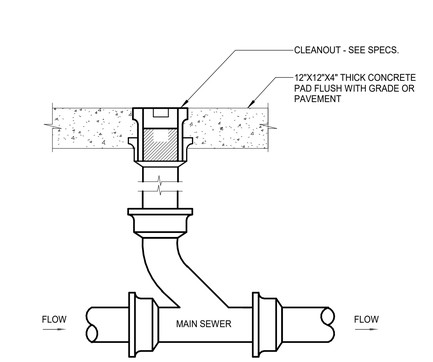
SCALE: NONE



NOTES:
1. TRAP GUARD SHALL BE FACTORY FITTED TO MATCH EACH FLOOR DRAIN (AND FLOOR SINK) BY SIZE, MODEL, AND MANUFACTURER.
2. FLOOR SINK TRAP GUARD INSTALLATION IS SIMILAR.
3. INSTALLATION OF TRAP GUARD TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. INSERT TRAP GUARD ONLY AFTER FINAL RODDING OF DRAINS. INSTALL TRAP GUARD WITH CLEAR SILICONE CAULK FOR GAS TITE SEAL. FOR DRAIN RODDING AFTER INSTALLATION, INSERT SEWER TAPE THROUGH LIGHTLY GREASED 1-1/2" PVC PIPE TO PROTECT TRAP GUARD.

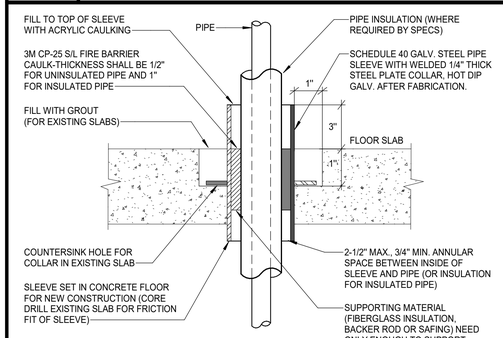
5 FLOOR DRAIN WITH TRAP SEAL PROTECTION

SCALE: NONE



2 EXTERIOR CLEANOUT - TYPICAL

SCALE: NONE

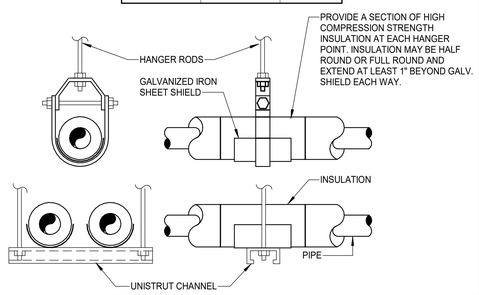


NOTE:
UL APPROVED PIPING ASSEMBLIES EQUAL TO UL SYSTEM #49 FOR UNINSULATED PIPE AND SYSTEM #91 FOR INSULATED PIPE

10 INTERIOR FLOOR PENETRATION

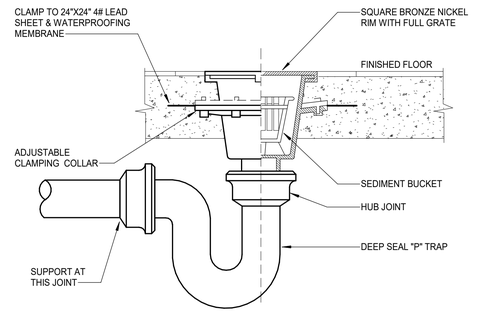
SCALE: NONE

MINIMUM DIMENSIONS OF GALVANIZED SHEETMETAL PROTECTION SHIELDS AT PIPE HANGERS		
NOMINAL SIZE PIPE	SHIELD LENGTH (IN.)	GAUGE THICKNESS
1/2" & 3/4"	12	18
1" - 2-1/2"	12	18
3" - 4"	16	18
6"	18	16



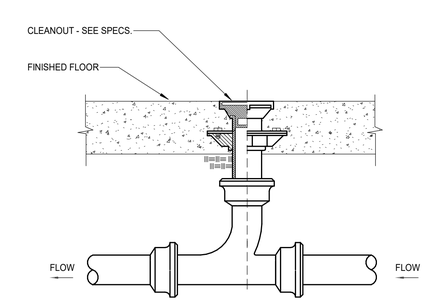
7 PIPE SHIELDS FOR INSULATED PIPING

SCALE: NONE



4 FLOOR SINK - TYPICAL

SCALE: NONE



1 FLOOR CLEANOUT - TYPICAL

SCALE: NONE

Issue

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PLUMBING DETAILS

SRA Project Number
2001

Scale
12" = 1'-0"

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PLUMBING PIPING LEGEND

SYMBOLS	DESCRIPTION
SAN	SANITARY OR WASTE PIPING ABOVE GRADE (SAN)
SAN	SANITARY OR WASTE PIPING BELOW GRADE (SAN)
GW	GREASE WASTE PIPING (GW)
GW	GREASE WASTE PIPING BELOW GRADE (GW)
SD	STORM DRAIN PIPING (SD)
SD	STORM DRAIN PIPING BELOW GRADE (GW)
SSD	SUB-SOIL DRAIN OR FOOTING DRAIN (SSD)
PD	PUMPED DISCHARGE (PD)
CD	CONDENSTATE DRAIN PIPING (CD)
D	CONDENSTATE - INDIRECT DRAIN PIPING (D)
	VENT PIPING (V)
CW	COLD WATER PIPING (CW)
HW	HOT WATER PIPING (HW)
HWR	HOT WATER RETURN PIPING (HWR)
AS	AUTOMATIC SPRINKLER PIPING (AS)
GAS	NATURAL GAS PIPING (G)
GV	GAS VENT PIPING (GV)
AIR	COMPRESSED AIR PIPING (A)
	FLOW DIRECTIONAL ARROW
	SHUT-OFF VALVE
	BALANCING VALVE (BV)
	SOLENOID VALVE (SV)
	BALL VALVE (BV)
	BUTTERFLY VALVE
	LUBRICATED PACKED PLUG STOP STOP COCK (PC)
	HORIZONTAL SWING CHECK
	UNION
	HORIZONTAL SWING CHECK
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	REDUCED PRESSURE BACKFLOW PREVENTER (RPBFP)
	PIPING DOWN
	RISE OR DROP PIPING
	PIPING UP -OR- PIPING UP & DOWN
	CAP ON END OF PIPE
	CLEANOUT (WALL OR CEILING) (CO)
	FLOOR CLEANOUT (FCO)
	EXTERIOR CLEANOUT WITH 18"x18"x4" CONCRETE PAD (ECO)
	TWO-WAY CLEANOUT (PROVIDE 18"x24"x4" CONCRETE PAD OUTSIDE)
	FIRE DEPARTMENT VALVE AT RISER
	FIRE HYDRANT
	FIRE DEPARTMENT CONNECTION
	PRESSURE REDUCING VALVE (PRV)
	BRANCH CONNECTION OUT OF TOP
	BRANCH CONNECTION OUT OF BOTTOM
	BRANCH CONNECTION OUT OF SIDE

SYMBOLS	DESCRIPTION
	WYE & 1/8TH BEND BRANCH CONNECTION
	WYE BRANCH CONNECTION
	HOSE BIBB
	PRESSURE GAUGE WITH COCK
	THERMOMETER
	GAS PRESSURE REGULATOR
	TEST COCK
	GAS METER
	WALL HYDRANT
	VALVE IN RISE
	ASME TEMPERATURE & PRESSURE RELIEF VALVE
	VACUUM RELIEF VALVE
	ANGLE VALVE
	OS&Y VALVE
	ROOF DRAIN
1	REFER TO KEYED NOTE
FS	FLOW SWITCH
	FLOOR SINK (FS)
	FLOOR DRAIN (FD)
	FLOOR DRAIN WITH P-TRAP (FD)
	FLOOR DRAIN WITH P-TRAP AT 45° ANGLE (FD)
	HUB DRAIN (HD)
	ACCESS PANEL FOR TRAP PRIMER OR SHOCK ABSORBER
AP	ACCESS PANEL LOCATION SYMBOL
A	SHOCK ABSORBER
	AIR CHAMBER
(E)	EXISTING
(N)	NEW
VTR	VENT THRU ROOF
B.F.F.	BELOW FINISHED FLOOR
A.F.F.	ABOVE FINISHED FLOOR
	NEW CONNECTION
IE=100.00'	INVERT ELEVATION
1	DELTA CHANGE SYMBOL
P 1	4" VTR RISER FLAG

PLUMBING FIXTURE SCHEDULE

TYPE: WC-1 (STANDARD HEIGHT)
DESCRIPTION: WATER CLOSET, WALL HUNG, WHITE VITREOUS CHINA, 1.28 GALLON PER FLUSH SIPHON JET ACTION, ELONGATED CLOSET BOWL WITH 1-1/2" BACK SPUD AND BOLT COVERS. AMERICAN STANDARD "AFWALL" 2634.101.
SEAT: ELONGATED OPEN FRONT WHITE PLASTIC SEAT, CHECK HINGES, ANTIMICROBIAL AGENT. KOHLER STRONGHOLD #K-4731-CA.
FLUSH VALVE: 1.28 GALLON FLUSH CYCLE, CONSEALED, DIAPHRAGM TYPE, CHROME PLATED CLOSET FLUSHOMETER. VACUUM BREAKER, SPUD COUPLING FOR 1-1/2" TOP SPUD. SLOAN ROYAL #153-1.28-2-3/4-LDIM.
CARRIER: WADE 311XH AND 330XH SERIES (750 LBS.)
ROUGH-IN: 4" WASTE, 2" VENT, 1" COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: WC-2 (ADA COMPLIANT)
DESCRIPTION: WATER CLOSET, WALL HUNG, WHITE VITREOUS CHINA, 1.28 GALLON PER FLUSH SIPHON JET ACTION, ELONGATED CLOSET BOWL WITH 1-1/2" BACK SPUD AND BOLT COVERS. AMERICAN STANDARD "AFWALL" 2634.101.
SEAT: ELONGATED OPEN FRONT WHITE PLASTIC SEAT, CHECK HINGES, ANTIMICROBIAL AGENT. KOHLER STRONGHOLD #K-4731-CA.
FLUSH VALVE: 1.28 GALLON FLUSH CYCLE, CONSEALED, DIAPHRAGM TYPE, CHROME PLATED CLOSET FLUSHOMETER. VACUUM BREAKER, SPUD COUPLING FOR 1-1/2" TOP SPUD. SLOAN ROYAL #153-1.28-2-3/4-LDIM.
CARRIER: WADE 311XH AND 330XH SERIES (750 LBS.)
ROUGH-IN: 4" WASTE, 2" VENT, 1" COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: U-1 (T.A.S. COMPLIANT)
DESCRIPTION: URINAL, WALL HUNG, WHITE VITREOUS CHINA, 1.0 GALLON PER FLUSH, WASHOUT FLUSH ACTION, INTEGRAL TRAP, REMOVABLE DOMED STRAINER, UNIVERSAL BACK SPUD. AMERICAN STANDARD WASHBROOK #6515.001
FLUSH VALVE: 1.0 GALLON FLUSH CYCLE, CONSEALED, DIAPHRAGM TYPE, CHROME PLATED URINAL FLUSHOMETER. VACUUM BREAKER, 1-1/2" SPUD COUPLING FOR REAR SPUD. SLOAN ROYAL #609-1.0-10-3/4-LDIM
CARRIER: RECTANGULAR STEEL TUBING UPRIGHTS WITH WELDED 4" SQUARE BASE ANCHORED TO CONCRETE WITH (4) 1/2" BOLTS. ADJUSTABLE SLEEVE, UPPER AND LOWER BEARING PLATES WITH THREADED STUDS. WADE 401-AM1-M36.
ROUGH-IN: 2" WASTE, 2" VENT, 3/4" COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: L-1 (T.A.S. COMPLIANT)
DESCRIPTION: LAVATORY, UNDER COUNTER MOUNT, VITREOUS CHINA, 23-1/4" X 16-1/4" WITH OVERFLOW, NO FAUCET HOLES. KOHLER LADENA # K-2215.
FAUCET: CHROME PLATED BRASS DECK MOUNTED METERING LAVATORY FAUCET, SINGLE-HOLE MOUNTING. QUARTER TURN CERAMIC DISC OPERATING CARTRIDGES, VANDAL RESISTANT 0.5 GPM NON-AERATING LAMINAR SPRAY. CHICAGO #3502-E2805ABCP.
STRAINER: 1-1/4" 17 GAUGE CHROME PLATED BRASS GRID STRAINER WITH TAILPIECE. MCGUIRE #155A.
P-TRAP: 1-1/4" 17 GAUGE CHROME PLATED HEAVY CAST BRASS TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON PLATE. MCGUIRE 8872.
SUPPLIES: 1/2" I.P.S. X 3/8" O.D.CHROME PLATED LOOSE KEY STOP VALVE WITH ESCUTCHEON AND 3/8" COMPRESSION CHROME PLATED FLEXIBLE RISERS. MCGUIRE 2165LK.
ROUGH-IN: 2" WASTE, 2" VENT, 1/2" COLD WATER ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: MS-1
DESCRIPTION: MOP SINK BASIN, 25" X 23" X 8" FLOOR MOUNTED RECTANGULAR TYPE, 16 GAUGE 304 STAINLESS STEEL WITH BUFFED SATIN FINISH. ELKAY #EFS2523C
FAUCET: CHROME PLATED BRASS WALL MOUNTED FITTING WITH CHECK IN STOPS, ADJUSTABLE SUPPLY ARMS, VACUUM BREAKER SPOUT WITH PAIL HOOK AND WALL BRACE, 2-1/2" INDEXED LEVER HANDLES ON 8" CENTERS. QUARTER TURN CARTRIDGES, 3/4" MALE HOSE THREAD OUTLET. ZURN #Z843M1-XL
ROUGH-IN: 3" WASTE, 2" VENT, 1/2" HOT AND COLD WATER.

TYPE: WH-1
DESCRIPTION: WALL HYDRANT IN S.S. BOX. 3/4" NON FREEZE, HALF TURN CERAMIC DISC CARTRIDGE, STAINLESS STEEL FINISH WITH ANTI SIPHON VACUUM BREAKER AND LOOSE TEE KEY. INSTALL WITH BOTTOM OF HYDRANT 18" A.F.F. WADE 8601-MT-175.
ROUGH-IN: 3/4" COLD WATER

TYPE: HB-1
DESCRIPTION: HOSE BIBB. WALL MOUNTED, EXPOSED TYPE, BODY DRAIN PLUG AND VACUUM BREAKER, OUTDOOR-MOUNTED FAUCET WITH 1/2" F.P.T. FEMALE INLET, 3/4" MALE HOSE THREAD OUTLET, SLOW COMPRESSION REBUILDABLE CARTRIDGE, SQUARE TAPERED STEM, ROUGH CHROME PLATED, REMOVABLE 2-1/4" METAL TEE HANDLE, COMPLIES WITH ASME A.112.18.1 & CSA B125.1. CHICAGO #998-12RCF.
ROUGH-IN: 3/4" COLD WATER. INSTALL WITH OUTLET AT 18" A.F.F. OR AS DIRECTED BY ARCHITECT/OWNER.

TYPE: FD-1
SERVICE: TOILET ROOMS AND GENERAL USE
DESCRIPTION: FLOOR DRAIN, CAST IRON BODY, ADJUSTABLE 6" DIAMETER STAINLESS STEEL STRAINER WITH VANDAL PROOF SCREWS, INTEGRAL CLAMPING DEVICE, BOTTOM OUTLET. WADE 1100-MR6.
TRAP SEAL: PROVIDE PRO-SET SYSTEMS, INC. TRAP GUARD FACTORY FITTED TO MATCH EACH FLOOR DRAIN BY SIZE, MODEL, AND MANUFACTURER.
ROUGH-IN: REFER TO FLOOR PLANS FOR SIZES. COORDINATE FINAL LOCATION AND INSTALLATION WITH ARCHITECTURAL DRAWINGS / FLOOR CONSTRUCTION.

TYPE: DF-1 (T.A.S. COMPLIANT) FOUNTAIN
SERVICE: EXTERIOR RESTROOM BUILDING
DESCRIPTION: OUTDOOR COOLER WALL MOUNT ADA FROST RESISTANT VANDAL-RESISTANT, NON-FILTERED NON-REFRIGERATED. FEATURES SHALL INCLUDE FROST RESISTANT, VANDAL RESISTANT. FURNISHED WITH VANDAL RESISTANT BUBBLER. MECHANICAL FRONT BUBBLER BUTTON ACTIVATION. PRODUCT SHALL BE WALL MOUNT, FOR OUTDOOR APPLICATIONS, SERVING 1 STATIONUNIT SHALL BE LEAD FREE DESIGN WHICH IS CERTIFIED TO NSF/ANSI 61 & 372 (LEAD FREE). ELKAY #VRCFRDS
P-TRAP: 1-1/4" CHROME PLATED CAST BRASS TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON. MCGUIRE 8872.
SUPPLIES: 1/2" I.P.S. X 3/8" O.D.CHROME PLATED LOOSE KEY STOP VALVE WITH ESCUTCHEON AND 3/8" COMPRESSION CHROME PLATED FLEXIBLE RISERS. MCGUIRE 2165LK.
CARRIER: RECTANGULAR STEEL TUBING UPRIGHTS WITH WELDED 3" X 4-1/2" BASE ANCHORED TO CONCRETE SLAB WITH (4) 1/2" BOLTS. ADJUSTABLE SLEEVE FOR CONNECTION TO HANGER PLATE PROVIDED BY FIXTURE MANUFACTURER. WADE 403.
ROUGH-IN: 2" WASTE, 2" VENT, 1/2" COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: DF-2 (T.A.S. COMPLIANT) FOUNTAIN WITH BOTTLE FILLER
SERVICE: EXTERIOR RESTROOM BUILDING
DESCRIPTION: OUTDOOR EZH2O® VANDAL RESISTANT BOTTLE FILLING STATION AND SINGLE COOLER, WALL MOUNT NON-FILTERED NON-REFRIGERATED STAINLESS, FEATURES SHALL INCLUDE GREEN TICKER, LAMINAR FLOW, REAL DRAIN, VANDAL RESISTANT. FURNISHED WITH VANDAL RESISTANT BUBBLER, ELECTRONIC BOTTLE FILLER BUTTON WITH MECHANICAL FRONT BUBBLER BUTTON ACTIVATION. PRODUCT SHALL BE WALL MOUNT, FOR OUTDOOR APPLICATIONS, SERVING 1 STATION. UNIT SHALL BE LEAD FREE DESIGN WHICH IS CERTIFIED TO NSF/ANSI 61 & 372 (LEAD FREE). ELKAY #VRCDWSK
P-TRAP: 1-1/4" CHROME PLATED CAST BRASS TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON. MCGUIRE 8872.
SUPPLIES: 1/2" I.P.S. X 3/8" O.D.CHROME PLATED LOOSE KEY STOP VALVE WITH ESCUTCHEON AND 3/8" COMPRESSION CHROME PLATED FLEXIBLE RISERS. MCGUIRE 2165LK.
CARRIER: RECTANGULAR STEEL TUBING UPRIGHTS WITH WELDED 3" X 4-1/2" BASE ANCHORED TO CONCRETE SLAB WITH (4) 1/2" BOLTS. ADJUSTABLE SLEEVE FOR CONNECTION TO HANGER PLATE PROVIDED BY FIXTURE MANUFACTURER. WADE 403.
ROUGH-IN: 2" WASTE, 2" VENT, 1/2" COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: ECO
DESCRIPTION: EXTERIOR CLEANOUT TO GRADE, CAST IRON BODY WITH ADJUSTABLE COMBINED ACCESS COVER/PLUG TOP ASSEMBLY WITH PRIMARY GASKET SEAL, AND ROUND SCORIATED VANDAL RESISTANT DUCTILE IRON TRACTOR TYPE COVER. IF LOCATED IN ASPHALT OR DIRT PROVIDE 18"X18"X12" CONCRETE PAD. WADE 6000-Z.

TYPE: FCO
DESCRIPTION: FLOOR CLEANOUT, CAST IRON BODY AND ADJUSTABLE COMBINED ACCESS COVER/PLUG TOP ASSEMBLY WITH PRIMARY GASKET SEAL, AND ROUND SCORIATED STAINLESS STEEL COVER. WADE 6000-153.

TYPE: WCO
DESCRIPTION: WALL CLEANOUT. CAST IRON CLEANOUT FERRULE WITH DUCTILE IRON COMBINED COVER/PLUG AND ROUND STAINLESS COVER PLATE WITH CENTER SECURING SCREW. WADE 8550 WITH 8480-R6. PROVIDE WADE 8560 CAST IRON CLEANOUT TEE IN LIEU OF FERRULE AS REQUIRED FOR WALL CONSTRUCTION.

TYPE: BFP-1 (2" AND SMALLER)
DESCRIPTION: BACKFLOW PREVENTER, REDUCED PRESSURE ZONE TYPE WITH TWO INLINE INDEPENDENT CHECK VALVES WITH AN INTERMEDIATE RELIEF VALVE. COMPLETE WITH TWO FULL PORTED BALL VALVE SHUT-OFFS AND BALL TYPE TEST COCKS. BRONZE STRAINER ON INLET. REFER TO FLOOR PLANS FOR SIZES. MOUNT AT 48" A.F.F. UNLESS NOTED OTHERWISE ON DRAWINGS. PROVIDE AIR GAP WITH DRAIN PIPE TO NEAREST FLOOR DRAIN. WATTS 909-QT-S.

GENERAL NOTES

ALL LAVATORIES AND SINKS SHALL BE SUPPLIED WITH HOT AND COLD WATER (UNLESS NOTED TO BE COLD WATER ONLY) TO FAUCETS AS INDICATED ON PLANS AND FIXTURE SCHEDULE. PROVIDE CHROME PLATED BRASS SUPPLY STOPS WITH LOOSE KEYS AND WALL ESCUTCHEONS. PROVIDE CHROME PLATED FLEXIBLE RISERS OF SIZE REQUIRED TO PROPERLY CONNECT FIXTURES. PROVIDE 17 GAUGE CHROME PLATED CAST BRASS P- TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON (UNLESS NOTED TO BE AN ACID WASTE FIXTURE). REFER TO FIXTURE SCHEDULE FOR MINIMUM SIZES OF PLUMBING FIXTURE ROUGH-INS.

INSULATION KITS AT ALL LAVATORIES AND SINKS REQUIRED TO BE T.A.S. ACCESSIBLE (MCGUIRE OR TRUEBRO). ALL SUCH FIXTURES AND FINAL INSTALLATIONS SHALL COMPLY WITH THE STATE ACCESSIBILITY STANDARDS REQUIREMENTS.

INSERT TRAP GUARDS AFTER FINAL RODDING OF DRAINS. INSTALL TRAP GUARD WITH CLEAR SILICONE CAULK FOR GAS-TIGHT SEAL. FOR DRAIN RODDING AFTER INSTALLATION. INSERT SEWER TAPE THROUGH LIGHTLY GREASED 1-1/2" PVC PIPE TO PROTECT TRAP GUARD.

SHOCK ARRESTOR SCHEDULE

P.D.I. SYMBOLS:	FIXTURE UNITS:	THREADED CONNECTION	CERTIFICATION
A	1 - 11	1/2"	ASSE 1010
B	12 - 32	3/4"	ASSE 1010
C	33 - 60	1"	ASSE 1010
D	61 - 113	1"	ASSE 1010
E	114 - 154	1"	ASSE 1010
F	155 - 330	1"	ASSE 1010

TANKLESS ELECTRIC WATER HEATER

ITEM NO.	KW INPUT	GPM AND RATE OF RISE (F)	POWER V/PH/HZ	WATER TEMP. OUT	MANUFACTURER / COMMENTS
EWH-1	18	2.25 GPM @ 54F	208/1/60	110 F	STIEBEL ELTRON TEMPURS 24

NOTES:
1. MOUNT UNDER COUNTER OR LAVATORY. IF USED FOR MOP SINK MOUNT ON WALL NEAR FAUCET MOUNTING.
2. CONTRACTOR SHALL VERIFY AVAILABLE WATER PRESSURE PRIOR TO PURCHASING AND INSTALLING EQUIPMENT.
3. INSTALL HEATER AND ROUTE PIPING BASED ON MANUFACTURER REQUIREMENTS.
4. PROVIDE SCALESAFE PF10SS WATER TREATMENT FILTER AT EACH HEATER.

PLUMBING MATERIAL LIST

ABOVE GRADE, INSIDE BUILDING

SANITARY WASTE AND VENT PIPING SHALL BE

NO-HUB CAST IRON SYSTEM CONFORMING TO CISPI. STANDARD NO. 301-75. NEOPRENE GASKETS SHALL CONFORM TO ASTM STANDARD C564-75, OR,

DOMESTIC WATER PIPING SHALL BE

DRAWN (HARD) COPPER WATER TUBE, TYPE "L", ASTM B88, WITH WROUGHT COPPER FITTINGS, ANSI B16.22 AND 95-5 SOLDER JOINTS.

BELOW GRADE, INSIDE BUILDING

SANITARY WASTE AND VENT PIPING SHALL BE

SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM-2665 WITH SOLVENT WELDED JOINTS. DO NOT USE IN AIR SUPPLY OR RETURN PLENUMS, AND OR WHERE FIRE RATED WALLS, PARTITIONS, OR FLOORS ARE PENETRATED.

DOMESTIC WATER PIPING SHALL BE

ANNEALED (SOFT) COPPER WATER TUBE, TYPE "K", ASTM B88, WITH NO JOINTS OR FITTINGS BELOW SLAB.

PLUMBING FIXTURE ROUGH-IN

FIXTURE	SAN.	VENT	CW	HW
WATER CLOSET	4"	2"	1"	--
LAVATORY	2"	2"	1/2"	1/2"
SINK	2"	2"	1/2"	1/2"
MOP SINK	3"	2"	1/2"	1/2"
URINAL	2"	2"	3/4"	--

Issue

No.	Date	Description
0	07/14/2021	BID SET
4	09/08/2022	ISSUE FOR BID

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09/08/2022

STUDIO RED ARCHITECTS

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Stuctural Engineer	**Fractal Structural Engineering**
MEP Engineer	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

SALASO'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 I Registration No. F-4111
2020-00593-00

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY - ARCHITECTURAL AND UTILITIES

Drawing Name
PLUMBING SCHEDULES

SRA Project Number
2001

Scale
12" = 1'-0"

Drawing Number
2-P4.01

1320 mcgowen houston, texas 77004
www.studioredarchitects.com 713.622.5333

HARDSCAPE NOTES

A. Contractor shall act in accordance with applicable local codes, ordinances and standards enforced at the time of construction.

B. Contractor is responsible for verifying the accurate locations of property lines, rights of way and future construction easements and shall notify the Landscape Architect of any discrepancies prior to construction.

C. Contractor is responsible for verifying all utility locations and shall notify the landscape architect of any discrepancies prior to construction.

D. Contractor shall not willfully proceed with construction as designed when it is obvious that unknown obstructions and/or grade differences exist that may not have been known during preparation of construction documents. Such conditions shall immediately be brought to the attention of the Owner. The contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.

E. Contractor shall stake locations of all proposed hardscape elements for approval by the Landscape Architect prior to construction.

F. Dimensions taken from road edge are typically from Back of Curb (B.O.C.) unless otherwise noted on the plan. All dimensions taken from curbs, building face, or other hardscape features are taken perpendicular unless otherwise noted on plans.

G. All hardscape element dimensions are to centerline of the element unless otherwise noted on the plans.

H. The elevations of all proposed hardscape elements shall be verified in the field and approved by Landscape Architect.

I. Contractor is responsible for replacement of any existing materials that are damaged during construction, as determined by the Landscape Architect or Owner's authorized representative.

J. Contractor shall be responsible for existing tree protection.

IRRIGATION NOTES

A. Except as otherwise provided, the contractor shall procure all permits and licenses, pay all charges & fees and give all notices necessary & incidental to the due lawful prosecution of the work.

B. The contractor shall follow the local municipal Public Works specifications for hot taps & installation of irrigation system.

C. The contractor shall notify pertinent utility companies 48 hours prior to construction for current utility locations. Extreme care shall be exercised in excavating and working near existing utilities. The contractor shall verify the location & condition of all utilities and be responsible for any damage to such.

D. The contractor shall not willfully install the sprinkler system as shown on the drawings when it is obvious in the field that obstructions, grade differences or differences in the area's dimensions exist that might not have been considered in the engineering. Such obstructions or differences shall be brought to the attention of the Owner. In the event this notification is not performed, the irrigation contractor shall assume full responsibility for any revisions necessary.

E. The drawings are diagrammatic. All irrigation mainlines, lateral lines, valves, wire, and fittings shall be placed in landscape areas. Gate valves, and remote control valves shall be placed in shrub beds whenever possible.

F. Avoid existing or future locations of trees and tree root balls when laying pipe.

G. The contractor shall clearly mark all exposed excavations, materials and equipment. Cover or barricade trenches when the contractor is not on site.

H. The contractor shall adjust the arc angle of the irrigation heads for even cover. Head layout shall be head to head coverage. All nozzles shall have matching precipitation rates.

I. The contractor shall at all times protect his work from damage and theft. In the event of damage or theft, the contractor shall replace all damaged or stolen parts until the work is accepted in writing by Owner.

LANDSCAPE NOTES

A. The contractor shall supply photos or samples of each plant species indicated on the planting legend, to Landscape Architect, to serve as min. requirements of each species type.

B. The contractor shall obtain an agricultural soils analysis by an approved lab for soils amendments and planting media recommendations. provide one copy to the Landscape Architect for approval prior to installation of soil mix.

C. The contractor shall be responsible for verifying all utility locations in the field prior to installation and shall be responsible for any damage to utilities.

D. Tree material shall be planted a min. of 3' from walkways, streets, or buildings unless otherwise noted on the drawings.

E. The contractor shall stake all tree locations and planting beds, and verify limits of turf in the field for approval by the Landscape Architect prior to installation.

F. Finish grade of all planting beds adjacent to buildings shall have a min. of 4-6' clearance from top of slab.

G. Existing soil shall be removed from planting holes, see specifications for appropriate backfill mix.

H. Stabilize soil below root ball prior to planting to prevent tree or shrub from settling.

I. The contract or is responsible for fine grading any areas disturbed by construction on site.

J. Contractor to repair or replace all disturbed turf areas from landscape construction outside and within limit of work, with solid sod of matching existing species.

ONE-CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG!!!
(713) 223-4567 (IN HOUSTON)
(NEW STATEWIDE NUMBER OUTSIDE HOUSTON)
1-800-545-6005

4/20/2021 3:14:05 PM

Issue

No.	Date	Description
1	09/08/2022	ISSUE FOR BID

REGISTERED LANDSCAPE ARCHITECT
STATE OF TEXAS
09.08.2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy. Suite 600 Houston, Texas 77042
Phone 713.953.5200 Fax 713.953.5026 FRN - F-1386

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

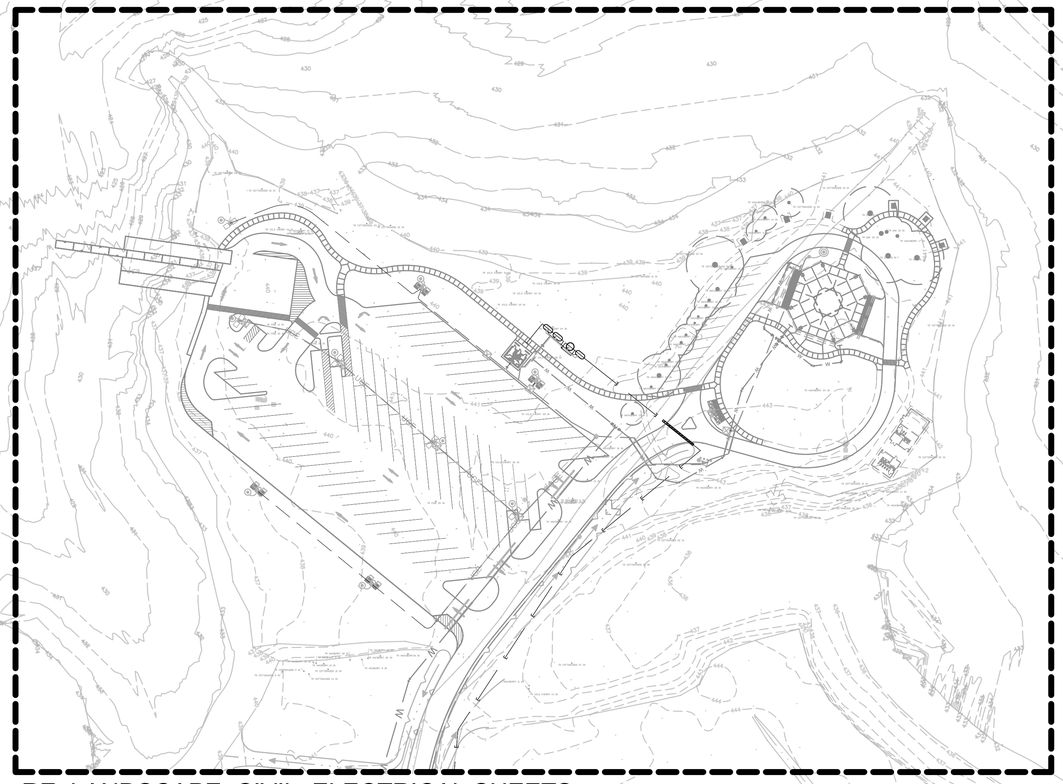
Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
LANDSCAPE NOTES

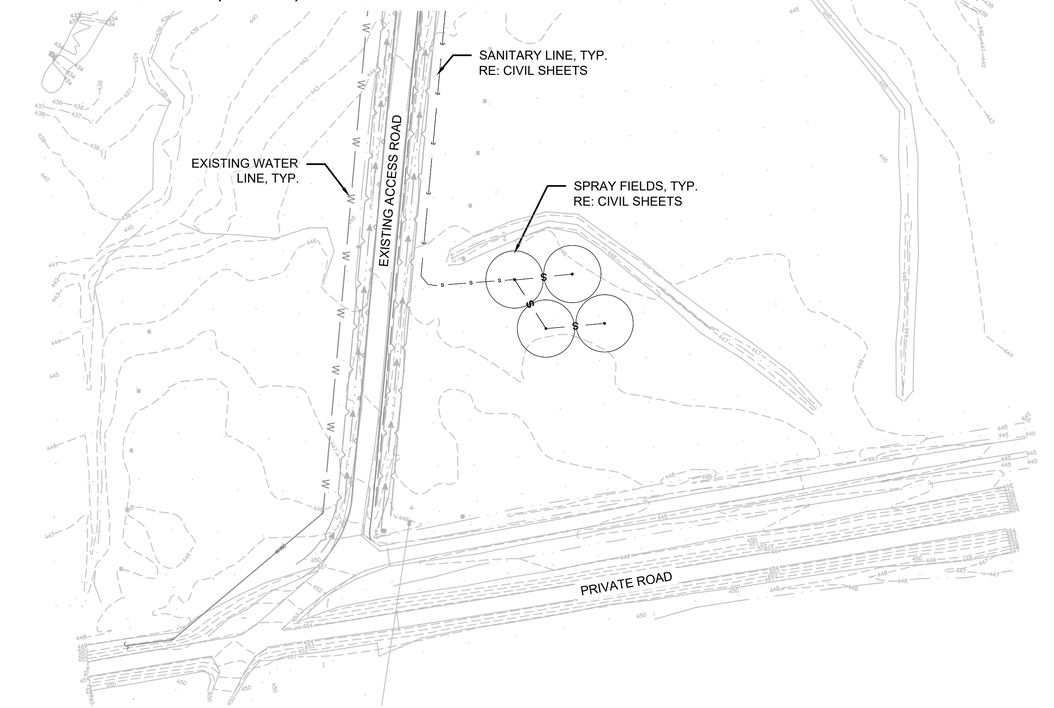
SRA Project Number
B883-1015C

Scale

Drawing Number
H0



RE: LANDSCAPE, CIVIL, ELECTRICAL SHEETS



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Drawing Scale is 1" = 80'
(Original size is 24 x 36")

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Issue

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1	09/08/2022	ISSUE FOR BID

REGISTERED LANDSCAPE ARCHITECT
STATE OF TEXAS
09.08.2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy.
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

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Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
HARDSCAPE OVERALL SITE PLAN

SRA Project Number
B883-1015C

Scale

Drawing Number
H1

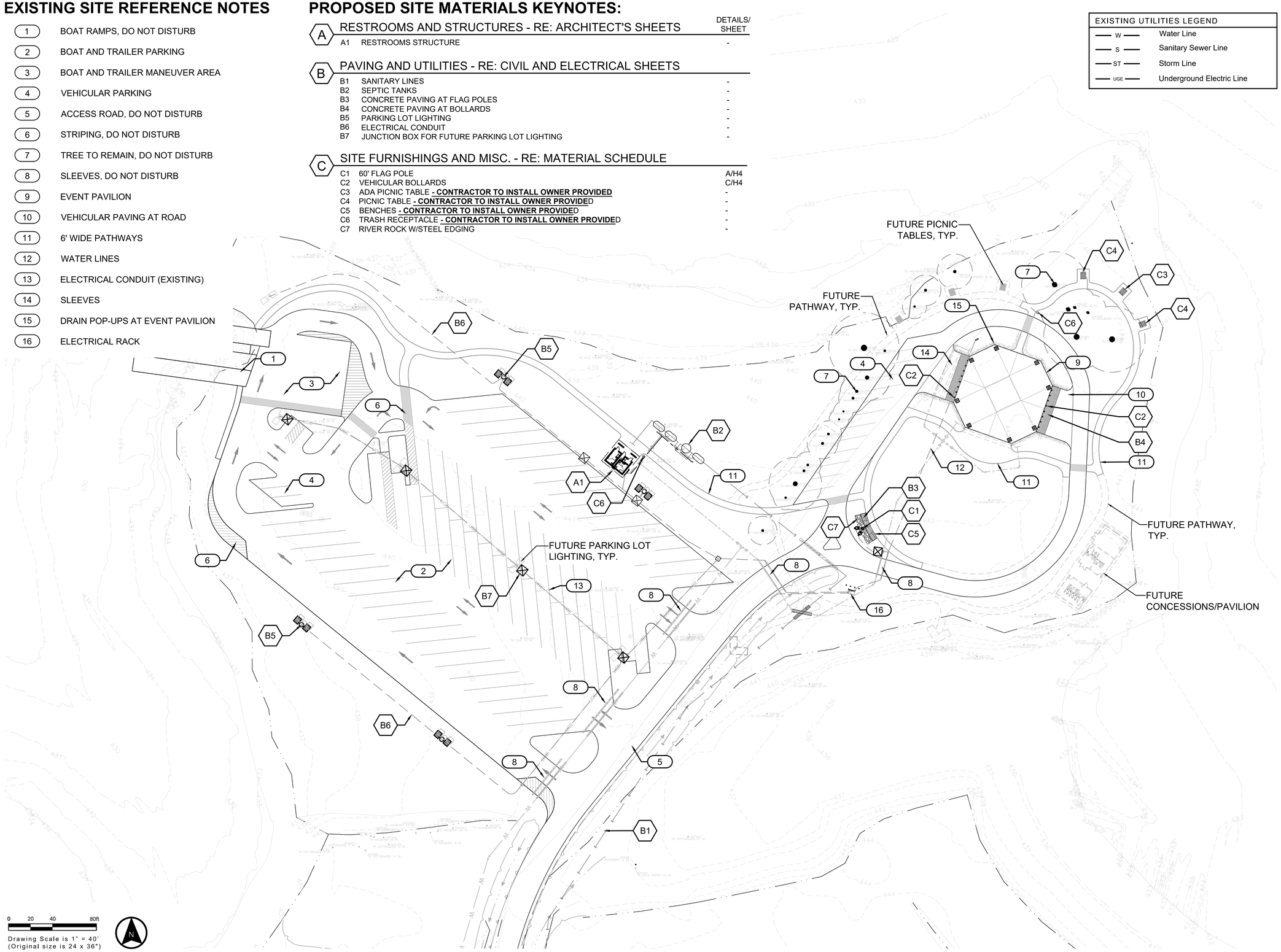
EXISTING SITE REFERENCE NOTES

1. BOAT RAMPS, DO NOT DISTURB
2. BOAT AND TRAILER PARKING
3. BOAT AND TRAILER MANEUVER AREA
4. VEHICULAR PARKING
5. ACCESS ROAD, DO NOT DISTURB
6. STRIPING, DO NOT DISTURB
7. TREE TO REMAIN, DO NOT DISTURB
8. SLEEVES, DO NOT DISTURB
9. EVENT PAVILION
10. VEHICULAR PAVING AT ROAD
11. 6' WIDE PATHWAYS
12. WATER LINES
13. ELECTRICAL CONDUIT (EXISTING)
14. SLEEVES
15. DRAIN POP-UPS AT EVENT PAVILION
16. ELECTRICAL RACK

PROPOSED SITE MATERIALS KEYNOTES:

		DETAILS/ SHEET
A	**RESTROOMS AND STRUCTURES - RE: ARCHITECT'S SHEETS**	
A1	RESTROOMS STRUCTURE	-
B	**PAVING AND UTILITIES - RE: CIVIL AND ELECTRICAL SHEETS**	
B1	SANITARY LINES	-
B2	SEPTIC TANKS	-
B3	CONCRETE PAVING AT FLAG POLES	-
B4	CONCRETE PAVING AT BOLLARDS	-
B5	PARKING LOT LIGHTING	-
B6	ELECTRICAL CONDUIT	-
B7	JUNCTION BOX FOR FUTURE PARKING LOT LIGHTING	-
C	**SITE FURNISHINGS AND MISC. - RE: MATERIAL SCHEDULE**	
C1	60' FLAG POLE	A/H4
C2	VEHICULAR BOLLARDS	C/H4
C3	ADA PICNIC TABLE **- CONTRACTOR TO INSTALL OWNER PROVIDED**	-
C4	PICNIC TABLE **- CONTRACTOR TO INSTALL OWNER PROVIDE**D	-
C5	BENCHES **- CONTRACTOR TO INSTALL OWNER PROVIDE**D	-
C6	TRASH RECEPTACLE **- CONTRACTOR TO INSTALL OWNER PROVIDE**D	-
C7	RIVER ROCK W/STEEL EDGING	-

EXISTING UTILITIES LEGEND	
W	Water Line
S	Sanitary Sewer Line
ST	Storm Line
UGE	Underground Electric Line



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Drawing Scale is 1" = 40'
(Original size is 24 x 36")

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Issue

No.	Date	Description
1	09/08/2022	ISSUE FOR BID

REGISTERED LANDSCAPE ARCHITECT
CHARLES A. ERICKSON III
STATE OF TEXAS
09.08.2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy. Suite 600 Houston, Texas 77042
Phone 713.953.5200 Fax 713.953.5026 FRN - F-1386

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

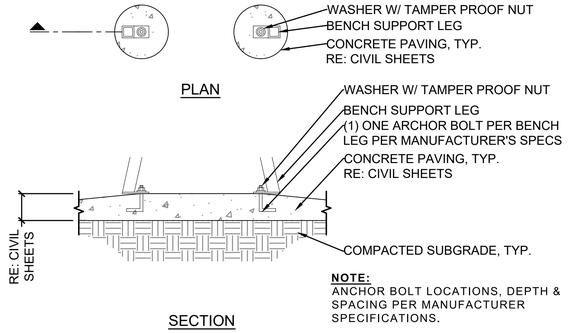
Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
HARDSCAPE LAYOUT

SRA Project Number
B883-1015C

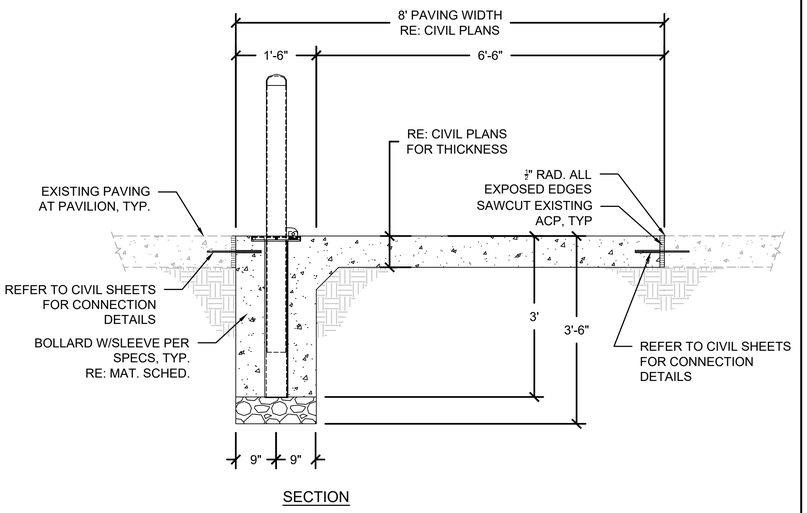
Scale

Drawing Number
H2



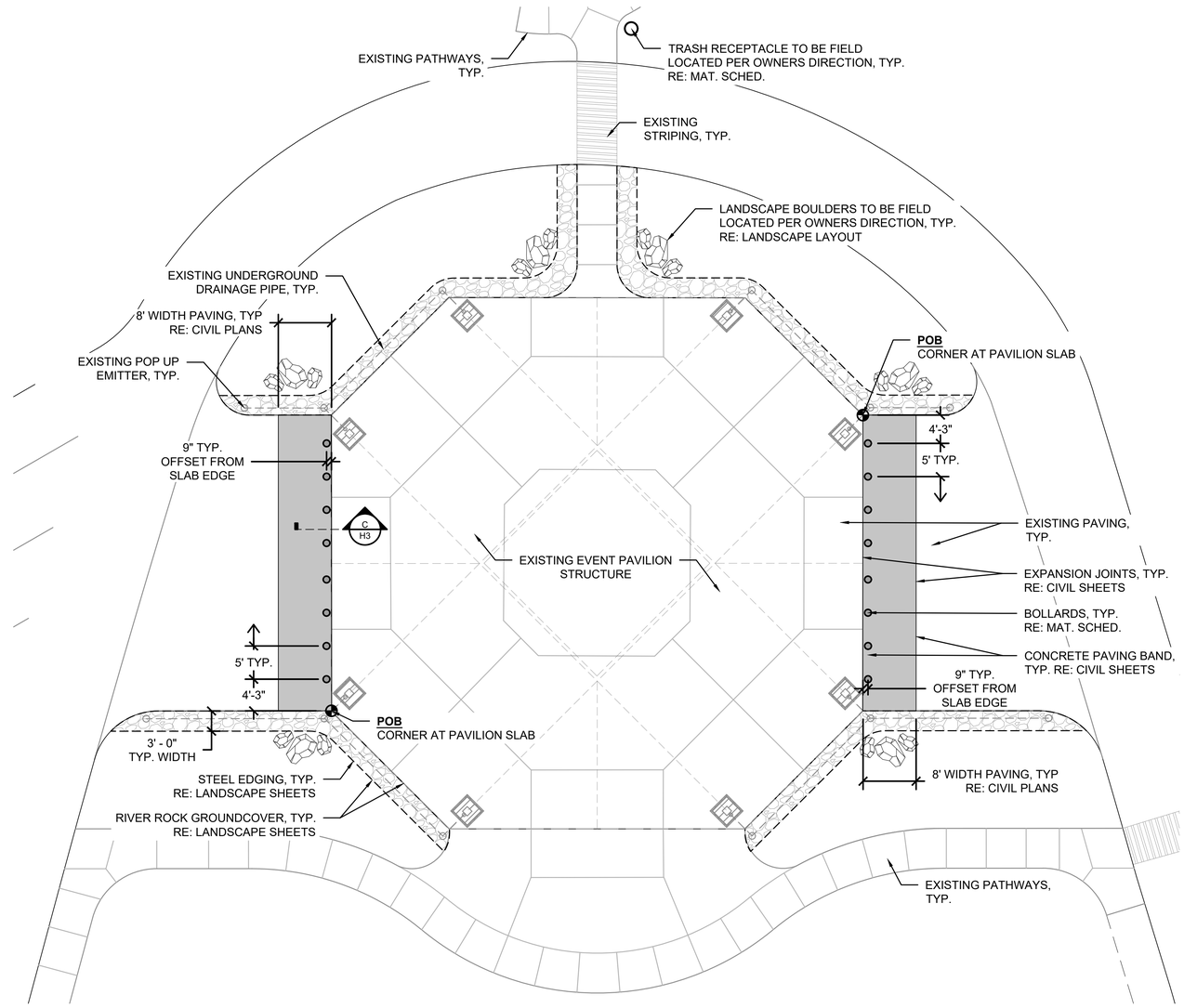
E SURFACE MOUNT BENCH AND PICNIC TABLE TYPICAL DETAIL

1"=1'-0"



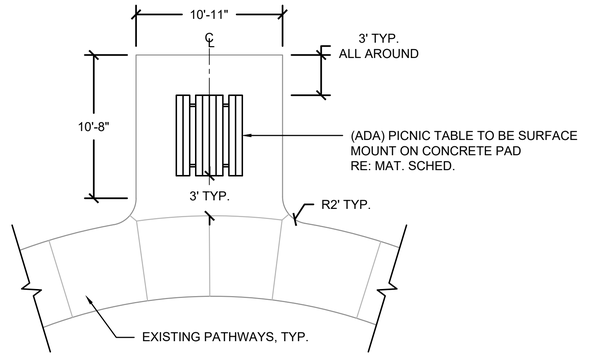
C REMOVABLE BOLLARD TYPICAL DETAIL

3/4"=1'-0"



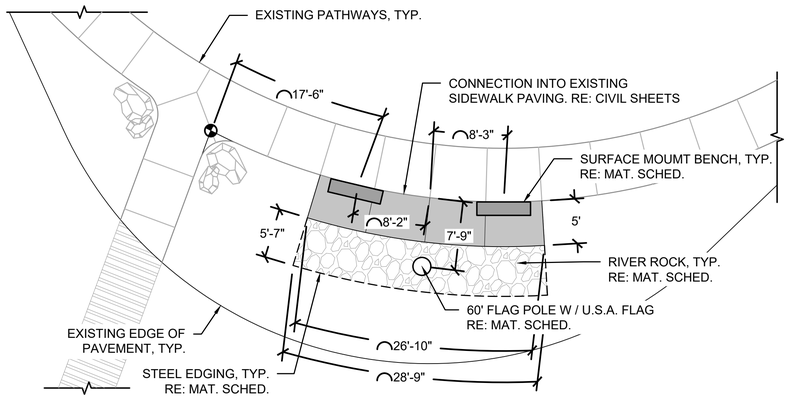
D PAVILION AREA LAYOUT

1" = 10'



B (ADA) PICNIC TABLE LAYOUT

3/16" = 1'



A FLAG POLES AND BENCHES LAYOUT

1/8" = 1'

Issue

No.	Date	Description
1	09/08/2022	ISSUE FOR BID

REGISTERED LANDSCAPE ARCHITECT
STATE OF TEXAS
09.08.2022

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Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
HARDSCAPE DETAILS SHEET (1 OF 2)

SRA Project Number
B883-1015C

Scale

Drawing Number
H3

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HARDSCAPE MATERIALS SCHEDULE						
ITEM NO.	ITEM	QTY	DESCRIPTION	MANUF.	MODEL NO.	NOTES
1.1	60' FLAG POLE	1	ATLAS SERIES 60FT SATIN POLE	EDER FLAG	POLE: ECXA60 US FLAG: PF18 010053	DIAGRAMS ARE FOR REFERENCE ONLY. US FLAG SIZE: 12' X 18' POLYESTER. CONTRACTOR TO PROVIDE SEALED STRUCTURAL ENGINEERING FOR POLE FOUNDATION.
1.2	BOLLARDS	16	REMOVABLE BOLLARDS	DUMOR, INC.	400-36/S-1SL	36" HT. BOLLARD ABOVE FINISHED GRADE. INCLUDES STEEL BOLLARD W / SLEEVE AND HINGE. CONTRACTOR TO PROVIDE LOCKING DEVICE FOR ALL BOLLARDS INSTALLED WITH A MASTER KEY. STEEL MEMBERS TO BE POWDER COAT BLACK.

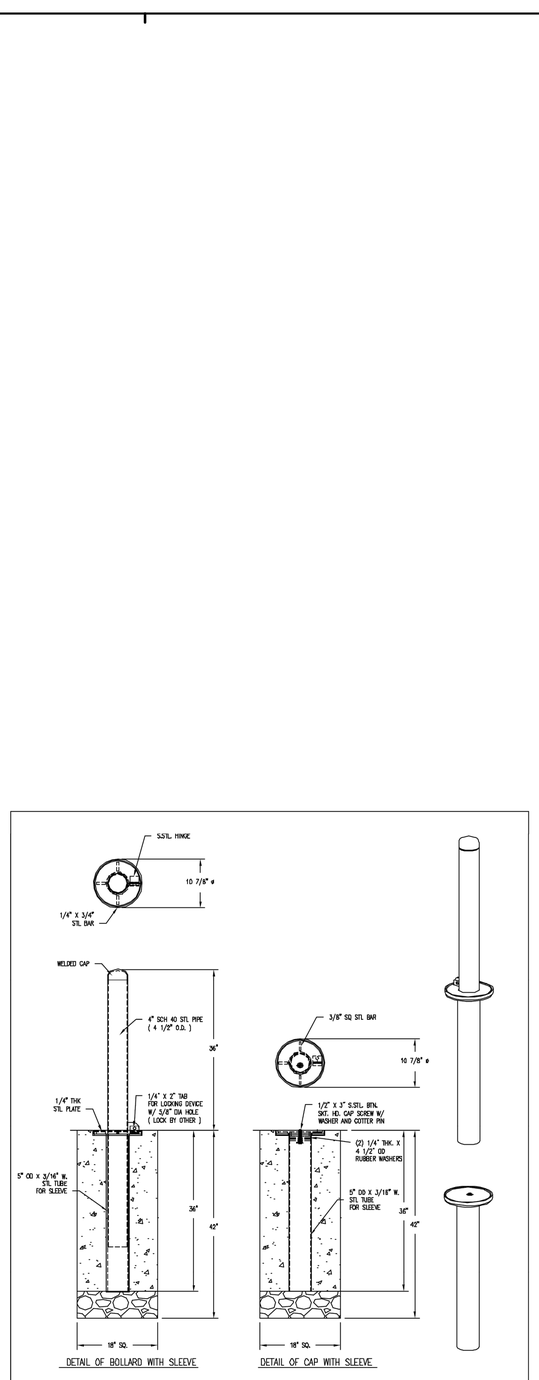
APPROVED MANUFACTURERS / VENDORS:

REMOVABLE BOLLARDS
ERIC D. HILLER
972.724.2656
ERICHILLER@PAULEALLENCO.CO

EDER FLAG
UNITED STATES FLAG STORE
414.764.3522
SALES@EDERFLAG.COM

GENERAL NOTES:

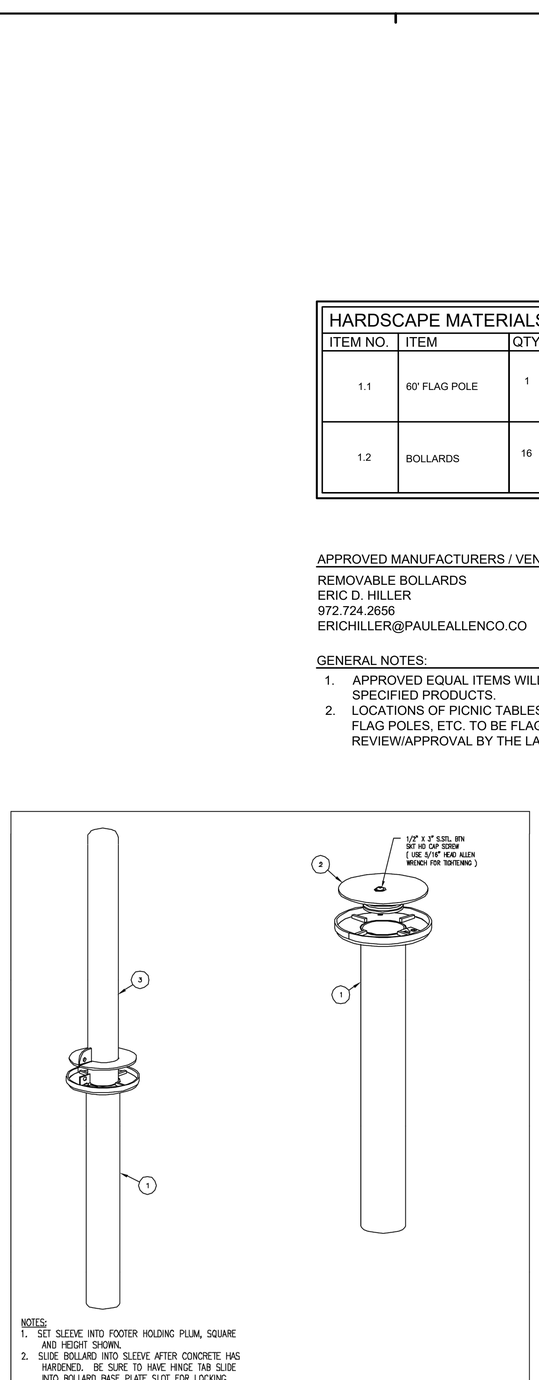
1. APPROVED EQUAL ITEMS WILL BE ACCEPTED FOR ALL SPECIFIED PRODUCTS.
2. LOCATIONS OF PICNIC TABLES, TRASH RECEPTACLES, FLAG POLES, ETC. TO BE FLAGGED IN THE FIELD FOR REVIEW/APPROVAL BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR INSTALLATION.
3. CONTRACTOR TO PROVIDE SHOP DRAWINGS AND CUTSHEETS FOR APPROVAL PRIOR TO PURCHASE/FABRICATION.



NOTES

1.) STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
2.) LOCKING DEVICE PROVIDED BY OTHER.

DuMor, inc. P.O. Box 142 Mifflintown, PA 17059-0142	SCALE : NONE	TITLE : BOLLARD		
	DATE DRAWN : 10/27/05			
	DRAWN BY : AMH	REV. B	DRAWING NUMBER 400-36/S-1SL	SHEET 1 OF 2
	DATE REV. : 01/10/07			
	REV. BY : ESS			



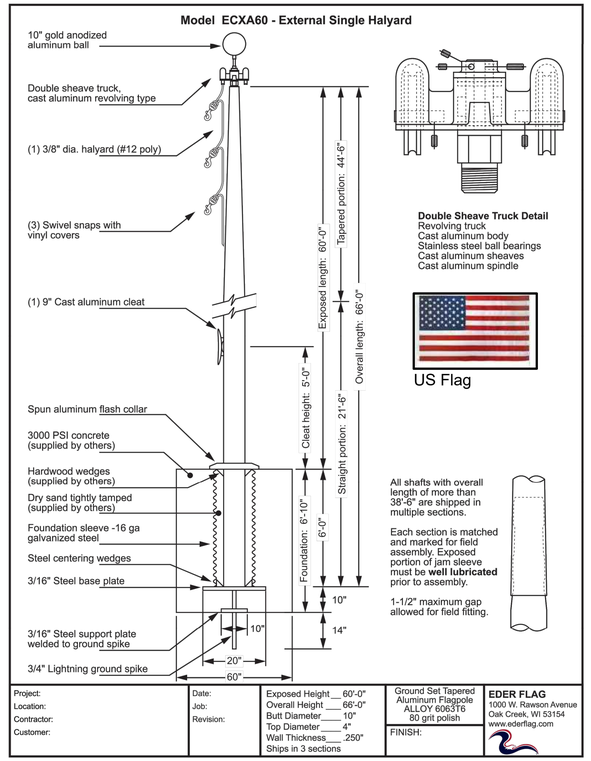
NOTES:
1. SET SLEEVE INTO FOOTER HOLDING PLUM, SQUARE AND HEIGHT SHOWN.
2. SLIDE BOLLARD INTO SLEEVE AFTER CONCRETE HAS HARDENED. BE SURE TO HAVE HINGE TAB SLIDE INTO BOLLARD BASE PLATE SLOT FOR LOCKING.
3. FOR USE OF CAP. WHEN BOLLARD IS REMOVED, PLACE CAP INTO SLEEVE. TIGHTEN CAP BY USING 1/2" X 3" BUTTON HEAD BOLT. THIS WILL COMPRESS THE RUBBER WASHERS THICKNESS AND EXPAND THE DIAMETER TO FIT SNUG TO SLEEVE.

ITEM	QTY	PART NO	DESCRIPTION
1	1	D-400-02	STL BOLLARD SLEVE W/ HINGE
2	1	D-400-03	BOLLARD SLEEVE CAP ASSEMBLY
3	1	D-400-36-01/1SL	36" STL BOLLARD, ENDED FOR SLEEVE

DuMor, inc. P.O. Box 142 Mifflintown, PA 17059-0142	SCALE : NONE	TITLE : BOLLARD		
	DATE DRAWN : 10/27/05			
	DRAWN BY : AMH	REV. B	DRAWING NUMBER 400-36/S-1SL	SHEET 2 OF 2
	DATE REV. : 01/10/07			
	REV. BY : ESS			

B BOLLARDS

FOR REFERENCE ONLY



Project:	Date:	Exposed Height __ 60'-0"	Ground Set Tapered Aluminum Flagpole ALLOY 6063T6 80 grit polish	EDER FLAG 1000 W. Rawson Avenue Oak Creek, WI 53154 www.ederflag.com
Location:	Job:	Overall Height ___ 66'-0"		
Contractor:	Revision:	Butt Diameter____ 10"	FINISH:	
Customer:		Top Diameter ____ 4"		
		Wall Thickness____ .250"		
		Ships in 3 sections		

A 60' UNITED STATES FLAG POLE

FOR REFERENCE ONLY

Issue

No.	Date	Description
1	09/08/2022	ISSUE FOR BID

REGISTERED LANDSCAPE ARCHITECT
CHARLES D. ERICKSON III
2504
STATE OF TEXAS
09.08.2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy. Suite 600 Houston, Texas 77042
Phone 713.953.5200 Fax 713.953.5026 FRN - F-1386

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
HARDSCAPE DETAILS SHEET (2 OF 2)

SRA Project Number
B883-1015C

Scale

Drawing Number
H4

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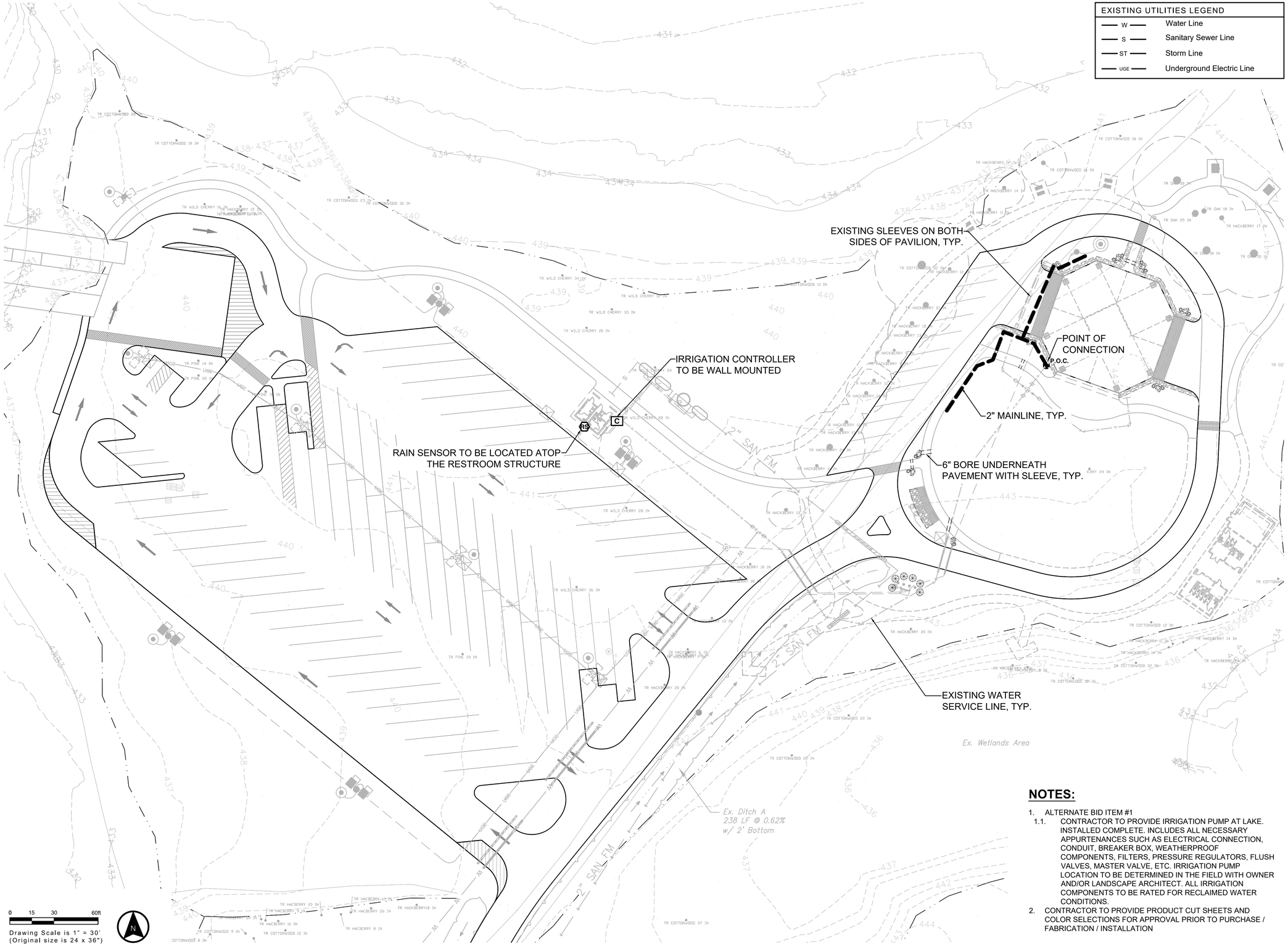

NOTES:

1. ALTERNATE BID ITEM #1
   1.1. CONTRACTOR TO PROVIDE IRRIGATION PUMP AT LAKE. INSTALLED COMPLETE. INCLUDES ALL NECESSARY APPURTENANCES SUCH AS ELECTRICAL CONNECTION, CONDUIT, BREAKER BOX, WEATHERPROOF COMPONENTS, FILTERS, PRESSURE REGULATORS, FLUSH VALVES, MASTER VALVE, ETC. IRRIGATION PUMP LOCATION TO BE DETERMINED IN THE FIELD WITH OWNER AND/OR LANDSCAPE ARCHITECT. ALL IRRIGATION COMPONENTS TO BE RATED FOR RECLAIMED WATER CONDITIONS.
2. CONTRACTOR TO PROVIDE PRODUCT CUT SHEETS AND COLOR SELECTIONS FOR APPROVAL PRIOR TO PURCHASE / FABRICATION / INSTALLATION

Issue

No.	Date	Description
1	09/08/2022	ISSUE FOR BID

REGISTERED LANDSCAPE ARCHITECT
CHARLES A. ROSS III
STATE OF TEXAS
09.08.2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy.
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

PROJECT TEAM

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Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
IRRIGATION MAINLINE DIAGRAM

SRA Project Number
B883-1015C

Scale

Drawing Number
H5

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EXISTING SITE REFERENCE NOTES

1. BOAT RAMPS, DO NOT DISTURB.
2. BOAT AND TRAILER PARKING
3. BOAT AND TRAILER MANEUVER AREA
4. VEHICULAR PARKING
5. ACCESS ROAD, DO NOT DISTURB.
6. STRIPING, DO NOT DISTURB.
7. TREE TO REMAIN, DO NOT DISTURB.

IRRIGATION SCHEDULE

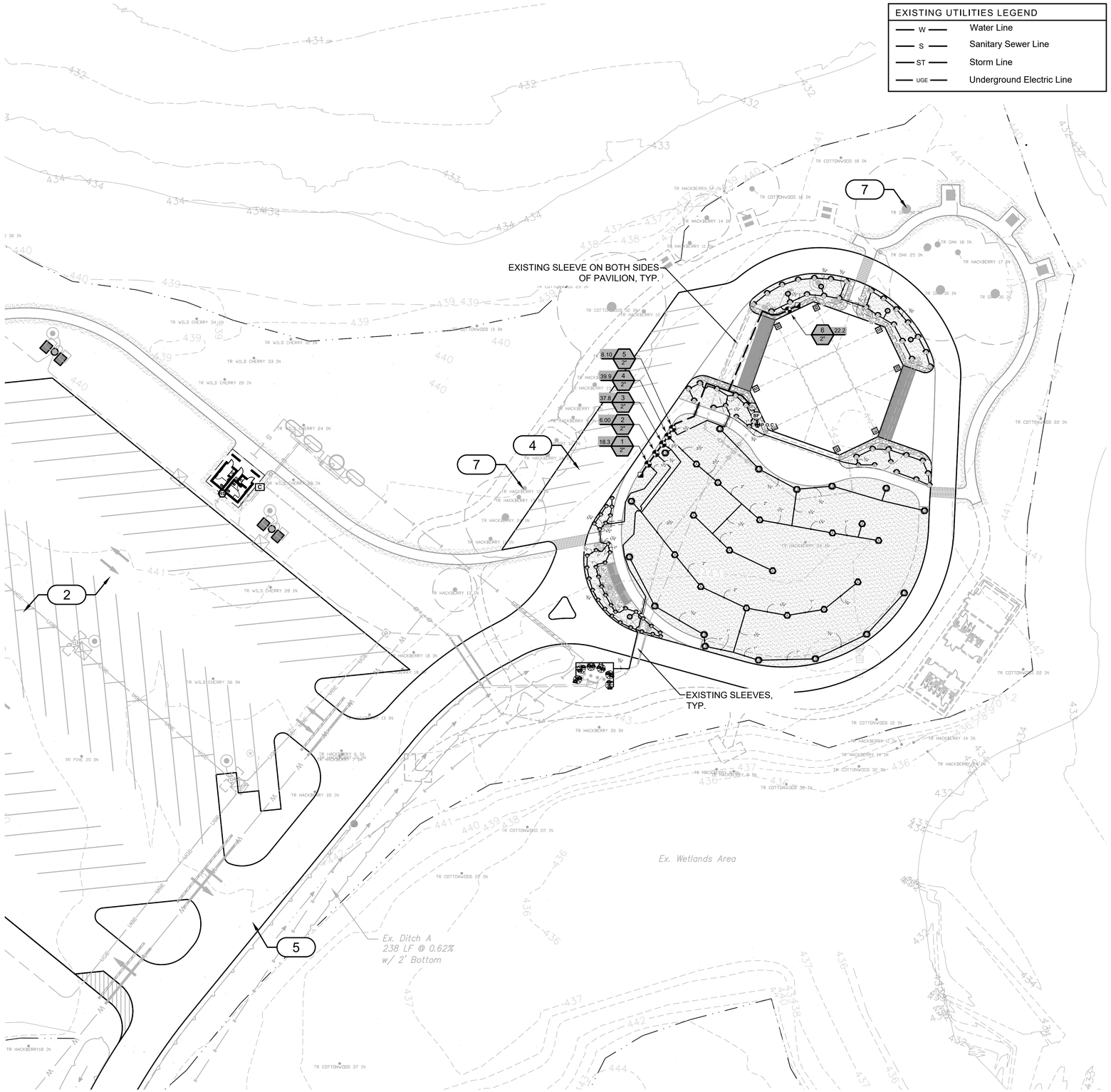
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
2Q 2H 4Q 4H 6Q 6H	Hunter PROS-06-PRS30-CV short radius nozzles Shrub Spray, 30 psi regulated 6.0" Pop-Up. With Factory Installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	35	30
Q T H F	Hunter PROS-06-PRS30-CV 8` radius Shrub Spray, 30 psi regulated 6.0" Pop-Up. With Factory Installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	11	30
Q T H F	Hunter PROS-06-PRS30-CV 10` radius Shrub Spray, 30 psi regulated 6.0" Pop-Up. With Factory Installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	25	30
Q T H F	Hunter PROS-12-PRS30-CV 10` radius Shrub Spray, 30 psi regulated 12.0" Pop-Up. With Factory Installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	16	30
A A A	Hunter MP3000 PROS-06-PRS30-CV Turf Rotator, 6" pop-up with factory installed check valve, pressure regulated to 30 psi, MP Rotator nozzle on PRS30 body. B=Blue adj arc 90-210, Y=Yellow adj arc 210-270, A=Gray 360 arc.	15	30
LB	Hunter MP3500 PROS-06-PRS30-CV Turf Rotator, 6" Pop-up with factory installed check valve, pressure regulated to 30 psi, MP Rotator nozzle on PRS30 body. LB=light brown adjustable arc, 90-210.	16	30
25Q 50Q 50H 10H 10F 20F	Hunter PROS-PRS30-00-MSBN Multi-Stream Bubbler, fixed riser, 25=.25gpm, 50=0.5gpm, 10=1.0gpm, 20=2.0gpm.	12	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Hunter ICV-G 1", 1-1/2", 2", and 3" Plastic Electric Remote Control Valves, Globe Configuration, with NPT Threaded Inlet/Outlet, for Commercial/Municipal Use.	6
	Rain Bird 33-DRC 3/4" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Thermoplastic Rubber Cover, Double Track Key Lug, and 2-Piece Body.	2
MV	Rain Bird EFB-CP-PRS-D 2" 1", 1-1/4", 1-1/2", 2" Brass Master Valve, that is Contamination Proof w/Self-Flushing Filter Screen. Globe Configuration, Reclaimed Water Compatible, and Purple Handle Cover Designates Non-Potable Water Use. With Pressure Regulator.	1
BF	Febco 825Y 2" Reduced Pressure Backflow Preventer	1
C	Hunter XCH-1200-SS Electromechanical controller, 12 stations, outdoor model, battery-powered. Stainless Steel Cabinet. For residential/commercial use.	1
RS	Hunter WSS Wireless Solar, rain freeze sensor with outdoor interface, connects to Hunter PCC, Pro-C, and I-Core Controllers, install as noted. Includes 10 year lithium battery and rubber module cover, and gutter mount bracket.	1
P.O.C.	Point of Connection 2"	1
	Irrigation Lateral Line: PVC Schedule 40	1,996 l.f.
	Irrigation Mainline: PVC Schedule 40	184.8 l.f.
	Pipe Sleeve: PVC Schedule 40	52.3 l.f.

Valve Callout
#" Valve Number
Valve Flow
#" Valve Size

EXISTING UTILITIES LEGEND

W	Water Line
S	Sanitary Sewer Line
ST	Storm Line
UGE	Underground Electric Line



0 15 30 60ft

Drawing Scale is 1" = 30'
(Original size is 24 x 36")

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Issue

No.	Date	Description
1	09/08/2022	ISSUE FOR BID

REGISTERED LANDSCAPE ARCHITECT
STATE OF TEXAS
09.08.2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy. Phone 713.953.5200
Suite 600 Fax 713.953.5026
Houston, Texas 77042 FRN - F-1386

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

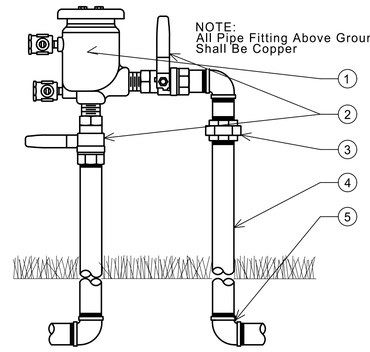
Drawing Name
IRRIGATION LAYOUT

SRA Project Number
B883-1015C

Scale

Drawing Number
H6

FEBCO 825Y
Pressure Vacuum Breaker
Outside Installation



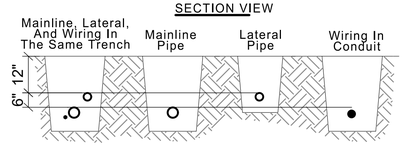
DETAIL CALLOUT LEGEND

1. Pressure Vacuum Breaker Assembly To Be 18" Min. Above Highest Head
2. Gate Valves.
3. Brass Union.
4. Copper Pipe, Wrap With Thermo Wrap For Protection.
5. At Point Where Copper Meets PVC, Use Copper Female Adapter & PVC Male Adapter.

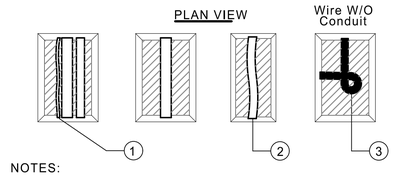
F BACKFLOW PREVENTION

NTS

SECTION VIEW



PLAN VIEW



DETAIL CALLOUT LEGEND

1. Run Wiring Beneath And Beside Mainline. Tape And Bundle At 10Ft Intervals.
2. All Solvent Weld Plastic Piping To Be Snaked In Trench As Shown.
3. Tie 24" Loop In All Wiring At Changes Of Direction Of 30° Or Greater. Untie After all Connections Have Been Made.

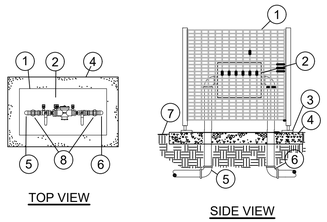
NOTES:

1. Sleeve Below All Hardsape Elements With Class 200PVC Twice The Diameter Of The Pipe Or Wire Bundle Within.
2. For Pipe And Wire Burial Depths See Specifications.

C PIPE & WIRE TRENCHING

NTS

CONTRACTOR TO PROVIDE BACKFLOW ENCLOSURE
BACKFLOW ENCLOSURE- V.I.T. PRODUCT # SBBC
SLIP-ON INSULATING COVER- V.I.T. PRODUCT # PBB

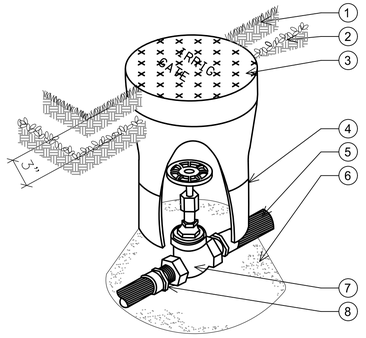


DETAIL CALLOUT LEGEND

1. Smooth touch backflow cover
2. R.P. device backflow preventer
3. Anchor rod (typical)
4. Poured concrete base - 4" min. thickness - extend 4" beyond outside dimensions of enclosure
5. Water service inlet piping
6. Water service outlet piping
7. Finish grade
8. Bronze unions

H BACKFLOW PREVENTOR WITH SECURITY CAGE

NTS

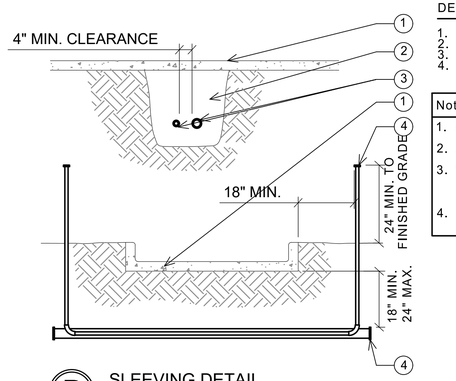


DETAIL CALLOUT LEGEND

1. Finished Grade Lawn Areas.
2. Finished grade Shrub Areas.
3. Top Of Valve Box To be Flush With Finished Grade (Turf Areas 3" Above Finished Grade (Shrub areas).
4. Box Extension.
5. Mainline.
6. 3/4" Washed Gravel 6" Deep Min.
7. Gate Valve.
8. Sch. 80 PVC Male Adapter.

E GATE VALVE

NTS



DETAIL CALLOUT LEGEND

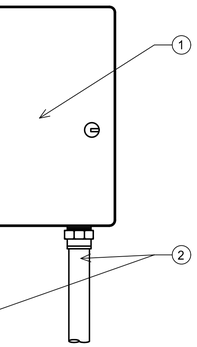
1. Paving.
2. Ditch.
3. Sleeves.
4. PVC Cap Typ.

Notes:

1. All PVC Irrigation Sleeves To be Class 200 Pipe.
2. All Joints To Be Solvent Welded And Watertight.
3. Where There Is More Than One Sleeve, Extend The Smaller Sleeve 24" Minimum Above Finished Grade.
4. Mechanically Tamp To 95% Proctor.

B SLEEVING DETAIL

NTS

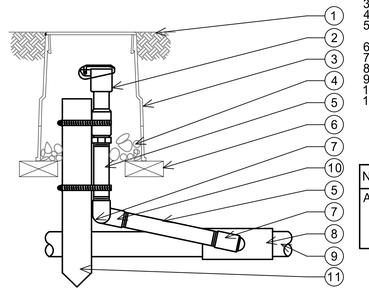


DETAIL CALLOUT LEGEND

1. Wall Mounted Controller Per Specification.
2. Rigid Electrical Conduit. Wire In Conduit To Supply 110v. As Per Applicable Codes.

G CONTROLLER DETAIL

NTS



DETAIL CALLOUT LEGEND

1. Finished Grade/Top of Mulch.
2. Quick Coupling Valve: Rainbird Model #5LRC.
3. Valve Box With cover 6" Size.
4. 3/4" Washed Gravel.
5. PVC Sch. 80 Nipple (Length As Required).
6. Brick (1 of 2)
7. PVC Sch. 40 Street Ell
8. PVC Sch. 40 Tee Or Ell.
9. PVC Mainline Pipe.
10. PVC Sch. 40 Ell.
11. 2" x 2" Redwood Stake W/Stainless Steel Gear Clamps Support Clamps.

NOTE:

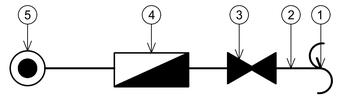
A. Furnish Fittings And Piping Nominally Sized Identical To Nominal Quick Coupling Valve Inlet Size.

D QUICK-COUPLING VALVE

NTS

WATER METER NOTE:

1. CONTRACTOR TO SUBMIT TAP APPLICATIONS PER SABINE RIVER AUTHORITY REQUIREMENTS.
2. CONTRACTOR TO TIE INTO MAINLINE STUBOUT AND INSTALL GATE VALVE.



DETAIL CALLOUT LEGEND

1. To Valves.
2. Irrigation Mainline (See Legend For Size).
3. Gate Valve (Mainline Size).
4. Backflow Prevention As Approved Per SRA Requirements.
5. Point Of Connection. Verify Location In Field.

NOTE:

See Irrigation Legend For Full Details, Sizing And Requirements.

A TYP. DIAGRAM - POINT OF CONNECTION

NTS

Issue

No.	Date	Description
1	09/08/2022	ISSUE FOR BID

REGISTERED LANDSCAPE ARCHITECT
CHARLES A. ROSS III
STATE OF TEXAS
09.08.2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy. Suite 600 Houston, Texas 77042
Phone 713.953.5200 Fax 713.953.5026 FRN - F-1386

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
IRRIGATION DETAILS SHEET (1 OF 2)

SRA Project Number
B883-1015C

Scale

Drawing Number
H7

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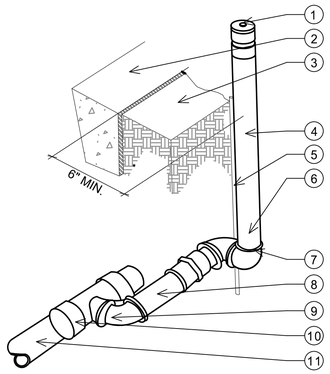
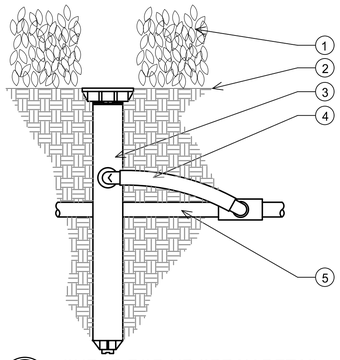


DETAIL CALLOUT LEGEND

1. Bubbler Above Finish Grade
2. Hardscape Element (Walk, Curb, Wall, Etc.).
3. Finished Grade.
4. 'Fastlock' Galvanized Bands (2) Per nozzle.
5. #4 Rebar, anchor 24" Depth.
6. 1/2" Schedule 80 PVC Nipple
7. 3/4" Marlex Street ELL.
8. 3/4" Sch. 80 Pipe Length As Required.
9. PVC Tee.
10. PVC Lateral Line (12" Min. Cover As Noted In Legend).

C BUBBLER

NTS

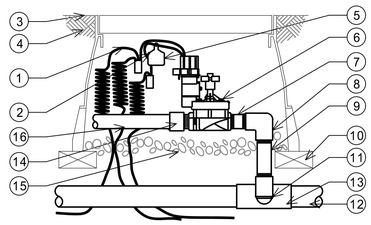


DETAIL CALLOUT LEGEND

1. Plant Material.
2. Finished Grade/Top Of Mulch.
3. 12" Pop-Up Spray Sprinkler: HunterMPR40-12 W MP Rotator Nozzle.
4. Swing Pipe, 12" Length: Hunter Model SJA-402 with PVC Tee sized to fit lateral
5. PVC Lateral Line (12" Cover As Noted In Legend)

B SHRUB POP-UP SPRAY DETAIL

NTS

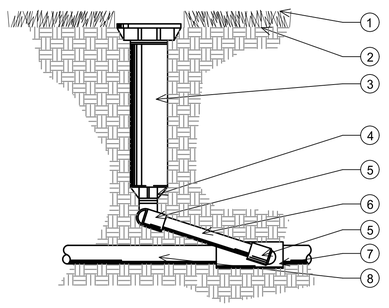


DETAIL CALLOUT LEGEND

1. 30-inch Linear Length Of Coiled Wire.
2. Waterproof Connection (1 Of 2).
3. Finished Grade / Top Of Mulch.
4. Valve Box With Cover: 12" Size.
5. ID Tag.
6. Remote Control Valve: Hunter ICV-B-AS SERIES
7. PVC Sch. 80 Nipple (Close).
8. PVC 40 ELL.
9. PVC 80 Nipple (Length as Required).
10. Brick (1 Of 4).
11. Sch. 80 Nipple (2-Inch Length, Hidden) And Sch. 40 ELL.
12. PVC Mainline Pipe.
13. PVC Sch. 40 Tee Or Ell.
14. PVC Sch. 40 Male Adapter.
15. 3.0 - Inch Minimum Depth Of 3/4" Washed Gravel.
16. PVC Lateral Pipe

D REMOTE CONTROL VALVE

NTS



DETAIL CALLOUT LEGEND

1. Turf Area.
2. Finished Grade.
3. 4" Pop-Up Spray Sprinkler: HunterMPR40-04 W MP Rotator Nozzle.
4. Hunter #437400 Drain Check Valve (Where Applicable).
5. 1/2" Marlex Street ELL.
6. 1/2" Sch. 80 Pipe Length As Required.
7. Sch. 40 PVC Tee Or ELL.
8. PVC Lateral Line (12" Min. Cover As Noted In Legend).

A TURF POP-UP SPRAY DETAIL

NTS

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STATE OF TEXAS
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Drawing Name
IRRIGATION DETAILS SHEET (2 OF 2)

SRA Project Number
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H8

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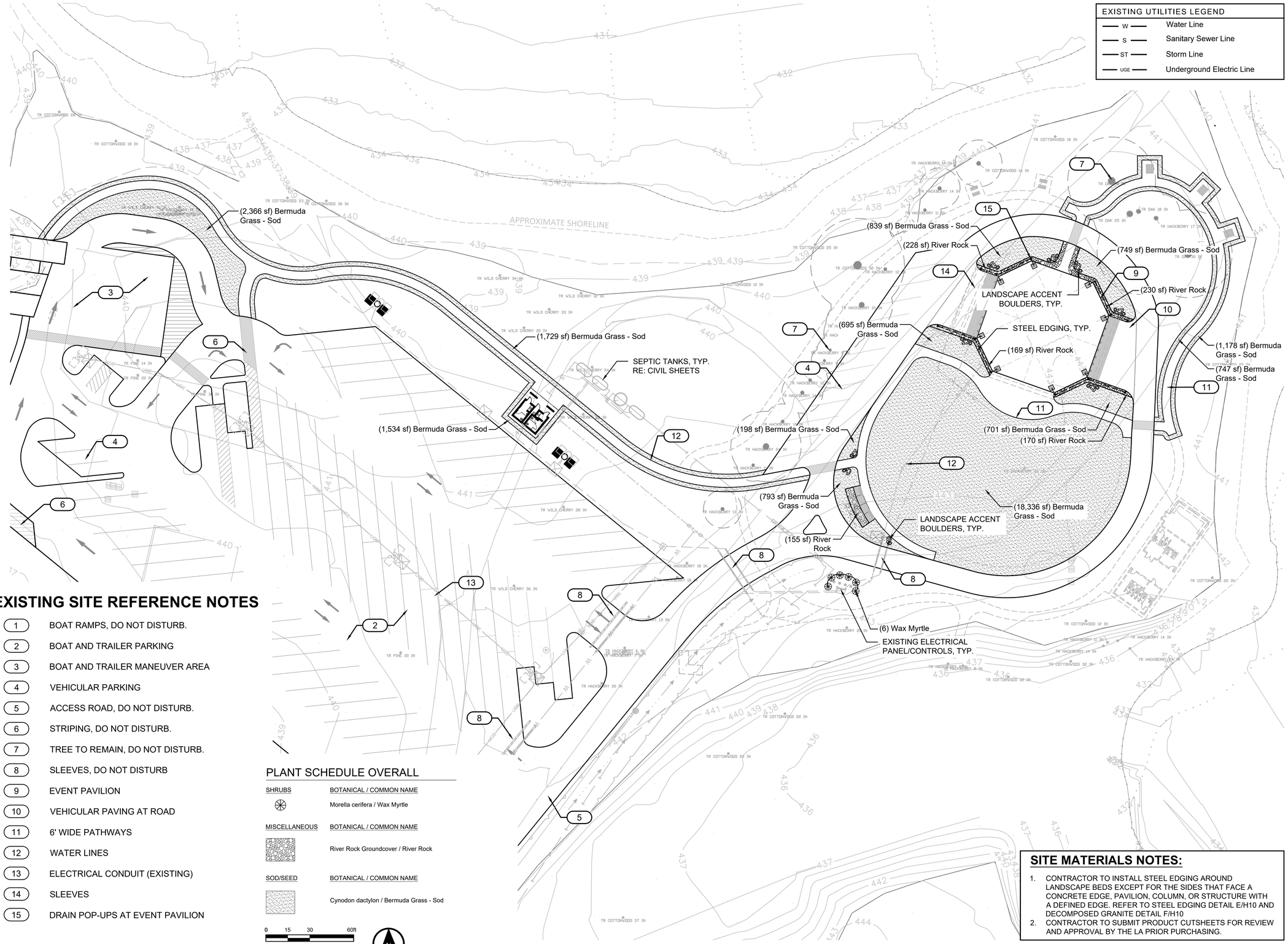

EXISTING SITE REFERENCE NOTES

1. BOAT RAMPS, DO NOT DISTURB.
2. BOAT AND TRAILER PARKING
3. BOAT AND TRAILER MANEUVER AREA
4. VEHICULAR PARKING
5. ACCESS ROAD, DO NOT DISTURB.
6. STRIPING, DO NOT DISTURB.
7. TREE TO REMAIN, DO NOT DISTURB.
8. SLEEVES, DO NOT DISTURB
9. EVENT PAVILION
10. VEHICULAR PAVING AT ROAD
11. 6' WIDE PATHWAYS
12. WATER LINES
13. ELECTRICAL CONDUIT (EXISTING)
14. SLEEVES
15. DRAIN POP-UPS AT EVENT PAVILION

PLANT SCHEDULE OVERALL

SHRUBS	BOTANICAL / COMMON NAME
	Morella cerifera / Wax Myrtle
MISCELLANEOUS	**BOTANICAL / COMMON NAME**
	River Rock Groundcover / River Rock
SOD/SEED	**BOTANICAL / COMMON NAME**
	Cynodon dactylon / Bermuda Grass - Sod

0 15 30 60ft

Drawing Scale is 1" = 30'
(Original size is 24 x 36")

SITE MATERIALS NOTES:

1. CONTRACTOR TO INSTALL STEEL EDGING AROUND LANDSCAPE BEDS EXCEPT FOR THE SIDES THAT FACE A CONCRETE EDGE, PAVILION, COLUMN, OR STRUCTURE WITH A DEFINED EDGE. REFER TO STEEL EDGING DETAIL E/H10 AND DECOMPOSED GRANITE DETAIL F/H10
2. CONTRACTOR TO SUBMIT PRODUCT CUTSHEETS FOR REVIEW AND APPROVAL BY THE LA PRIOR PURCHASING.

Issue

No.	Date	Description
1	09/08/2022	ISSUE FOR BID

REGISTERED LANDSCAPE ARCHITECT
STATE OF TEXAS
09.08.2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy. Suite 600 Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
LANDSCAPE LAYOUT

SRA Project Number
B883-1015C

Scale

Drawing Number
H9

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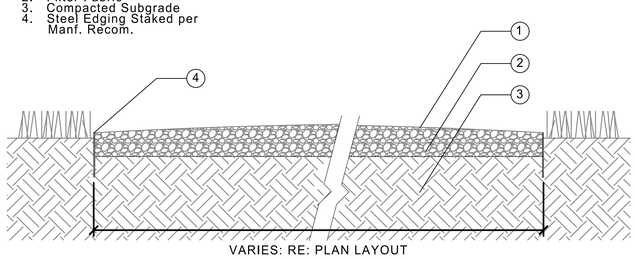
PLANT SCHEDULE

SHRUBS	CONT	HEIGHT	SPREAD	SPACING	QTY	REMARKS
Morella cerifera / Wax Myrtle	15g	3-4'	3'	60" o.c.	6	Container Grown; Well Rooted
MISCELLANEOUS	CONT	HEIGHT	SPREAD	SPACING	QTY	REMARKS
River Rock Groundcover / River Rock	SF	N/A	N/A		952 sf	4" Depth; Installed Complete, Refer to Details and Specifications
SOD/SEED	CONT	HEIGHT	SPREAD	SPACING	QTY	REMARKS
Cynodon dactylon / Bermuda Grass - Sod	SF	N/A	N/A		29,865 sf	Common Bermuda - Solid Sod

Detail Callout Legend:

1. 4" Thick River Rock
2. Filter Fabric
3. Compacted Subgrade
4. Steel Edging Staked per Manf. Recom.

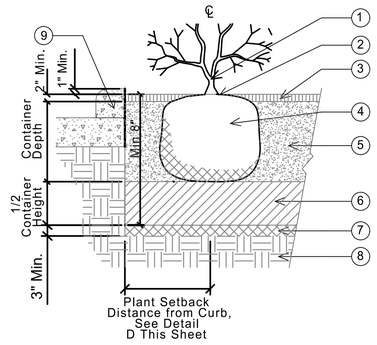


D RIVER ROCK DETAIL

NTS

Detail Callout Legend:

1. Plant.
2. Top Of Rootball To Be Flush With Grade.
3. 2" Shredded Hardwood Mulch.
4. Rootball.
5. Planting Mix Per Soils Analysis.
6. Compacted Prepared Planting Mix With Parent Material.
7. 3" Scarification Layer.
8. Undisturbed Soil.
9. Concrete Curb or sidewalk (If Applicable).



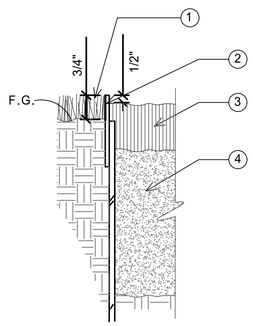
B SHRUB / GROUNDCOVER PLANTING DETAIL

NTS

Detail Callout Legend:

1. Turf.
2. 4" Tall Steel Edging W/3/4" Of Steel Edging To Be Above Finished Grade And Steel Stakes 36" O.C., Max. Alternate Sides Black Color.
3. River rock groundcover.
4. Compacted subgrade.
5. Contractor shall place steel edging at all shrub beds adjacent to turf, unless otherwise noted on plans.

NOTE:
Contractor shall place steel edging at all shrub beds adjacent to turf, unless otherwise noted on plans.

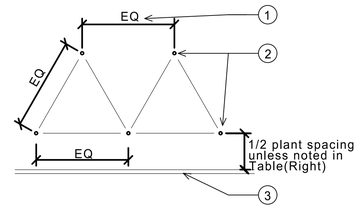


C STEEL EDGING DETAIL

NTS

SPACING CHART

Spacing	Plants required per sq/ft
6" O.C.	4.61
8" O.C.	2.60
9" O.C.	1.78
10" O.C.	1.66
12" O.C.	1.15
18" O.C.	.50
24" O.C.	.28
30" O.C.	.18
36" O.C.	.12
48" O.C.	.07



Detail Callout Legend:

1. Spacing As Noted.
2. Typical Plant Location.
3. Edge of planting (Steele edging, curb, walls...etc) as defined on plan See Detail F This Sheet For Steele Edge Planting Section

Common Name	Planting Distance
	From Curb

NOTE:
Contractor shall use this spacing chart to determine total Quantities of Shrubs and Groundcover. Contractor shall round total up to nearest whole plant. The Contractor shall be responsible for providing all plantings necessary to fill all planting areas shown on the plans, based upon plant spaces provided by the spacing diagram and chart. Any quantities given by the owner or landscape architect,or determined by the contractor shall be ***FOR REFERENCE ONLY.*** The contractor shall be responsible for all costs associated with underestimates.

A SHRUB / GROUNDCOVER SPACING

NTS

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STATE OF TEXAS
09.08.2022

LJA Engineering, Inc.
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MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
LANDSCAPE DETAILS

SRA Project Number
B883-1015C

Scale

Drawing Number
H10

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GENERAL CONSTRUCTION NOTES:

1. UTILITIES PRESENTED ON THIS DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATION IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 800-245-4545 AND LONE STAR ONE CALL AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.

2. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.

3. CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.

4. THE CONTRACTOR, ON BEHALF OF THE OWNER, IS TO OBTAIN ALL PERMITS REQUIRED, PRIOR TO STARTING CONSTRUCTION

5. GUIDELINES SET FORTH IN THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED, SHALL BE OBSERVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAG MEN, SIGNING, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION – BOTH DAY AND NIGHT.

6. THE WORK AREAS WITH DIRECT PUBLIC ACCESS SHALL BE BARRICADED AND ILLUMINATED DURING DARKNESS AND PERIODS OF INACTIVITY.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING AND PROTECTING ALL MATERIAL AND EQUIPMENT STORED ON THE JOB SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE OF MATERIALS IN A SAFE AND WORKMANLIKE MANNER TO PREVENT INJURIES, DURING AND AFTER WORKING HOURS, UNTIL PROJECT COMPLETION AND OWNER ACCEPTANCE.

8. ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.

9. ALL GEOTECHNICAL REPORTS FOR THIS PROJECT (IF ANY) ARE AVAILABLE FOR REFERENCE AT THE OFFICE OF THE ENGINEER.

10. CONTRACTOR SHALL PROTECT ALL TREES ADJACENT TO WORK AREA.

11. THERE WILL BE NO SEPARATE PAYMENT FOR WORK SHOWN ON THESE PLANS, UNLESS SPECIFICALLY ESTABLISHED IN THE BID SECTION OF THE CONTRACT DOCUMENTS. INCLUDE COST OF THIS WORK IN THE CONTRACT UNIT PRICE FOR ITEMS OF WHICH THIS WORK IS A COMPONENT OR INCIDENTAL.

12. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF EXISTING FACILITIES PRIOR TO CONSTRUCTION OF PROPOSED CLEARING AND GRUBBING. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF CONSTRUCTION OPERATIONS WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

13. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATELY MAINTAINED SANITARY FACILITIES.

14. CONTRACTOR SHALL KEEP CONSTRUCTION SITE FREE OF LITTER, I.E. LUNCH WRAPPERS, SODA CANS, ETC., ON A DAILY BASIS.

15. SITE SHALL BE ROOT RAKED AND SIGNED OFF BY ENGINEER BEFORE COMPLETION.

16. ALL COSTS (PERMIT FEES, HAULING FEES, DISPOSAL FEES, ETC.) ASSOCIATED WITH THE DISPOSAL OF ALL MATERIALS RESULTING FROM THE CLEARING AND GRUBBING SHALL BE RESPONSIBILITY OF THE CONTRACTOR.

17. CONTRACTOR IS TO COMPLY WITH ALL TCEQ OUTDOOR BURN REQUIRMENTS AS OUTLINED IN 30 TAC 111.201-221 AND TCEQ PUBLICATION RG-049, BURNING IN TEXAS.

18. THE LOCATION OF ALL UTILITIES (WATER, TELEPHONE, ELECTRICAL, GAS, ETC.) IS THE RESPONSIBILITY OF THE CONTRACTOR. THE UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT INTENDED TO SHOW THE EXACT LOCATION OF THE UTILITIES. THE CONTRACTOR SHALL GIVE EACH UTILITY OWNER THE REQUIRED NOTICE PRIOR TO BEGINNING CONSTRUCTION NEAR EACH UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESOLVING ANY DISPUTES WITH THE UTILITY OWNERS REGARDING DAMAGE TO THE UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO LOCATE ANY EXISTING UTILITIES. THE OWNER SHALL NOT BE RESPONSIBLE FOR DAMAGE TO EXISTING UTILITIES.

19. TRENCH PROTECTION IN ACCORDANCE WITH THE SPECIFICATIONS SHALL BE USED WHERE EXCAVATIONS ARE DEEPER THAN FIVE (5) FEET DEEP OR IF THE TRENCH IS LESS THAN (5) FEET DEEP AND IN A DANGEROUS CONDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHORING OF OPEN PITS AS REQUIRED BY OSHA AND THE SPECIFICATIONS.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ANY PROPERTY MARKERS DISTURBED DURING HIS OPERATIONS. THE CONTRACTOR SHALL BE REQUIRED TO HIRE A REGISTERED PROFESSIONAL LAND SURVEYOR TO RESTORE ANY DISTURBED PROPERTY MARKERS.

21. THE CONTRACTOR SHALL KEEP ALL WORK SITES IN A NEAT, ORDERLY AND SAFE MANNER DURING THE COURSE OF THE CONSTRUCTION. ALL EXCESS MATERIALS SHALL BE DISPOSED OF ON A REGULAR BASIS OR WHENEVER, IN THE OPINION OF THE ENGINEER, THEY CONSTITUTE A HAZARD OR NUISANCE. DISPOSAL OF EXCESS SOILS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS. ALL WORK AREAS AND SURFACES DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER.

22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING THE TEMPORARY BENCHMARK AND THE CONTROL POINTS PROVIDED ON THE PLANS. ANY SUBSEQUENT CONTROL POINTS NECESSARY DUE TO DEMOLITION OF EXISTING STRUCTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

23. THE CONTRACTOR IS RESPONSIBLE FOR PURCHASING ALL MATERIALS AND EQUIPMENT TO BE SUPPLIED IN THIS PROJECT.

24. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS AND RUBBISH REMOVED FROM THE PROJECT SITE AT AN OFF SITE DISPOSAL AREA IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS. ON SITE BURNING WILL NOT BE ALLOWED.

25. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS OF THE JOB SITE.

26. THE CONTRACTOR SHALL CONFINE HIS OPERATIONS TO THE INDICATED EASEMENTS AND RIGHTS OF WAYS OR WITHIN CONSTRUCTION LIMITS IF INDICATED.

27. ALL WORK AREAS AND SURFACES DISTURBED BY THE CONTRACTOR SHALL BE CLEANED AND RESTORED TO THEIR ORIGINAL CONDITION PRIOR TO THE CONTRACT BEING CONSIDERED COMPLETE. ALL EXCESS SOILS AND MATERIALS SHALL BE REMOVED, LITTER AND TEMPORARY TRASH DISPOSAL FACILITIES SHALL BE REMOVED, ALL MATERIALS DESIGNATED TO BE SALVAGED TO THE OWNER SHALL BE DEPOSITED IN AN OWNER APPROVED SITE, AND ALL SURFACE RESTORATION, INCLUDING SEEDING SHALL BE COMPLETED.

28. ALL DISTURBED AREAS OF THE PROJECT SHALL BE SEEDED AFTER SURFACE RESTORATION IN ACCORDANCE WITH THE SPECIFICATIONS.

29. EROSION CONTROL WILL BE SUBSIDIARY TO OTHER ITEMS.

30. THE SLOPES OF ANY DITCHES OR ANY SURFACES THAT ARE DISTURBED SHALL BE RETURNED TO THEIR ORIGINAL CONDITION OR BETTER.

31. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ALL ROADS FREE OF DIRT, DEBRIS, OR ANY OTHER NUISANCE CONDITIONS CAUSED BY HIS ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE TO TXDOT AND COUNTY ROADS RESULTING FROM HIS OPERATIONS.

32. IN THE EVENT THAT ANY PORTIONS OF THE CONDITIONS IN THE CONTRACT DOCUMENTS AND SPECIFICATIONS CONFLICT WITH THE CONSTRUCTION PLANS THE MORE STRICT REQUIREMENT SHALL BE FOLLOWED.

33. ALL WORK AREAS, SURFACES, PAVEMENT, AND DITCHES DISTURBED BY THE CONTRACTOR SHALL BE CLEANED AND RESTORED TO THEIR ORIGINAL CONDITION OR BETTER IN THE TIME FRAME ESTABLISHED IN THE SPECIFICATIONS. THE CONTRACTOR SHALL ENSURE THAT HIS OPERATIONS DO NOT IMPEDE DRAINAGE AND THAT ANY DRAINAGE WAYS ARE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING TEMPORARY PROVISIONS FOR DRAINAGE AREAS IMPEDED BY HIS OPERATIONS WHEN NECESSARY IN THE OPINION OF THE ENGINEER. ALL DRAINAGE STRUCTURES AND CHANNELS SHALL BE CLEANED AND OUTFALL CHANNELS UNOBSTRUCTED ON A DAILY BASIS.

DRY UTILITY NOTES:

WARNING: OVERHEAD ELECTRICAL FACILITIES

1. OVERHEAD LINES MAY EXIST ON THE PROPERTY. WE HAVE NOT ATTEMPTED TO MARK THOSE LINES SINCE THEY ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION.

2. TEXAS LAW, SECTION 752, HEALTH AND SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN SIX FEET (6') OF LIVE OVERHEAD HIGH VOLTAGE LINES. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS CARRIES BOTH CRIMINAL AND CIVIL LIABILITY.

Issue

No.	Date	Description
1	09/08/2022	ISSUE FOR BID

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GREGORY J. PATCH, PE
TEXAS P.E. #89063
AUGUST 26, 2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy.
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

PROJECT TEAM

Owner	**Sabine River Authority**
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Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
GENERAL NOTES

SRA Project Number
B883-1015C

Scale
NO SCALE

Drawing Number
C1

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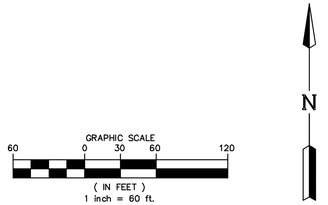

LEGEND

- EXISTING ELEVATION POINTS — x67.75
- EXISTING NATURAL GROUND ELEVATION — +NG98.00
- EXISTING CONCRETE ELEVATION — +CE98.10
- EXISTING GRADE BREAK ELEVATION — +GB98.10
- EXISTING DITCH HIGH BANK ELEVATION — +HB97.75
- EXISTING DITCH TOE ELEVATION — +TE96.75
- EXISTING DITCH FLOW LINE — +FL95.50
- EXISTING TOP OF CURB ELEVATION — +TC98.10
- EXISTING GUTTER ELEVATION — +G97.75
- EXISTING POWER POLE
- EXISTING WATER METER
- EXISTING SPRINKLER HEAD
- EXISTING FIRE HYDRANT
- EXISTING SIGN POST
- EXISTING SANITARY CLEAN OUT
- EXISTING SEPTIC TANK
- EXISTING TREE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING UNDERGROUND TELEPHONE CABLE
- EXISTING FENCE
- EXISTING DITCH HIGH BANK
- EXISTING DITCH CENTER LINE
- SANITARY SEWER LINES 2" AND LARGER SHALL BE SDR 26 PVC, PER ASTM D2241
- SANITARY SEWER LINES 1½" AND SMALLER SHALL BE PVC SCHEDULE 40
- PROPOSED SANITARY SLEEVE
- WATER LINES 4" AND LARGER SHALL BE PVC PER AWWA C900, 3" AND SMALLER WATER LINES SHALL BE PVC SCHEDULE 40.

GENERAL NOTES:

1. ALL EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY BASED ON SURVEY RECEIVED FROM LJA SURVEYING.
2. CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING STORM, SANITARY AND WATER FACILITIES AND NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES FOUND.
3. THE SABINE RIVER AUTHORITY IS TO BE NOTIFIED 48 HOURS PRIOR TO WATER AND SANITARY SEWER TAPS ARE TO BE MADE. AN AUTHORIZED SRA REPRESENTATIVE MUST INSPECT SAID TAPS.
4. OWNER TO OBTAIN ALL PERMITS REQUIRED BY THE SABINE RIVER AUTHORITY PRIOR TO STARTING CONSTRUCTION OF UTILITY AND/OR CULVERTS WITHIN THE SABINE RIVER AUTHORITY, WILLIS POINT, AND VAN ZANDT COUNTY RIGHT OF WAY.
5. SANITARY SEWER LINES CROSSING WATER LINES ARE TO BE CASED (C-900 OR DUCTILE IRON) TO SRA CITY SPECIFICATIONS.
6. CONTRACTOR TO MAINTAIN A MINIMUM OF 9' SEPARATION BETWEEN WATER AND SANITARY SEWER PER TCEQ STANDARD.

SEWER NOTES:

1. PROVIDE SANITARY SEWER STUB 5' FROM BUILDING.
2. CONTRACTOR TO INSTALL ON SITE SEWAGE SYSTEM. SEE DETAILS ON SHEET C4.
3. CENTER 1-FULL SECTION OF SANITARY SEWER PIPE SDR-26 PVC, 160 PSI RATED, CENTERED BELOW WATER LINE.
4. PROPOSED SPRAY FIELD AREA.

SEPTIC TANK CALCULATIONS:

250 PERSONS PER DAY * 2 GAL./PERSON = 500 GPD

500 GPD / 0.041 = 12,195 SQ FT REQUIRED

SHOWN SPRAY AREA = 12,864 SQ FT (4-SPRAY HEADS X 32'R EACH)

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TEXAS P.E. #89063
AUGUST 26, 2022

PROFESSIONAL ENGINEER (P.E.) SEAL FOR GRADING PURPOSES ONLY. WASTE WATER AND ON SITE SANITARY FACILITY DESIGNED BY JENNIFER LYN MEINERS REGISTERED PROFESSIONAL SANITARIAN (R.S.) NO. 3234

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy. Phone 713.953.5200
Suite 600 Fax 713.953.5026
Houston, Texas 77042 FRN - F-1386

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KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

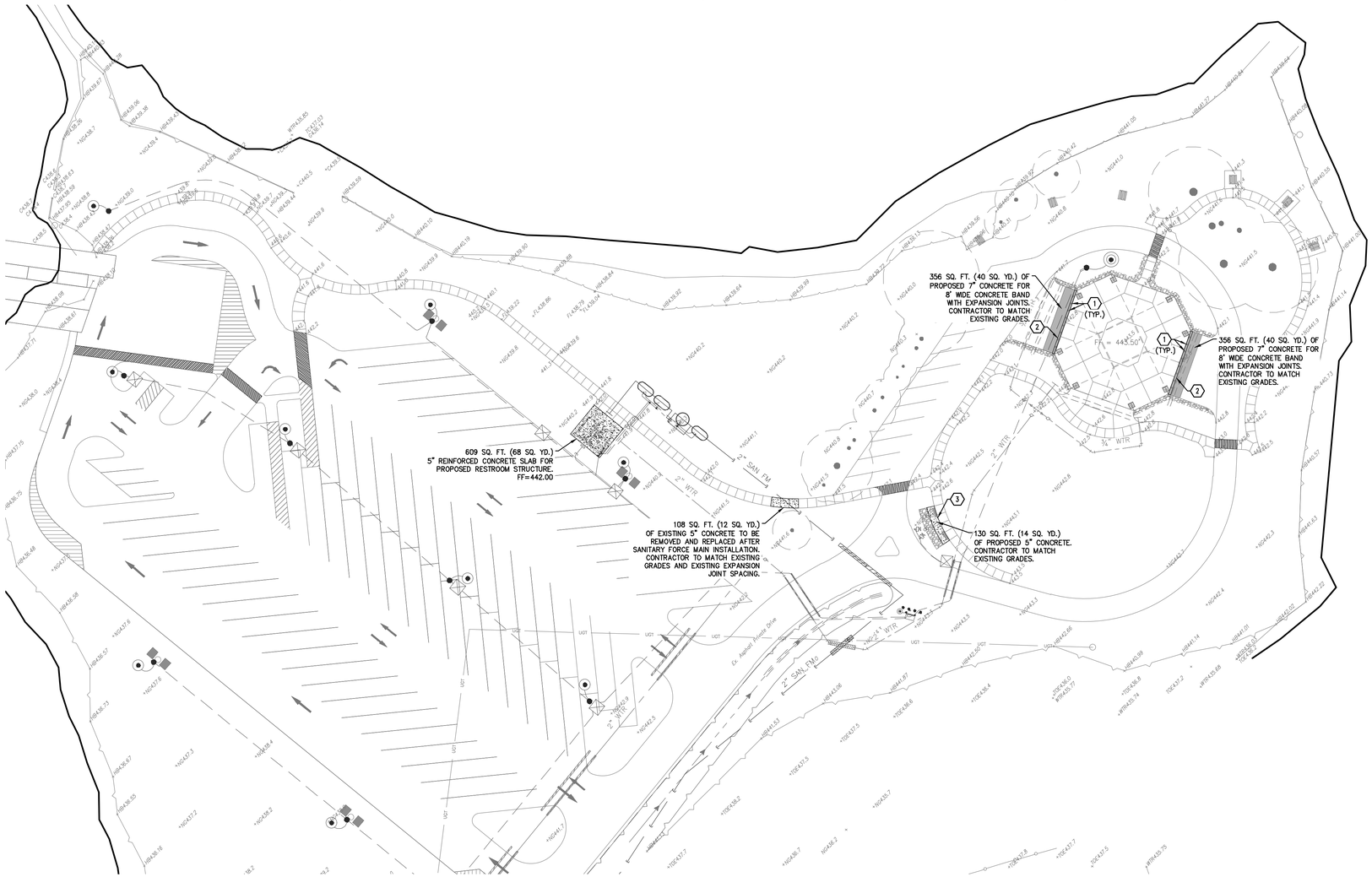
Drawing Name
UTILITY PLAN

SRA Project Number
B883-1015C

Scale
1" = 60'

Drawing Number
C2

4/20/2021 3:14:05 PM



GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.

N

LEGEND

- EXISTING ELEVATION POINTS — 451.75
- EXISTING NATURAL GROUND ELEVATION — x6458.00
- EXISTING CONCRETE ELEVATION — x6458.10
- EXISTING GRADE BREAK ELEVATION — x6458.10
- EXISTING DITCH HIGH BANK ELEVATION — x6457.75
- EXISTING DITCH TOE ELEVATION — x7256.75
- EXISTING DITCH FLOW LINE — x7245.50
- EXISTING TOP OF CURB ELEVATION — x7258.10
- EXISTING GUTTER ELEVATION — x6457.75
- EXISTING POWER POLE
- EXISTING WATER METER
- EXISTING SPRINKLER HEAD
- EXISTING FIRE HYDRANT
- EXISTING SIGN POST
- EXISTING SANITARY CLEAN OUT
- EXISTING SEPTIC TANK — SEPTIC
- EXISTING TREE
- EXISTING OVERHEAD ELECTRIC LINE — OHP
- EXISTING UNDERGROUND TELEPHONE CABLE — UGT
- EXISTING FENCE
- EXISTING DITCH HIGH BANK
- EXISTING DITCH CENTER LINE
- PROPOSED 5" CONCRETE PAVEMENT
- PROPOSED 7" CONCRETE PAVEMENT

GENERAL NOTES:

1. ALL PROPOSED ELEVATIONS NOTED ARE TO FINISHED PAVEMENT GRADE. FOR TOP OF CURB GRADE, WHERE APPLICABLE, ADD 6"
2. CONTRACTOR SHALL MAINTAIN SITE DRAINAGE AT ALL TIMES.
3. ALL MATERIALS FROM DEMOLITION/REMOVALS AS WELL AS EXCESS MATERIALS FROM THE EXCAVATIONS SHALL BECOME THE PROPERTY OF THE CONTRACTOR WHO SHALL DISPOSE OFF-SITE IN A LAWFUL MANNER.
4. GRADE PAVING UNIFORMLY BETWEEN INDICATED ELEVATIONS. ADJUST ELEVATIONS AS DIRECTED BY THE ENGINEER AND AS REQUIRED TO ACHIEVE POSITIVE DRAINAGE AND PLEASING APPEARANCE THROUGHOUT.
5. CONTRACTOR TO ENSURE MAX 3:1 SLOPES ON ALL PROPOSED DITCHES AND REGRADING OF DITCHES. ENSURE MAX 3:1. SLOPE TO EXISTING GRADE.
6. CONTRACTOR TO ENSURE THAT ALL SIDEWALKS MEET ADA DESIGN STANDARDS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
7. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 3500 PSI AS REQUIRED PER GEOTECHNICAL REPORT.

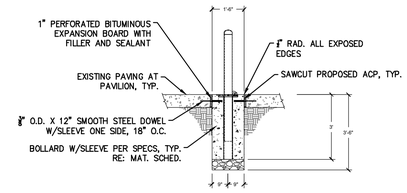
GRADING NOTES:

(1) 16-REMOVABLE CONCRETE BOLLARDS TO BE CONSTRUCTED PER THE DETAILS BELOW.

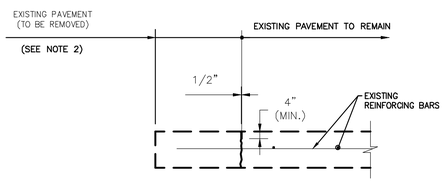
(2) PROPOSED SAWCUT AND EXPANSION JOINTS TO BE CONSTRUCTED PER THE REMOVABLE BOLLARD AND DOWEL EXPANSION JOINT DETAILS BELOW.

(3) PROPOSED DOWEL EXPANSION JOINT TO BE CONSTRUCTED PER THE DETAIL BELOW.

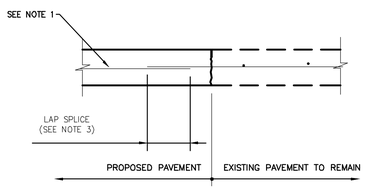
REMOVABLE BOLLARD TYPICAL DETAIL:



CONCRETE TO CONCRETE STANDARD PAVEMENT TIE-IN:



STEP 1 DEMOLITION OF EXISTING PAVEMENT

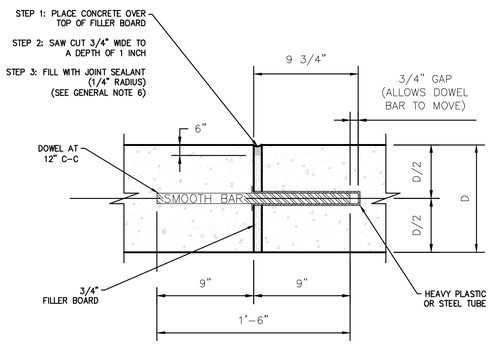


STEP 2 CONSTRUCTION OF NEW PAVEMENT

NOTES FOR STANDARD PAVEMENT TIE-IN:

1. REINFORCING CENTERED IN PROPOSED PAVEMENT, 2" CLEAR AT EDGES.
2. SAWCUT 2" DEEP MINIMUM AND REMOVE 2'-0" EXISTING PAVEMENT OR PAVEMENT WITH CURB. EXPOSE AND CLEAN EXISTING REINFORCING BAR.
3. 24 BAR DIAMETER LAP SPLICE OR WELD, IF DIRECTED.
4. IF NO EXPOSED REINFORCING STEEL EXISTS, HORIZONTAL DOWELS SHALL BE GRADE 60, 30" LONG DRILLED AND EMBEDDED 15" INTO THE CENTER OF THE EXISTING CONCRETE SLAB WITH EPOXY OR APPROVED EQUAL. SIZE OF DOWEL BARS SHALL CONFORM TO CONCRETE CONSTRUCTION DETAIL ON THIS SHEET. DOWELS SHALL BE PLACED ACCORDING TO CONCRETE CONSTRUCTION DETAIL.
5. ALTERNATIVELY, THE CONTRACTOR MAY CHOOSE TO USE FULL DEPTH SAWCUT WITH DRILLED IN DOWELS. IF THE CONTRACTOR SO CHOOSES, THE SAWCUTTING AND DOWELS WILL BE AT HIS OWN EXPENSE (THESE ITEMS WILL ONLY BE PAID FOR IF SRA REQUIRES THE FULL DEPTH SAWCUT AND DOWELS).

DOWEL TYPE EXPANSION JOINT:

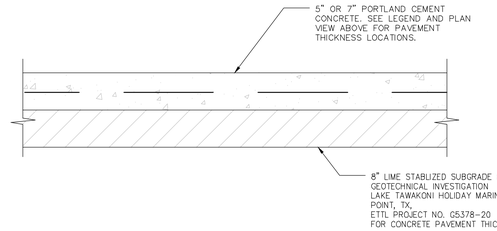


NOTES FOR DOWEL EXPANSION JOINT:

1. EXPANSION JOINT SHALL BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 60 FEET.
2. CENTER DOWEL HORIZONTALLY ON JOINT.
3. EXPANSION JOINT BARS SHALL BE HELD PARALLEL TO THE FINISHED CONCRETE SURFACE.

CONCRETE CONSTRUCTION DETAIL:

REINFORCING TABLE		
CONCRETE THICKNESS	REIN. BAR	SPACING 2" CLEAR FROM TOP OF SLAB
5"	#3, #4 MAX	24"
7"	#3, #4 MAX	18"



Issue

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1	09/08/2022	ISSUE FOR BID

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GREGORY J. PATCH, PE
TEXAS P.E. #89063
AUGUST 26, 2022

LJA Engineering, Inc.
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PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
GRADING & PAVING PLAN

SRA Project Number
B883-1015C

Scale
1" = 40'

Drawing Number
C3

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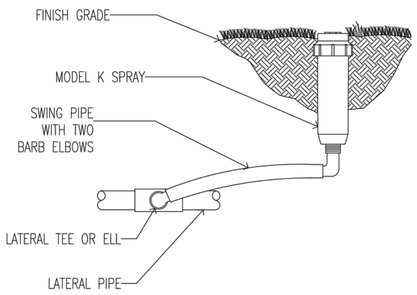


K SPRAY: 3", 4" AND 6"

IRRIGATION INSTALLATION DETAIL

GENERAL NOTES

1. PRIOR TO CONSTRUCTION OF THIS SYSTEM, AN ON-SITE SEWAGE FACILITY LICENSE MUST BE OBTAINED FROM THE LOCAL REGULATORY AUTHORITY. IF LOCAL REGULATORY AUTHORITY HAS NO INSPECTION, THEN THE STATE AUTHORITY MUST BE CONTACTED. THE LICENSING AUTHORITY SHALL BE NOTIFIED FOR INSPECTION PRIOR TO THE COVERING OF ANY PART OF THE SYSTEM.

2. THIS SYSTEM SHALL BE INSTALLED BY A REGISTERED INSTALLER OF ON-SITE SEWAGE FACILITIES AS REQUIRED BY ARTICLE 4477-7E, VERNON'S TEXAS CIVIL STATUTES. FOLLOW THIS PLAN AND THE "CONSTRUCTION STANDARDS" AS GUIDELINES FOR THE CONSTRUCTION OF THIS SYSTEM.

3. THE MATERIALS USED SHALL BE IN ACCORDANCE WITH THE RULES OF THE "CONSTRUCTION STANDARDS FOR SEWAGE FACILITIES".

4. IF THIS SYSTEM IS INSTALLED BY THE STATE RULES, IT SHOULD NOT PRESENT A HAZARD TO PUBLIC HEALTH OR THREATEN ADJACENT WATER WELLS. THE INSTALLER IS RESPONSIBLE FOR VERIFYING WELL DISTANCES BEFORE CONSTRUCTION.

5. ANYTHING PERTAINING TO THIS JOB THAT IS NOT CLEAR OR SPECIFICALLY COVERED IS COVERED BY THE STATE RULES.

6. THE SITE SHALL BE GRADED TO DRAIN BEFORE CONSTRUCTION OF THIS SEWER SYSTEM. AFTER THE SYSTEM IS INSTALLED, IT SHOULD BE BACKFILLED SO IT WILL DRAIN PROPERLY.

7. IT IS THE INSTALLER'S RESPONSIBILITY TO NOTIFY THE DESIGNER AND LOCAL AUTHORITY OF DISCREPANCIES BETWEEN THE SITE AND THE PLAN.

8. IF THE PROPERTY IS IN THE 100 YEAR FLOODPLAIN, CONTACT THE LOCAL AUTHORITY FOR CONSTRUCTION RULES AND REGULATIONS.

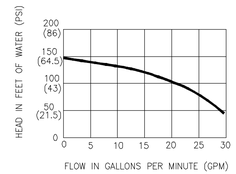
9. ANY ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE, CURRENT EDITION.

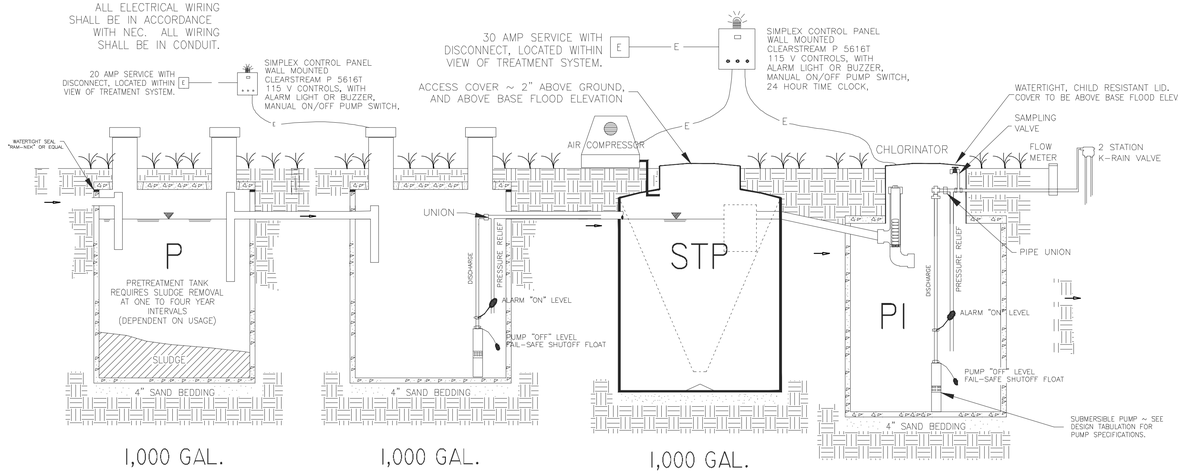
10. WATER SOFTENERS, SWIMMING POOL BACKWASH, AIR CONDITIONER CONDENSATION, AND ANY OTHER WATER THAT IS CLEARLY NOT SEWER MUST BE KEPT FROM THE SEWER SYSTEM.

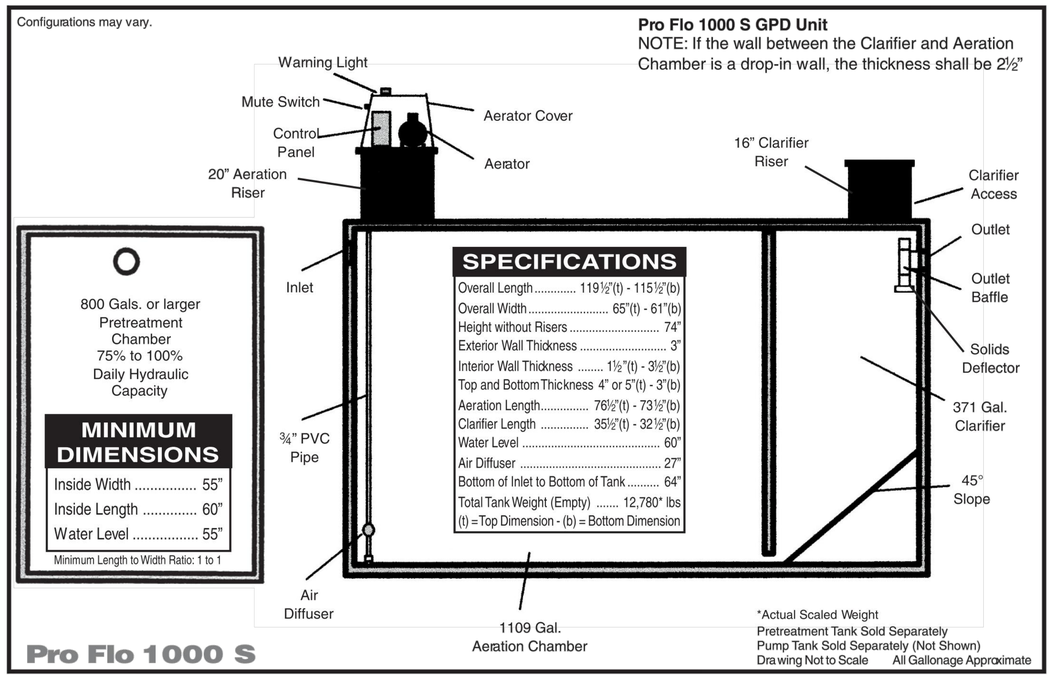
11. PLUMBING STUB OUTS SHALL BE KEPT AS SHALLOW AS POSSIBLE AND NOT EXCEED 12" OR A LIFT STATION MAY BE REQUIRED.

12. OWNER SHALL MARK OR UNCOVER PERSONAL UTILITIES SUCH AS WATER, ELECTRICAL, GAS, ETC. CONTRACTOR SHALL NOTIFY UTILITY COORDINATING COMMITTEE, 1-800-669-8344 AND/OR TEXAS ONE CALL SYSTEM, 1-800-245-4545, WELL IN ADVANCE OF CONSTRUCTION FOR THE PURPOSE OF LOCATING UNDERGROUND LINES. AUTHORITY: OSHA RULE 1926.651.

SERIES P20 4" SUBMERSIBLE PUMP







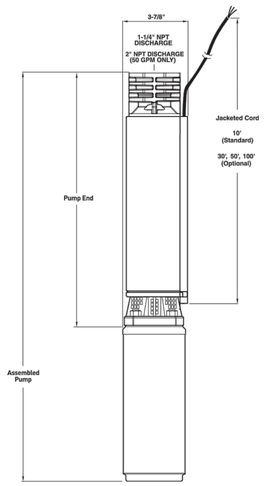
Pro Flo 1000 S System Diagram

SYSTEM OWNER'S MANUAL

STA-RITE® ST.E.P Plus Series

4" high-head multi-stage submersible effluent pumps

OUTLINE DIMENSIONS



Dimensions (in inches) are for estimating purposes only.

S11411WS

STA-RITE® ST.E.P Plus Series

4" high-head multi-stage submersible effluent pumps

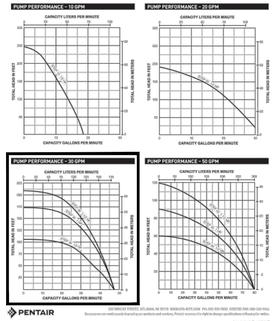
ORDERING INFORMATION

CATALOG NUMBER	HP	STAGES	MAX. LOAD AMPS	VOLTS	PHASE/ CYCLES	CORD LENGTH	PUMP END LENGTH	PUMP + MOTOR LENGTH
STEP10	1/3	7	12.0	115	1/60	10'	13"	31-1/2"
STEP10075FT-05121	1/2	7	12.0	115	1/60	100'	13"	31-1/2"
STEP10025FT	1/3	7	12.0	115	1/60	30'	13"	31-1/2"
STEP10050FT	1/2	7	12.0	115	1/60	50'	13"	31-1/2"
STEP20	1/2	5	12.0	115	1/60	10'	13-1/4"	29-1/4"
STEP20050FT	1/3	5	12.0	115	1/60	50'	13-1/4"	29-1/4"
STEP20050FT	1/2	5	12.0	115	1/60	50'	13-1/4"	33-1/4"
STEP30-05121	1/3	3	9.5	115	1/60	10'	11-1/2"	23-1/2"
STEP30050-05121	1/3	3	12.0	115	1/60	50'	11-1/2"	23-1/2"
STEP30050-05121	1/2	3	12.0	115	1/60	50'	11-1/2"	23-1/2"
STEP30-05231	1/3	3	4.7	230	1/60	10'	11-1/2"	23-1/2"
STEP30100-05221	1/3	3	4.7	230	1/60	100'	11-1/2"	23-1/2"
STEP30050-05231	1/3	3	4.7	230	1/60	50'	11-1/2"	23-1/2"
STEP30050-05221	1/3	3	4.7	230	1/60	50'	11-1/2"	23-1/2"
STEP30-10321	1	6	9.1	230	1/60	10'	14"	27-1/2"
STEP30100-10221	1	6	9.1	230	1/60	100'	14"	27-1/2"
STEP30050-10221	1	6	9.1	230	1/60	50'	14"	27-1/2"
STEP30050-10231	1	6	9.1	230	1/60	50'	14"	27-1/2"
STEP50-15321	1-1/2	6	11.8	230	1/60	10'	15-1/4"	30-1/4"
STEP50100-15221	1-1/2	6	11.8	230	1/60	100'	15-1/4"	30-1/4"
STEP50050-15221	1-1/2	6	11.8	230	1/60	50'	15-1/4"	30-1/4"
STEP50050-15231	1-1/2	6	11.8	230	1/60	50'	15-1/4"	30-1/4"
STEP50-05131	1/3	2	9.1	115	1/60	10'	11-1/4"	21-1/2"
STEP50-05231	1/3	2	9.1	230	1/60	10'	11-1/4"	21-1/2"
STEP50-15321	1	3	9.1	230	1/60	10'	13-1/4"	24-3/4"
STEP50100FT-15221	1	3	9.1	230	1/60	100'	13-1/4"	24-3/4"
STEP50050FT-15221	1	3	9.1	230	1/60	50'	13-1/4"	24-3/4"
STEP50050FT-15231	1	3	9.1	230	1/60	50'	13-1/4"	24-3/4"
STEP50-15321	1-1/2	4	11.8	230	1/60	10'	15-1/4"	28-1/4"
STEP50100FT-15221	1-1/2	4	11.8	230	1/60	100'	15-1/4"	28-1/4"
STEP50050FT-15221	1-1/2	4	11.8	230	1/60	50'	15-1/4"	28-1/4"
STEP50050FT-15231	1-1/2	4	11.8	230	1/60	50'	15-1/4"	28-1/4"

S11411WS

STA-RITE® ST.E.P Plus Series

4" high-head multi-stage submersible effluent pumps



PENTAIR

S11411WS (1/17/17)

Issue

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GREGORY J. PATCH, PE
TEXAS P.E. #89063
AUGUST 26, 2022

PROFESSIONAL ENGINEER (P.E.) SEAL FOR GRADING PURPOSES ONLY. WASTE WATER AND ON SITE SANITARY FACILITY DESIGNED BY JENNIFER LYN MEINERS REGISTERED PROFESSIONAL SANITARIAN (R.S.) NO. 3234

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy. Suite 600 Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

PROJECT TEAM

Owner	**Sabine River Authority**
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Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
ON-SITE SEWAGE FACILITY DETAILS

SRA Project Number
B883-1015C

Scale
NO SCALE

Drawing Number
C4

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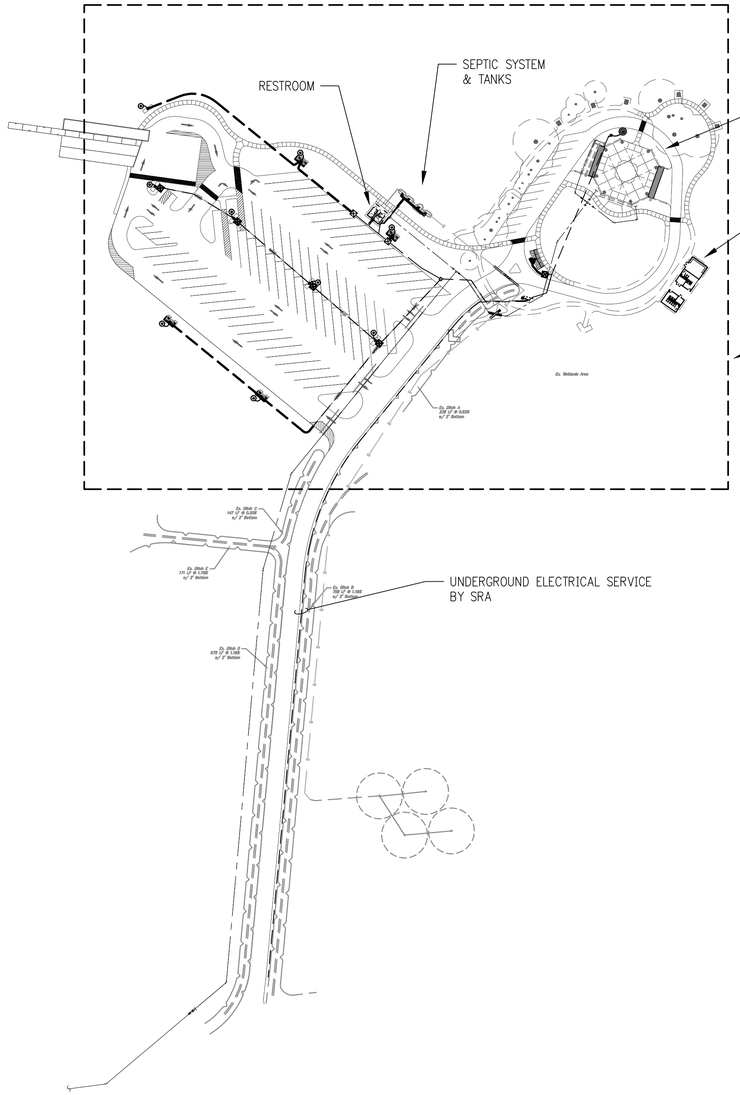

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STATE OF TEXAS
FRANK J. DILLARD
39983
REGISTERED
PROFESSIONAL ENGINEER
09/08/2022

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Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
ELECTRICAL OVERALL CONDUIT PLANS

SRA Project Number
B883-1015C

Scale
1" = 100'

Drawing Number
E1

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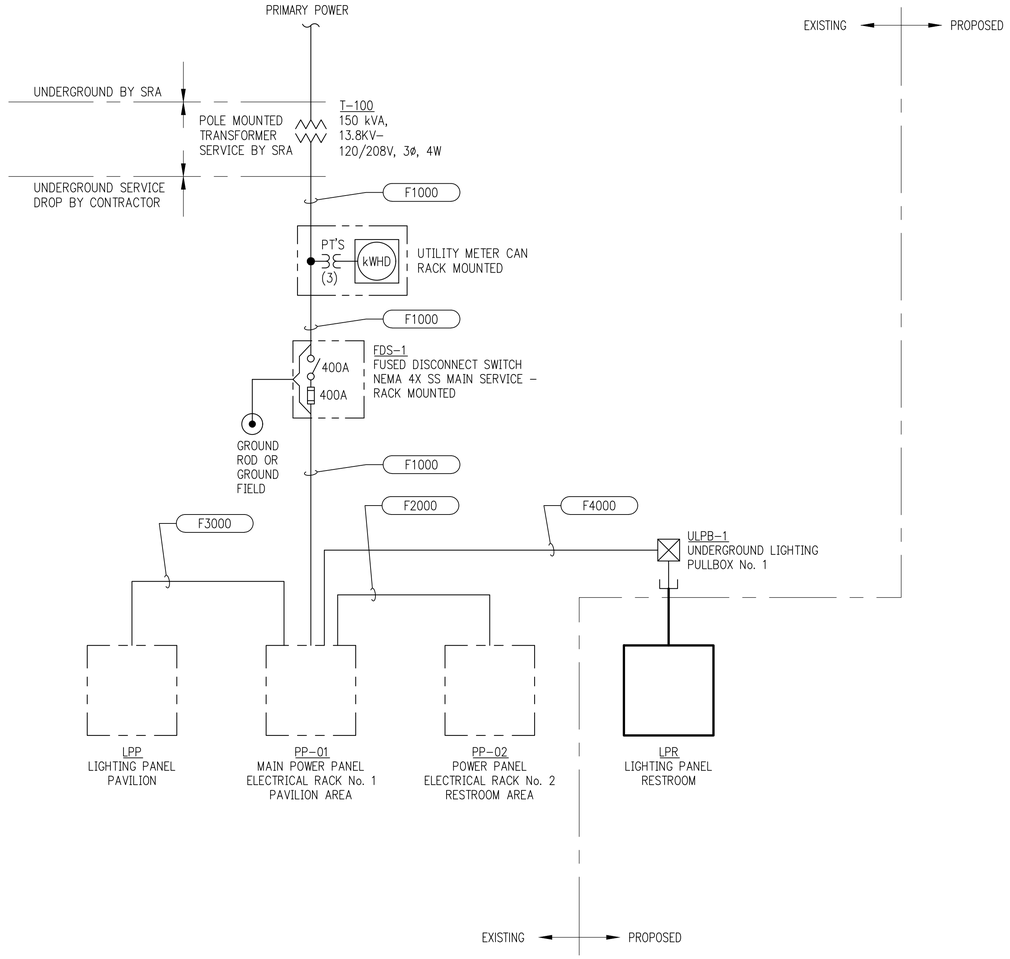

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Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
ELECTRICAL ONELINE DIAGRAM

SRA Project Number
B883-1015C

Scale
NONE

Drawing Number
E2

4/20/2021 3:14:05 PM

NAME:	**PP-01 MAIN POWER PANEL SCHEDULE (BY OTHERS)**		NEMA: 3R			LOCATION:	**ELECTRICAL RACK No. 1 (PAVILION AREA)**		
SOURCE:	T-100 TRANSFORMER		PHASE: 3			WIRE:	4W		
VOLTS:	120/208V		MCB:	400A		BUS:	400A		
CKT #	BKR AMP	DESIGNATION	VA	LOAD ϕA VA	LOAD ϕB VA	LOAD ϕC VA	VA	DESIGNATION	BKR AMP	CKT #
1	100	"LPR" RESTROOM LIGHTING PANEL	10800.00	15800.00			5000.00	"LPP" LIGHTING PANEL PAVILION	100	2
3			6000.00		12600.00		6600.00			4
5			6300.00			14700.00	8400.00			6
7	150	"PP-02" POWER PANEL RESTROOM AREA	13205.00	14094.00			889.00	LIGHT POLE No. 1 (FUTURE), 2 (FUTURE), 3 (FUTURE), 4 (FUTURE), 5 (PROPOSED), AND 6 (PROPOSED)	30	8
9			10805.00		11694.00		889.00			10
11			7205.00			8094.00	889.00			12
13	20	FLAG POLES FLOODLIGHT No. 1A (FUTURE), 1B (FUTURE), 2A (PROPOSED), 2B (PROPOSED), 3A (FUTURE), 3B (FUTURE)	200.00	645.00			445.00	LIGHT POLE No. 7 (PROPOSED), 8 (PROPOSED), AND 9 (PROPOSED)	30	14
15			200.00		645.00		445.00			16
17			200.00			645.00	445.00			18
19	20	LIGHTING CONTACTOR CONTROLS	50.00	50.00			0.00	SPARE	100	20
21	20	SPARE	0.00		0.00		0.00			22
23	20	SPARE	0.00			0.00	0.00			24
25	20	SPARE	0.00	0.00			0.00	SPARE	20	26
27	--	SPACE	0.00		0.00		0.00	SPARE	20	28
29	--	SPACE	0.00			0.00	0.00	SPARE	20	30
31	--	SPACE	0.00	0.00			0.00	SPARE	20	32
33	--	SPACE	0.00		0.00		0.00	SPACE	--	34
35	--	SPACE	0.00			0.00	0.00	SPACE	--	36
37	--	SPACE	0.00	0.00			0.00	SPACE	--	38
39	--	SPACE	0.00		0.00		0.00	SPACE	--	40
41	--	SPACE	0.00			0.00	0.00	SPACE	--	42
NOTES: 1.				30589.00	24939.00	23439.00	TOTAL KNOWN VA			
				30.59	24.94	23.44	TOTAL KNOWN kVA PER PHASE			
				78.97			TOTAL KNOWN kVA			

NAME:	**PP-02 POWER PANEL SCHEDULE (BY OTHERS)**		NEMA: 3R			LOCATION:	**ELECTRICAL RACK No. 2 (RESTROOM AREA)**		
SOURCE:	PP-01 POWER PANEL		PHASE: 3			WIRE:	4W		
VOLTS:	120/208V		MCB:	150A		BUS:	225A		
CKT #	BKR AMP	DESIGNATION	VA	LOAD ϕA VA	LOAD ϕB VA	LOAD ϕC VA	VA	DESIGNATION	BKR AMP	CKT #
1	30	DOSING TANK CONTROL PANEL	2400.00	3600.00			1200.00	PRETREATMENT TANK CONTROL PANEL	20	2
3	40	IRRIGATION TANK CONTROL PANEL	3600.00		3600.00		0.00	SPARE	20	4
5			3600.00			4800.00	1200.00	TREATMENT TANK CONTROL PANEL	20	6
7	20	SPARE	0.00	0.00			0.00	SPARE	20	8
9	20	SPARE	0.00		0.00		0.00	SPARE	20	10
11	20	SPARE	0.00			0.00	0.00	SPARE	20	12
13	20	SPARE	0.00	0.00			0.00	SPARE	20	14
15	20	SPARE	0.00		0.00		0.00	SPARE	20	16
17	20	SPARE	0.00			0.00	0.00	SPARE	20	18
19	20	SPARE	0.00	0.00			0.00	SPARE	20	20
21	--	SPACE	0.00		0.00		0.00	SPACE	--	22
23	--	SPACE	0.00			0.00	0.00	SPACE	--	24
NOTES: 1.				3600.00	3600.00	4800.00	TOTAL KNOWN VA			
				3.60	3.60	4.80	TOTAL KNOWN kVA PER PHASE			
				12.00			TOTAL KNOWN kVA			

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09/08/2022

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Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

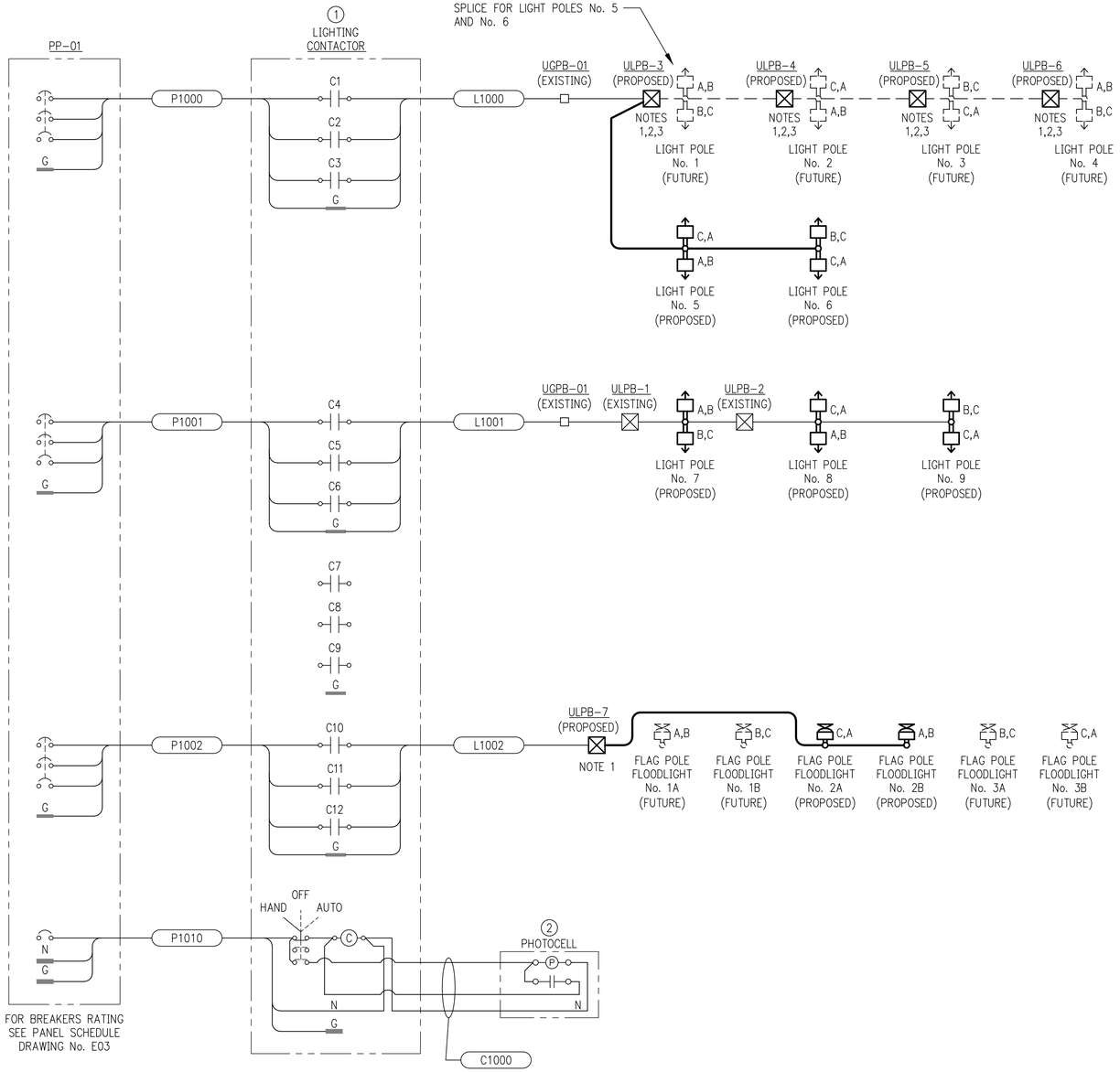
Drawing Name
ELECTRICAL PANEL SCHEDULES

SRA Project Number
B883-1015C

Scale
NONE

Drawing Number
E3

4/20/2021 3:14:05 PM



ITEM	QTY	DESCRIPTION
1	1	LIGHTING CONTACTOR, 208V, 30A, 12 POLE, 120VAC COIL, ELECTRICALLY HELD, NEMA 3R WITH HAND-OFF-AUTO SELECTOR SWITCH (BY OTHERS)
2	1	PHOTOCELL, 120VAC, 15A, STEM MOUNTED (BY OTHERS)

NOTES:

1. CONTRACTOR SHALL DETERMINE PULLBOX SIZE AS REQUIRED AND PER THE LATEST NEC NFPA-70.
2. SAWCUT THE ASPHALTIC CONCRETE PAVING. INSTALL TRAFFIC RATED UNDERGROUND LIGHTING PULLBOXES (ULPB-3, 4, 5 AND 6) FOR FUTURE LIGHT POLES NO. 1, 2, 3 AND 4. SURROUND EACH OF THESE UNDERGROUND LIGHTING PULLBOXES WITH A 6" WIDE x 12" DEEP REINFORCED CONCRETE CURB (FLUSH).
3. CONTRACTOR SHALL COIL 20 FEET OF EXTRA CONDUCTOR LENGTH IN PROPOSED ULPB-3 FOR FUTURE INSTALLATION OF FUTURE LIGHT POLES IN THE PARKING LOT.

LEGEND:

- XXXXX — CONDUCTORS/CABLE TAG
- FUTURE CONDUCTORS/CABLE
- PROPOSED CONDUCTORS/CABLE
- EXISTING CONDUCTORS/CABLE
- PROPOSED LIGHTING UNDERGROUND PULLBOX
- EXISTING LIGHTING UNDERGROUND PULLBOX
- EXISTING UNDERGROUND PULLBOX

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Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
ELECTRICAL LIGHTING CONTACTOR SCHEMATIC

SRA Project Number
B883-1015C

Scale
NONE

Drawing Number
E4

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CONDUIT AND CABLE SCHEDULE

		SERVICE		ROUTING		CABLES/CONDUCTORS				CONDUITS			VIA / COMMENTS / NOTES
CONDUIT TAG	CABLE TAG	VOLTS	LOAD	ORIGINATION POINT	TERMINATION POINT	QTY.	SIZE	INSUL. TYPE	APRROX. LENGTH *	COND. SIZE	TYPE	APPROX. LENGTH	
F4000	F4000	120/208V, 3ϕ	100A	PP-01 MAIN POWER PANEL (ELECT. RACK No. 1 PAV. AREA)	LPR LIGHTING PANEL (RESTROOM)	3	#1, 1 #1 NEU., 1 #6 GND.	THHN	300'	1 1/2"	DETAIL 5	290'	VIA UGPB-1
P2001	P2001	120V	10A	PRETREATMENT TANK PANEL CONTROLLER	PRETREATMENT TANK	2	#12, 1 #12 GND.	THHN	80'	SEE COMMENT	DETAIL 5	70'	UNDERGROUND CAPPED CONDUITS, SEE PLANS FOR APPROXIMATE LOCATION. CONDUCTORS/CABLES SHALL BE EXTENDED PER MANUFACTURER RECOMMENDATIONS AND LATEST NEC NFPA-70.
P2002	P2002	120V	20A	DOSING TANK PANEL CONTROLLER	DOSING TANK	2	#10, 1 #10 GND.	THHN	80'	SEE COMMENT	DETAIL 5	70'	
P2003	P2003	120V	10A	TREATMENT TANK PANEL CONTROLLER	TREATMENT TANK	2	#12, 1 #12 GND.	THHN	95'	SEE COMMENT	DETAIL 5	85'	
P2004	P2004	208V	30A	IRRIGATION TANK PANEL CONTROLLER	IRRIGATION TANK	2	#6, 1 #8 GND.	THHN	110'	SEE COMMENT	DETAIL 5	100'	
L1000	L1000	208V, 3ϕ	25A	LIGHTING CONTACTOR	LIGHT POLE No. 1, 2, 3, 4, 5, 6	3	#4, 1 #8 GND.	THHN	1180'	2"	DETAIL 5	1100'	ELECTRICAL ADDITIVE ALTERNATE 9/8/2022
L1001	L1001	208V, 3ϕ	624VA	LIGHTING CONTACTOR	LIGHT POLE No. 7, 8, 9	3	#4, 1 #8 GND.	THHN	745'	2"	DETAIL 5	710'	ELECTRICAL ADDITIVE ALTERNATE 9/8/2022
L1002	L1002	208V, 3ϕ	1200VA	LIGHTING CONTACTOR	FLAG POLE FLOODLIGHT No. 1A (FUTURE), 1B (FUTURE), 2A, 2B, 3A (FUTURE), 3B (FUTURE)	2	#10, 1 #12 GND.	THHN	120'	1"	DETAIL 5	110'	ELECTRICAL ADDITIVE ALTERNATE 9/8/2022

* SEE NOTE 5

NOTES:

1. FOR ALLOWABLE CONDUIT AND CONDUCTOR INSULATION TYPES SEE RELATED SPECIFICATIONS.
2. CONDUCTOR AND CABLE LENGTHS ARE IN FEET.
3. CONTRACTOR SHALL COIL AND TAPE SPARE CONDUCTORS.
4. CONDUITS ON PLANS ARE SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL INSTALL SUPPORTS AND PULL FITTINGS AS REQUIRED WITH A MAXIMUM OF THREE (3) 90° CONDUIT BENDS BETWEEN FITTINGS OR BOXES. FINAL CONDUIT BANK ROUTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. CONDUCTOR LENGTHS SHOWN ARE ONLY ONE WAY DISTANCES FOR INDIVIDUAL CONDUCTORS ONLY. CONTRACTOR SHALL TAKE INTO ACCOUNT THE NUMBER OF CONDUCTORS AND TOTAL LENGTH OF CONDUCTORS INVOLVED IN EACH CONDUIT PER MANUFACTURER RECOMMENDATIONS AND LATEST NEC NFPA-70.

ABBREVIATIONS:

EA. = EACH
FT. = FEET
GND. = GROUND
NEU. = NEUTRAL

Issue

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STATE OF TEXAS
FRANK J. DILLARD
39983
REGISTERED
PROFESSIONAL ENGINEER
09/08/2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy. Phone 713.953.5200
Suite 600 Fax 713.953.5026
Houston, Texas 77042 FRN - F-1386

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
ELECTRICAL CONDUIT AND CABLE SCHEDULE

SRA Project Number
B883-1015C

Scale
NONE

Drawing Number
E5

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LUMINAIRE SCHEDULE

SYMBOL	TYPE	QTY	MANUFACTURER	CATALOG No.	NUMBER LAMPS	DESCRIPTION	WATTAGE	POLE HEIGHT
		2	INSIGHT LIGHTING	PS9-HO-30K-10-TR-UNV-DIM-TBL	--	PROSPOT 9, HIGH OUPUT 100W, 3000K, 10 DEGREES OPTICS, TRUNION TYPE MOUNTING, UNIVERSAL VOLTAGE, 0-10V DIMMING, TEXTURED BLACK FINISH	100W	--
FUTURE	A	8	AMERICAN ELECTRIC	ATB2 P901 MVOLT R5 4K BK 20 BL NR	1	AUTOBAHN COBRA HEAD, PERFORMANCE PACKAGE, MVOLT, ROADWAY TYPE V, 4000K (STANDARD), BLACK, 20KV/10KA SPD (STANDARD), TERMINAL BLOCK (STANDARD), BUBBLE LEVEL.	199W EACH	--
		4	AMERICAN ELECTRIC	RTS 35 73B B04 NDR BK ABG	--	ROUND TAPERED STEEL POLE, 7.3 X 2.4 X 11 GAUGE WALL, TENON, 2.38 O.D. X 4" TALL, NO DRILL PATTERN, BLACK, ANCHOR BOLT (GALVANIZED STEEL).	--	35 FT.
		4	AMERICAN ELECTRIC	BR1056 BK ASSY6481	--	STEEL TWO SPOKE ARM FOR TWO UNITS (2@180), 2-3/8IN OD X 9IN LONG TENONS FOR HORIZONTAL MOUNT FIXTURE, 2-3/8IN OD SLIP FIT FOR US, BLACK	--	--
	B	10	AMERICAN ELECTRIC	ATB2 P602 MVOLT R4 4K BK 20 BL NR	1	AUTOBAHN COBRA HEAD, PERFORMANCE PACKAGE, MVOLT, ROADWAY TYPE IV, 4000K (STANDARD), BLACK, 20KV/10KA SPD (STANDARD), TERMINAL BLOCK (STANDARD), BUBBLE LEVEL.	196W EACH	--
		5	AMERICAN ELECTRIC	RTS 35 73B B04 NDR BK ABG	--	ROUND TAPERED STEEL POLE, 7.3 X 2.4 X 11 GAUGE WALL, TENON, 2.38 O.D. X 4" TALL, NO DRILL PATTERN, BLACK, ANCHOR BOLT (GALVANIZED STEEL).	--	35 FT.
		5	AMERICAN ELECTRIC	BR1924 BK ASSY6481	--	STEEL 2-LIGHT BRACKET, HORIZONTAL PIPE ARMS, 2-3/8IN OD SLIP FIT FOR P2 TENON, FOR USE WITH HORIZONTAL AUTOBAHNS FIXTURES, BLACK	--	--

FUTURE

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

N

CONDUIT DUCTBANK (TYP) NOTE 3 — 1/E09

L1001 NOTE 3

LIGHT POLE No. 9 NOTE 3 — B

7/E09 CONDUIT BENEATH SIDEWALK NOTE 3

4/E08 LIGHT POLE GROUND (TYP) NOTE 3

LIGHT POLE No. 8 NOTE 3 — B

L1001 NOTE 3

1/E07 DETAIL

2/E08 PP-02 POWER PANEL (ELECTRICAL RACK No. 2 RESTROOM AREA)

LPP LIGHTING PANEL PAVILION

NOTE 3 L1000

LIGHT POLE No. 4 (FUTURE) — A

ULPB-6 NOTE 1 & 3

TRAFFIC RATED UNDERGROUND PULLBOX 8/E09

LIGHT POLE No. 3 (FUTURE) — A

ULPB-2 (EXISTING)

RESTROOM

LIGHT POLE No. 7 NOTE 3 — B

2" SAN FM

EVENT PAVILION

FLAG POLE F3000

ULPB-7 NOTE 3

L1002 NOTE 3

ULPB-5 NOTE 1 & 3

TRAFFIC RATED UNDERGROUND PULLBOX 8/E09

L1000 NOTE 3

F2000
F4000
L1001 NOTE 3

ULPB-1 (EXISTING)

1/E08 PP-01 MAIN POWER PANEL (ELECTRICAL RACK No. 1 PAVILION AREA)

A

LIGHT POLE No. 2 (FUTURE)

ULPB-4 NOTE 1 & 3

TRAFFIC RATED UNDERGROUND PULLBOX 8/E09

L1000 NOTE 3

F2000
F4000
L1000 NOTE 3
L1001 NOTE 3

2/E07 DETAIL

L1002 NOTE 3
F3000

FUTURE CONCESSION STAND

LIGHT POLE No. 6 NOTE 3 — B

NOTE 3 L1000

A

LIGHT POLE No. 1 (FUTURE)

ULPB-3 NOTE 1 & 3

TRAFFIC RATED UNDERGROUND PULLBOX 8/E09

UGPB-01 ELECTRICAL UNDERGROUND PULLBOX 18" x 18" MINIMUM, H20 RATED (EXISTING)

EXISTING SWALE

2" SAN FM

L1000 NOTE 3

Ex. Wetlands Area

CONDUIT SLEEVE (TYP.)

c. Ditch A 38 LF @ 0.62% w/ 2' Bottom

LIGHT POLE No. 5 NOTE 3 — B

NOTE 3 L1000

L1000 NOTE 3

NOTE 2

2" SAN FM

EXISTING SLEEVE (TYPICAL)

UNDERGROUND ELECTRICAL SERVICE BY SRA

LEGEND

- PROPOSED UNDERGROUND CONDUITS
- EXISTING UNDERGROUND CONDUITS
- GROUND TAP
- GROUND ROD
- GROUND ROD AND WELL
- ULPB-X; PROPOSED UNDERGROUND LIGHTING PULLBOX 12" x 12" MIN. H20 RATED
- ULPB-X; EXISTING UNDERGROUND LIGHTING PULLBOX
- UGPB-XX; EXISTING UNDERGROUND PULLBOX
- XXXXX PROPOSED OR MODIFIED CONDUIT NAME DESIGNATION

NOTES:

1. SAWCUT THE ASPHALTIC CONCRETE PAVING. INSTALL TRAFFIC RATED UNDERGROUND LIGHTING PULLBOXES (ULPB-3, 4, 5 AND 6) FOR FUTURE LIGHT POLES NO. 1, 2, 3 AND 4. SURROUND EACH OF THESE UNDERGROUND LIGHTING PULLBOXES WITH A 6" WIDE x 12" DEEP REINFORCED CONCRETE CURB (FLUSH).
2. CONTRACTOR SHALL REMOVE EXISTING CONDUIT CAP, EXTEND CONDUIT AS REQUIRED TO THE EQUIPMENT/LIGHT POLE AND INSTALL THE NEW CONDUCTORS PER THE CONDUIT AND CABLE SCHEDULE FROM THE SOURCE TO THE EQUIPMENT.
3. ELECTRICAL ADDITIVE ALTERNATE 9/8/2022

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Issue

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1	09/08/2022	ISSUE FOR BID

STATE OF TEXAS — FRANK J. DILLARD — 39983 — REGISTERED PROFESSIONAL ENGINEER
09/08/2022

LJA Engineering, Inc.
3600 W. Sam Houston Pkwy. Suite 600 Houston, Texas 77042
Phone 713.953.5200 Fax 713.953.5026 FRN - F-1386

PROJECT TEAM

Owner	**Sabine River Authority**
Architect	**Studio Red Architects**
Civil Engineer	**LJA Engineering**
Structural Engineer	**Fractal Stuctural Engineering**
MEP	**Salas O'Brien**
Landscape Architect	**LJA Engineering**

KEY PLAN

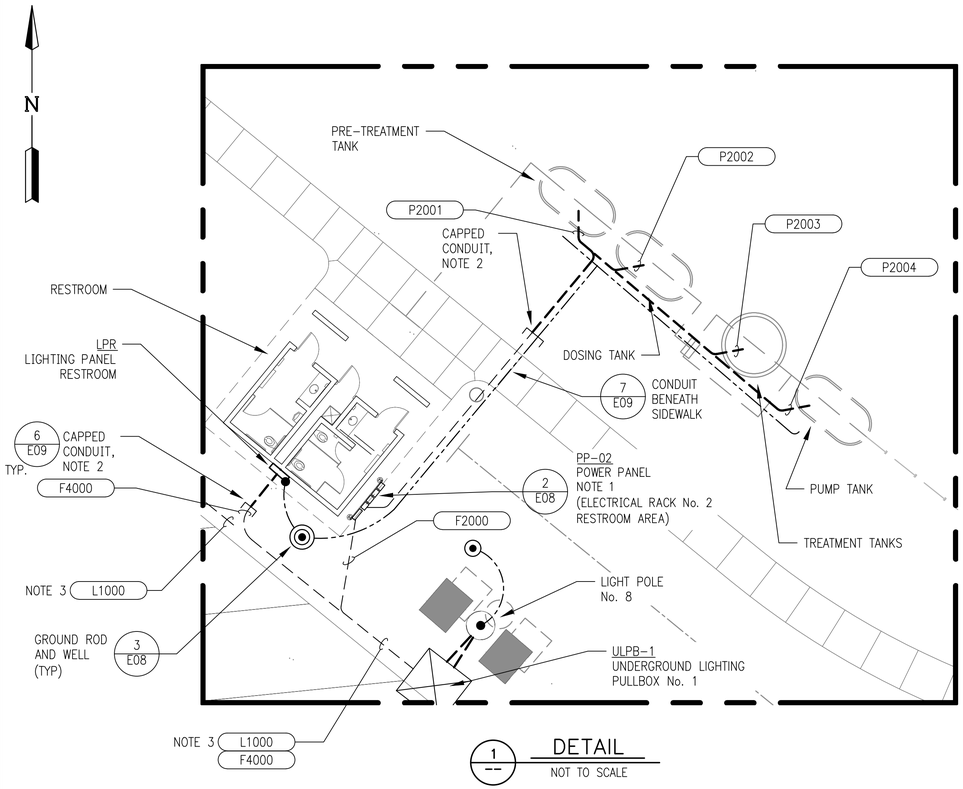
Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
ELECTRICAL ENLARGED CONDUIT PLANS

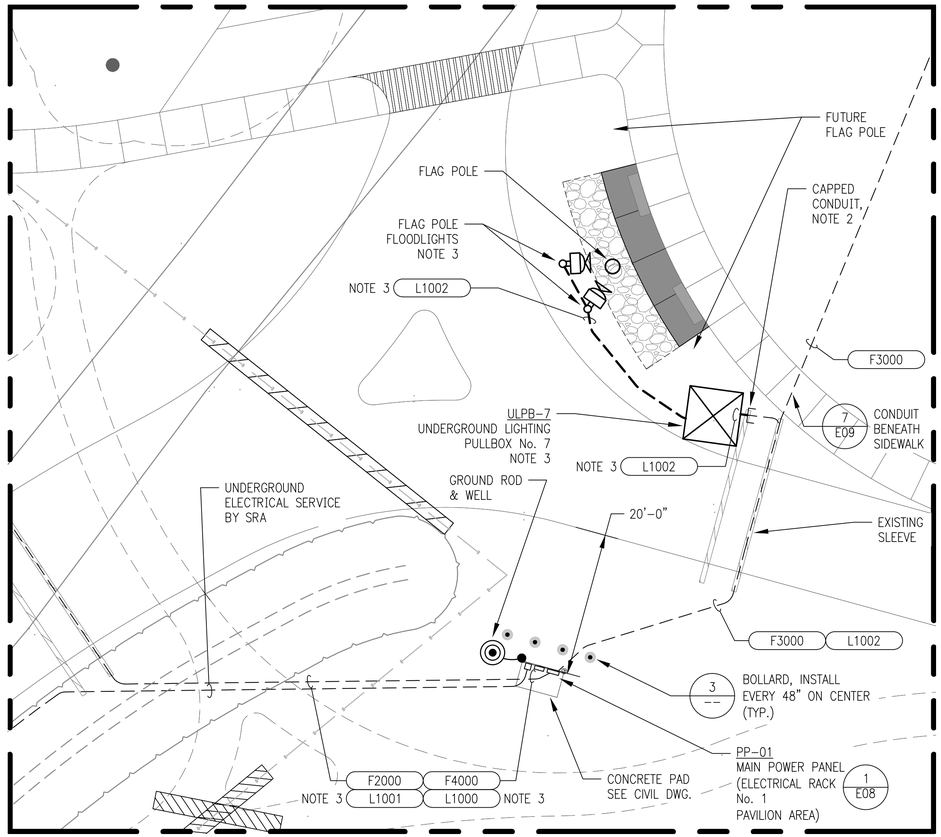
SRA Project Number
B883-1015C

Scale
1" = 30'

Drawing Number
E6



1 -- DETAIL
NOT TO SCALE



2 -- DETAIL
NOT TO SCALE

NOTES:

1. CONTRACTOR TO INSTALL FUSED DISCONNECT SWITCHES AS FOLLOWS:
   1.1. PRETREATMENT, TREATMENT AND DOSING TANKS 20A, 1 POLE, NEMA 3R
   1.2. IRRIGATION TANK 30A, 2 POLE, NEMA 3R
2. CONTRACTOR SHALL REMOVE EXISTING CONDUIT CAP, EXTEND CONDUIT AS REQUIRED TO THE EQUIPMENT/LIGHT POLE AND INSTALL THE NEW CONDUCTORS PER THE CONDUIT AND CABLE SCHEDULE FROM THE SOURCE TO THE EQUIPMENT.
3. ELECTRICAL ADDITIVE ALTERNATE 9/8/2022

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KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
ELECTRICAL ENLARGED CONDUIT PLAN DETAILS

SRA Project Number
B883-1015C

Scale
NTS

Drawing Number
E7

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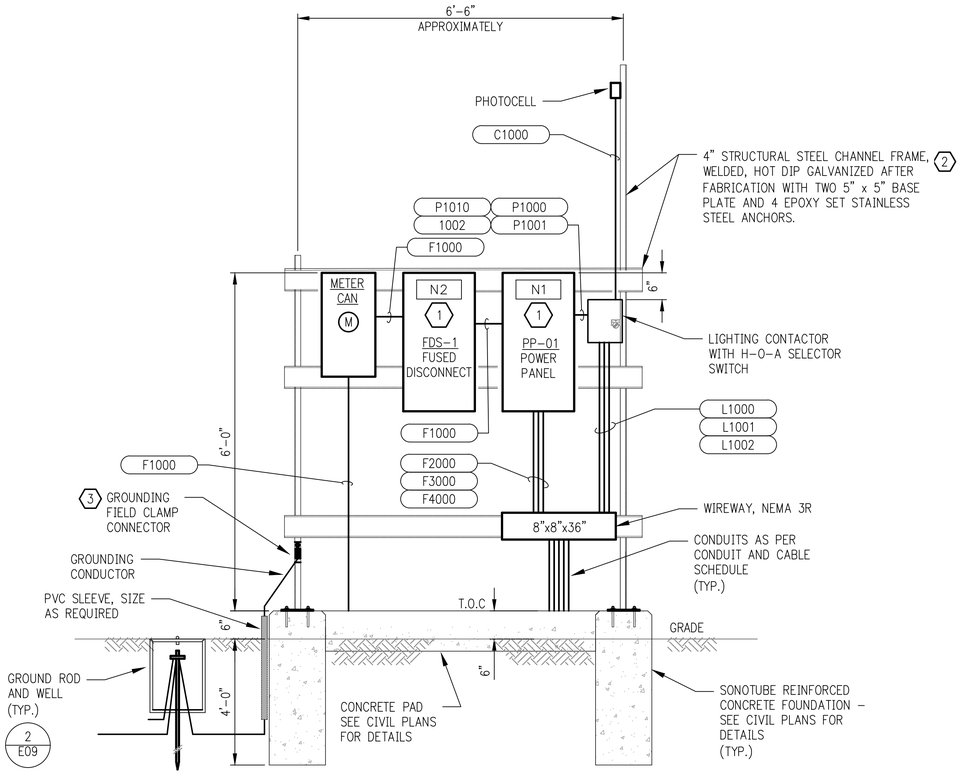
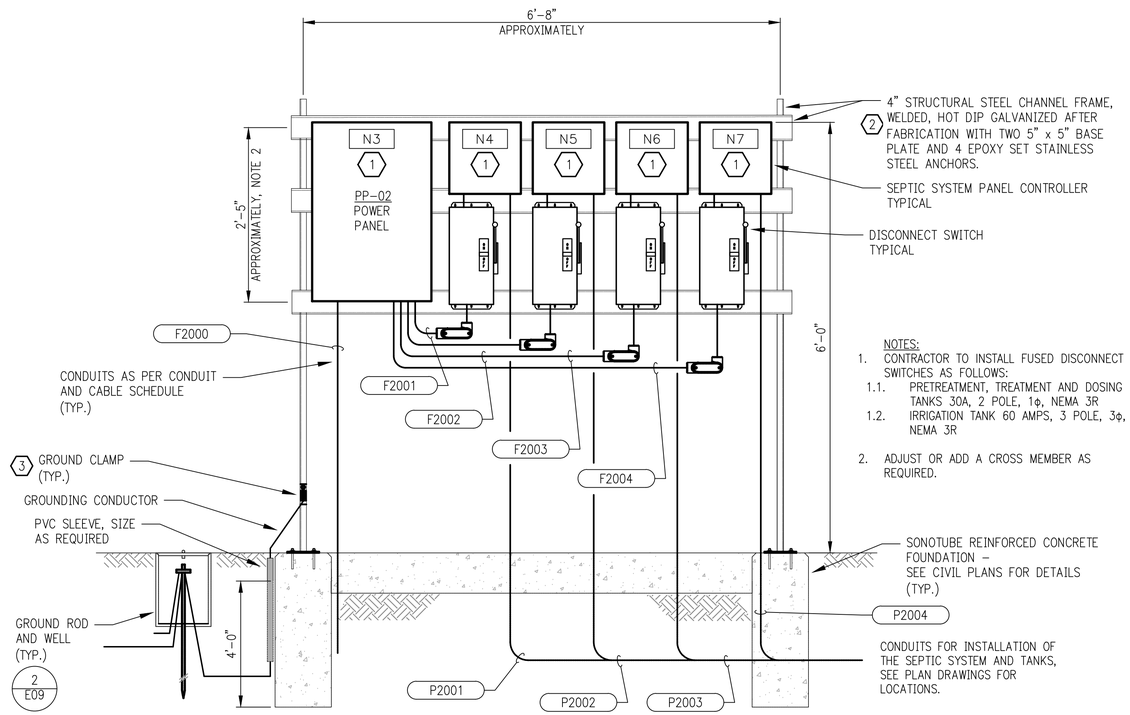


EXISTING ELECTRICAL RACK No. 1 ELEVATION FRONT VIEW

1 / -- DETAIL
NOT TO SCALE

EXISTING EQUIPMENT FOR INFORMATION ONLY



EXISTING ELECTRICAL RACK No. 2 ELEVATION FRONT VIEW

2 / -- DETAIL
NOT TO SCALE

EXISTING EQUIPMENT FOR INFORMATION ONLY

NAMEPLATE SCHEDULE

DESIGNATION	ENGRAVED
N1	PP-01
N2	FDS-1
N3	PP-02
N4	PRE-TREATMENT TANK
N5	DOSING TANK
N6	TREATMENT TANK
N7	PUMP TANK

NOTES BY SYMBOL "⬡X"

1. NAMEPLATE, 3/8" HIGH LETTERS IN WHITE ON BLACK BAKELIGHT (SEE NAMEPLATE SCHEDULE), SHALL BE MOUNTED USING 316 STAINLESS STEEL HARDWARE.
2. UNLESS OTHERWISE NOTED, ALL NUTS, BOLTS, SCREWS WASHERS, ETC. SHALL BE TYPE 316 STAINLESS STEEL.
3. PROVIDE ANTI-CORROSIVE SPRAY ON ANY BARE METAL PARTS OR EXPOSED WIRE.

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KEY PLAN

Project Name
LAKE TAWAKONI TOURNAMENT FACILITY RESTROOM, HARDSCAPE, AND LANDSCAPE

Drawing Name
ELECTRICAL SWITCHRACK No. 1 AND No. 2

SRA Project Number
B883-1015C

Scale
NTS

Drawing Number
E8

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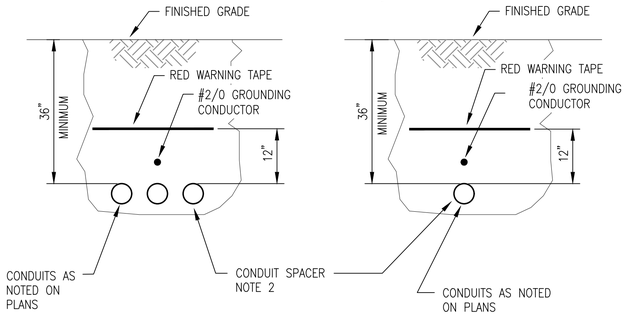
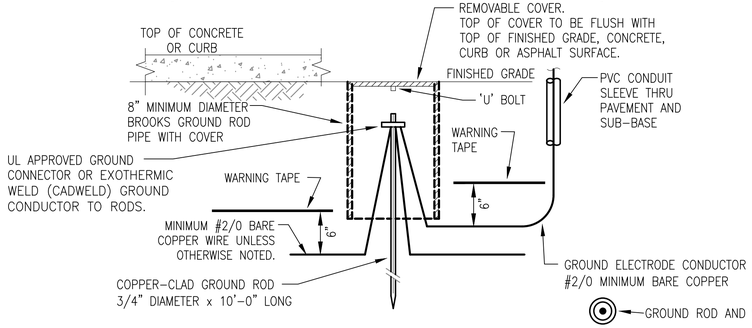


TYPICAL MULTI-CONDUIT DUCTBANK SECTION TYPICAL SINGLE-CONDUIT DUCTBANK SECTION

1 DETAIL — NOT TO SCALE



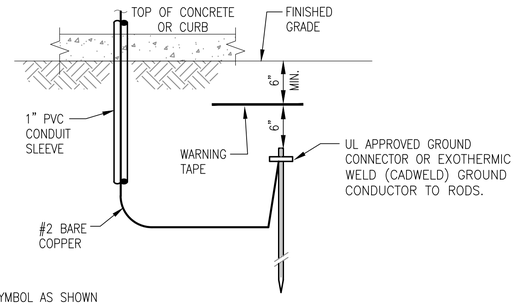
TYPICAL GROUND ROD AND WELL INSTALLATION

2 DETAIL — NOT TO SCALE

GROUND ROD AND WELL SYMBOL AS SHOWN

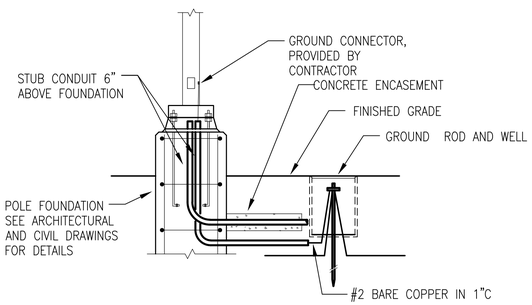
GROUND WELL SYMBOL AS SHOWN

GROUND CONNECTOR SCHEDULE	
WIRE SIZE	BURNDY
#2 AWG	GAR 6426
#2/0 AWG	GAR 6426
#4/0 AWG	GAR 6429
500 MCM	GAR 6434



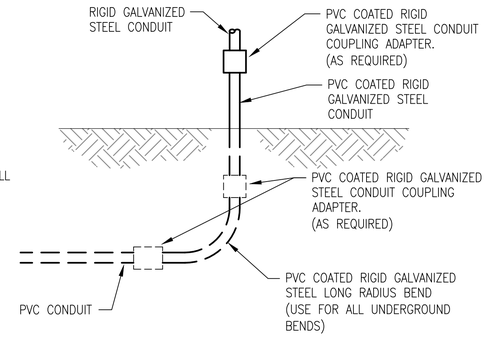
TYPICAL GROUND ROD INSTALLATION

3 DETAIL — NOT TO SCALE



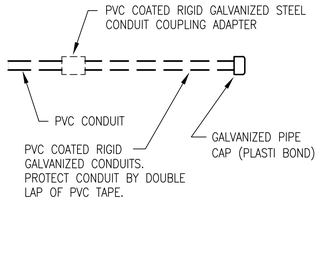
TYPICAL LIGHT POLE GROUND

4 DETAIL — NOT TO SCALE



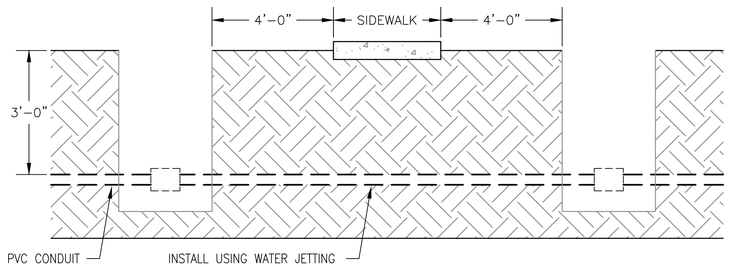
CONDUIT STUB-UP

5 DETAIL — NOT TO SCALE



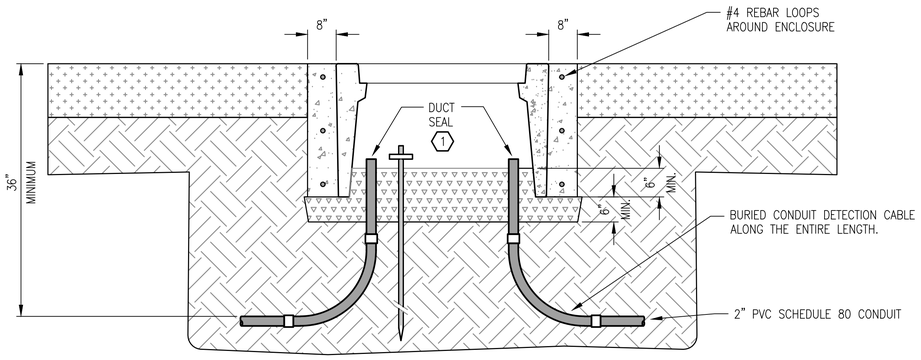
UNDERGROUND CAPPED CONDUIT STUB-OUT

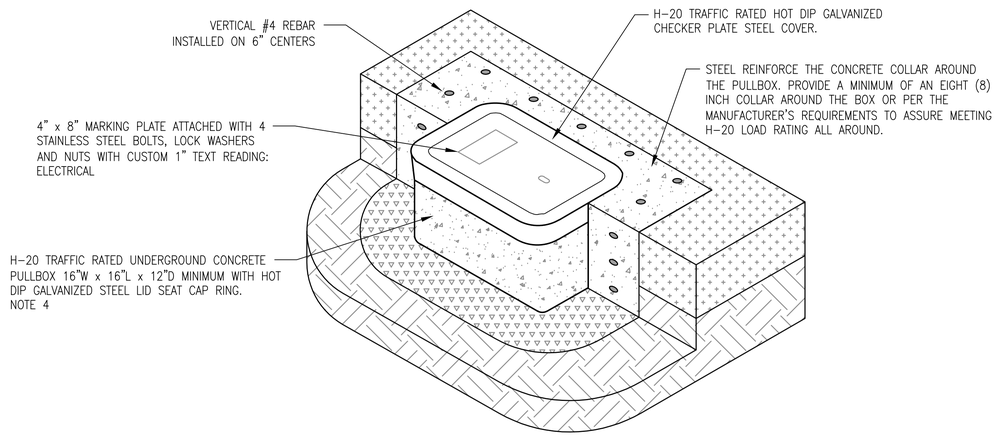
6 DETAIL — NOT TO SCALE



TYPICAL CONDUIT INSTALLATION DETAIL BENEATH AN EXISTING SIDEWALK

7 DETAIL — NOT TO SCALE





TYPICAL TRAFFIC RATED UNDERGROUND PULLBOX

8 DETAIL — NOT TO SCALE

LEGEND

- ASPHALTIC CONCRETE PAVEMENT
- REINFORCED CONCRETE
- CRUSHED STONE, 1/2" MINIMUM, 2" MAXIMUM ALL AROUND. COMPACT TO 95% OF THE STANDARD PROCTOR.
- COMPACTED FILL PER PIPELINE BACKFILL REQUIREMENTS.

NOTES:

1. SEAL ALL OPEN CONDUITS WITH NON-HARDENING DUCT SEAL.
2. SUPPORT ALL CONDUITS USING CARLON SPACERS AT MAXIMUM SEPARATION DISTANCE OF TEN (10) FEET.
3. ALL EXPOSED THREADS AND GALVANIZED VOIDS TO BE COATED WITH ANTI-RUST MATERIAL.
4. PRECAST PULLBOX (AS MANUFACTURED BY OLDCASTLE PRECAST OR APPROVED EQUAL) SHALL BE ASSHTO H-20 TRAFFIC RATED.

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Drawing Name
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SRA Project Number
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Scale
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Drawing Number
E9