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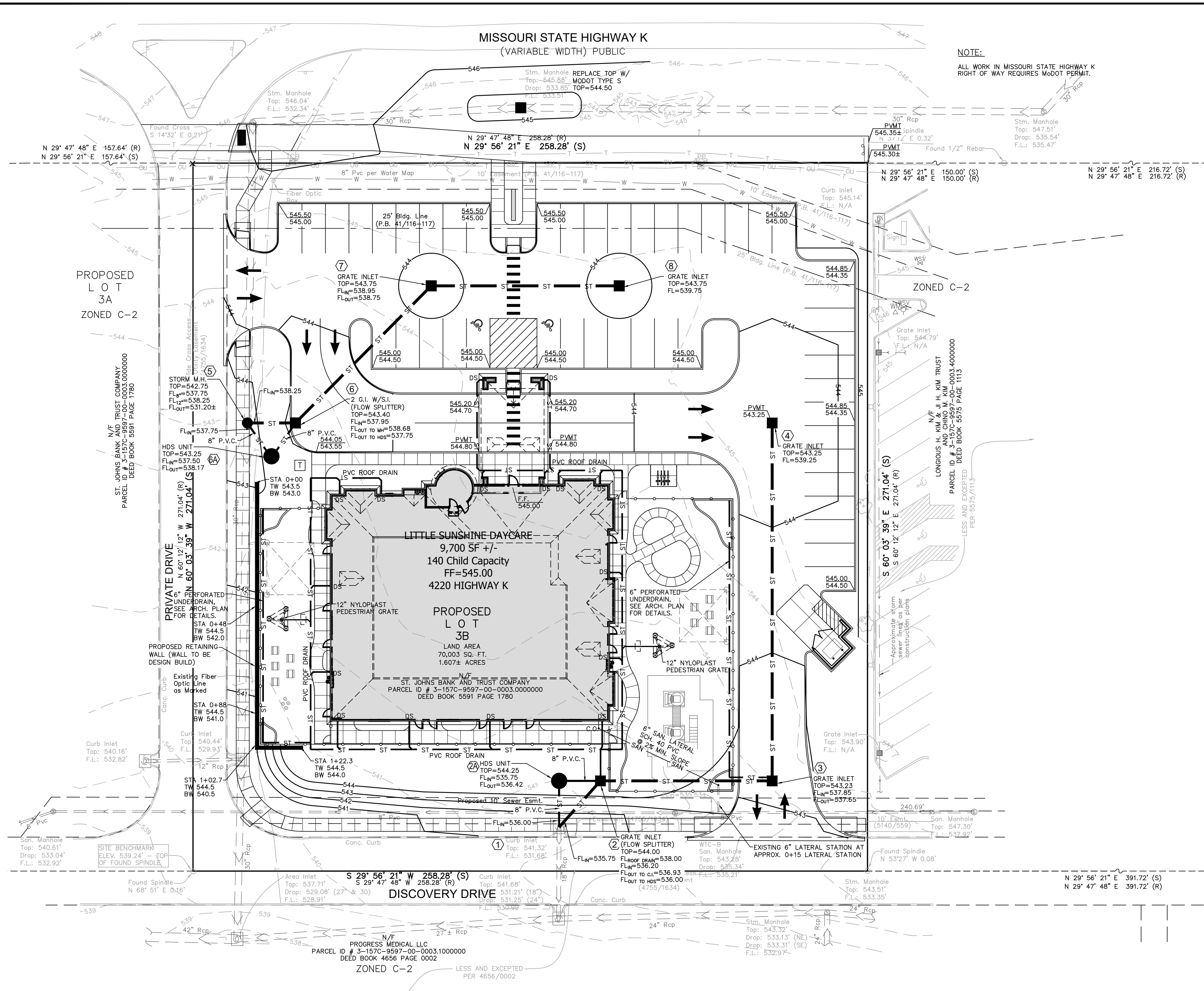
Site Improvement Plans for
LITTLE SUNSHINE PLAYHOUSE & PRESCHOOL
4220 Highway K
O'Fallon, Missouri 63368

Proj. # 1776

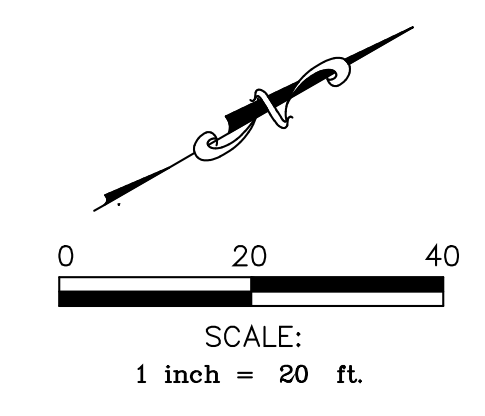
No.	Description	Date
To Utilities	05/22/18	
Bid Set	05/30/18	
To City	06/21/18	
To City	07/17/18	
To City	08/03/18	

SITE AND GRADING PLAN

C04



NOTE:
ALL WORK IN MISSOURI STATE HIGHWAY K RIGHT OF WAY REQUIRES MODOT PERMIT.



GENERAL NOTES

- ALL UTILITIES SHOWN HAVE BEEN LOCATED FROM AVAILABLE RECORDS. THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION. TO HAVE EXISTING UTILITIES FIELD LOCATED. THE CONTRACTOR SHALL BE ON RECORD WITH THE MISSOURI ONE CALL SYSTEM. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND.
- BOUNDARY AND TOPOGRAPHIC SURVEY BY MARLER SURVEYING COMPANY.
- ALL ON-SITE MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF O'FALLON.
- ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING AS REQUIRED BY THE CITY OF O'FALLON.
- PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS ON PAVED AREAS.
- ALL GRADING AND DRAINAGE TO BE IN CONFORMANCE WITH THE CITY OF O'FALLON.
- ADEQUATE TEMPORARY OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES SHALL BE PROVIDED. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEES' VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS.
- ALL SEWER CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY OF O'FALLON AND DUCKETT CREEK SEWER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES.
- THE CONTRACTOR SHALL BE REQUIRED TO VERIFY ALL EXISTING CONDITIONS AT THE SITE. PRIOR TO SUBMITTING BID OR STARTING WORK, THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES THAT MAY EXIST BETWEEN THE CONTRACT DOCUMENTS AND REQUEST CLARIFICATION IN WRITING PRIOR TO THE BID.
- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION PARKING WITH THE OWNER AND/OR THE CITY OF O'FALLON.
- CONTRACTOR SHALL VERIFY EXISTING UTILITY SERVICES ARE CAPPED OR REMOVED AND/OR ABANDONED AS REQUIRED PER THE SPECIFICATIONS OF THE APPROPRIATE GOVERNING AGENCY.
- PROVIDE PROTECTIONS NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS AND UTILITIES INDICATED TO REMAIN IN PLACE.
- LANDSCAPING IRRIGATION SYSTEMS TO BE CAPPED AND REMOVED IN AREAS OF CONSTRUCTION WITH SERVICE LINES AND CAPS FLAGGED OR PROPERLY MARKED FOR FUTURE TIE-INS, IF APPLICABLE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL PER THE CITY OF O'FALLON STANDARDS TO MINIMIZE TRAFFIC DISRUPTION WITHIN RIGHT-OF-WAY OF ADJACENT ROADS.
- ALL DEBRIS RESULTING FROM THE DEMOLITION OF PAVEMENTS, CURBING, STRUCTURES, FOUNDATION AND FOOTINGS SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF UNLESS NOTED OTHERWISE IN THE PROJECT SPECIFICATIONS.
- PUBLIC UTILITY FACILITIES SUCH AS MANHOLES, METER AND VALVE BOXES OF GAS, ELECTRIC AND TELEPHONE WILL BE ADJUSTED OR RELOCATED BY THE VARIOUS UTILITY COMPANIES. ADJUSTMENT OF UTILITY AND SEWER FACILITIES NOT PROVIDED BY THE UTILITY COMPANIES WILL BE PROVIDED BY THE CONTRACTOR AS NECESSARY.
- DESIGN OF SHORING FOR UTILITY AND SEWER TRENCHES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- NO BURNING OF TREES, OVERGROWTH, DEBRIS, BRUSH, OR ANY MATERIAL ALLOWED ON SITE.
- ANY ABANDONED SEWERS SHALL BE REMOVED OR COMPLETELY GROUT FILLED.
- ALL WALKS AND ADA ACCESSIBLE ROUTES SHALL NOT HAVE A CROSS SLOPE THAT EXCEEDS 2% AND A RUNNING SLOPE THAT EXCEEDS 5%.
- ALL SIGNAGE SHALL REQUIRE APPROVAL THROUGH A SEPARATE PROCESS.
- "NO DUMPING-DRAINS TO WATERWAY" MARKING REQUIRED ON ALL GRATED INLETS.

DCSD NOTES

- EXISTING SANITARY SEWER SERVICE SHALL NOT BE INTERRUPTED.
- CONNECTION TO EXISTING LATERAL STUB DOES NOT REQUIRE D.C.S.D. INSPECTION.

15 YR HYDRAULIC CALCULATION SHEET (SEE DRAINAGE AREA PLAN FOR FL AND Q (inflow) FOR EACH STRUCTURE)

Project name: Little Sunshine - O'Fallon
Project number: 1776
Project location: O'Fallon, MO
Calculated by: JHD
Checked by: BAH
Date: 5/3/2018

Structure Number	LINE	Upper structure	Lower structure	FLOW LINE ELEVATIONS		Length (ft)	Flowline Grade (ft/ft)	Pipe Size (in.)	Full Flow Cap. (cfs)	Bend Coefficients			HEAD LOSS			Hydraulic Elevations			Structure Number						
				Upper Structure	Lower Structure					Total (Q)	Mean Full Flow Vel(V) (ft/s)	Bend Coef.	Velocity Head (V ₁ ²)/(ft)	Pipe Coef. (n)	H ₁ (ft)	Junction (ft)	Bend (ft)	Total H ₂		Upper F.L. + Dis.	Lower H.L. -H ₁	Lower H.L.	Structure H.L. + H ₂	TOP Structure Elevation	Free Board
8	8	7	539.75	538.95	72.00	0.0111	12	3.77	0.63	0.80	0.00	0.01	0.01	0.02	0.01	0.00	0.01	540.75	539.97	539.95	540.76	543.75	2.90	8	
7	7	6	538.75	537.95	73.80	0.0108	12	3.72	1.12	1.43	0.47	0.04	0.013	0.07	0.04	0.00	0.04	539.75	539.80	539.72	539.84	543.75	3.91	7	
6	6	5	538.68	538.25	18.39	0.0234	12	5.46	1.49	1.90	0.00	0.06	0.08	0.013	0.03	0.04	0.00	0.04	539.68	539.28	539.25	539.72	543.40	3.68	6
Assume Starting Hydraulic Grade at Top of 30" Pipe																									
4	4	3	539.25	537.85	137.02	0.0102	12	3.61	0.89	1.13	0.00	0.02	0.02	0.013	0.09	0.03	0.00	0.03	540.25	538.94	538.85	540.28	543.25	2.97	4
3	3	2	537.65	536.20	65.77	0.0220	12	5.30	1.27	1.62	0.70	0.04	0.05	0.013	0.08	0.04	0.01	0.05	538.65	537.28	537.20	538.70	543.25	4.55	3
2	2	1	536.00	535.75	23.75	0.0105	12	3.67	2.55	3.25	0.00	0.16	0.42	0.013	0.12	0.19	0.00	0.19	537.00	536.87	536.75	537.19	544.00	6.81	2
Assume Starting Hydraulic Grade at Top of 18" Pipe																									

FORMULAS:
 MEAN FULL FLOW VELOCITY: $V = Q_{ACT} / A_{PIPE}$
 FRICTION LOSS (H_f): $H_f = 2.47 n^2 (L/V^4.75)$
 VELOCITY HEAD: $V_h = V^2/2g$
 JUNCTION LOSSES (JUNC.) = $(Q_{in} V_{in} - \sum (Q_{out} V_{out})) / 1.33 Q_{in}$
 BEND LOSSES (BEND) = $(V^2/2g) * \text{ANGLE COEFFICIENT}$
 Note: 1. IF MORE THAN ONE INCOMING LINE, CALCULATE EACH BEND LOSS AND ADD TOGETHER.
 2. NO STRUCTURE LOSSES TO BE CALCULATED AT A DROP.
 3. IF $Q_{in} > Q_{out}$, NO JUNCTION LOSSES TO BE CALCULATED.