Proposed Improvements
for

MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

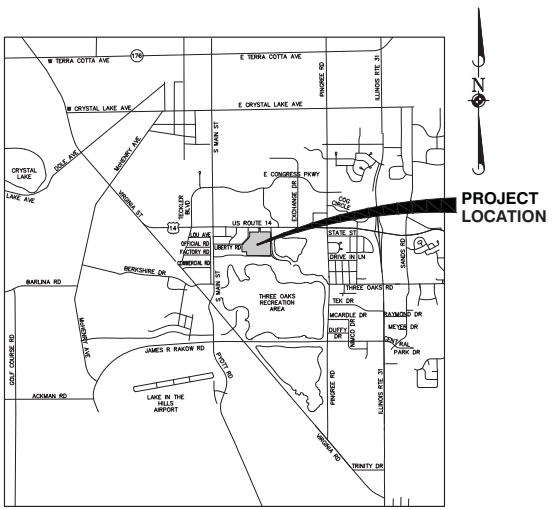
5561-5657 NORTHWEST HIGHWAY
CITY OF CRYSTAL LAKE, ILLINOIS

STANDARD SYMBOLS

EXISTING		PROPOSED
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
	FORCEMAIN	
	DRAINTILE	
	WATER MAIN	
	ELECTRIC	
	GAS	
	TELEPHONE	
	OVERHEAD WIRES	
	SANITARY MANHOLE	
	STORM MANHOLE	
	CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	HAY BALES	
	RIP RAP	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	
	BUFFALO BOX	
	FLARED END SECTION	
	STREET LIGHT	
	SUMMIT / LOW POINT	
795.20 / 785.25	RIM ELEVATION / INVERT ELEVATION	795.25 / 790.20
	DITCH OR SWALE	
	DIRECTION OF FLOW	
	OVERFLOW RELIEF SWALE	
764	1 FOOT CONTOURS	764
	CURB AND GUTTER	
	DEPRESSED CURB AND GUTTER	
	REVERSE CURB AND GUTTER	
	SIDEWALK	
	DETECTABLE WARNINGS	
	PROPERTY LINE	
	EASEMENT LINE	
	SETBACK LINE	
	MAIL BOX	
	SIGN	
	TRAFFIC SIGNAL	
	POWER POLE	
	GUY WIRE	
	GAS VALVE	
	HANDHOLE	
	ELECTRICAL EQUIPMENT	
	TELEPHONE EQUIPMENT	
	CHAIN-LINK FENCE	
796.8	SPOT ELEVATION	792.8 G
	BRUSH/TREE LINE	
24"	DECIDUOUS TREE WITH TRUNK DIA. IN INCHES (TBR)	18"
25'	CONIFEROUS TREE WITH HEIGHT IN FEET (TBR)	25'
S	SILT FENCE	S
	RETAINING WALL	
	WETLAND	

ABBREVIATIONS

ADJ	ADJUST	F/L	FLOW LINE	R.O.W.	RIGHT-OF-WAY
AGG.	AGGREGATE	FM	FORCE MAIN	RCP	REINFORCED CONCRETE PIPE
ARCH	ARCHITECT	G	GROUND	REM	REMOVAL
B.A.M.	BITUMINOUS AGGREGATE MIXTURE	G/F	GRADE AT FOUNDATION	REV	REVERSE
B-B	BACK TO BACK	GW	GUY WIRE	RR	RAILROAD
B/C	BACK OF CURB	HDWL	HEADWALL	RT	RIGHT
B/P	BOTTOM OF PIPE	HH	HANDHOLE	SAN	SANITARY
B/W	BACK OF WALK	HWL	HIGH WATER LEVEL	SF	SQUARE FOOT
B-BOX	BUFFALO BOX	HYD.	HYDRANT	SHLD.	SHOULDER
BIT.	BITUMINOUS	INL	INLET	SL	STREET LIGHT
BM	BENCHMARK	INV.	INVERT	SMH	SANITARY MANHOLE
B.O.	BY OTHERS	IP	IRON PIPE	ST	STORM
C.E.	COMMERCIAL ENTRANCE	LT	LEFT	STA.	STATION
CB	CATCH BASIN	MAX.	MAXIMUM	STD	STANDARD
℄	CENTERLINE	MB	MAILBOX	SW	SIDEWALK
CMP	CORRUGATED METAL PIPE	M/E	MEET EXISTING	SY	SQUARE YARDS
CNTRL	CONTROL	MH	MANHOLE	TBR	TO BE REMOVED
C.O.	CLEANOUT	MIN.	MINIMUM	T	TELEPHONE
CONC.	CONCRETE	NWL	NORMAL WATER LEVEL	T-A	TYPE A
CY	CUBIC YARD	P.E.	PRIVATE ENTRANCE	T/C	TOP OF CURB
D	DITCH	PC	POINT OF CURVATURE	T/F	TOP OF FOUNDATION
DIA.	DIAMETER	PCC	POINT OF COMPOUND CURVE	T/P	TOP OF PIPE
DIP	DUCTILE IRON PIPE	PGL	PROFILE GRADE LINE	T/W	TOP OF WALK
DIWM	DUCTILE IRON WATER MAIN	PI	POINT OF INTERSECTION	T/WALL	TOP OF WALL
DS	DOWNSPOUT	℗	PROPERTY LINE	TEMP	TEMPORARY
DT	DRAIN TILE	PP	POWER POLE	TRANS	TRANSFORMER
E	ELECTRIC	PROP.	PROPOSED	V.B.	VALVE BOX
E-E	EDGE TO EDGE	PT	POINT OF TANGENCY	VCP	VITRIFIED CLAY PIPE
ELEV.	ELEVATION	PVC	POLYVINYL CHLORIDE PIPE	V.V.	VALVE VAULT
E/P	EDGE OF PAVEMENT	PVC	POINT OF VERTICAL CURVATURE	WL	WATER LEVEL
EX.	EXISTING	PVI	POINT OF VERTICAL INTERSECTION	WM	WATER MAIN
F.E.	FIELD ENTRANCE	PVT	POINT OF VERTICAL TANGENCY		
F-F	FACE TO FACE	P	PAVEMENT		
F.F.	FINISHED FLOOR	P.U.D.E.	PUBLIC UTILITY & DRAINAGE EASEMENT		
FES	FLARED END SECTION	R	RADIUS		



LOCATION MAP
N.T.S.

OWNER:
HEARTLAND REAL ESTATE PARTNERS
1535 NORTH ELSTON AVENUE
CHICAGO, ILLINOIS 60642
(773) 489-7600

CITY OF CRYSTAL LAKE

CLSO APPENDIX 3 STANDARD DRAIN TILE NOTES

1. DRAIN TILES DISTURBED DURING REGULATED DEVELOPMENT SHALL BE RECONNECTED BY THOSE RESPONSIBLE FOR THEIR DISTURBANCE, UNLESS THE DEVELOPMENT PLANS SPECIFY ABANDONMENT OF THE DRAIN TILES.
2. ALL ABANDONED DRAIN TILES WITHIN DISTURBED AREAS SHALL BE REMOVED IN THEIR ENTIRETY.
3. DRAIN TILES WITHIN THE DISTURBED AREA OF A DEVELOPMENT SITE SHALL BE REPLACED, BYPASSED AROUND THE DEVELOPMENT SITE OR INTERCEPTED AND CONNECTED TO THE STORMWATER MANAGEMENT SYSTEM FOR THE DEVELOPMENT SITE. THE SIZE OF THE REPLACED OR BYPASSED DRAIN TILE SHALL BE EQUIVALENT TO THE EXISTING DRAIN TILE.

NOTES:

THE BOUNDARY LINES AND TOPOGRAPHY FOR THIS PROJECT ARE BASED ON A FIELD SURVEY COMPLETED BY MANHARD CONSULTING, LTD. ON OCTOBER 22, 2021. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY MANHARD CONSULTING AND THE CLIENT IN WRITING OF ANY DIFFERING CONDITIONS.

BENCHMARKS:

REFERENCE BENCHMARK:
ELEVATIONS AND SITE BENCHMARKS SHOWN HEREON WERE ESTABLISHED UTILIZING A TRIMBLE RAPID STATIC GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) AND THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA'S) ONLINE POSITIONING USER SERVICE (OPUS). THE OBSERVED ELEVATIONS, AS REFINED BY OPUS, IS THE BASIS FOR ALL ELEVATIONS SHOWN HEREON AND THIS INFORMATION HAS NOT BEEN DIRECTLY COMPARED TO ANY OTHER KNOWN OR FIXED BENCHMARK. ALL ELEVATIONS ARE BASED ON NAVD 88 DATUM (GEOID18).

SITE BENCHMARK #1:
CUT SQUARE ON NORTH SIDE OF CONCRETE LIGHT POLE BASE LOCATED APPROXIMATELY 529 FEET SOUTHERLY OF THE CENTERLINE OF LIBERTY ROAD AND APPROXIMATELY 521 FEET EASTERLY OF THE CENTERLINE OF CRYSTAL POINT ROAD.
ELEVATION=885.17 DATUM=NAVD88-GEOID 18

SITE BENCHMARK #2:
CUT SQUARE ON NORTH SIDE OF CONCRETE LIGHT POLE BASE LOCATED APPROXIMATELY 1,348 FEET SOUTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 998 FEET EASTERLY OF THE CENTERLINE OF LIBERTY ROAD AS MEASURED ALONG THE CENTERLINE OF US ROUTE 14.
ELEVATION=897.67 DATUM=NAVD88-GEOID 18

SITE BENCHMARK #3:
CUT SQUARE ON EAST SIDE OF CONCRETE LIGHT POLE BASE LOCATED APPROXIMATELY 1,127 FEET SOUTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 1,097 FEET EASTERLY OF THE CENTERLINE OF LIBERTY ROAD AS MEASURED ALONG THE CENTERLINE OF US ROUTE 14.
ELEVATION=897.81 DATUM=NAVD88-GEOID 18

SITE BENCHMARK #4:
CUT SQUARE ON EAST SIDE OF CONCRETE LIGHT POLE BASE LOCATED APPROXIMATELY 277 FEET SOUTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 1,056 FEET EASTERLY OF THE CENTERLINE OF LIBERTY ROAD.
ELEVATION= 906.50 DATUM=NAVD88-GEOID 18

SITE BENCHMARK #5:
EAST BOLT ON FIRE HYDRANT LOCATED APPROXIMATELY 59 FEET NORTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 1,057 FEET EASTERLY OF THE CENTERLINE OF LIBERTY ROAD AS MEASURED ALONG THE CENTERLINE OF US ROUTE 14.
ELEVATION= 908.68 DATUM=NAVD88-GEOID 18

SITE BENCHMARK #6:
CUT SQUARE ON SOUTH SIDE OF CONCRETE LIGHT POLE BASE LOCATED APPROXIMATELY 68 FEET NORTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 122 FEET WESTERLY OF THE CENTERLINE OF LIBERTY ROAD.
ELEVATION=903.59 DATUM=NAVD88-GEOID 18

SITE BENCHMARK #7:
EAST BOLT ON FIRE HYDRANT LOCATED APPROXIMATELY 277 FEET SOUTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 69 FEET WESTERLY OF THE CENTERLINE OF LIBERTY ROAD.
ELEVATION=898.38 DATUM=NAVD88-GEOID 18

SITE BENCHMARK #8:
EAST BOLT ON FIRE HYDRANT LOCATED APPROXIMATELY 23 FEET NORTHERLY OF THE CENTERLINE OF LIBERTY ROAD AND APPROXIMATELY 380 FEET EASTERLY OF THE CENTERLINE OF CRYSTAL POINT ROAD.
ELEVATION=896.07 DATUM=NAVD88-GEOID 18

UTILITY CONTACTS

ELECTRIC	GAS	TELEPHONE	WATER AND SEWER
COMMONWEALTH EDISON	NICOR GAS	AT&T	CITY OF CRYSTAL LAKE
350 SOUTH SECOND STREET	1844 FERRY ROAD	2004 MINER STREET	100 W. WOODSTOCK STREET
ELGIN, IL 60123	NAPERVILLE, IL 60563	DES PLAINES, IL 60016	CRYSTAL LAKE, IL 60014
(630) 639-5532	(630) 399-0600	(847) 888-6864	(815) 356-3614
CONTACT: SUSAN WEYHRAUCH	CONTACT: FORAM SHAH	CONTACT: HECTOR SUAREZ	CONTACT: ANDREW RESEK

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

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INDEX OF SHEETS

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3	EXISTING CONDITIONS AND DEMOLITION PLAN – NORTHWEST
4	EXISTING CONDITIONS AND DEMOLITION PLAN – EAST
5	EXISTING CONDITIONS AND DEMOLITION PLAN – SOUTHWEST
6	EXISTING CONDITIONS AND DEMOLITION PLAN – SOUTHWEST BASIN
7	SOIL EROSION AND SEDIMENT CONTROL PLAN
8	SOIL EROSION AND SEDIMENT CONTROL PLAN
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10	OVERALL GRADING PLAN
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H9	PLAN AND PROFILE – THREE OAKS REC–AREA DR STA.40+00 TO STA.45+00
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H17	ADA PLAN – WATERS EDGE BOULEVARD
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H19	ADA PLAN – THREE OAKS RECREATION AREA DRIVE

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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
TITLE SHEET

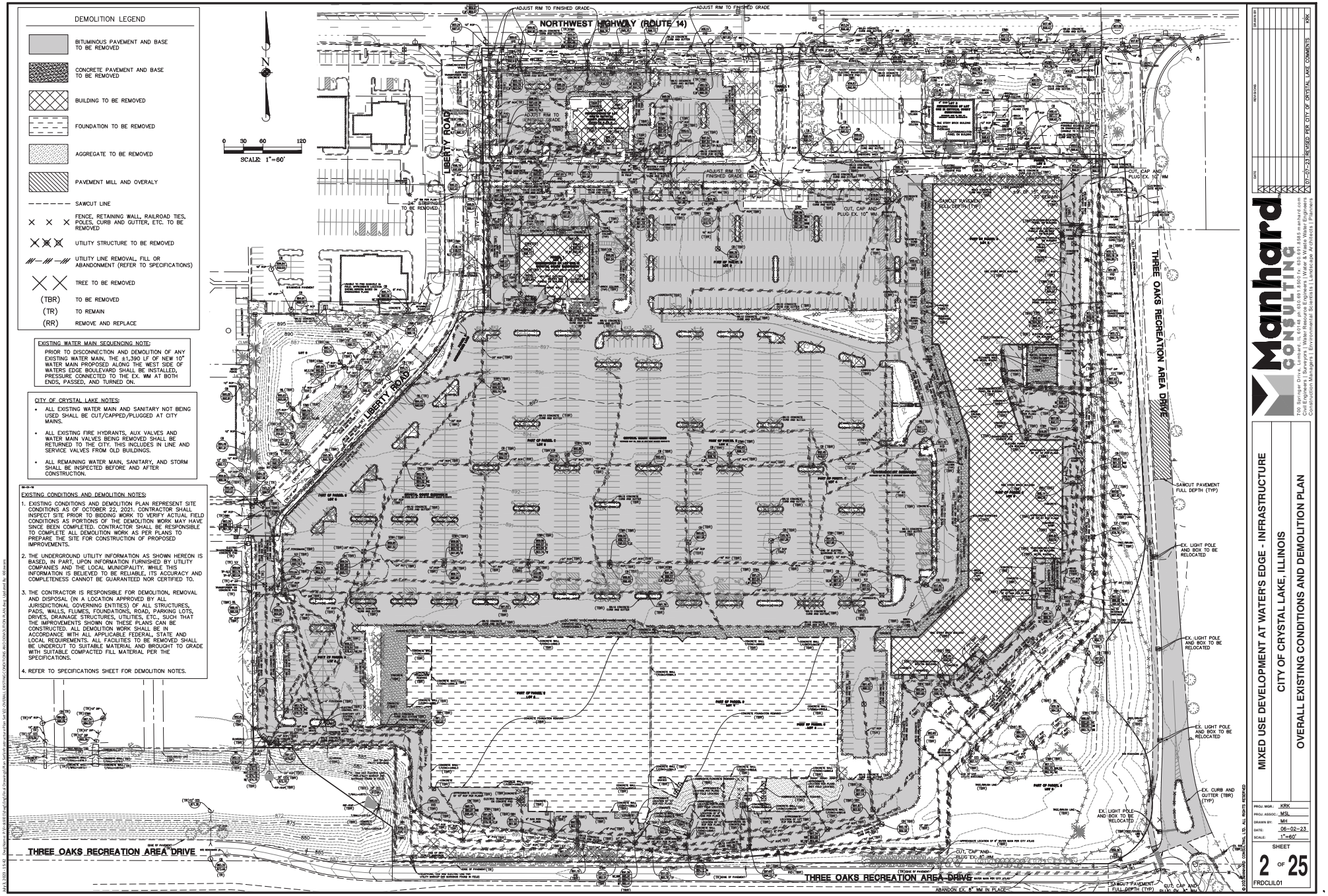
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PROJ. ASSOC.: MSL
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SHEET 1 OF 25
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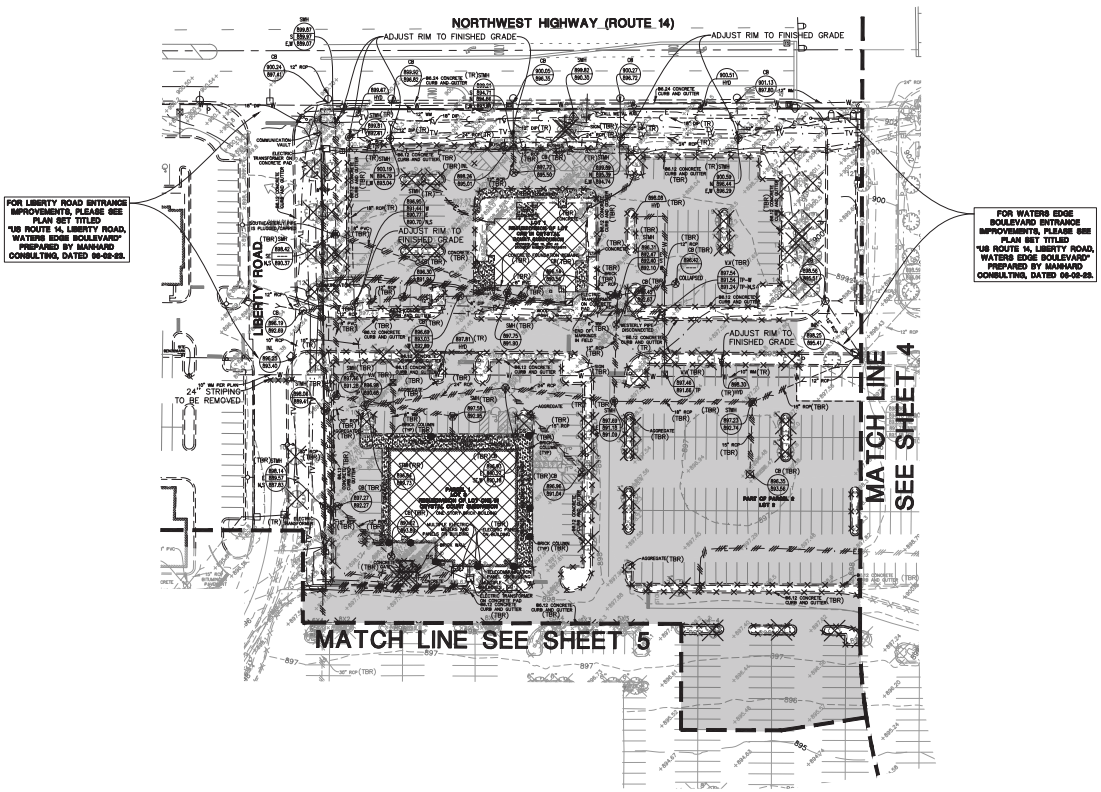
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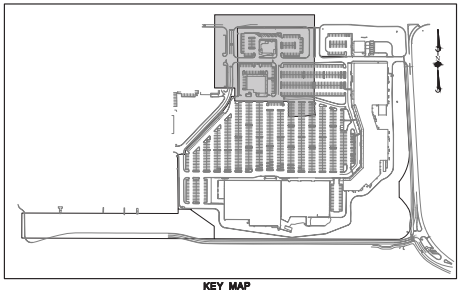
MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
OVERALL EXISTING CONDITIONS AND DEMOLITION PLAN

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SHEET 2 OF 25
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KEY MAP

EXISTING WATER MAIN SEQUENCING NOTE:

PRIOR TO DISCONNECTION AND DEMOLITION OF ANY EXISTING WATER MAIN, THE ±1,390 LF OF NEW 10" WATER MAIN PROPOSED ALONG THE WEST SIDE OF WATERS EDGE BOULEVARD SHALL BE INSTALLED, PRESSURE CONNECTED TO THE EX. WM AT BOTH ENDS, PASSED, AND TURNED ON.

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- ALL EXISTING WATER MAIN AND SANITARY NOT BEING USED SHALL BE CUT/CAPPED/PLUGGED AT CITY MAINS.
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06-2-23

EXISTING CONDITIONS AND DEMOLITION NOTES:

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2. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.
3. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION, REMOVAL AND DISPOSAL (IN A LOCATION APPROVED BY ALL JURISDICTIONAL GOVERNING ENTITIES) OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, ROAD, PARKING LOTS, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THESE PLANS CAN BE CONSTRUCTED. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
4. REFER TO SPECIFICATIONS SHEET FOR DEMOLITION NOTES.

DEMOLITION LEGEND

- BITUMINOUS PAVEMENT AND BASE TO BE REMOVED
- CONCRETE PAVEMENT AND BASE TO BE REMOVED
- BUILDING TO BE REMOVED
- FOUNDATION TO BE REMOVED
- AGGREGATE TO BE REMOVED
- PAVEMENT MILL AND OVERALY
- SAWCUT LINE
- FENCE, RETAINING WALL, RAILROAD TIES, POLES, CURB AND GUTTER, ETC. TO BE REMOVED
- UTILITY STRUCTURE TO BE REMOVED
- UTILITY LINE REMOVAL, FILL OR ABANDONMENT (REFER TO SPECIFICATIONS)
- TREE TO BE REMOVED
- (TBR) TO BE REMOVED
- (TR) TO REMAIN
- (RR) REMOVE AND REPLACE

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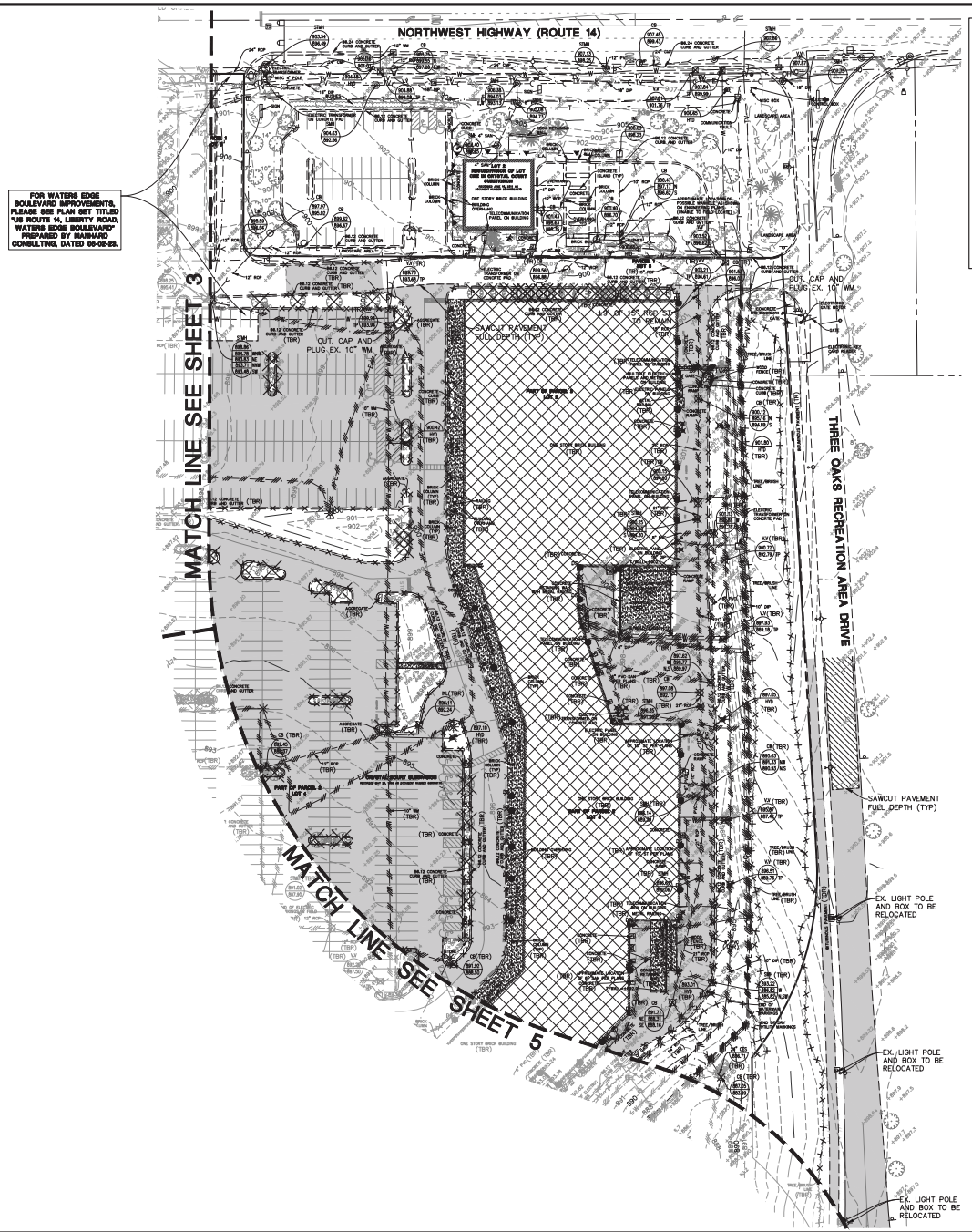
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CITY OF CRYSTAL LAKE, ILLINOIS
EXISTING CONDITIONS AND DEMOLITION PLAN - NORTHWEST

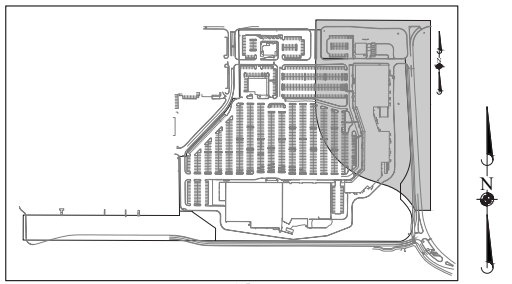
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SHEET 3 OF 25

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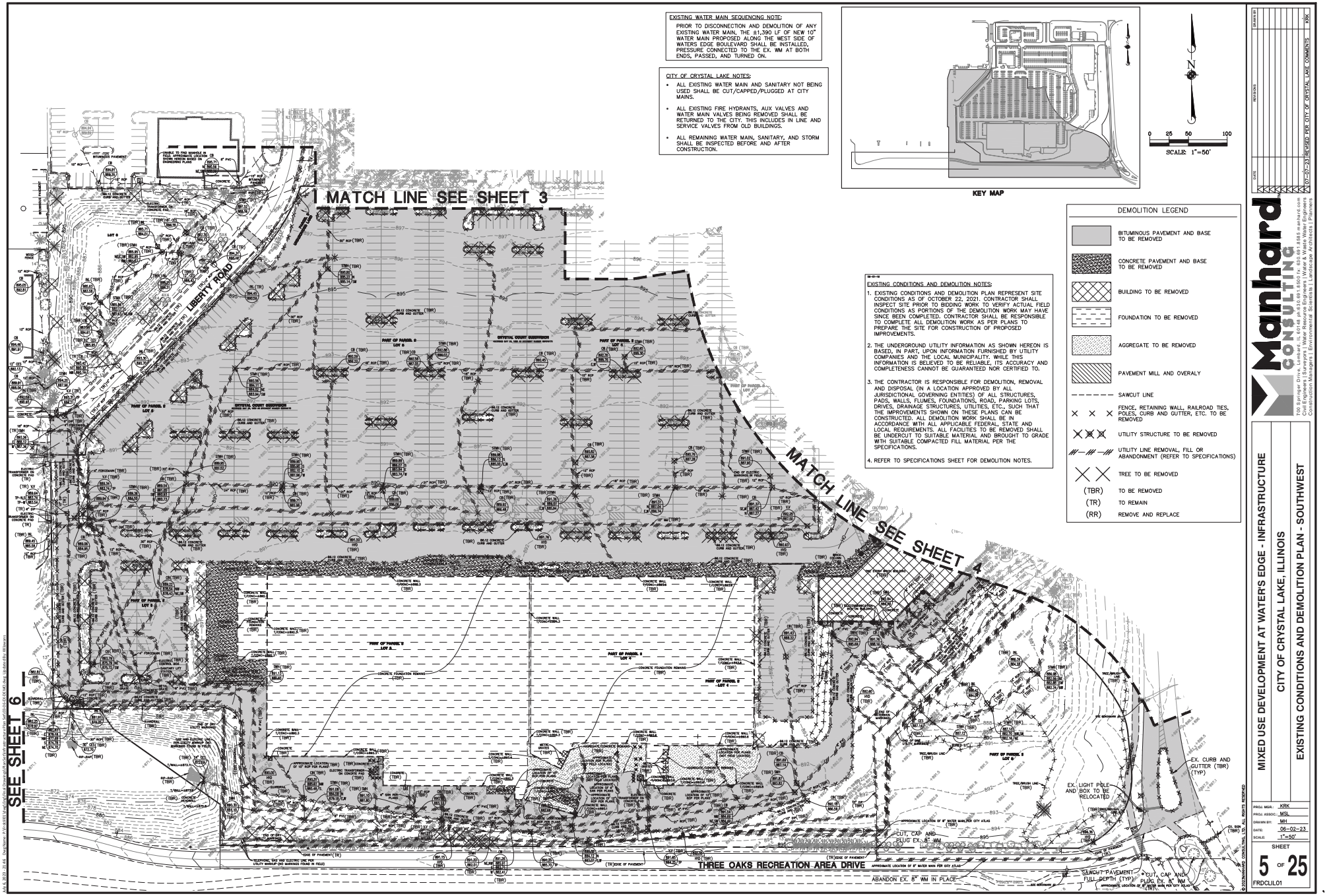
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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
EXISTING CONDITIONS AND DEMOLITION PLAN - EAST

PROJ. MGR.:	KRK
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SHEET 4 OF 25
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Construction Managers | Environmental Scientists | Landscape Architects | Planners

MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
EXISTING CONDITIONS AND DEMOLITION PLAN - SOUTHWEST

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=50'

SHEET 5 OF 25
FRDCLIL01

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CITY OF CRYSTAL LAKE NOTES:

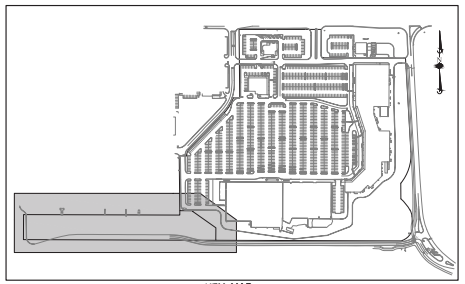
- ALL EXISTING WATER MAIN AND SANITARY NOT BEING USED SHALL BE CUT/CAPPED/PLUGGED AT CITY MAINS.
- ALL EXISTING FIRE HYDRANTS, AUX VALVES AND WATER MAIN VALVES BEING REMOVED SHALL BE RETURNED TO THE CITY. THIS INCLUDES IN LINE AND SERVICE VALVES FROM OLD BUILDINGS.
- ALL REMAINING WATER MAIN, SANITARY, AND STORM SHALL BE INSPECTED BEFORE AND AFTER CONSTRUCTION.

EXISTING CONDITIONS AND DEMOLITION NOTES:

1. EXISTING CONDITIONS AND DEMOLITION PLAN REPRESENT SITE CONDITIONS AS OF OCTOBER 22, 2021. CONTRACTOR SHALL INSPECT SITE PRIOR TO BIDDING WORK TO VERIFY ACTUAL FIELD CONDITIONS AS PORTIONS OF THE DEMOLITION WORK MAY HAVE SINCE BEEN COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLETE ALL DEMOLITION WORK AS PER PLANS TO PREPARE THE SITE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS.
2. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.
3. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION, REMOVAL AND DISPOSAL (IN A LOCATION APPROVED BY ALL JURISDICTIONAL GOVERNING ENTITIES) OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, ROAD, PARKING LOTS, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THESE PLANS CAN BE CONSTRUCTED. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
4. REFER TO SPECIFICATIONS SHEET FOR DEMOLITION NOTES.

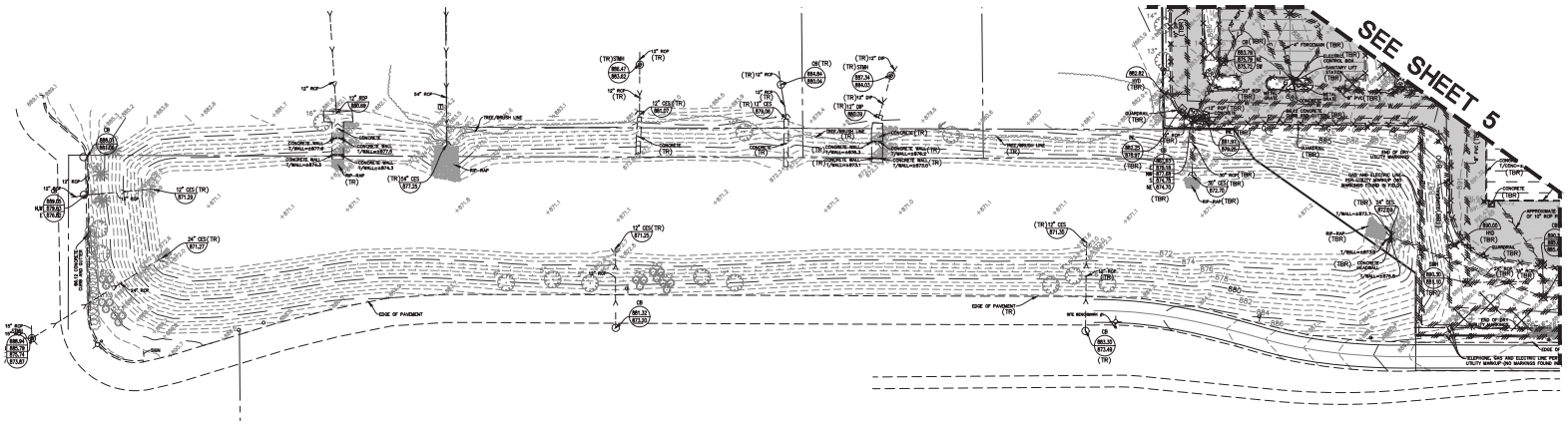
DEMOLITION LEGEND

- BITUMINOUS PAVEMENT AND BASE TO BE REMOVED
- CONCRETE PAVEMENT AND BASE TO BE REMOVED
- BUILDING TO BE REMOVED
- FOUNDATION TO BE REMOVED
- AGGREGATE TO BE REMOVED
- PAVEMENT MILL AND OVERALY
- SAWCUT LINE
- FENCE, RETAINING WALL, RAILROAD TIES, POLES, CURB AND GUTTER, ETC. TO BE REMOVED
- UTILITY STRUCTURE TO BE REMOVED
- UTILITY LINE REMOVAL, FILL OR ABANDONMENT (REFER TO SPECIFICATIONS)
- TREE TO BE REMOVED
- (TBR) TO BE REMOVED
- (TR) TO REMAIN
- (RR) REMOVE AND REPLACE



KEY MAP

SCALE: 1"=50'



DRAWN BY	KRK
REVISIONS	
DATE	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS

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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

CITY OF CRYSTAL LAKE, ILLINOIS

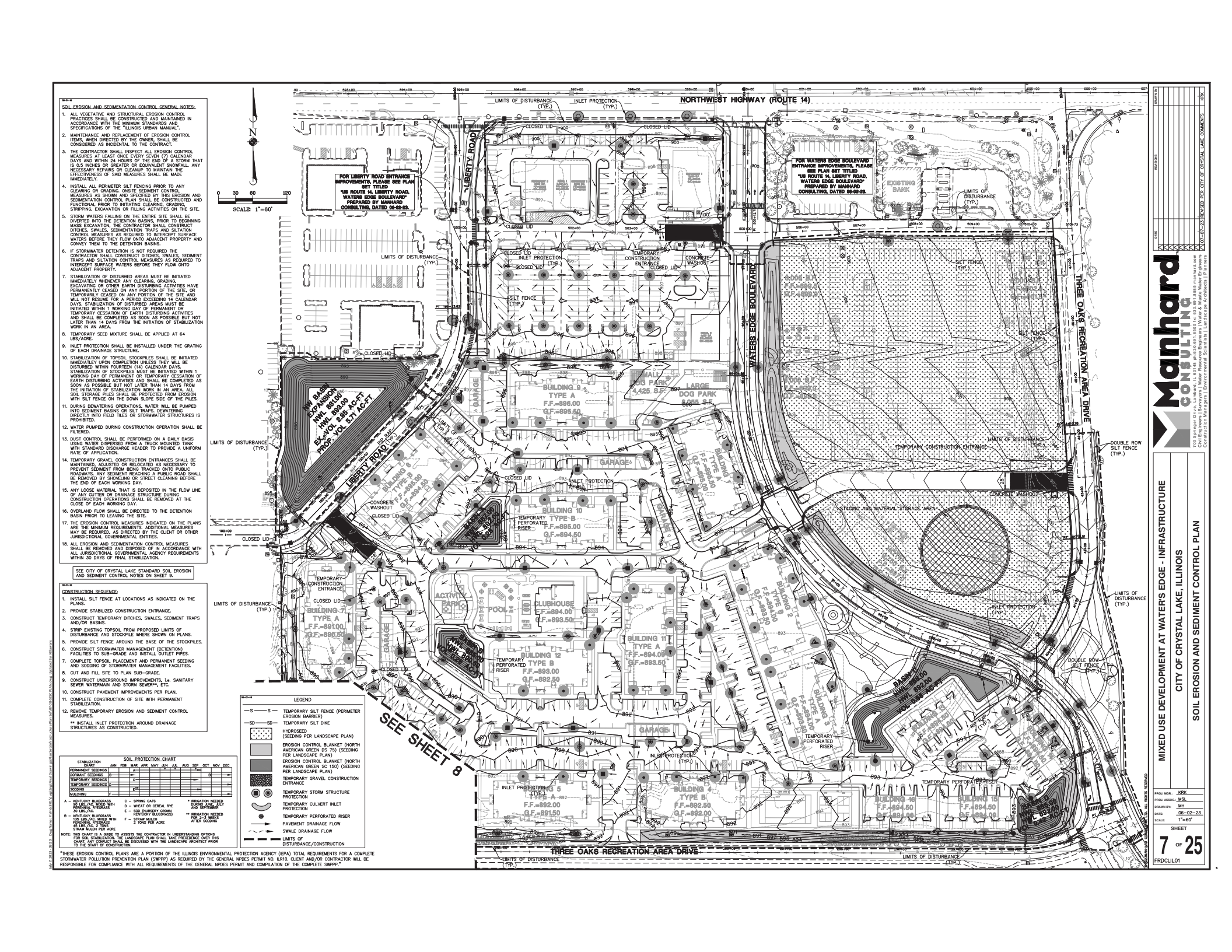
EXISTING CONDITIONS AND DEMOLITION PLAN - SOUTHWEST BASIN

PROJ. MGR.:	KRK
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SHEET 6 OF 25

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SOIL EROSION AND SEDIMENTATION CONTROL GENERAL NOTES:
1. ALL VEGETATIVE AND STRUCTURAL EROSION CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "ILLINOIS URBAN MANUAL".
2. MAINTENANCE AND REPLACEMENT OF EROSION CONTROL ITEMS, WHEN DIRECTED BY THE OWNER, SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER OR EQUIVALENT SNOWFALL. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF SAID MEASURES SHALL BE MADE IMMEDIATELY.
4. INSTALL ALL PERIMETER SILT FENCING PRIOR TO ANY CLEARING OR GRADING. ONSITE SEDIMENT CONTROL MEASURES AS SHOWN AND SPECIFIED BY THIS EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE CONSTRUCTED AND FUNCTIONAL PRIOR TO INITIATING CLEARING, GRADING, STRIPPING, EXCAVATION OR FILLING ACTIVITIES ON THE SITE.
5. STORM WATERS FALLING ON THE ENTIRE SITE SHALL BE DIVERTED INTO THE DETENTION BASINS, PRIOR TO BEGINNING MASS EXCAVATION, THE CONTRACTOR SHALL CONSTRUCT DITCHES, SWALES, SEDIMENTATION TRAPS AND SILTATION CONTROL MEASURES AS REQUIRED TO INTERCEPT SURFACE WATERS BEFORE THEY FLOW ONTO ADJACENT PROPERTY AND CONVEY THEM TO THE DETENTION BASINS.
6. IF STORMWATER DETENTION IS NOT REQUIRED THE CONTRACTOR SHALL CONSTRUCT DITCHES, SWALES, SEDIMENT TRAPS AND SILTATION CONTROL MEASURES AS REQUIRED TO INTERCEPT SURFACE WATERS BEFORE THEY FLOW ONTO ADJACENT PROPERTY.
7. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING OR OTHER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEDING 14 CALENDAR DAYS. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA.
8. TEMPORARY SEED MIXTURE SHALL BE APPLIED AT 64 LBS/ACRE.
9. INLET PROTECTION SHALL BE INSTALLED UNDER THE GRATING OF EACH DRAINAGE STRUCTURE.
10. STABILIZATION OF TOPSOIL STOCKPILES SHALL BE INITIATED IMMEDIATLEY UPON COMPLETION UNLESS THEY WILL BE DISTURBED WITHIN FOURTEEN (14) CALENDAR DAYS. STABILIZATION OF STOCKPILES MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA. ALL SOIL STORAGE PILES SHALL BE PROTECTED FROM EROSION WITH SILT FENCE ON THE DOWN SLOPE SIDE OF THE PILES.
11. DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO SEDIMENT BASINS OR SILT TRAPS. DEWATERING DIRECTLY INTO FIELD TILES OR STORMWATER STRUCTURES IS PROHIBITED.
12. WATER PUMPED DURING CONSTRUCTION OPERATION SHALL BE FILTERED.
13. DUST CONTROL SHALL BE PERFORMED ON A DAILY BASIS USING WATER DISPERSED FROM A TRUCK MOUNTED TANK WITH STANDARD DISCHARGE HEADER TO PROVIDE A UNIFORM RATE OF APPLICATION.
14. TEMPORARY GRAVEL CONSTRUCTION ENTRANCES SHALL BE MAINTAINED, ADJUSTED OR RELOCATED AS NECESSARY TO PREVENT SEDIMENT FROM BEING TRACKED ONTO PUBLIC ROADWAYS. ANY SEDIMENT REACHING A PUBLIC ROAD SHALL BE REMOVED BY SHOVELING OR STREET CLEANING BEFORE THE END OF EACH WORKING DAY.
15. ANY LOOSE MATERIAL THAT IS DEPOSITED IN THE FLOW LINE OF ANY GUTTER OR DRAINAGE STRUCTURE DURING CONSTRUCTION OPERATIONS SHALL BE REMOVED AT THE CLOSE OF EACH WORKING DAY.
16. OVERLAND FLOW SHALL BE DIRECTED TO THE DETENTION BASIN PRIOR TO LEAVING THE SITE.
17. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE CLIENT OR OTHER JURISDICTIONAL GOVERNMENTAL ENTITIES.
18. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL JURISDICTIONAL GOVERNMENTAL AGENCY REQUIREMENTS WITHIN 30 DAYS OF FINAL STABILIZATION.
SEE CITY OF CRYSTAL LAKE STANDARD SOIL EROSION AND SEDIMENT CONTROL NOTES ON SHEET 9.
CONSTRUCTION SEQUENCE:
1. INSTALL SILT FENCE AT LOCATIONS AS INDICATED ON THE PLANS.
2. PROVIDE STABILIZED CONSTRUCTION ENTRANCE.
3. CONSTRUCT TEMPORARY DITCHES, SWALES, SEDIMENT TRAPS AND/OR BASINS.
4. STRIP EXISTING TOPSOIL FROM PROPOSED LIMITS OF DISTURBANCE AND STOCKPILE WHERE SHOWN ON PLANS.
5. PROVIDE SILT FENCE AROUND THE BASE OF THE STOCKPILES.
6. CONSTRUCT STORMWATER MANAGEMENT (DETENTION) FACILITIES TO SUB-GRADE AND INSTALL OUTLET PIPES.
7. COMPLETE TOPSOIL PLACEMENT AND PERMANENT SEEDING AND SODDING OF STORMWATER MANAGEMENT FACILITIES.
8. CUT AND FILL SITE TO PLAN SUB-GRADE.
9. CONSTRUCT UNDERGROUND IMPROVEMENTS, i.e. SANITARY SEWER WATERMAIN AND STORM SEWER**, ETC.
10. CONSTRUCT PAVEMENT IMPROVEMENTS PER PLAN.
11. COMPLETE CONSTRUCTION OF SITE WITH PERMANENT STABILIZATION.
12. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
** INSTALL INLET PROTECTION AROUND DRAINAGE STRUCTURES AS CONSTRUCTED.
SOIL PROTECTION CHART
STABILIZATION CHART
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
PERMANENT SEEDINGS A
DORMANT SEEDINGS B
TEMPORARY SEEDINGS C
TEMPORARY SEEDINGS D
SODDING E**
MULCHING F
A – KENTUCKY BLUEGRASS 100 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 30 LBS./AC.
B – KENTUCKY BLUEGRASS 135 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 45 LBS./AC. 2 TONS STRAW MULCH PER ACRE
C – SPRING OATS
D – WHEAT OR CEREAL RYE
E – SOD (NURSERY GROWN KENTUCKY BLUEGRASS)
F – STRAW MULCH 2 TONS PER ACRE
* IRRIGATION NEEDED BETWEEN JULY AND SEPTEMBER
** IRRIGATION NEEDED FOR 2–3 WEEKS AFTER SODDING
NOTE: THIS CHART IS A GUIDE TO ASSISTS THE CONTRACTOR IN UNDERSTANDING OPTIONS FOR SOIL STABILIZATION. THE LANDSCAPE PLAN SHALL TAKE PRECEDENCE OVER THIS CHART. ANY CONFLICT SHALL BE DISCUSSED WITH THE LANDSCAPE ARCHITECT PRIOR TO THE START OF CONSTRUCTION.
"THESE EROSION CONTROL PLANS ARE A PORTION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA) TOTAL REQUIREMENTS FOR A COMPLETE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY THE GENERAL NPDES PERMIT NO. ILR10. CLIENT AND/OR CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE GENERAL NPDES PERMIT AND COMPILATION OF THE COMPLETE SWPPP."
LEGEND
S — S — TEMPORARY SILT FENCE (PERIMETER EROSION BARRIER)
SD — SD — TEMPORARY SILT DIKE
HYDROSEED (SEEDING PER LANDSCAPE PLAN)
EROSION CONTROL BLANKET (NORTH AMERICAN GREEN DS 75) (SEEDING PER LANDSCAPE PLAN)
EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC 150) (SEEDING PER LANDSCAPE PLAN)
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
TEMPORARY STORM STRUCTURE PROTECTION
TEMPORARY CULVERT INLET PROTECTION
TEMPORARY PERFORATED RISER
PAVEMENT DRAINAGE FLOW
SWALE DRAINAGE FLOW
LIMITS OF DISTURBANCE/CONSTRUCTION
NORTHWEST HIGHWAY (ROUTE 14)
LIBERTY ROAD
WATERS EDGE BOULEVARD
THREE OAKS RECREATION AREA DRIVE
FOR LIBERTY ROAD ENTRANCE IMPROVEMENTS, PLEASE SEE PLAN SET TITLED "US ROUTE 14, LIBERTY ROAD, WATERS EDGE BOULEVARD" PREPARED BY MANHARD CONSULTING, DATED 06-02-23.
FOR WATERS EDGE BOULEVARD ENTRANCE IMPROVEMENTS, PLEASE SEE PLAN SET TITLED "US ROUTE 14, LIBERTY ROAD, WATERS EDGE BOULEVARD" PREPARED BY MANHARD CONSULTING, DATED 06-02-23.
SCALE: 1"=60'
0 30 60 120
N
LIMITS OF DISTURBANCE (TYP.)
INLET PROTECTION (TYP.)
CLOSED LID
SILT FENCE (TYP.)
TEMPORARY CONSTRUCTION ENTRANCE
CONCRETE WASHOUT
DOUBLE ROW SILT FENCE (TYP.)
STAGING AND MATERIAL STORAGE AREA
EXISTING BANK
BUILDING 1 TYPE A F.F.=896.00 G.F.=895.50
BUILDING 2 TYPE B F.F.=894.00 G.F.=893.50
BUILDING 3 TYPE A F.F.=894.00 G.F.=893.50
BUILDING 4 TYPE B F.F.=892.50 G.F.=892.00
BUILDING 5 TYPE A F.F.=892.00 G.F.=891.50
BUILDING 6 TYPE B F.F.=894.50 G.F.=894.00
BUILDING 7 TYPE A F.F.=891.00 G.F.=890.50
BUILDING 8 TYPE B F.F.=894.50 G.F.=894.00
BUILDING 9 TYPE A F.F.=896.00 G.F.=895.50
BUILDING 10 TYPE B F.F.=895.00 G.F.=894.50
BUILDING 11 TYPE A F.F.=894.00 G.F.=893.50
BUILDING 12 TYPE B F.F.=893.00 G.F.=892.50
BUILDING 13 TYPE A F.F.=894.00 G.F.=893.50
BUILDING 14 F.F.=894.50 G.F.=894.00
BUILDING 15 F.F.=894.50 G.F.=894.00
BUILDING 16 F.F.=894.50 G.F.=894.00
BUILDING 17 F.F.=894.50 G.F.=894.00
CLUBHOUSE F.F.=894.00 F.F.=893.50
POOL
ACTIVITY PARK
SMALL DOG PARK 1,425 S.F.
LARGE DOG PARK 5,685 S.F.
GARAGE
SEE SHEET 8
SEE SHEET 10
SEE SHEET 6
SEE SHEET 7
SEE SHEET 9
SEE SHEET 11
SEE SHEET 12
SEE SHEET 13
SEE SHEET 14
SEE SHEET 15
SEE SHEET 16
SEE SHEET 17
SEE SHEET 18
SEE SHEET 19
SEE SHEET 20
SEE SHEET 21
SEE SHEET 22
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SEE SHEET 24
SEE SHEET 25
DRAWN BY KRK
REVISIONS
07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS KRK
DATE
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CITY OF CRYSTAL LAKE, ILLINOIS
SOIL EROSION AND SEDIMENT CONTROL PLAN
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SHEET 7 OF 25
FRDCLIL01
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18. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL JURISDICTIONAL GOVERNMENTAL AGENCY REQUIREMENTS WITHIN 30 DAYS OF FINAL STABILIZATION.

SEE CITY OF CRYSTAL LAKE STANDARD SOIL EROSION AND SEDIMENT CONTROL NOTES ON SHEET 9.

CONSTRUCTION SEQUENCE:

1. INSTALL SILT FENCE AT LOCATIONS AS INDICATED ON THE PLANS.
2. PROVIDE STABILIZED CONSTRUCTION ENTRANCE.
3. CONSTRUCT TEMPORARY DITCHES, SWALES, SEDIMENT TRAPS AND/OR BASINS.
4. STRIP EXISTING TOPSOIL FROM PROPOSED LIMITS OF DISTURBANCE AND STOCKPILE WHERE SHOWN ON PLANS.
5. PROVIDE SILT FENCE AROUND THE BASE OF THE STOCKPILES.
6. CONSTRUCT STORMWATER MANAGEMENT (DETENTION) FACILITIES TO SUB-GRADE AND INSTALL OUTLET PIPES.
7. COMPLETE TOPSOIL PLACEMENT AND PERMANENT SEEDING AND SODDING OF STORMWATER MANAGEMENT FACILITIES.
8. CUT AND FILL SITE TO PLAN SUB-GRADE.
9. CONSTRUCT UNDERGROUND IMPROVEMENTS, i.e. SANITARY SEWER WATERMAIN AND STORM SEWER**, ETC.
10. CONSTRUCT PAVEMENT IMPROVEMENTS PER PLAN.
11. COMPLETE CONSTRUCTION OF SITE WITH PERMANENT STABILIZATION.
12. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.

** INSTALL INLET PROTECTION AROUND DRAINAGE STRUCTURES AS CONSTRUCTED.

SOIL PROTECTION CHART

STABILIZATION CHART	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDINGS			A									
DORMANT SEEDINGS	B									B		
TEMPORARY SEEDINGS			C									
TEMPORARY SEEDINGS	D											
SODDING			E**									
MULCHING	F											

A – KENTUCKY BLUEGRASS 100 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 30 LBS./AC.

B – KENTUCKY BLUEGRASS 130 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 45 LBS./AC. 2 TONS STRAW MULCH PER ACRE

C – SPRING OATS

D – WHEAT OR CEREAL RYE

E – SOD (NURSERY GROWN KENTUCKY BLUEGRASS)

F – STRAW MULCH 2 TONS PER ACRE

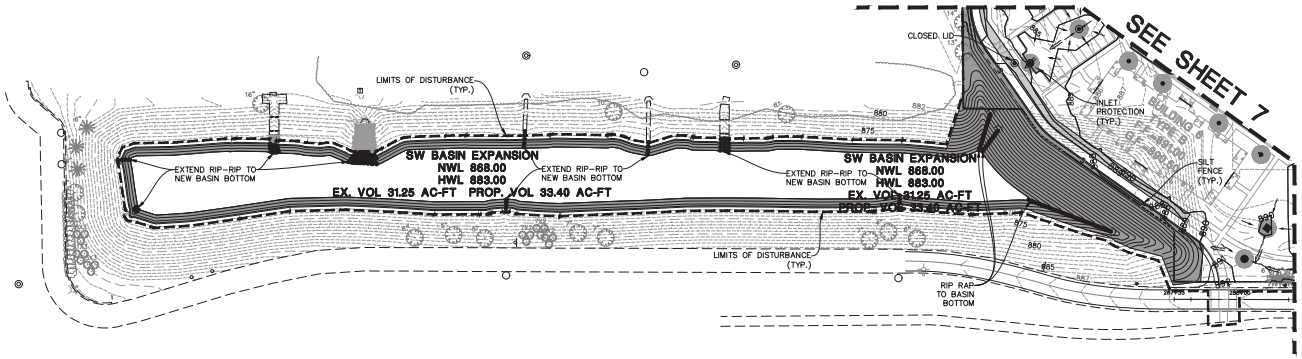
* IRRIGATION NEEDED FOR 2-3 WEEKS JULY AND SEPTEMBER

** IRRIGATION NEEDED FOR 2-3 WEEKS AFTER SODDING

NOTE: THIS CHART IS A GUIDE TO ASSISTS THE CONTRACTOR IN UNDERSTANDING OPTIONS FOR SOIL STABILIZATION. THE LANDSCAPE PLAN SHALL TAKE PRECEDENCE OVER THIS CHART. ANY CONFLICT SHALL BE DISCUSSED WITH THE LANDSCAPE ARCHITECT PRIOR TO THE START OF CONSTRUCTION.

LEGEND

- TEMPORARY SILT FENCE (PERIMETER EROSION BARRIER)
- TEMPORARY SILT DIKE
- HYDROSEED (SEEDING PER LANDSCAPE PLAN)
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN DS 75) (SEEDING PER LANDSCAPE PLAN)
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC 150) (SEEDING PER LANDSCAPE PLAN)
- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- TEMPORARY STORM STRUCTURE PROTECTION
- TEMPORARY CULVERT INLET PROTECTION
- TEMPORARY PERFORATED RISER
- PAVEMENT DRAINAGE FLOW
- SWALE DRAINAGE FLOW
- LIMITS OF DISTURBANCE/CONSTRUCTION





"THESE EROSION CONTROL PLANS ARE A PORTION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA) TOTAL REQUIREMENTS FOR A COMPLETE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY THE GENERAL NPDES PERMIT NO. ILR10. CLIENT AND/OR CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE GENERAL NPDES PERMIT AND COMPILATION OF THE COMPLETE SWPPP."

DRAWN BY	REVISIONS	DATE
KRK	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-07-23

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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
SOIL EROSION AND SEDIMENT CONTROL PLAN

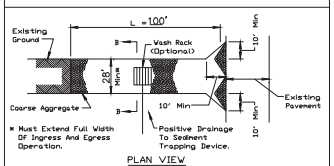
PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: MH
DATE: 06-02-23
SCALE: 1"=60'

SHEET 8 OF 25
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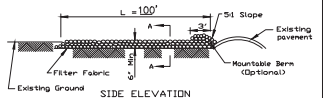
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July 7 2023 - 09:10 - DanNunn - P:\P-0455\Working\Civil\Drawings\Site\Sheets\Soil Erosion and Sediment Control Plan.dwg - Xref(s) Used: Xref(s) Not Found: Xref(s) Not Loaded: Xref(s) Not Saved: Images Used:

STABILIZED CONSTRUCTION ENTRANCE PLAN



PLAN VIEW



SIDE ELEVATION

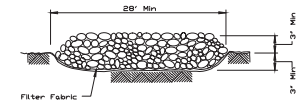
NOTES:
1. Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table I or 2, Class I, II or IV and shall be placed over the cleared area prior to the placing of rock.
2. Rock or reclaimed concrete shall meet one of the following IDOT coarse aggregate gradation, CA-1, CA-2, CA-3 or CA-4 and be placed according to construction specification 25 ROCKFILL using placement Method 1 and Class III compaction.
3. Any drainage facilities required because of washing shall be constructed according to manufacturers specifications.
4. If wash racks are used they shall be installed according to the manufacturer's specifications.

REFERENCE: Project, Designed, Checked, Approved — Date

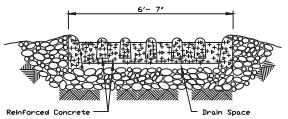
NRCS — National Resources Conservation Service

STANDARD DWG. NO. IL-630 — SHEET 1 OF 2 — DATE 4-18-94

STABILIZED CONSTRUCTION ENTRANCE PLAN



SECTION A-A

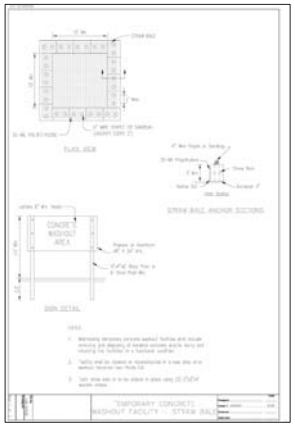


SECTION B-B

REFERENCE: Project, Designed, Checked, Approved — Date

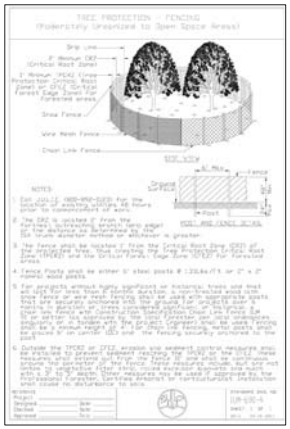
NRCS — National Resources Conservation Service

STANDARD DWG. NO. IL-630 — SHEET 2 OF 2 — DATE 4-18-94



TEMPORARY CONCRETE WASHOUT FACILITY - STRAW BALES

STANDARD DWG. NO. IDM-670-1 — SHEET 1 OF 1 — DATE 06-01-15

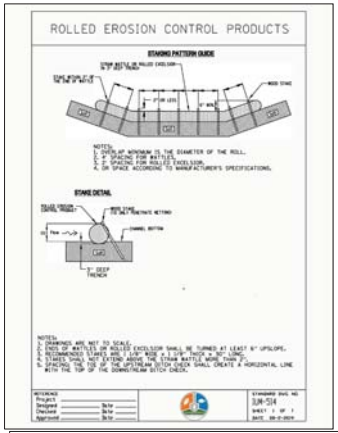


CITY OF CRYSTAL LAKE

CLSD APPENDIX 2: STANDARD SOIL EROSION AND SEDIMENT CONTROL NOTES

1. CONTROL MEASURES SHALL MEET THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE ILLINOIS URBAN MANUAL (WWW.NRCS.USDA.GOV/IUM) UNLESS STATED OTHERWISE.
2. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. AREAS OF THE DEVELOPMENT SITE THAT ARE NOT TO BE DISTURBED SHALL BE PROTECTED FROM CONSTRUCTION TRAFFIC OR OTHER DISTURBANCE UNTIL FINAL STABILIZATION IS ACHIEVED.
3. SOIL STABILIZATION MEASURES SHALL CONSIDER THE TIME OF YEAR, DEVELOPMENT SITE CONDITIONS AND THE USE OF TEMPORARY OR PERMANENT MEASURES.
4. STABILIZATION BY SEEDING SHALL INCLUDE TOPSOIL PLACEMENT AND FERTILIZATION, AS NECESSARY.
5. NATIVE SEED MIXTURES SHALL INCLUDE RAPID-GROWING ANNUAL GRASSES OR SMALL GRAINS TO PROVIDE INITIAL, TEMPORARY SOIL STABILIZATION.
6. OFF-SITE PROPERTY SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. VELOCITY DISSIPATION DEVICES SHALL BE PLACED AT CONCENTRATED DISCHARGE LOCATIONS AND ALONG THE LENGTH OF ANY OUTFALL CHANNEL, AS NECESSARY TO PREVENT EROSION.
7. SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE DISTURBANCE OF TRIBUTARY AREAS.
8. STABILIZATION OF DISTURBED AREAS SHALL BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING OR OTHER EARTH-DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE DEVELOPMENT SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE DEVELOPMENT SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION OF DISTURBED AREAS SHALL BE INITIATED WITHIN ONE WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH-DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE, BUT NOT LATER THAN 14 CALENDAR DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA. EXCEPTIONS TO THESE TIME FRAMES ARE SPECIFIED BELOW:
   - 8.a. WHERE THE INITIATION OF STABILIZATION MEASURES IS PRECLUDED BY SNOW COVER, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE; AND
   - 8.b. IN AREAS WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED AND WILL RESUME AFTER 14 DAYS, A TEMPORARY STABILIZATION METHOD MAY BE USED.
9. DISTURBANCE OF STEEP SLOPES SHALL BE MINIMIZED. AREAS OR EMBANKMENTS HAVING SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH STAKED-IN-PLACE SOD, EROSION CONTROL BLANKETS IN COMBINATION WITH SEEDING, OR AN EQUIVALENT CONTROL MEASURE.
10. PERIMETER CONTROL MEASURES SHALL BE PROVIDED DOWNSLOPE AND PERPENDICULAR TO THE FLOW OF RUNOFF FROM DISTURBED AREAS, WHERE THE TRIBUTARY AREA IS GREATER THAN 5,000 SQUARE FEET, AND WHERE RUNOFF WILL FLOW IN A SHEET FLOW MANNER. PERIMETER EROSION CONTROL SHALL ALSO BE PROVIDED AT THE BASE OF SOIL STOCKPILES.
11. THE STORMWATER MANAGEMENT SYSTEM SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION DOWNSLOPE FROM DISTURBED AREAS. INLET PROTECTION THAT REDUCES SEDIMENT LOADING, WHILE ALLOWING RUNOFF TO ENTER THE INLET, SHALL BE REQUIRED FOR ALL STORM SEWERS. CHECK DAMS, OR AN EQUIVALENT CONTROL MEASURE, SHALL BE REQUIRED FOR ALL CHANNELS. FILTER FABRIC INLET PROTECTION AND STRAW BALE DITCH CHECKS ARE NOT ACCEPTABLE CONTROL MEASURES.
12. IF DEWATERING SERVICES ARE USED, DISCHARGES SHALL BE ROUTED THROUGH AN EFFECTIVE SEDIMENT CONTROL MEASURE (E.G., SEDIMENT TRAP OR AN EQUIVALENT CONTROL MEASURE). THE ENFORCEMENT OFFICER SHALL BE NOTIFIED PRIOR TO THE COMMENCEMENT OF DEWATERING ACTIVITIES.
13. ALL TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL STABILIZATION OF THE DEVELOPMENT SITE IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NECESSARY. TRAPPED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED.
14. STOCKPILED SOIL AND MATERIALS SHALL BE REMOVED FROM FLOOD HAZARD AREAS AT THE END OF EACH WORK DAY. SOIL AND MATERIALS STOCKPILED IN HMC OR BUFFER AREAS SHALL BE PLACED ON TIMBER MATS, OR AN EQUIVALENT CONTROL MEASURE.
15. EFFECTIVE CONTROL MEASURES SHALL BE UTILIZED TO MINIMIZE THE DISCHARGE OF POLLUTANTS FROM THE DEVELOPMENT SITE. AT A MINIMUM, CONTROL MEASURES SHALL BE IMPLEMENTED IN ORDER TO:
   - 15.a. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATER; AND
   - 15.b. MINIMIZE THE EXPOSURE OF BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, VEHICLE FLUIDS, SANITARY WASTE, AND OTHER MATERIALS PRESENT ON THE DEVELOPMENT SITE TO PRECIPITATION AND TO STORMWATER.
16. ADEQUATE RECEPTACLES SHALL BE PROVIDED FOR THE DEPOSITING OF ALL CONSTRUCTION MATERIAL DEBRIS GENERATED DURING THE DEVELOPMENT PROCESS. THE APPLICANT SHALL NOT CAUSE OR PERMIT THE DUMPING, DEPOSITING, DROPPING, THROWING, DISCARDING OR LEAVING OF CONSTRUCTION MATERIAL DEBRIS UPON OR INTO ANY DEVELOPMENT SITE, CHANNEL, OR WMC. THE DEVELOPMENT SITE SHALL BE MAINTAINED FREE OF CONSTRUCTION MATERIAL DEBRIS.
17. THE ENFORCEMENT OFFICER MAY REQUIRE ADDITIONAL OR ALTERNATE SOIL EROSION AND SEDIMENT CONTROL MEASURES, BASED ON DEVELOPMENT-SITE-SPECIFIC CONSIDERATIONS AND THE EFFECTIVENESS OF THE INSTALLED CONTROL MEASURES.

ROLLED EROSION CONTROL PRODUCTS



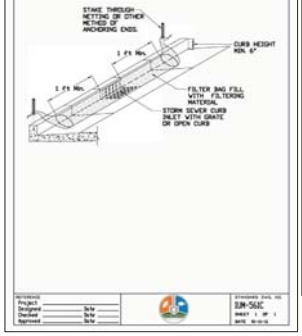
NOTES:
C. DIVERSION DENSITY AND SPACING FOR RILLS.
D. SPACING FOR RILLED EXCELSIOR.
E. OR SPACE ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

NOTES:
C. ENDS OF WATTLES OR ROLLED EXCELSIOR SHALL BE TURNED AT LEAST 6" UPSLOPE.
D. RECOMMENDED STAKES ARE 1 1/8" WIDE X 1 1/8" THICK X 30" LONG.
A. STAKES SHALL NOT EXTEND ABOVE THE STRAW WATTLE MORE THAN 2".
B. SPACING ON THE TOE OF THE OPTIMUM STITCH CHECK SHALL CREATE A HORIZONTAL LINE WITH THE TOP OF THE DOWNSTREAM STITCH CHECK.

REFERENCE: Project, Designed, Checked, Approved — Date

STANDARD DWG. NO. IL-514 — SHEET 1 OF 1 — DATE 08-01-2019

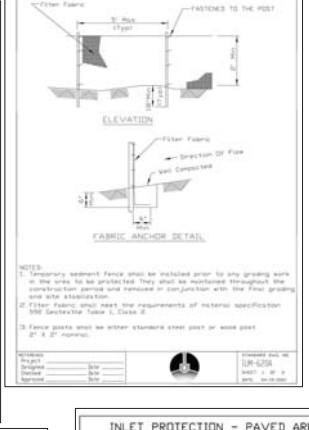
INLET PROTECTION - IMPERVIOUS AREAS CURB PROTECTION



REFERENCE: Project, Designed, Checked, Approved — Date

STANDARD DWG. NO. IDM-566 — SHEET 1 OF 1 — DATE 06-01-15

SILT FENCE PLAN

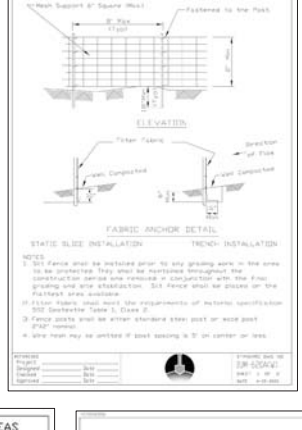


NOTES:
1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table I, Class II.
3. Fence posts shall be either standard steel post or wood post (2"x2" nominal). A wire mesh may be omitted if post spacing is 5' on center or less.

REFERENCE: Project, Designed, Checked, Approved — Date

STANDARD DWG. NO. IDM-670-4 — SHEET 1 OF 1 — DATE 4-01-2002

SILT FENCE WITH WIRE SUPPORT PLAN

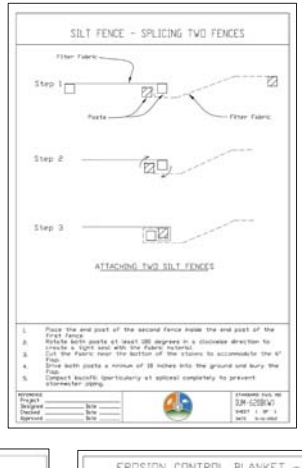


NOTES
1. Silt Fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization. Silt Fence shall be placed on the flattest area available.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table I, Class II.
3. Fence posts shall be either standard steel post or wood post (2"x2" nominal). A wire mesh may be omitted if post spacing is 5' on center or less.

REFERENCE: Project, Designed, Checked, Approved — Date

STANDARD DWG. NO. IDM-670-5 — SHEET 1 OF 1 — DATE 4-01-2002

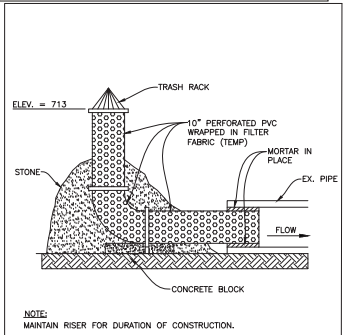
SILT FENCE - SPLICING TWO FENCES



1. Place the end post of the second fence inside the end post of the first fence.
2. Rotate both posts at least 180 degrees in a clockwise direction to create a tight seal with the fabric material.
3. Cut the fabric near the bottom of the stakes to accomodate the 6" Flap.
4. Drive both posts a minimum of 18 inches into the ground and bury the flap.
5. Compact backfill (particularly at splices) completely to prevent stormwater piping.

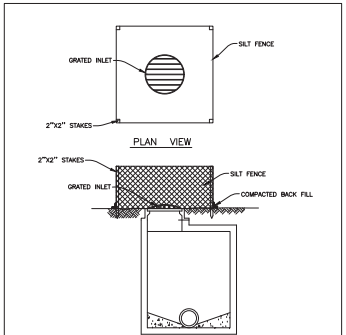
REFERENCE: Project, Designed, Checked, Approved — Date

STANDARD DWG. NO. IDM-670-6 — SHEET 1 OF 1 — DATE 4-01-2002



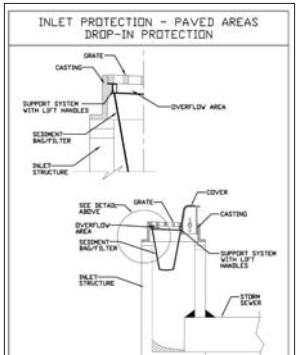
NOTE:
MAINTAIN RISER FOR DURATION OF CONSTRUCTION.

DWG: TEMPORARY PERFORATED RISER #1 — FRDJAUL01



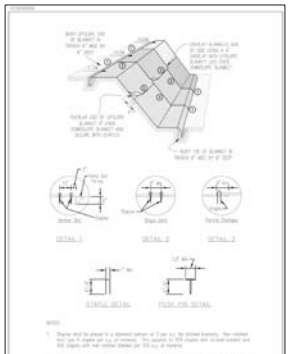
06-01-15 — SILT FENCE INLET SEDIMENT FILTER (NON-PAVEMENT) — S-EC-SF-INLETPROTECT

INLET PROTECTION - PAVED AREAS DROP-IN PROTECTION

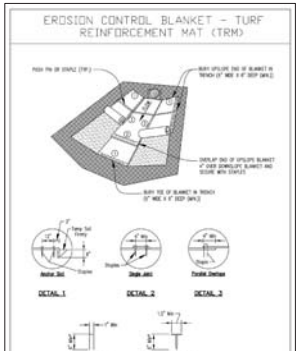


REFERENCE: Project, Designed, Checked, Approved — Date

STANDARD DWG. NO. IDM-560 — SHEET 1 OF 1 — DATE 06-02-15



EROSION CONTROL BLANKET - TURF REINFORCEMENT MAT (TRM)



REFERENCE: Project, Designed, Checked, Approved — Date

STANDARD DWG. NO. IDM-530 — SHEET 1 OF 1 — DATE 06-02-15

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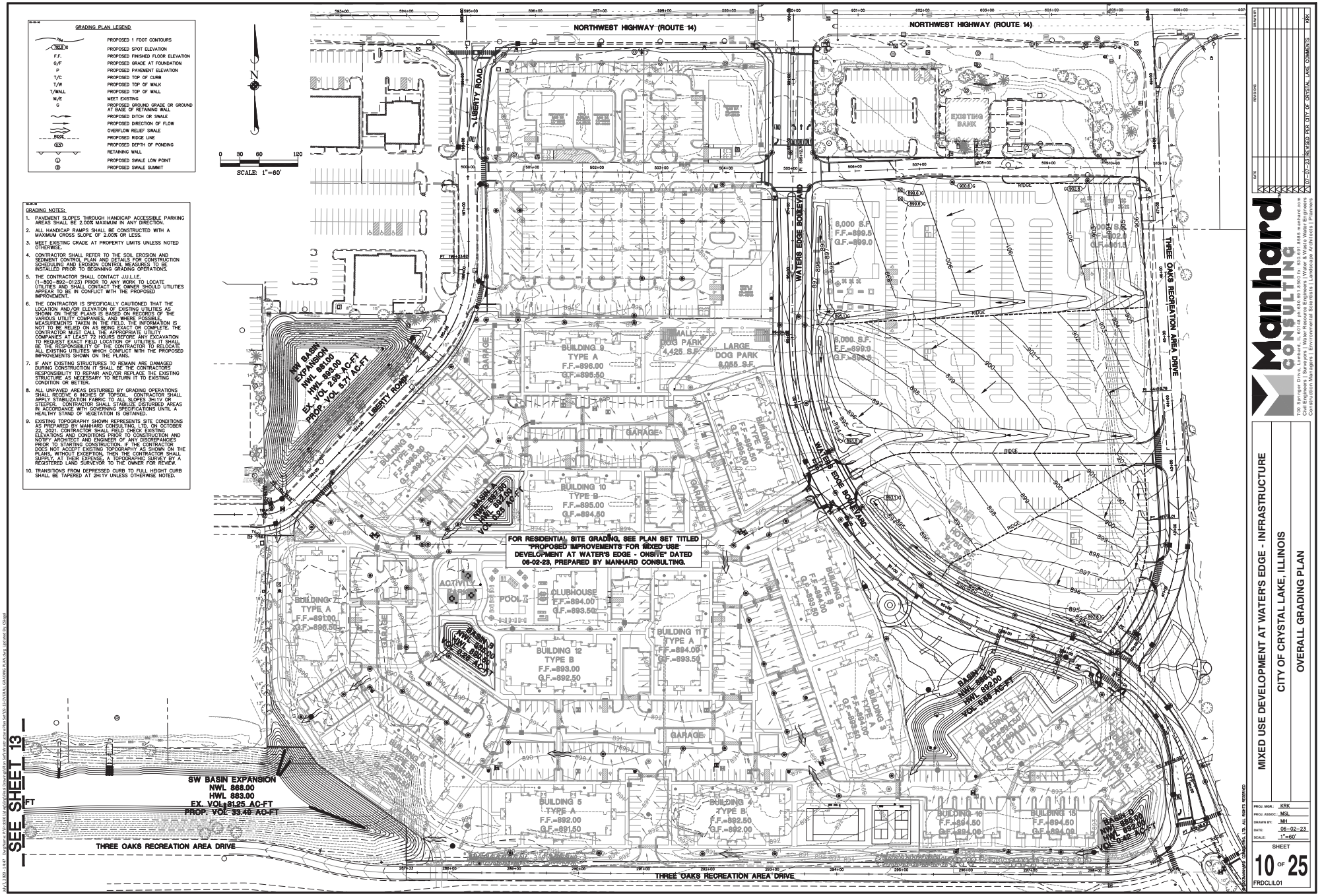
MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
SOIL EROSION AND SEDIMENT CONTROL DETAILS

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: MH
DATE: 06-02-23
SCALE: N.T.S.

SHEET 9 OF 25

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File Name: K:\PD\2021 Projects\210189 - Crystal Lake Water's Edge\Civil\Engineering\Plan Sets\Final Engineering\Soil Erosion and Sediment Control Details.dwg



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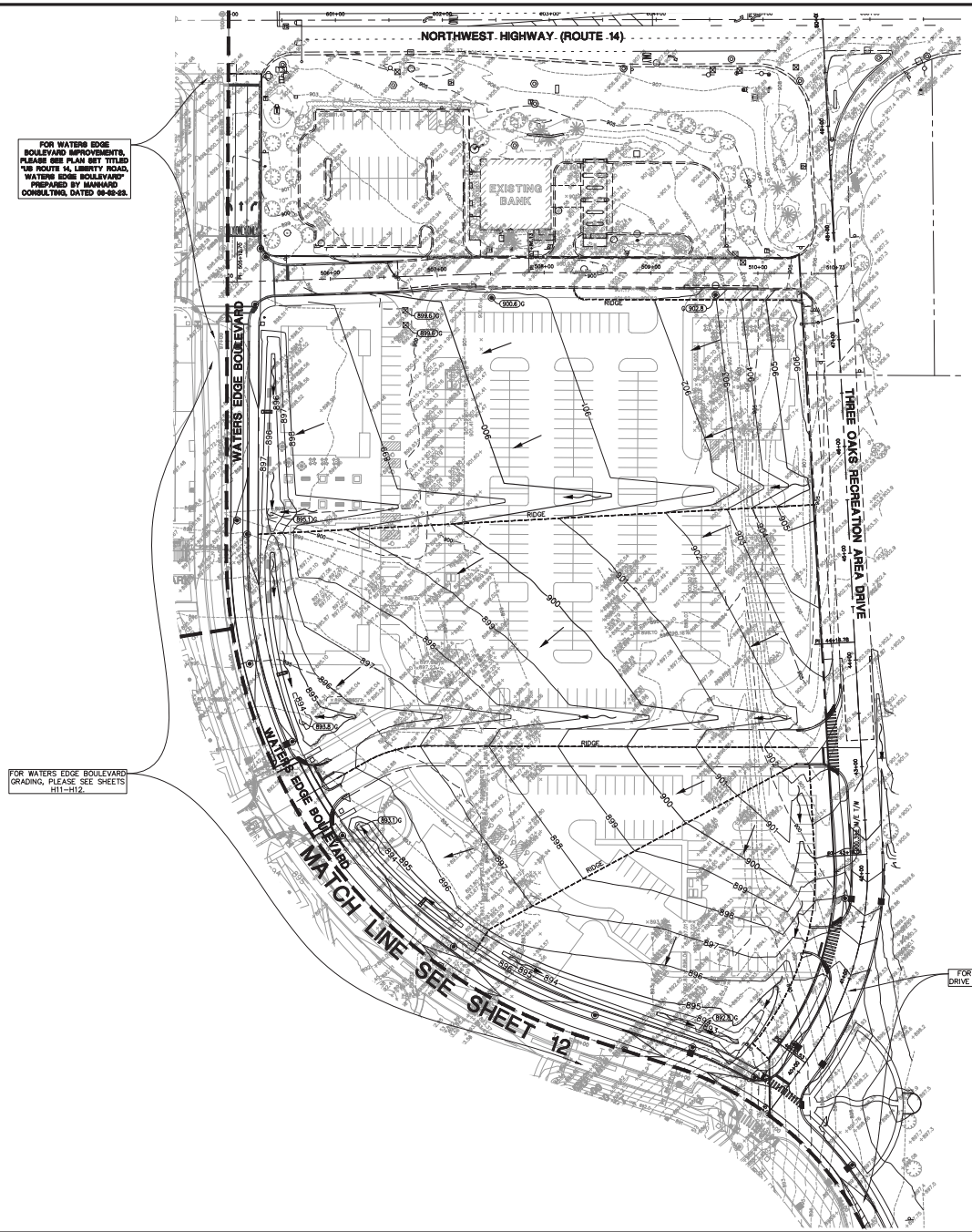
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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
OVERALL GRADING PLAN

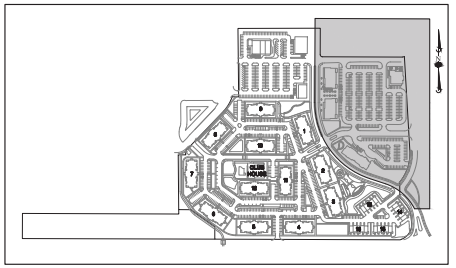
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PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=60'

SHEET 10 OF 25
FRDCLIL01

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0 25 50 100
SCALE: 1"=50'



KEY MAP

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.8 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
0.2	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
S	PROPOSED SWALE SUMMIT

GRADING NOTES:

1. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
2. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
3. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
5. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
8. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
9. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY MANHARD CONSULTING, LTD. ON OCTOBER 22, 2021. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
10. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

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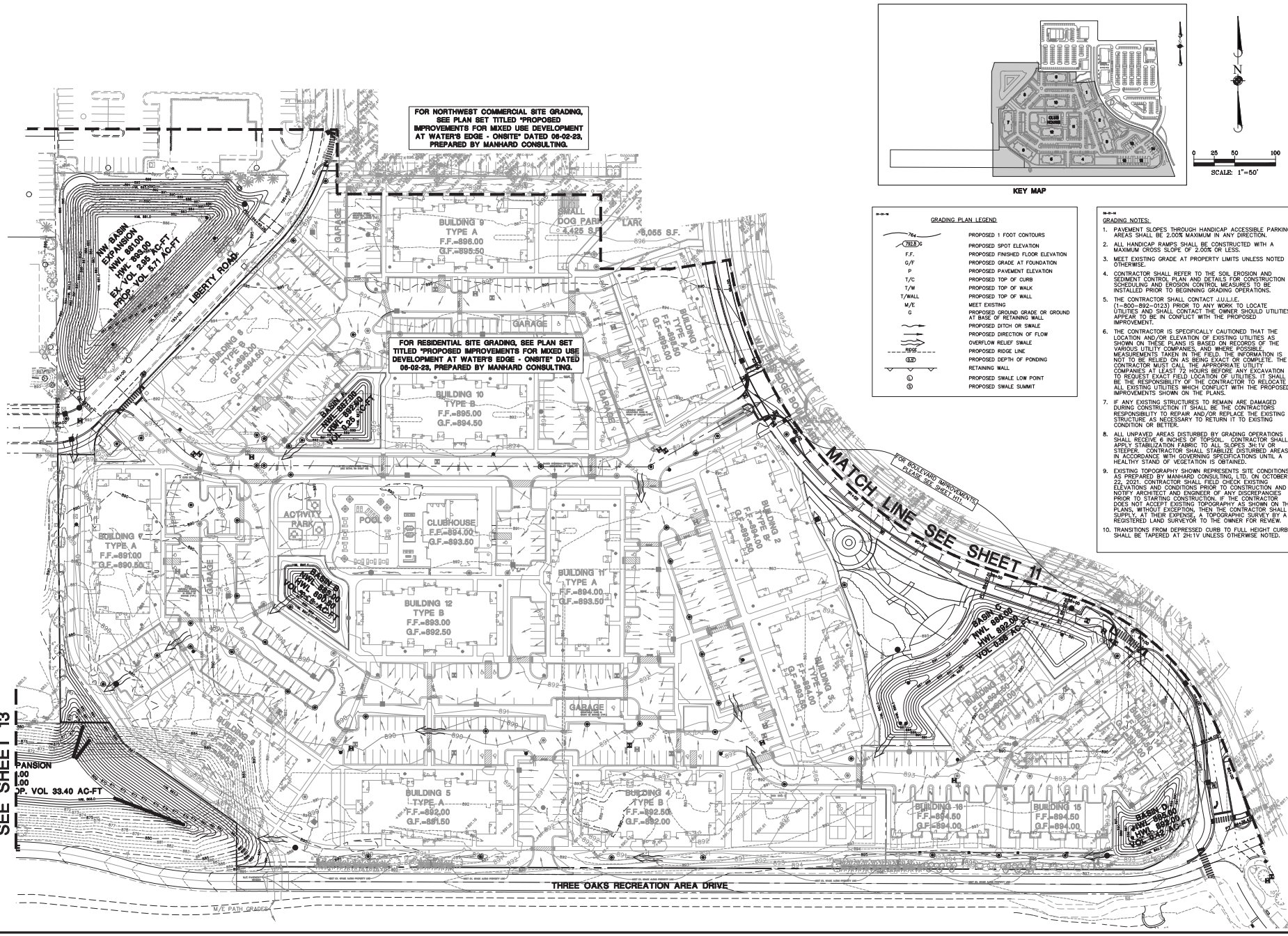
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KRK	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-07-23

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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
GRADING PLAN - EAST

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=50'

SHEET 11 OF 25
FRDCLIL01



KEY MAP

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.8 G	PROPOSED SPOT ELEVATION
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	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
0.27	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
S	PROPOSED SWALE SUMMIT

GRADING NOTES:

1. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
2. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
3. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
5. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
8. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
9. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY MANHARD CONSULTING, LTD. ON OCTOBER 22, 2021. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
10. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

DRAWN BY	REVISIONS	DATE
KRK		
KRK	COMMENTS	07-07-23
KRK	REVISED PER CITY OF CRYSTAL LAKE	07-07-23

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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
GRADING PLAN - SOUTHWEST

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=50'

SHEET 12 OF 25
FRDCLIL01

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01-01-16

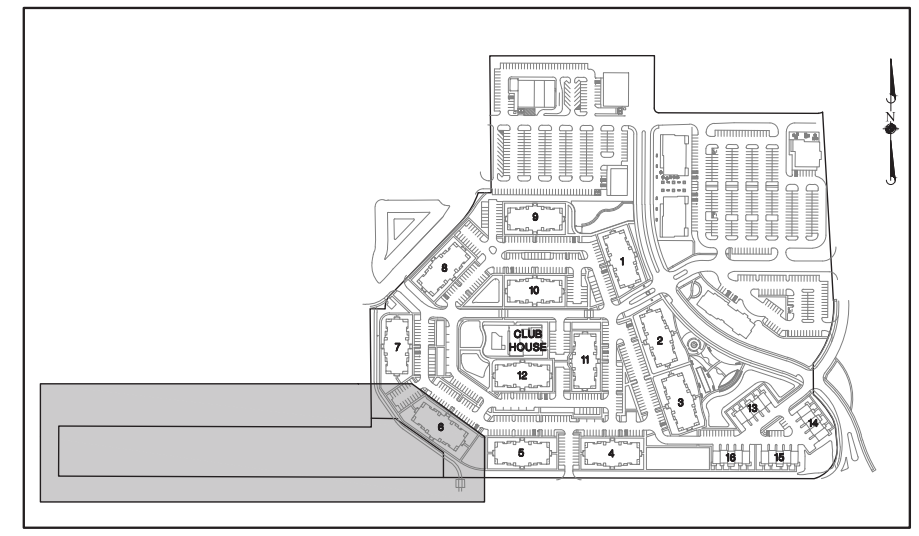
GRADING PLAN LEGEND

Symbol	Description
764	PROPOSED 1 FOOT CONTOURS
792.8 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
0.5'	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
S	PROPOSED SWALE SUMMIT

06-01-16

GRADING NOTES:

1. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
2. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
3. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
5. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
8. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
9. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY MANHARD CONSULTING, LTD. ON OCTOBER 22, 2021. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
10. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

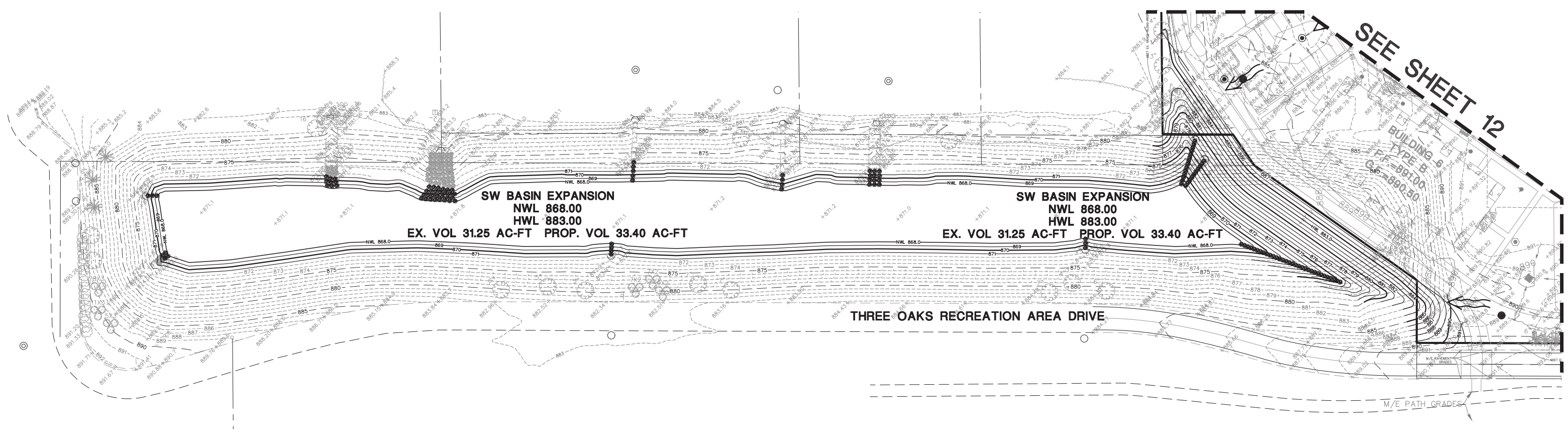


KEY MAP

N

0 25 50 100

SCALE: 1"=50'



July 7, 2023 - 10:18 Dwg Name: P:\Frdclil01\dwg\Eng\Final Drawings\Plan Set\Infrastructure Plan Set\09-13-GRADING PLAN.dwg Updated By: GCano

DATE	REVISIONS	DRAWN BY
07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	KRK

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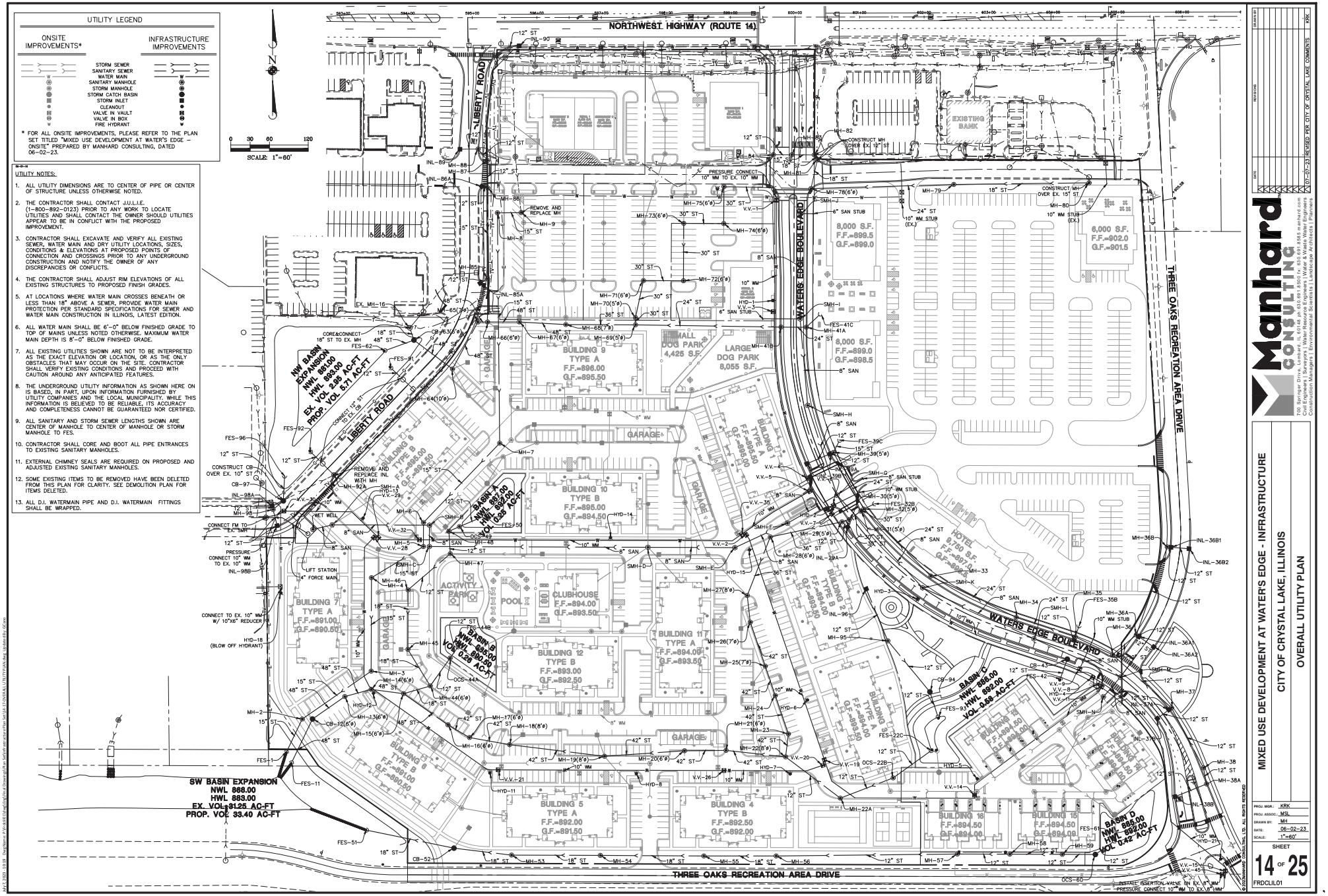
MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
GRADING PLAN - SOUTHWEST BASIN

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: MH
DATE: 06-02-23
SCALE: 1"=50'

SHEET 13 OF 25

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DATE	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS KRK

MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
OVERALL UTILITY PLAN

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: MH
DATE: 06-02-23
SCALE: 1"=60'

SHEET 14 OF 25
FRDCLIL01

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UTILITY CROSSINGS

① 6" SAN OVER EX. 18" ST
B/P 6" SAN = 894.45
T/P EX. 18" ST = 893.06

② 18" ST OVER 6" WM
B/P 18" ST = 892.52
T/P 6" WM = 890.52
LOWER WM

③ 15" ST OVER EX. 10" WM
B/P 15" ST = 891.84
T/P EX. 10" WM = 889.84
LOWER WM

④ 18" ST OVER 10" WM
B/P 18" ST = 892.23
T/P 10" WM = 890.23
LOWER WM

⑤ 30" ST OVER 10" WM
B/P 30" ST = 891.30
T/P 10" WM = 889.30
LOWER WM

⑥ 30" ST OVER 6" SAN
B/P 30" ST = 892.11
T/P 6" SAN = 891.67

⑦ 6" SAN OVER EX. 10" WM
B/P 6" SAN = 891.00
T/P EX. 10" WM = 889.00
LOWER WM

⑧ 24" ST OVER EX. 10" WM
B/P 24" ST = 893.12
T/P EX. 10" WM = 891.12
LOWER WM

⑨ 15" ST OVER 48" ST
B/P 15" ST = 887.26
T/P 48" ST =886.56

⑩ 6" SAN OVER 10" WM
B/P 6" SAN = 892.16
T/P 10" WM = 890.66
LOWER WM

⑪ 24" ST OVER 10" WM
B/P 24" ST = 891.82
T/P 10" WM = 889.82
LOWER WM

⑫ 24" ST OVER 8" SAN
B/P 24" ST = 892.28
T/P 8" SAN = 889.60

⑬ 15" ST OVER 8" WM
B/P 15" ST = 885.45
T/P 8" WM = 883.45
LOWER WM

⑭ 6" SAN OVER 8" WM
B/P 6" SAN = 886.73
T/P 8" WM = 884.73
LOWER WM

⑮ 8" ST OVER 8" WM
B/P 8" ST = 892.36
T/P 8" WM = 889.67

⑯ 15" ST OVER 8" WM
B/P 15" ST = 889.53
T/P 8" WM = 887.53
LOWER WM

⑰ 12" ST OVER 8" SAN
B/P 12" ST = 892.09
T/P 8" SAN = 887.55

⑱ 6" SAN OVER 10" WM
B/P 6" SAN = 884.02
T/P 10" WM = 882.02
LOWER WM

⑲ 10" WM OVER 8" SAN
B/P 10" WM = 884.53
T/P 8" SAN = 881.39

⑳ 8" WM OVER 8" SAN
B/P 8" WM = 886.63
T/P 8" SAN = 881.75

㉑ 8" ST OVER 8" WM
B/P 8" ST = 890.43
T/P 8" WM =888.30

㉒ 8" ST OVER 15" ST
B/P 8" ST = 890.07
T/P 15" ST = 885.07

㉓ 8" ST OVER 8" SAN
B/P 8" ST = 889.80
T/P 8" SAN = 884.00

㉔ 15" ST OVER 8" SAN
B/P 15" ST = 883.24
T/P 8" SAN = 881.80

㉕ 8" ST OVER 10" WM
B/P 8" ST = 886.65
T/P 10" WM = 884.23

㉖ 15" ST OVER 10" WM
B/P 15" ST = 882.99
T/P 10" WM = 880.99
LOWER WM

㉗ 10" WM OVER 8" SAN
B/P 10" WM = 886.06
T/P 8" SAN = 881.94

㉘ 12" ST OVER 10" WM
B/P 12" ST = 885.95
T/P 10" WM = 883.95
LOWER WM

㉙ 12" ST OVER 8" SAN
B/P 12" ST = 885.83
T/P 8" SAN = 882.13

㉚ 6" WM OVER 8" SAN
B/P 6" WM = 887.02
T/P 8" SAN = 882.92

㉛ 6" SAN OVER 10" WM
B/P 6" SAN = 885.46
T/P 10" WM =883.46
LOWER WM

㉜ 24" ST OVER 10" WM
B/P 24" ST = 887.12
T/P 10" WM = 885.12
LOWER WM

㉝ 8" ST OVER 10" WM
B/P 8" ST = 890.79
T/P 10" WM =888.71

㉞ 8" ST OVER 6" SAN
B/P 8" ST = 891.84
T/P 6" SAN = 888.76

㉟ 6" SAN OVER 10" WM
B/P 6" SAN = 887.54
T/P 10" WM = 885.54
LOWER WM

㊱ 24" ST OVER 8" SAN
B/P 24" ST = 887.05
T/P 8" SAN = 883.91

㊲ 10" WM OVER 8" SAN
B/P 10" WM = 887.35
T/P 8" SAN = 884.23

㊳ 8" ST OVER 8" SAN
B/P 8" ST = 890.24
T/P 8" SAN = 884.37

㊴ 10" WM OVER 8" SAN
B/P 10" WM = 888.48
T/P 8" SAN = 884.81

㊵ 24" ST OVER 8" SAN
B/P 24" ST = 891.20
T/P 8" SAN = 885.04

㊶ 24" ST OVER 10" WM
B/P 24" ST = 891.14
T/P 10" WM = 889.62

㊷ 10" WM OVER 8" SAN
B/P 10" WM = 888.94
T/P 8" SAN = 884.98

㊸ 36" ST OVER 8" SAN
B/P 36" ST = 886.13
T/P 8" SAN = 885.63

㊹ 36" ST OVER 10" WM
B/P 36" ST = 886.46
T/P 10" WM =884.96
LOWER WM

㊺ 30" ST OVER 8" SAN
B/P 30" ST = 887.19
T/P 8" SAN = 885.11

㊻ 36" ST OVER 10" WM
B/P 36" ST = 885.69
T/P 10" WM = 884.19
LOWER WM

㊼ 12" ST OVER 15" ST
B/P 12" ST = 885.90
T/P 15" ST = 883.59

㊽ 12" ST OVER 8" SAN
B/P 12" ST = 885.24
T/P 8" SAN = 883.20

㊾ 15" ST OVER 10" WM
B/P 15" ST = 880.07
T/P 10" WM =878.07
LOWER WM

㊿ 48" ST OVER 10" WM
B/P 48" ST = 877.57
T/P 10" WM = 87.57
LOWER WM

(51) 12" ST OVER 8" SAN
B/P 12" ST = 884.43
T/P 8" SAN = 883.91

(52) 8" ST OVER 10" WM
B/P 8" ST = 886.00
T/P 10" WM = 884.07

(53) 8" SAN OVER 42" ST
B/P 8" SAN = 883.86
T/P 42" ST = 883.32

(54) 8" SAN OVER 10" WM
B/P 8" SAN = 884.31
T/P 10" WM = 882.31
LOWER WM

(55) 8" ST OVER 8" SAN
B/P 8" ST = 887.23
T/P 8" SAN = 885.17

(56) 8" SAN OVER 8" WM
B/P 8" SAN = 884.14
T/P 8" WM = 882.14
LOWER WM

(57) 42" ST OVER 8" WM
B/P 42" ST = 879.21
T/P 8" WM =877.21
LOWER WM

(58) 8" ST OVER 8" WM
B/P 8" ST = 888.11
T/P 8" WM = 885.95

(59) 8" ST OVER 8" WM
B/P 8" ST = 888.08
T/P 8" WM = 885.91

(60) 12" ST OVER 8" SAN
B/P 12" ST = 886.14
T/P 8" SAN = 885.62

(61) 12" ST OVER 10" WM
B/P 12" ST = 886.34
T/P 10" WM = 884.34
LOWER WM

(62) 6" SAN OVER 10" WM
B/P 6" SAN = 885.29
T/P 10" WM = 883.29
LOWER WM

(63) 8" ST OVER 6" SAN
B/P 8" ST = 887.22
T/P 6" SAN = 886.11

(64) 42" ST OVER 8" WM
B/P 42" ST = 882.2
T/P 8" WM = 880.2
LOWER WM

(65) 12" ST OVER 10" WM
B/P 12" ST = 884.76
T/P 10" WM = 882.76
LOWER WM

(66) 8" ST OVER 10" WM
B/P 8" ST = 888.31
T/P 10" WM = 885.97

(67) 12" ST OVER 10" WM
B/P 12" ST = 885.12
T/P 10" WM = 883.12
LOWER WM

(68) 6" SAN OVER 12" ST
B/P 6" SAN = 888.67
T/P 12" ST = 886.74

(70) 8" SAN OVER 8" WM
B/P 8" ST = 888.00
T/P 8" WM = 886.00
LOWER WM

(71) 8" SAN OVER 18" ST
B/P 8" SAN = 888.09
T/P 18" ST = 887.43

(72) 18" ST OVER 8" WM
B/P 18" ST = 885.37
T/P 8" WM = 883.87
LOWER WM

(73) 12" ST OVER 8" SAN
B/P 12" ST = 888.95
T/P 8" SAN = 888.03

(74) 12" ST OVER 8" WM
B/P 12" ST = 889.09
T/P 8" WM = 887.09
LOWER WM

(75) 8" SAN OVER 8" WM
B/P 8" SAN = 887.11
T/P 8" WM = 885.11
LOWER WM

(76) 12" ST OVER 10" WM
B/P 12" ST = 891.19
T/P 10" WM = 889.19
LOWER WM

(77) 8" SAN OVER 10" WM
B/P 8" SAN = 886.32
T/P 10" WM =884.32
LOWER WM

(78) 15" ST OVER 10" WM
B/P 15" ST = 890.31
T/P 10" WM = 888.31
LOWER WM

(79) 8" ST OVER 15" ST
B/P 8" ST = 886.54
T/P 15" ST = 883.22

(80) 8" ST OVER 10" WM
B/P 8" ST = 890.50
T/P 10" WM = 887.21

(81) 8" ST OVER 15" ST
B/P 8" ST = 886.74
T/P 15" ST = 881.24

NOTES:

1. WATER AND SEWER CROSSINGS SHALL MEET STATE EPA SEPARATION AND PIPE MATERIAL REQUIREMENTS. (SEE DETAIL SHEET)
2. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS.

DATE	REVISIONS	DRAWN BY
07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	KRK

Manhard CONSULTING LTD

MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

CITY OF CRYSTAL LAKE, ILLINOIS

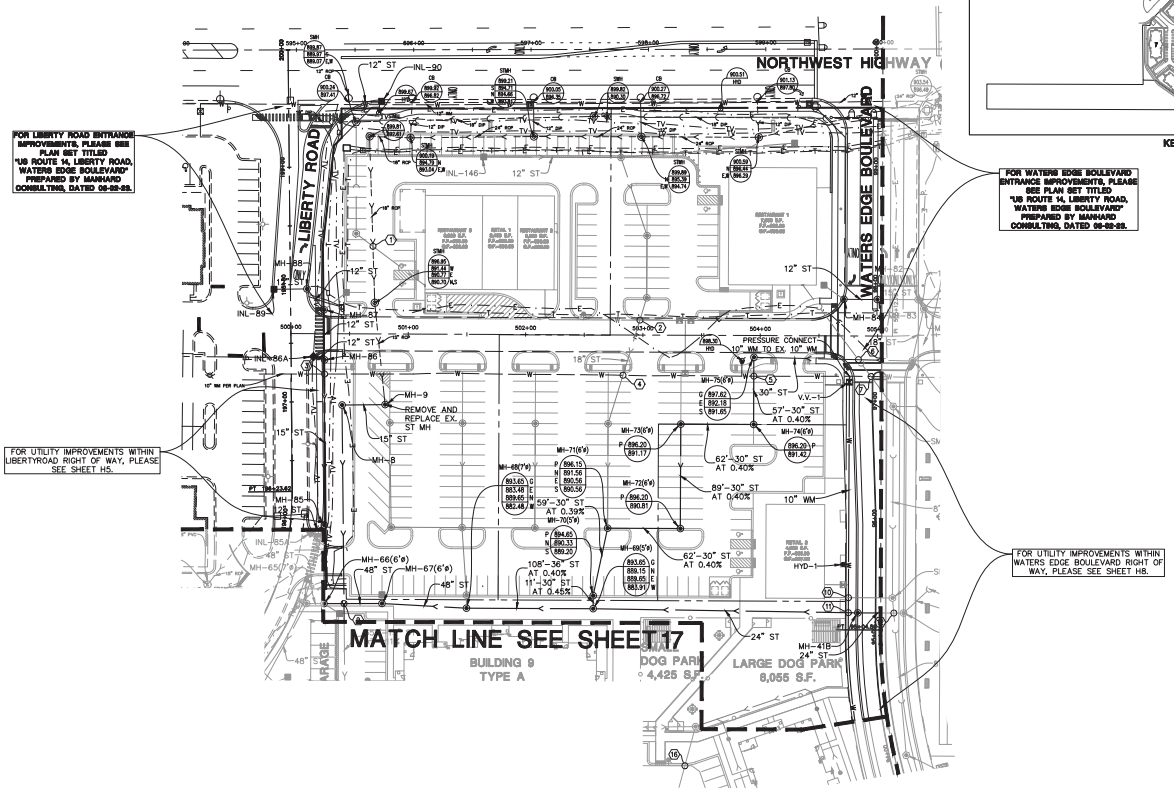
UTILITY CROSSING INFORMATION

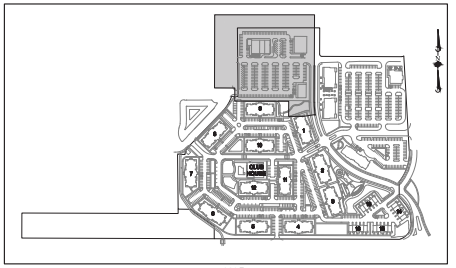
PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: KRK
DATE: 06-02-23
SCALE: N.T.S.

SHEET
15 OF 25
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July 6, 2023 - 23:19 Dre Name: P:\Projects\Work\Eng\Final Drawings\Plan Set\Infrastructure Plan Set\14-17-UTILITY CROSSING INFORMATION.dwg Updated By: KKlawiere





KEY MAP

0 25 50 100

SCALE: 1"=50'

SEE SHEET 15 FOR UTILITY CROSSING INFORMATION.

UTILITY LEGEND

ONSITE IMPROVEMENTS*		INFRASTRUCTURE IMPROVEMENTS
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

* FOR ALL ONSITE UTILITY IMPROVEMENTS, PLEASE REFER TO THE PLAN SET TITLED "MIXED USE DEVELOPMENT AT WATER'S EDGE – ONSITE" PREPARED BY MANHARD CONSULTING, DATED 06-02-23.

UTILITY NOTES:

1. ALL UTILITY DIMENSIONS ARE TO CENTER OF PIPE OR CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
3. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
4. THE CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF ALL EXISTING STRUCTURES TO PROPOSED FINISH GRADES.
5. AT LOCATIONS WHERE WATER MAIN CROSSES BENEATH OR LESS THAN 18" ABOVE A SEWER, PROVIDE WATER MAIN PROTECTION PER STANDARD SPECIFICATIONS FOR SEWER AND WATER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.
6. ALL WATER MAIN SHALL BE 6'-0" BELOW FINISHED GRADE TO TOP OF MAINS UNLESS NOTED OTHERWISE. MAXIMUM WATER MAIN DEPTH IS 8'-0" BELOW FINISHED GRADE.
7. ALL EXISTING UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT ELEVATION OR LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES.
8. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HERE ON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED.
9. ALL SANITARY AND STORM SEWER LENGTHS SHOWN ARE CENTER OF MANHOLE TO CENTER OF MANHOLE OR STORM MANHOLE TO FES.
10. CONTRACTOR SHALL CORE AND BOOT ALL PIPE ENTRANCES TO EXISTING SANITARY MANHOLES.
11. EXTERNAL CHIMNEY SEALS ARE REQUIRED ON PROPOSED AND ADJUSTED EXISTING SANITARY MANHOLES.
12. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
13. ALL D.I. WATERMAIN PIPE AND D.I. WATERMAIN FITTINGS SHALL BE WRAPPED.

DRAWN BY	REVISIONS	DATE
KRK	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-07-23

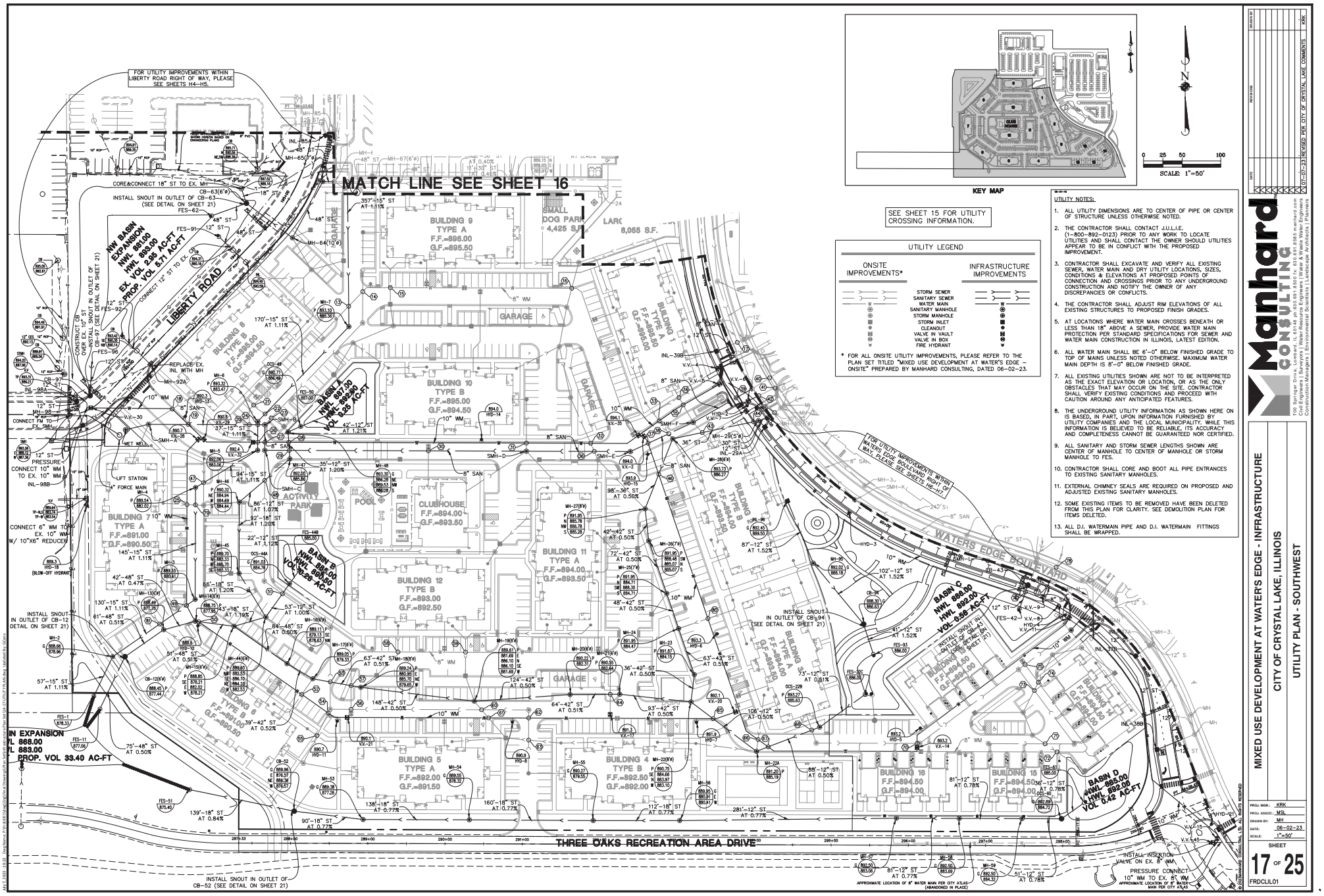
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Construction Managers | Environmental Scientists | Landscape Architects | Planners

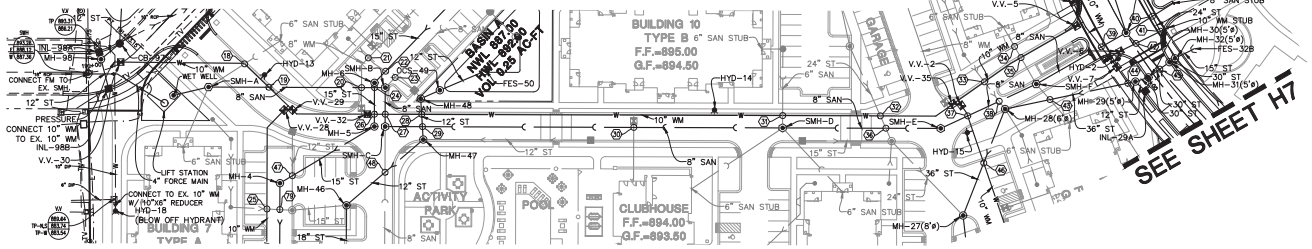
MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
UTILITY PLAN - NORTHWEST

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=50'

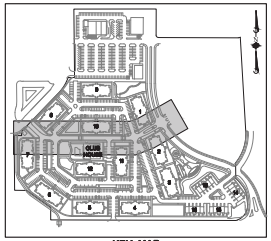
SHEET 16 OF 25
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FOR UTILITY IMPROVEMENTS WITHIN LIBERTY ROAD RIGHT OF WAY, PLEASE SEE SHEETS H4-H5.
MATCH LINE SEE SHEET 16
LIBERTY ROAD
THREE OAKS RECREATION AREA DRIVE
WATERS EDGE BOULEVARD
FOR UTILITY IMPROVEMENTS WITHIN WATERS EDGE BOULEVARD RIGHT OF WAY, PLEASE SEE SHEETS H6-H7
NW BASIN EXPANSION NWL 893.00 VOL 2.95 AC-FT
EX. VOL 5.71 AC-FT
PROP. VOL 8.66 AC-FT
BASIN A NWL 891.00 VOL 0.25 AC-FT
BASIN B NWL 889.00 VOL 0.26 AC-FT
BASIN C NWL 892.00 VOL 0.55 AC-FT
BASIN D NWL 895.00 VOL 0.42 AC-FT
IN EXPANSION
L 868.00
L 883.00
PROP. VOL 33.40 AC-FT
BUILDING 1 TYPE A F.F.=895.00 G.F.=895.50
BUILDING 2 TYPE A F.F.=894.50 G.F.=894.00
BUILDING 4 TYPE B F.F.=892.50 G.F.=892.00
BUILDING 5 TYPE A F.F.=892.00 G.F.=891.50
BUILDING 6 TYPE B F.F.=895.00 G.F.=894.50
BUILDING 7 TYPE A F.F.=891.00 G.F.=890.50
BUILDING 8 TYPE B F.F.=893.00 G.F.=892.50
BUILDING 9 TYPE A F.F.=896.00 G.F.=895.50
BUILDING 10 TYPE B F.F.=895.00 G.F.=894.50
BUILDING 11 TYPE A F.F.=894.00 G.F.=893.50
BUILDING 12 TYPE B F.F.=893.00 G.F.=892.50
BUILDING 15 F.F.=894.50 G.F.=894.00
BUILDING 16 F.F.=894.50 G.F.=894.00
CLUBHOUSE F.F.=894.00 G.F.=893.50
POOL
GARAGE
SMALL DOG PARK 4,425 S.F.
LARGE 8,055 S.F.
ACTIVITY PARK
LIFT STATION
4" FORCE MAIN
PRESSURE CONNECT 10" WM TO EX. 10" WM W/ 10"X6" REDUCER
CONNECT 6" WM TO EX. 10" WM
CONNECT FM TO FM
CORE&CONNECT 18" ST TO EX. MH
INSTALL SNOUT IN OUTLET OF CB-63 (SEE DETAIL ON SHEET 21)
INSTALL SNOUT IN OUTLET OF CB-97 (SEE DETAIL ON SHEET 21)
INSTALL SNOUT IN OUTLET OF CB-12 DETAIL ON SHEET 21)
INSTALL SNOUT IN OUTLET OF CB-52 (SEE DETAIL ON SHEET 21)
INSTALL SNOUT IN OUTLET OF CB-94 (SEE DETAIL ON SHEET 21)
INSTALL INSERTION VALVE ON EX. 8" WM. PRESSURE CONNECT 10" WM TO EX. 8" WM
APPROXIMATE LOCATION OF 8" WATER MAIN PER CITY ATLAS (ABANDONED IN PLACE)
APPROXIMATE LOCATION OF 8" WATER MAIN PER CITY ATLAS
REPLACE EX. INL WITH MH
CONSTRUCT 12" ST OVER EX. 10" ST
CONNECT 12" ST TO EX. MH
SEE SHEET 15 FOR UTILITY CROSSING INFORMATION.
KEY MAP
SCALE: 1"=50'
UTILITY LEGEND
ONSITE IMPROVEMENTS*
INFRASTRUCTURE IMPROVEMENTS
STORM SEWER
SANITARY SEWER
WATER MAIN
SANITARY MANHOLE
STORM MANHOLE
STORM INLET
CLEANOUT
VALVE IN VAULT
VALVE IN BOX
FIRE HYDRANT
* FOR ALL ONSITE UTILITY IMPROVEMENTS, PLEASE REFER TO THE PLAN SET TITLED "MIXED USE DEVELOPMENT AT WATER'S EDGE – ONSITE" PREPARED BY MANHARD CONSULTING, DATED 06-02-23.
UTILITY NOTES:
1. ALL UTILITY DIMENSIONS ARE TO CENTER OF PIPE OR CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
3. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
4. THE CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF ALL EXISTING STRUCTURES TO PROPOSED FINISH GRADES.
5. AT LOCATIONS WHERE WATER MAIN CROSSES BENEATH OR LESS THAN 18" ABOVE A SEWER, PROVIDE WATER MAIN PROTECTION PER STANDARD SPECIFICATIONS FOR SEWER AND WATER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.
6. ALL WATER MAIN SHALL BE 6'-0" BELOW FINISHED GRADE TO TOP OF MAINS UNLESS NOTED OTHERWISE. MAXIMUM WATER MAIN DEPTH IS 8'-0" BELOW FINISHED GRADE.
7. ALL EXISTING UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT ELEVATION OR LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES.
8. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HERE ON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED.
9. ALL SANITARY AND STORM SEWER LENGTHS SHOWN ARE CENTER OF MANHOLE TO CENTER OF MANHOLE OR STORM MANHOLE TO FES.
10. CONTRACTOR SHALL CORE AND BOOT ALL PIPE ENTRANCES TO EXISTING SANITARY MANHOLES.
11. EXTERNAL CHIMNEY SEALS ARE REQUIRED ON PROPOSED AND ADJUSTED EXISTING SANITARY MANHOLES.
12. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
13. ALL D.I. WATERMAIN PIPE AND D.I. WATERMAIN FITTINGS SHALL BE WRAPPED.
DRAWN BY KRK
07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS KRK
Manhard CONSULTING
700 Springer Drive, Lombard, IL 60148 ph 630.691.8300 / fx 630.691.8585 manhard.com
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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
UTILITY PLAN - SOUTHWEST
PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: MH
DATE: 06-02-23
SCALE: 1"=50'
SHEET 17 OF 25
FRDCLIL01
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UTILITY LEGEND

ONSITE IMPROVEMENTS*		INFRASTRUCTURE IMPROVEMENTS
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

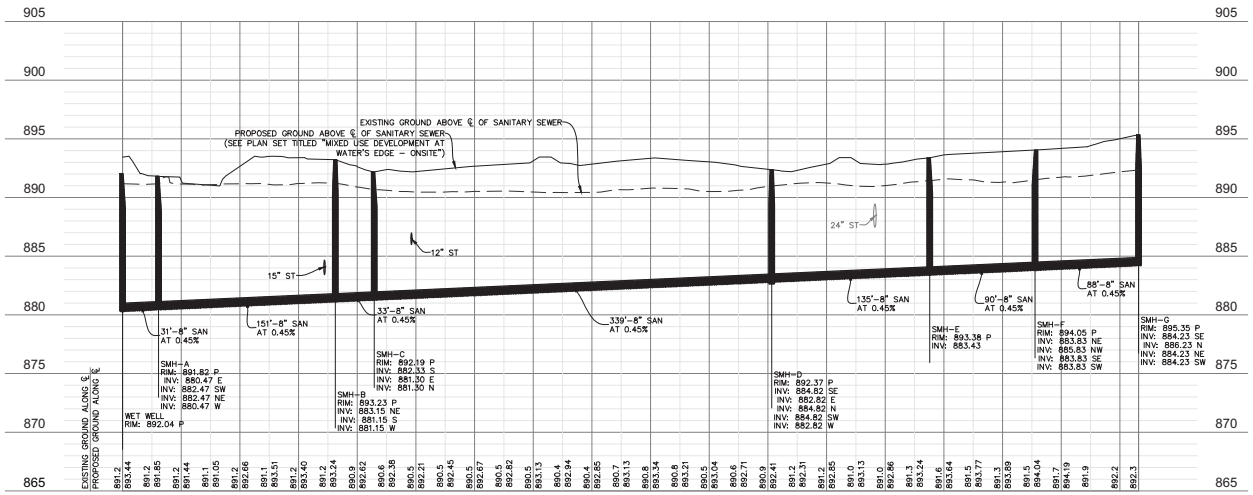
* FOR ALL ONSITE IMPROVEMENTS, PLEASE REFER TO THE PLAN SET TITLED "MIXED USE DEVELOPMENT AT WATER'S EDGE – ONSITE" PREPARED BY MANHARD CONSULTING, DATED 06-02-23.

W-S-M

1. WATER AND SEWER CROSSINGS SHALL MEET STATE EPA SEPARATION AND PIPE MATERIAL REQUIREMENTS. (SEE DETAIL SHEET)
2. CONTRACTOR MAY BEND WATER MAIN PIPE UNIFORMLY UNDER SEWERS WITHOUT USING FITTINGS, PROVIDED THAT JOINT DEFLECTION DOES NOT EXCEED THE ALLOWABLE LIMITS ESTABLISHED BY THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS," OR BY THE PIPE MANUFACTURER. IF FITTINGS ARE USED, CONTINUOUS STRAPPING WITH RODS, STRAPS, NUTS AND BOLTS BELOW NORMAL WATER MAIN DEPTH ARE REQUIRED. OR RETAINER GLANDS MAY BE USED IN LIEU OF STRAPPING.
3. RIM ELEVATIONS GIVEN FOR STORM SEWER STRUCTURES IN CURB LINE ARE PAVEMENT ELEVATIONS. ALL STRUCTURES IN CURB LINE SHALL HAVE CURB TYPE FRAME & GRATE.

SEE UTILITY CROSSING INFORMATION ON SHEET 15.

SANITARY SEWER: WET WELL TO SMH-G



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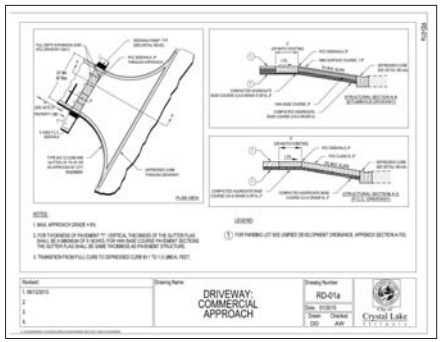
DRAWN BY	REVISIONS	DATE
KRK	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-07-23

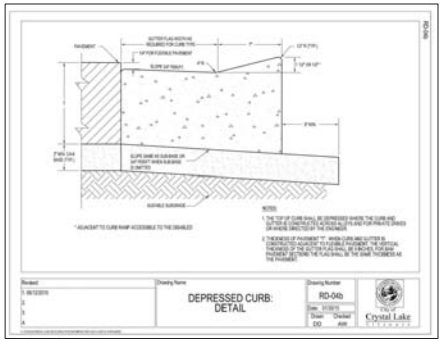
MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
PLAN AND PROFILE-SANITARY SEWER WET WELL TO SMH-G

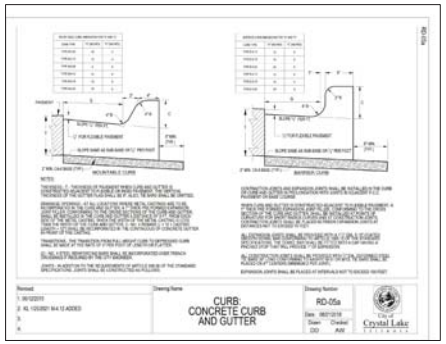
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PROJ. ASSOC.: MSL
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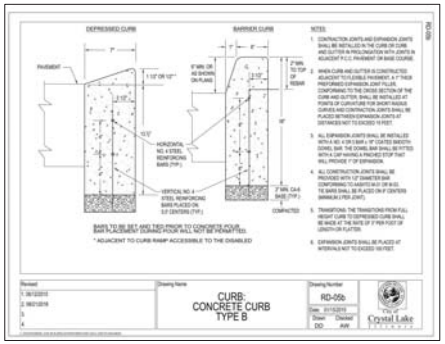
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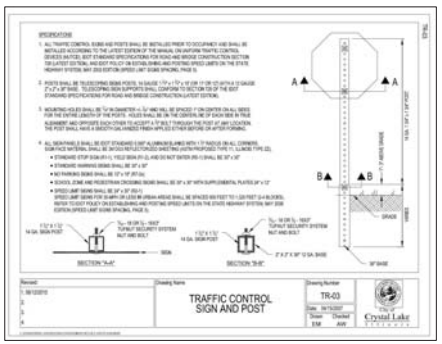
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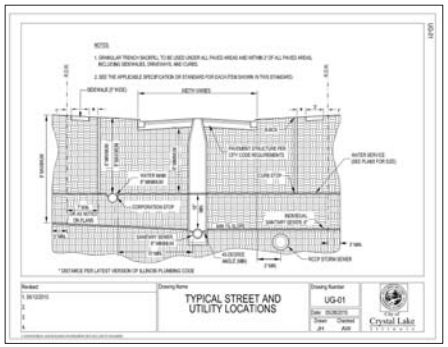


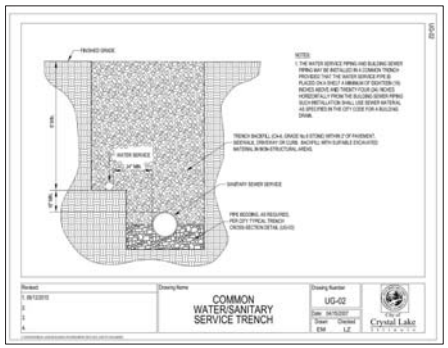


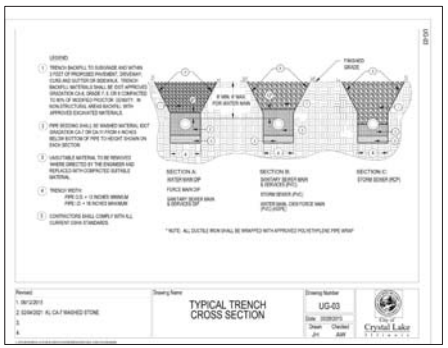




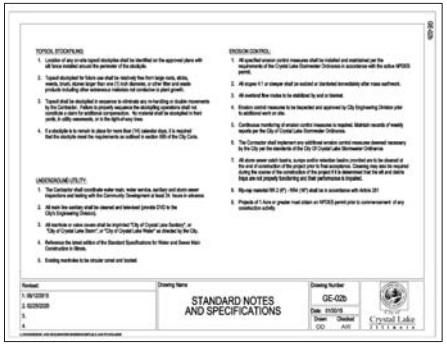


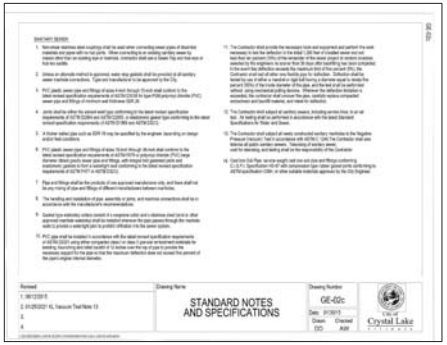














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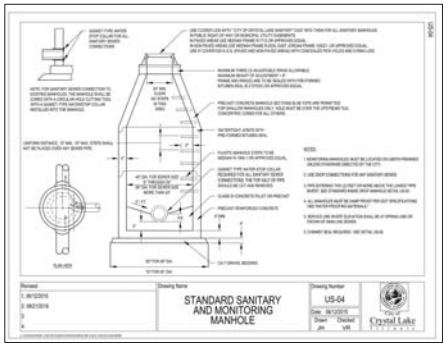
MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
CONSTRUCTION DETAILS

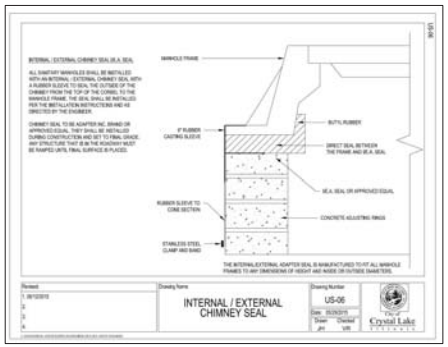
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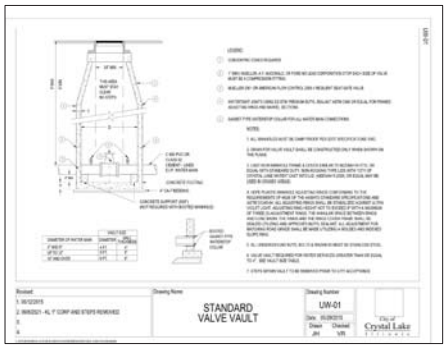
SHEET 19 OF 25
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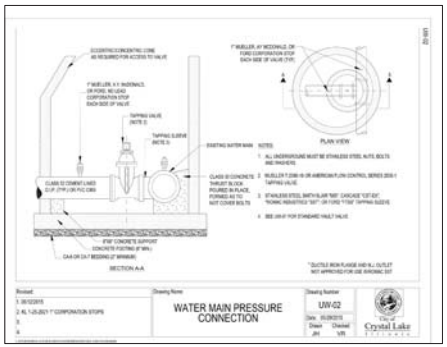
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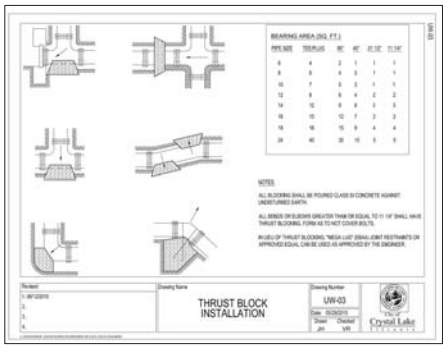
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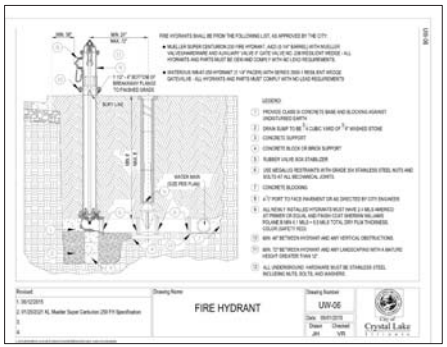




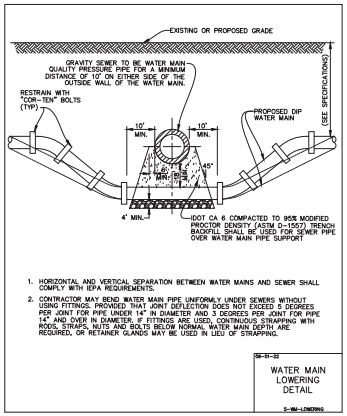


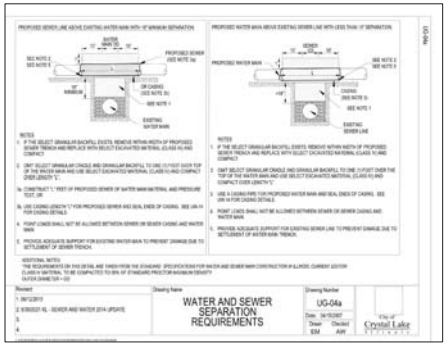


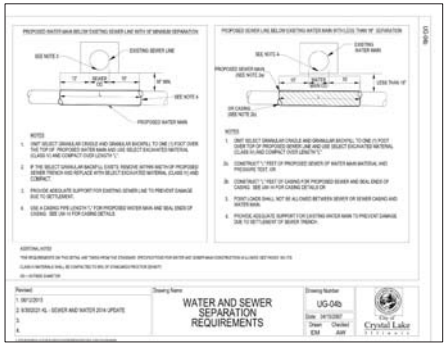












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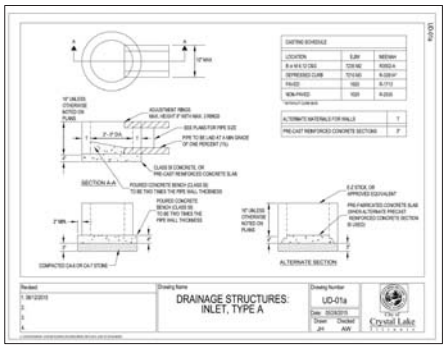
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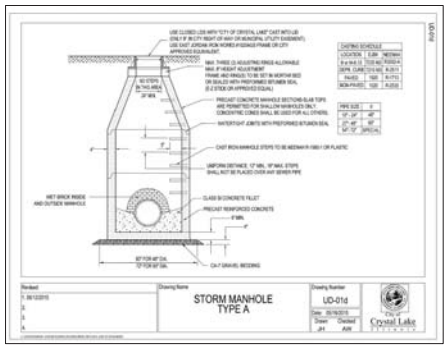
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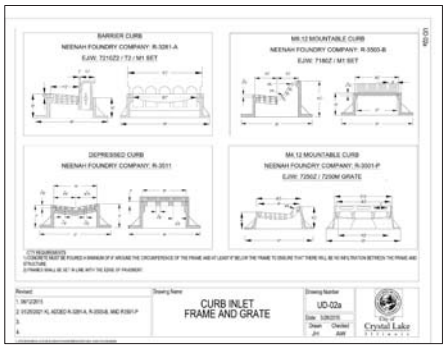
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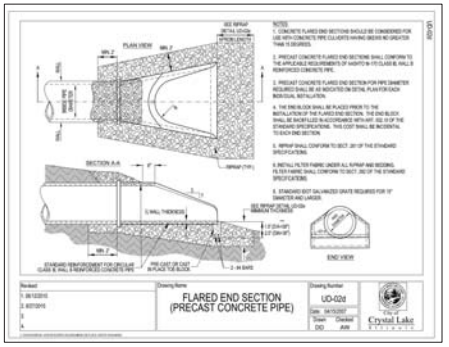
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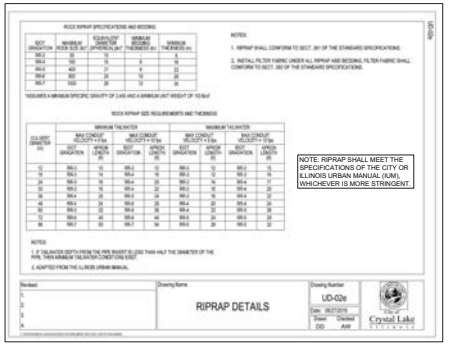
SHEET 20 OF 25
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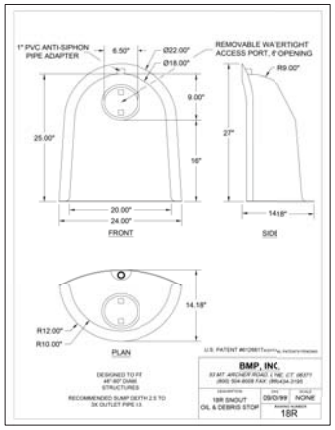


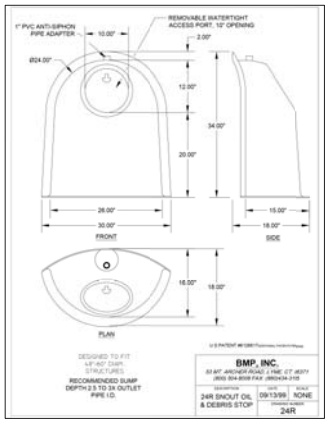


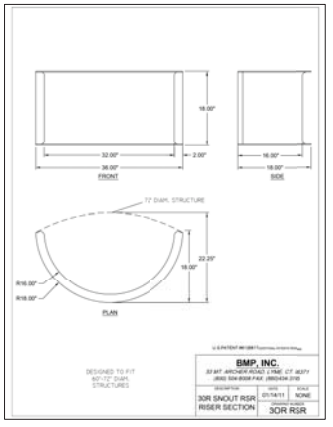


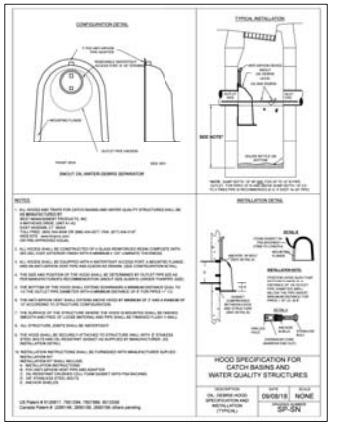


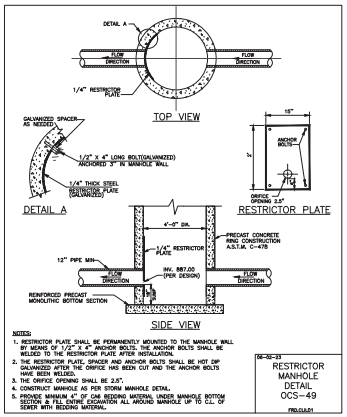


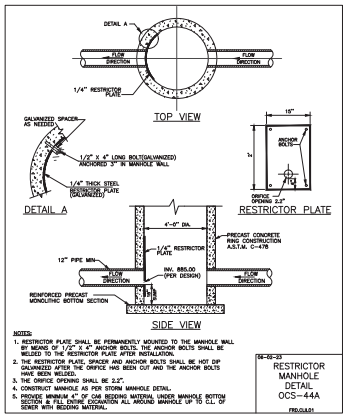


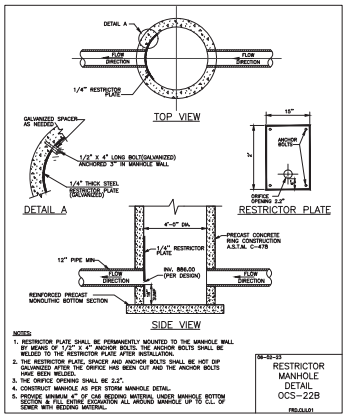


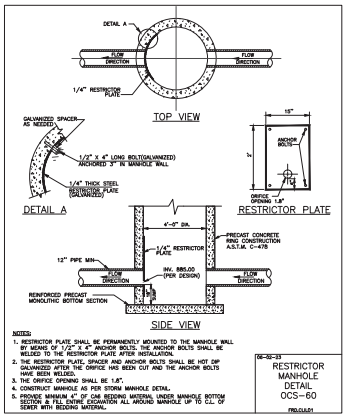












SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE CITY DETAILS, THE CITY DETAILS SHALL TAKE PRECEDENCE.

DRAWN BY	DATE	REVISIONS
KRK	07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS

Manhard CONSULTING
700 Springer Drive, Lombard, IL 60148 ph 630.691.9500 / fx 630.691.9585 manhard.com
Civil Engineers | Surveyors | Water Resource Engineers | Water & Wastewater Engineers
Construction Managers | Environmental Scientists | Landscape Architects | Planners

MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

CITY OF CRYSTAL LAKE, ILLINOIS

CONSTRUCTION DETAILS

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	N.T.S.

SHEET 21 OF 25

FRDCLIL01

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06-01-16

MANHARD CONSULTING
STANDARD SPECIFICATIONS

GENERAL CONDITIONS

CONTRACTOR acknowledges and agrees that the use and reliance of these Plans and Specifications is sufficient consideration for CONTRACTOR'S covenants stated herein.

DEFINITION OF TERMS

a. "CLIENT" shall mean Heartland Real Estate Partners which is the person or entity with whom Manhard Consulting has contracted with to prepare Civil Engineering PLANS and SPECIFICATIONS.

b. "ENGINEER" shall mean Manhard Consulting, a Civil Engineering consultant on the subject project.

c. "PLANS and SPECIFICATIONS" shall mean the Civil Engineering PLANS and SPECIFICATIONS prepared by the ENGINEER, which may be a part of the contract documents for the subject project.

d. "CONTRACTOR" shall mean any person or entity performing any work described in the PLANS and SPECIFICATIONS.

e. "JURISDICTIONAL GOVERNMENTAL ENTITY" shall mean any municipal, county, state or federal unit of government from whom an approval, permit and/or review is required for any aspect of the subject project.

INTENT OF THE PLANS AND SPECIFICATIONS

The intent of the PLANS and SPECIFICATIONS is to set forth certain requirements of performance, type of equipment and structures, and standards of materials and construction. They may also identify labor and materials, equipment and transportation necessary for the proper execution of the work but are not intended to be infinitely determined so as to include minor items obviously required as part of the work. The PLANS and SPECIFICATIONS require new material and equipment unless otherwise indicated, and to require complete performance of the work in spite of omissions of specific references to any minor component part. It is not intended, however, that materials or work not covered by or properly inferred from any heading, branch, class or trade of the SPECIFICATIONS shall be supplied unless distinctly so noted. Materials or work described in words, which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.

INTERPRETATION OF PLANS AND SPECIFICATIONS

a. The CLIENT and/or CONTRACTOR shall promptly report any errors or ambiguities in the PLANS and SPECIFICATIONS to the ENGINEER. Questions as to meaning of PLANS and SPECIFICATIONS shall be interpreted by the ENGINEER, whose decision shall be final and binding on all parties concerned.

b. The ENGINEER will provide the CLIENT with such information as may be required to show revised or additional details of construction.

c. Should any discrepancies or conflicts on the PLANS or SPECIFICATIONS be discovered either prior to or after award of the contract, the ENGINEER's attention shall be called to the same before the work is begun thereon and the proper corrections made. Neither the CLIENT nor the CONTRACTOR may take advantage of any error or omissions in the PLANS and SPECIFICATIONS. The ENGINEER will provide information when errors or omissions are discovered.

GOVERNING BODIES

All works herein proposed shall be completed in accordance with all requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, and all such pertinent laws, directives, ordinances and the like shall be considered to be a part of these SPECIFICATIONS. If a discrepancy is noted between the PLANS and SPECIFICATIONS and requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, the CLIENT and/or the CONTRACTOR shall immediately notify the ENGINEER in writing.

LOCATION OF UNDERGROUND FACILITIES AND UTILITIES

When the PLANS and SPECIFICATIONS include information pertaining to the location of existing underground facilities and utilities (including but not limited to water mains, sanitary sewers, storm sewers, electric, telephone, gas and cable TV lines), such information represents only the opinion of the ENGINEER as to the approximate location and elevation of such facilities and utilities. At the locations wherein detailed positions of these facilities and utilities become necessary to the new construction, including all points of connection, the CONTRACTOR shall furnish all labor and tools to verify or definitely establish the horizontal location, elevation, size and material (if appropriate) of the facilities and utilities. The CONTRACTOR shall notify the ENGINEER at least 48 hours prior to construction if any discrepancies in existing utility information or conflicts with existing utilities exist. The ENGINEER assumes no responsibility whatever with respect to the sufficiency or accuracy of the information shown on the PLANS and SPECIFICATIONS relative to the location of underground facilities and utilities, nor the manner in which they are removed or adjusted.

It shall be the CONTRACTOR's responsibility prior to construction, to notify all Utility Companies of the intent to begin construction and to verify the actual location of all such facilities and utilities. The CONTRACTOR shall also obtain from the respective Utility Companies the working schedules for removing or adjusting these facilities.

UNSUITABLE SOILS

The PLANS have been prepared by the ENGINEER based on the assumption that all soils on the project are suitable to support the proposed improvements shown. The CLIENT or CONTRACTOR shall immediately notify the ENGINEER if he discovers or encounters an obstruction that prevents the installation of the improvement according to the line and grades shown on the PLANS.

PROTECTION OF TREES

All trees that are not to be removed shall be protected from damage. Trees shall not be removed unless requested to do so in writing by the CLIENT.

NOTIFICATION OF OWNERS OF FACILITIES AND UTILITIES

The CONTRACTOR shall notify all applicable Jurisdictional Governmental Entities or utility companies, i.e., water, sewer, electric, telephone, gas and cable TV prior to beginning any construction so that said entity or company can establish the location and elevation of underground pipes, conduits or cables adjoining or crossing proposed construction.

TRAFFIC CONTROL

The CONTRACTOR shall provide when required by any JURISDICTIONAL GOVERNMENTAL ENTITY, all signs, equipment, and personnel necessary to provide for safe and efficient traffic flow in all areas where the work will interrupt, interfere or cause to change in any form, the conditions of traffic flow that existed prior to the commencement of any portions of the work. The CLIENT may, at his discretion, require the CONTRACTOR to furnish traffic control under these or other circumstances where in his opinion it is necessary for the protection of life and property. Emergency vehicle access shall be maintained at all times. Unless authorized by the CLIENT or CLIENT's construction representative, all existing access points shall be maintained at all times by the CONTRACTOR. The need for traffic control shall be anticipated by the CLIENT.

WORK AREA

The CONTRACTOR, his agents and employees and their employees and all equipment, machinery and vehicles shall confine their work within the boundaries of the project or work area specified by the Client. The CONTRACTOR shall be solely liable for damage caused by him or his agents and employees and their equipment, machinery and vehicles on adjacent property or areas outside designated work areas.

UTILITY POLES

It shall be the responsibility of the CONTRACTOR to arrange for the relocation or bracing of existing utility poles that may be within the working limits of this contract. It is expressly understood that all work and costs connected with the maintenance of these utility poles, their temporary relocations, etc., shall be the responsibility of the CLIENT or the CONTRACTOR.

RESTORATION

It is the intent of these SPECIFICATIONS that clean-up and final restoration shall be performed immediately upon completion of each phase of the work, both inside and outside the Project, or when so directed by the CLIENT so that these areas will be restored as nearly as possible to their original condition or better, and shall include but not be limited to, restoration of maintained lawns and rights-of-way, roadways, driveways, sidewalks, ditches, bushes, hedges, trees, shrubs, fences, mailboxes, sewers, drain tiles, water mains, etc.

CLEANING UP

The CONTRACTOR shall at all times keep the premises free from accumulations of waste material or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish, tools, scaffolding and surplus materials and shall leave his work "broom clean" or its equivalent, unless more exactly specified.

ROAD CLEANING

The CONTRACTOR shall maintain roadways adjoining the project site free from mud and debris at all times. If mud and/or debris is carried onto the roadways from vehicles entering onto the highway from either the CONTRACTOR's trucks, his employees' vehicles, or his material suppliers, the CONTRACTOR shall immediately remove said mud and/or debris.

SAFETY AND PROTECTION

The CONTRACTOR shall be solely and completely responsible for the conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. The CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR's duties and responsibilities for safety and for protection of the work shall continue until such time as all work is completed and the CLIENT has notified CONTRACTOR that the work is acceptable. The duties of the ENGINEER do not include review of the adequacy of either the CONTRACTOR's or the general public's safety in, on, or near the construction site.

HOLD HARMLESS

To the fullest extent permitted by law, any CONTRACTOR; material supplier or other entity by use of these plans and specifications hereby waives any right of contribution and agrees to indemnify, defend, save and hold harmless the CLIENT and ENGINEER and its agents, employees and consultants from and against all manner of claims, causes, causes of action, damages, losses and expenses, including but not limited to, attorneys' fees arising out of, resulting from or in connection with the performance of any work, pursuant to or with respect to these plans and specifications. However, this indemnity shall not be construed to indemnify ENGINEER, its consultants, agents or employees against its own negligence.

Claims, damages, losses and expenses as these words are used in the Agreement shall mean and include, but not be limited to (1) injury or damage occurring by reason of the failure of or use or misuse of any hoist, riggings, blocking, scaffolding or any and all other kinds of items of equipment, whether or not the same be owned, furnished or loaned by any part or entity, including any contractor; (2) all attorneys' fees and costs incurred in bringing an action to enforce the provisions of this indemnity; (3) costs for time expended by the indemnified party and its employees, at its usual rates plus costs or travel, long distance telephone and reproduction of documents and (4) consequential damages.

In any and all claims against the CLIENT or ENGINEER or any of their agents or employees and consultants by any party, including any employee of the CONTRACTOR or any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount of type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts or any insurance maintained by CONTRACTOR or any Subcontractor or any other party.

INSURANCE

Any party using or relying on these plans, including any contractor, material supplier, or other entity shall obtain, (prior to commencing any work) general public liability insurance insuring against all damages and claims for any bodily injuries, death or property damage arising out of any work, including the construction work provided for in these plans, and shall name the CLIENT and ENGINEER and its consultants, agents and representatives as additional insureds under such insurance policy; provided that any party using or relying on these plans having obligations to maintain specific insurance by reason of any agreement with CLIENT or any CONTRACTOR or ENGINEER shall provide evidence and certificates of insurance as required by such contract or agreement. Such insurance must contain a clause stating that the insurance is primary coverage for ENGINEER and ENGINEER's other applicable coverage is considered secondary. Such insurance shall not limit any liability of any party providing work or services or providing materials.

THIRD PARTY BENEFICIARY

Manhard Consulting, Ltd., the ENGINEER, is intended to be a third party beneficiary of this willing agreement and requirement.

Note: These Specifications are for Northern Illinois.

DETAILED SPECIFICATIONS

*I. DEMOLITION

The CONTRACTOR shall coordinate with respective utility companies prior to the removal and/or relocation of utilities. The CONTRACTOR shall coordinate with the utility company concerning portions of work which may be performed by the Utility Company's forces and any fees which are to be paid to the utility company for their services. The CONTRACTOR is responsible for paying for all fees and charges.

Should removal and/or relocation activities damage features indicated to remain, the CONTRACTOR shall provide new materials/structures in accordance with the contract documents. Except for materials designed to be relocated on this plan, all other construction materials shall be new.

Prior to demolition occurring, all erosion control devices are to be installed.

All existing utility lines and conduits located under proposed buildings shall be removed and properly backfilled. All utility lines and conduits located under drives, on-site roads, parking lots or sidewalks shall be filled with a flowable backfill and end plugged. All existing structures shall be removed. All existing utility lines located under landscape areas shall be left in place and plugged at all structures.

The CONTRACTOR is responsible for demolition, removal and disposal (in a location approved by all JURISDICTIONAL GOVERNING ENTITIES) of all structures, pads, walls, flumes, foundations, road, parking lots, drives, drainage structures, utilities, etc., such that the improvements shown on these plans can be constructed. All demolition work shall be in accordance with all applicable federal, state and local requirements. All facilities to be removed shall be undercut to suitable material and brought to grade with suitable compacted fill material per the specifications.

The CONTRACTOR is responsible for obtaining all permits required for demolition and disposal. Clean construction or Demolition Debris (CCDD) testing and certification on 662/663 forms must be requested by the CONTRACTOR in order to be implemented by the owner.

Electrical, telephone, cable, water, fiber optic cable and/or gas lines needing to be removed shall be coordinated by the CONTRACTOR with the affected utility company.

CONTRACTOR must protect the public at all times with fencing, barricades, enclosures, and other appropriate best management practices.

Continuous access shall be maintained for surrounding properties at all times during demolition.

All fire access lanes within the project area shall remain in service, clean of debris, and accessible for use by emergency vehicles.

The CONTRACTOR shall coordinate water main work with the Fire Department and the JURISDICTIONAL GOVERNING ENTITY to plan the proposed improvements and to ensure adequate fire protection is available to the facility and site throughout this specific work and through all phases of construction. CONTRACTOR shall be responsible for any required water main shut offs with the JURISDICTIONAL GOVERNING ENTITY during construction. Any costs associated with water main shut offs will be the responsibility of the CONTRACTOR and no extra compensation will be provided.

CONTRACTOR shall maintain all existing parking areas, sidewalks, drives, etc. clear and free from any construction activity and/or material to ensure easy and safe pedestrian and vehicular traffic to and from the site. CONTRACTOR shall coordinate/phase all construction activity within proximity of the building and utility interruptions with the facility manager to minimize disturbance and inconvenience to facility operations.

CONTRACTOR may limit saw-cut and pavement removal to only those areas where it is required as shown on these construction plans, however if any damage is incurred on any of the surrounding pavement, etc. the CONTRACTOR shall be responsible for ITS removal and repair.

Any existing wells encountered shall be exposed and sealed 3' below proposed finish grade by the CONTRACTOR in accordance with Section 920.120 (latest edition) of the Illinois Water Well Construction Code, Department of Public Health, and all applicable local rules and regulations. CONTRACTOR is responsible for obtaining all permits required by JURISDICTIONAL GOVERNMENTAL ENTITIES for abandoning existing wells.

Any existing septic tanks and grease traps encountered shall have all liquids and solids removed and disposed of by a licensed commercial hauler in accordance with JURISDICTIONAL GOVERNING ENTITY regulations, and the tank and grease traps shall then be filled with suitable materials or removed from the site and disposed of by the CONTRACTOR.

Voids left by any item removed under any proposed building, pavement, walk, etc. or within 24" thereof shall be filled and compacted with suitable materials by the CONTRACTOR.

The CONTRACTOR shall be responsible for the disconnection of utility services to the existing buildings prior to demolition of the buildings.

Any material containing asbestos found within existing structures shall be removed from the site and disposed of off-site by the CONTRACTOR in accordance with County, State and Federal regulations.

CONTRACTOR shall develop and implement a daily program of dust control and shall submit and obtain JURISDICTIONAL GOVERNING ENTITY approval of dust control procedures prior to demolition of any structures. Modification of dust control procedures shall be performed by the CONTRACTOR to the satisfaction of the JURISDICTIONAL GOVERNING ENTITY as requested.

The CONTRACTOR shall coordinate all demolition with the JURISDICTIONAL GOVERNING ENTITY and CLIENT to ensure protection and maintenance of sanitary sewer and water utilities as necessary and to provide stormwater conveyance until new facilities are constructed, tested and placed into operation.

The locations of all existing utilities shown on this plan have been determined from the best information available and are given for the convenience of the CONTRACTOR and are not to be interpreted as the exact location, or as the only obstacles that may occur on the site. The ENGINEER assumes no responsibility for their accuracy. Prior to the start of any demolition activity, the CONTRACTOR shall notify the utility companies for location of existing utilities and shall verify existing conditions and proceed with caution around any anticipated features.

The CONTRACTOR is responsible for removing the existing irrigation system in the areas of proposed improvements. The contractor shall cap the existing irrigation system to remain such that the remaining system shall continue to function properly.

II.EARTHWORK

STANDARDS

This work shall be completed in conformance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition except as modified below.

SOIL BORING DATA

Copies of results of soil boring and reports, if such borings were taken by the CLIENT in the vicinity of the proposed construction site, should be made available by the CLIENT to the CONTRACTOR. These borings are presented for whatever purpose the CONTRACTOR chooses to make of them. The ENGINEER makes no representation or warranty regarding the number, location, spacing or depth of borings taken, nor of the accuracy or reliability of the information given in the results thereof.

Further, the ENGINEER does not assume responsibility for the possibility that during construction, the soil and groundwater condition may be different than indicated. Neither does the ENGINEER assume responsibility for variations of soil and groundwater at location between borings. The CONTRACTOR is required to make its own borings, explorations and observations to determine soil and groundwater conditions.

***EARTHWORK CALCULATIONS AND CROSS SECTIONS**

The CONTRACTOR understands that any earthwork calculations, quantities or cross sections that have been furnished by the ENGINEER are for information only and are provided without any guarantee by the CLIENT or ENGINEER whatsoever as to their sufficiency or accuracy. CONTRACTOR warrants that he has performed his own subsurface investigations as necessary and his own calculations and cross sections to determine site soil conditions and earthwork volumes. The ENGINEER makes no representation or guarantee regarding earthwork quantities or that the earthwork for this project will balance due to the varying field conditions, changing soil types, allowable construction to tolerances and construction methods that are beyond the control of the ENGINEER.

CLEARING, GRUBBING AND TREE REMOVAL

The site shall be cleared, grubbed, and trees and stumps removed where designated on the PLANS. Trees designated to remain shall be protected from damage.

TOPSOIL STRIPPING

Upon completion of demolition, clearing, grubbing and tree removal, all topsoil shall be stripped from under all buildings and pavements areas, and other areas necessary to complete the work. Topsoil stripped shall be placed in stockpiles in locations as designated by the CLIENT.

TOPSOIL RESPREAD

Upon completion of roadway and/or parking lot improvements and installation of underground utilities a minimum of six inches (6") of topsoil shall be respread over all unpaved areas which have been disturbed by earthwork construction, except building pads and other designated areas, which shall be kept free from topsoil.

SEEDING

Upon completion of topsoil respread, the CONTRACTOR shall apply seed and fertilizer to all respread areas in accordance with IDOT standards or as designated on landscape drawings and specifications provided by the CLIENT.

SODDING

Upon completion of topsoil respread, the CONTRACTOR shall install sod to all areas designated on the plans or as designated on the landscape drawings and specifications provided by the CLIENT.

***EXCAVATION AND EMBANKMENT**

Upon completion of topsoil stripping, all excavation and embankments shall be completed as shown on the PLANS. All suitable excavated materials shall be hauled, placed (moisture conditioned if necessary) and compacted in the embankment areas. The CONTRACTOR shall include all dewatering, temporary ditching and culverts necessary to complete the excavation and embankment.

Specifically included in the scope of Excavation and Embankments is grading and shaping of all cut or fill areas including swales and ditches; handling of sewer spoil, etc., and all work required to provide positive drainage at the end of each working day and upon completion of a section.

The CONTRACTOR shall be responsible for the excavation of all swales and ditches and for the excavation or filling of the roads, building pads and parking lots within the work limits to lines & grades shown on the plans. He shall be responsible for obtaining compaction in accordance with the minimum values listed in the table below for all embankments unless more stringent values are listed in the soils report or are approved by the CLIENT, and to use any method approved by the CLIENT necessary to obtain this compaction (i.e., soil fabric or any undercutting that may be required). The CONTRACTOR is responsible to provide discing and watering method, or any similar method approved by the CLIENT as necessary to obtain proper compaction incidental to the contract.

	Compaction		Minimum Percent Compaction			Required Moisture Content		
Soil Type	Standard	Depth	Building Pads	Pavement	Landscape	Building Pads	Pavement	Landscape
Granular	ASTM D 1557	Full Depth	95%	90%	80%	Min. +2% opt	opt to +2%	as directed
Cohesive (lean clay)	ASTM D 1557	0' to 3'	95%	95%	85%	-1% to +2% opt	opt to +2%	as directed
Cohesive (lean clay)	ASTM D 698	0' to 3'	98%	98%	85%	-1% to +2% opt	opt to +2%	as directed
Cohesive (fat clay)	ASTM D 698	minus 3'	95%	95%	85%	Min. +2% opt	opt to +2%	as directed

The CONTRACTOR shall notify the CLIENT if proper compaction cannot be obtained so that the CLIENT may determine what remedial measures may be needed.

A soils testing firm employed by the CLIENT shall determine which soils are unsuitable. Materials in their natural state being defined as unsuitable that would be suitable material if moisture conditioned, shall be conditioned by the CONTRACTOR and used as suitable embankment material or hauled from the site.

For purposes of definition, unsuitable material shall be as follows unless determined otherwise by the Soils Engineer:

1. Any soil whose optimum moisture content exceeds 25%.
2. Any soil whose silt content exceeds 60% by weight.
3. Any soil whose maximum density is less than 100 pounds per cubic foot.
4. Any soil containing deleterious, or hazardous material.
5. AASHTO T-194, organic content greater than 8.0%.

Upon completion of excavation and shaping of the water retention areas intended to maintain a permanent pool of water, all silt seams and granular or sandy soils shall be removed to a minimum depth of three feet below the subgrade and replaced with an impermeable clay liner, including adjacent to and under storm sewer inlets and outlets. It is the intent of these PLANS and SPECIFICATIONS that the CONTRACTOR shall prepare the lake bottoms, side slopes, and compaction thereof such that the lakes will maintain the proposed normal water level and that leakage does not exceed ½ inch per week.

Ditches and swales are to be excavated to the lines and grades indicated on the PLANS. All suitable materials excavated from the ditches shall be used in construction of the embankments.

The CONTRACTOR shall notify the CLIENT immediately upon encountering groundwater during excavation. If in the opinion of the CLIENT or the JURISDICTIONAL GOVERNING ENTITY this condition necessitates the installation of perforated drain tile bedded in washed gravel or open storm sewer joints wrapped with fabric, the CONTRACTOR shall install the same.

During excavation and embankment, grades may be adjusted to achieve an overall site earthwork balance. The CONTRACTOR shall cooperate fully with the CLIENT in adjustment of grades, construction methods and placement of material to meet the above goals and shall immediately advise CLIENT if he believes that the earthwork will not balance. Ultimately however, the CONTRACTOR shall be responsible for any import or export of material to achieve a site balance.

It is the intent of these PLANS that storm waters falling on the site be diverted into sedimentation / lake / detention basins during construction. The CONTRACTOR shall construct and maintain any temporary ditches or swales that are necessary to accomplish this prior to beginning mass excavation.

***RETAINING WALLS**

All Retaining Walls greater than 3' shall be signed and sealed by a State of Illinois Structural Engineers. Appropriate safety protection measures shall be provided along the tops of the walls.

***EROSION CONTROL**

Suitable erosion control practices shall be maintained by the CONTRACTOR in accordance with Illinois Urban Manual and all applicable Soil Erosion and Sedimentation Control ordinances and the PLANS. SWPPP monitoring (if required) shall be administered by CONTRACTOR.

UNDERCUTTING DURING EARTHWORK

If the subgrade cannot be dried adequately by discing as outlined above for placement of material to planned grades and if the CLIENT determines that the subgrade does not meet the standards set forth above, the CLIENT may require undercutting.

***MISCELLANEOUS CONTRACT ITEMS**

The following items may be required at the CLIENT's option, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY:

(1) **GEOTEXTILE FABRIC**

Geotextile fabric or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY where proper compaction of embankments over existing soft soils is not possible. Geotextile fabric shall meet the material specifications of and shall be installed in accordance with the above standards.

(2) **EROSION CONTROL BLANKET**

Erosion control blanket or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY for the stabilization of disturbed areas. Erosion control blanket shall meet the material specifications of and shall be installed in accordance with the above standards, the Illinois Urban Manual and/or the details shown on the PLANS.

(3) **DEWATERING**

Excessive dewatering beyond a 3" pump capacity by the contractor is excluded. All dewatering prior to this limit is considered incidental to the contract.

III.UNDERGROUND IMPROVEMENTS

A. GENERAL

STANDARDS

All underground improvements shall be constructed and tested in accordance with the Standard Specifications for Water and Sewer Construction in Illinois and Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition. In the event of conflicting guidelines, the more restrictive shall govern.

SELECTED GRANULAR BACKFILL

Selected Granular Backfill shall be required for all sewer and water main trenches lying under existing or proposed streets, driveways, parking lots and within 24" thereof, and where noted on PLANS. All material placed in such trenches shall be in accordance with the above standards.

MANHOLES, CATCH BASIN, INLETS & VALVE VAULTS

All Manholes, Catch Basins, Inlets, and Valve Vaults shall be constructed of reinforced precast concrete ring construction with tongue and groove joints in conformance with the latest revision of ASTM designation C-478. All joints between sections and frames (except sanitary manholes, see Section IIIB Manholes, below) shall be sealed with mastic type bituminous jointing compound. CONTRACTOR shall remove all excess mastic on inside of structure and butter joints with mortar. Manholes are to have offset cones except that no cone shall be used on storm manholes 6'-0" deep or less in which case a reinforced concrete flat top section shall be used, and Valve Vaults shall have concentric cones. Only concrete adjustment rings will be permitted where necessary and shall be limited to two adjustment rings totaling not more than 8" in height. All manholes and catch basin steps shall be copolymer polypropylene with continuous ½" steel reinforcement as manufactured by MA Industries, or approved equal.

***AUGER/BORING AND CASING** - INTENTIONALLY OMITTED

***AUGER (OPEN BORE)** - INTENTIONALLY OMITTED

HORIZONTAL AND VERTICAL SEPARATION OF WATER AND SEWER MAINS

Horizontal and vertical separation of water and sewer mains shall be in accordance with Standard Specifications for Water and Sewer Construction in Illinois Section 41-2.01A and 41-2.01B and Standard Drawing 18, 19, 20, 21, 22, 23 and 24.

STRUCTURE ADJUSTMENTS

Structures shall be adjusted to the finished grade as shown on PLANS.

B. SANITARY SEWERS AND APPURTENANCES

***SANITARY SEWER PIPE**

Sanitary sewer pipe including building services, shall conform to the following:

(1) Polyvinyl Chloride (PVC) Sewer Pipe shall conform to ASTM D3034 (4-inch thru 15-inch) or ASTM F679 (18-inch thru 48-inch) minimum SDR 26 with flexible elastomeric seal gasket gasketed joints conforming to ASTM D3212 and F477.

Sanitary sewers shall include bedding and backfilling.

MANHOLES

Manholes shall be constructed in conformance with Section IIIA Manholes, etc. above. The concrete base and bottom section shall be constructed of precast reinforced concrete monolithically cast sections including benches, pipe connection and invert flow lines. Manhole frame and lids shall be Neenah R-1772 or approved equal, with lids imprinted "SANITARY", with recessed pick holes. Manhole joints between adjustment rings and frames and between manhole sections shall be set on preformed plastic gasket consisting of a homogeneous blend of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler to provide a water tight seal. All pipe connection openings shall be precast with resilient rubber watertight pipe sleeves. A 10" elastomeric band (chimney seal) shall be installed extending from the manhole top to the manhole frame as shown on detail. Manholes shall include steps, frame & grate, bedding, and trench backfill.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

TESTING

Sanitary sewers shall be air tested and tested for deflection in accordance with the requirements of Section 31-1.12 "TESTING AND INSPECTION FOR ACCEPTANCE OF SANITARY SEWERS" of the Standard Specifications for Water and Sewer Construction in Illinois or the JURISDICTIONAL GOVERNING ENTITY, whichever is more restrictive. In addition, a televised inspection of the completed sanitary sewers shall be conducted and a copy of the videotape and report furnished to the JURISDICTIONAL GOVERNING ENTITY.

All sanitary manholes are to be tested for water tightness in accordance with ASTM C969 "Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines", or ASTM C1244 "Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test".

SERVICES

A wye branch or "tee" and sanitary service line, properly plugged and sealed shall be constructed as shown on the PLANS. The ends of all services shall be marked with a 4"x4" post extending 36" above grade and painted red. The CONTRACTOR shall keep accurate records of all Wye or Tee locations as measured from the downstream manhole as well as the service lengths and furnish same to CLIENT.

***RISERS** - INTENTIONALLY OMITTED

***DROP MANHOLE CONNECTIONS** - INTENTIONALLY OMITTED

SANITARY SEWER FORCE MAIN

Sanitary sewer force main shall conform to the following:

(1) Polyvinyl Chloride (PVC) Pressure Pipe conforming to the latest revision of ANSI/AWWA C900, Class 150 with integral bell and flexible elastomeric gasket joints conforming to ASTM F477.

(2) Ductile iron cement lined pipe conforming to the latest revision of ANSI/AWWA C151/A21.51, Thickness Class 50, minimum 150 psi working pressure with "push on" type joints.

Force mains shall have a minimum of five feet six inches (5'-6") of cover and shall include bedding and trench backfill.

Upon completion of installation, force mains are to be plugged and pressure tested at 2 times the working pressure or total dynamic head for a period of 10 minutes, with no loss of pressure or as required by the JURISDICTIONAL GOVERNING ENTITY, whichever is more stringent.

TELEVISION INSPECTION

Upon completion of construction a television inspection of the sanitary sewer system shall be performed on all portions of the sewer if required by the JURISDICTIONAL GOVERNING ENTITY. Videotapes and written report of all television inspections shall be provided to the CLIENT. The form of report and type and format of the videotape shall be approved by the JURISDICTIONAL GOVERNING ENTITY.

All sewers and appurtenances shall be cleaned prior to inspection and testing required by this section.

All defects and corrective work required as the result of television inspection shall be performed by the CONTRACTOR without delay. All dips, cracks, leaks, improperly sealed joints and departures from approved grades and alignment shall be repaired by removing and replacing the involved sections of pipe. Upon completion thereof, the sewer shall be retested and such further inspection made as may appear warranted by the CLIENT.

MISCELLANEOUS

All floor drains shall be connected to the sanitary sewer.

C. WATER MAINS AND APPURTENANCES

***WATER MAIN PIPE (3" AND LARGER)**

Water main pipe shall conform to the following:

(1) Ductile iron pipe shall be per ANSI/AWWA C151/A21.51, Thickness Class 52, minimum 150 psi working pressure, cement lined in accordance with ANSI/AWWA C104/A21.4, with "push on" type joints.(2)

Installation shall be in accordance with ANSI/AWWA C600 (Ductile Iron). All water main shall have mechanical joint cast iron or ductile iron fittings in accordance with ANSI/AWWA C110/A21.10 or compact ductile iron fittings in accordance with ANSI/AWWA C153/A21.53 with 250 psi working pressure.

Poured or monolithic concrete thrust blocks are required to brace all tees, plugs, caps, and bends of 11 1/4 degree deflection or greater. Minimum cover for all water mains, including services, shall be 6'-0" from the finished grade. Water main shall include bedding and backfilling.

WATER VALVES

All valves shall be resilient wedge gate valves conforming to the latest revision of ANSI/AWWA C515, with a rated working pressure of 200 psi in accordance with JURISDICTIONAL GOVERNING ENTITY requirements, except that butterfly valves conforming to ANSI/AWWA C504 shall be constructed on all water mains 16" diameter and larger. Valves shall be non-rising stem and shall close by turning clockwise.

VALVE VAULTS

Valve vaults shall be constructed in conformance with Section IIIA Manholes, etc. above. Frame and lids shall be as approved by the JURISDICTIONAL GOVERNING ENTITY and shall be imprinted "WATER".

VALVE BOXES

Valve boxes shall be constructed in conformance with the standard detail. Valve boxes shall be cast iron extension screw type having lids imprinted with the letters "WATER".

FIRE HYDRANTS

Fire Hydrants shall be per JURISDICTIONAL GOVERNING ENTITY requirements. All fire hydrants shall be located as shown on the PLANS and shall be painted in a manner acceptable to the JURISDICTIONAL GOVERNING ENTITY after installation and shall be adjusted to final grade.

***TAP, STOPS AND BOX** - INTENTIONALLY OMITTED

***SMALL WATER SERVICES (2" DIAMETER OR LESS)** - INTENTIONALLY OMITTED

DISINFECTION

Disinfections shall meet all of the requirements of the State of Illinois, Environmental Protection Agency, Public Water Supplies Division. The safe quality of the water supply shall be demonstrated by bacteriological analysis of samples collected at sampling taps on at least two consecutive days following disinfection of the mains and copies of the said report submitted to the JURISDICTIONAL GOVERNING ENTITY and the CLIENT.

PRESSURE TEST

Allowable leakage, test pressure and duration shall be as per the requirements of the JURISDICTIONAL GOVERNING ENTITY.

PRESSURE CONNECTION TO EXISTING WATER MAIN

The CONTRACTOR shall maintain system pressure on existing water main at all times. Existing water main shall be located and material excavated, and valve basin slab and main supports installed. The existing water main shall be cleaned and the exterior disinfected prior to installing the tapping tee (material to conform to AWWA C110). The tapping valve shall be installed (valve to conform to AWWA C500) and the pressure tap completed in accordance with the detail on the plans. Valve shall be constructed in conformance with the detail. Payment for pressure connection to existing water main shall include disinfection, tapping valve and tee, valve vault, frame and lid, bedding, and trench backfill.

DRY CONNECTION TO EXISTING WATER MAIN

A dry connection to existing water main shall include a connection to an existing water main stub where shown on the PLANS. The CONTRACTOR shall obtain approval of the JURISDICTIONAL GOVERNING ENTITY to shut down any main, including submittal of a schedule of the time of shut off and the time the line will be returned to service. All mains shut down that are opened to atmosphere must be disinfected prior to returning main into service.

POLYETHYLENE ENCASEMENT (FOR DUCTILE IRON WATER MAIN ONLY)

The CLIENT, or JURISDICTIONAL GOVERNING ENTITY may request that portions of the water main be enclosed in a polyethylene encasement in accordance with ANSI/AWWA C105/A21.5 should soil conditions so warrant its use.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

TRACER WIRE

If the distance between valves when installing PVC pipe exceeds 1,000', tracer wire stations will be required for current induction. Tracer wire stations in grass areas will be Rhino TriView Flex Tracing Wire Stations or approved equal. In paved areas, they will be Valvco Tracer Wire Access Box for H2O loading or approved equal.

For open cut construction, using PVC pipe, a continuous, insulated, 12 gauge copper wire suitable for direct burial shall be taped on top of all piping to provide for locating following construction. This wire shall be securely terminated inside every valve vault on stainless steel hardware with an exposed lead of at least 12". A mechanically secure and soldered connection shall be provided for all wire splices. Where construction is by directional drilling or similar trenchless technology the tracer wire shall be 3/16" 7x19 PVC coated stainless steel aircraft cable with minimum breaking strength of 3,700 lbs (Lexco, Chicago, IL). Or Trace-Safe water blocking tracerwire RT series 19 gauge conductor (RT 1802W water, RT 1803W sewer).

Before final approval of any water main, there will be a monitored tracer wire continuity test in order to confirm proper installation of any tracer wire.

D. STORM SEWERS AND APPURTENANCES

***STORM SEWER PIPE**

Storm sewer pipe shall conform to the following:

(1) Reinforced concrete pipe minimum Class IV in conformance with the latest revision of ASTM designation C76 with C361 or C443 flexible gasket joints, except that bituminous mastic joints may be used in grass areas.

(2) Polyvinyl Chloride (PVC) Pipe: ASTM D3034 (4-inch thru 15-inch) or ASTM F679 (18-inch thru 36-inch), rated SDR 35, continually marked with manufacturer's name, pipe size, cell classification, SDR rating. Joints shall be flexible elastomeric seals conforming to ASTM D3212.

(3) Ductile Iron Pipe (DIP) shall conform to ANSI/AWWA C151/21.5, Class 50 cement lined with push on type joints conforming to ANSI/AWWA C111/A21.11.

(4) High Density Polyethylene Pipe (HDPE) Smooth Interior, AASHTO Designation M252 and M294, maximum diameter of 48 inches. Pipe joints and fittings shall be watertight gasketed joints. No band seals will be allowed. (Only permitted with Municipality Approval and/or when specifically indicated on PLANS).

Precast tees, bends, and manholes may be used if permitted by the JURISDICTIONAL GOVERNMENTAL ENTITY.

Storm sewers may be constructed with reinforced concrete pipe using only flexible gasket joints (ASTM 361 or 443) for water main crossings.

Storm sewer shall include bedding and trench backfill.

MANHOLES, INLETS & CATCH BASINS

Manholes, Inlets and Catch Basins shall be constructed in conformance with Section IIIA Manholes, etc. above. The space between connecting pipes and the wall of the manhole shall be completely filled with non-shrink hydraulic cement mortar. Frames and lids shall be Neenah or approved equal unless specified otherwise on the PLANS. All frames and grates shall be provided such that the flange fully covers the opening plus 2" of the structure as a minimum. * Provide **"Vane"** Type frame & grate for all structures located in curb where gradient exceed 2.0%. Manholes shall include steps, frame & grate, bedding and trench backfill.

FLARED END SECTION

Flared end sections shall be pre-cast reinforced concrete flared end section with an end block cast separate as per the Illinois Department of Transportation Standard 542301 and shall be installed where shown on the PLANS. All flared end sections for storm sewers 12" in diameter and larger shall be installed with a grating per Standard 542311 and/or as detailed on the PLANS. Work shall include end block.

RIP RAP

Stone rip rap consisting of pieces of "A" quality stone 4" to 8" in diameter shall be furnished and installed in accordance with IDOT Specifications and shall be placed where shown on the plans, to a minimum thickness of 12" and a width as indicated on the plans. Broken concrete or concrete blocks will not be acceptable.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

***UNDERDRAINS** - INTENTIONALLY OMITTED

MISCELLANEOUS

(1) All existing field drainage tile or storm sewers encountered or damaged during construction shall either be restored to their original condition, properly rerouted and/or connected to the storm sewer system.

(2) Footing drains shall be connected to sump pumps or discharged directly into storm sewers. Footing drains or drainage tile shall not be connected to the sanitary sewer.

CONNECTION FOR STORM SERVICE TO STORM MAIN

Connections of storm sewer services to storm sewer mains should be made with manufactured tees when available. Availability of manufactured tees will be a function of the storm sewer material and pipe diameter size of the service sewer and main. If manufactured tees are not reasonably available, connections should be made in accordance with manufacturer's recommendations for all storm sewer other than concrete pipe. For concrete pipe connections without manufactured tees the storm sewer main shall be machine cored and the service sewer connected using non-shrink grout for the void between pipes. The service sewer shall be cut flush with the inside wall of the sewer main and not extend into the inside flow area of the main or otherwise impede flow.

IV. ROADWAY AND PARKING LOT IMPROVEMENTS

STANDARDS

Work shall be completed in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition (hereinafter referred to collectively as the "Standard Specifications") except as modified below and except that payment will be defined as detailed in the contract documents between the CLIENT and the CONTRACTOR. Supplementing the Standard Specifications shall be the applicable sections of the latest editions of the "Supplemental Specifications and Recurring Special Provisions", the "Manual on Uniform Traffic Control Devices for Streets and Highways" and the Illinois Supplement thereto, (hereinafter referred to collectively as the "MUTCD"). Any references to "ENGINEER" in the "Standard Specifications" shall be interpreted as the CLIENT or CLIENT's Construction Representative.

SUBGRADE PREPARATION

The CONTRACTOR shall be responsible for all subgrade compaction and preparation to the lines and grades shown on the plans.

AGGREGATE BASE COURSE TYPE 'B'

Aggregate Base Course Type B shall be limited to CA-6 or CA-10 gradation. Aggregate base courses shall be proof rolled as outlined below.

PROOF ROLL

The CONTRACTOR shall proof roll the subgrade with either a 2-axle truck loaded to 27,000 lbs. Or a 3-axle truck loaded to 45,000 lbs. or as specified by the JURISDICTIONAL GOVERNING ENTITY. The CLIENT and JURISDICTIONAL GOVERNING ENTITY shall observe and approve the proof rolling of the subgrade and the base course. Proof rolling tolerances shall be a maximum deflection of 1" for the subgrade and ½" for the base course. The above criteria is intended as a maximum deflection standard and that proof rolling of a majority of the area will have less deflection than specified above. In any case of deficiency, the subgrade and/or base course shall be repaired and retested before proceeding with the pavement construction.

Pavement subgrade material shall not be removed, placed or disturbed after proof roll testing has been completed prior to the pavement construction. Additional testing will be required if the pavement subgrade is disturbed and/or material is removed from or placed on the pavement subgrade after proof rolling approval.

Trucks or heavy equipment shall not travel on any pavement subgrade after final testing prior to pavement construction.

HOT-MIX ASPHALT BASE COURSE

HMA Base Course shall meet the requirements of IDOT or N50 mix design as indicated and shown on the plans. The maximum amount of recycled asphalt pavement allowed shall be 30% in a N30 mix design and 25% in a N50 mix design.

HOT-MIX ASPHALT BINDER AND SURFACE COURSE

HMA binder and surface courses, shall be constructed to the compacted thickness as shown on the PLANS. The base course shall be cleaned and primed in accordance with the JURISDICTIONAL GOVERNING ENTITY. The surface course shall be placed after the base and courses have gone through one winter season, or as directed by the CLIENT. Before applying the surface course, the binder course shall be thoroughly cleaned and primed in accordance with the JURISDICTIONAL GOVERNING ENTITY. Prior to the placement of the surface course, the JURISDICTIONAL GOVERNING ENTITY shall examine the completed pavement, including curb and gutter, and all failures shall be corrected by the CONTRACTOR.

CONCRETE PAVEMENTS

Concrete pavements shall be constructed in accordance with American Concrete Institute Standard ACI330R-08 and as shown on the PLANS.

Slabs and driveway aprons shall be constructed with 6" x 6" - W1.4 x W1.4 welded wire fabric positioned on steel chair supports. Placing fabric during the concrete pouring operation will not be allowed.

Sawing of joints shall commence as soon as the concrete has cured and hardened sufficiently to permit sawing without excessive raveling, but no later than eight hours after the concrete has been placed. All joints shall be sawed to a depth equal to 1/3 of the pavement thickness before uncontrolled shrinkage cracking take place. If necessary, the sawing operation shall occur during the day or at night, regardless of weekends, holidays or weather conditions. The CONTRACTOR shall be aware of jurisdictional noise ordinances and holiday restrictions for scheduling purposes.

The CONTRACTOR is responsible to guard fresh concrete until it sets and hardens sufficiently to prevent people from writing, walking, riding bicycles or otherwise permanently marking, defacing or causing depressions of any type in the concrete. Any concrete so marked will be removed and replaced by the CONTRACTOR at the CONTRACTOR's expense.

The CONTRACTOR shall protect the pavement against all traffic, including that of their own employees or other workers, until test specimens have attained the specified strength.

SIDEWALKS

Concrete sidewalks shall be constructed to width and thickness as shown on the PLANS. Sidewalks shall be thickened to a minimum of 6" at all driveways. All sidewalks shall be IDOT Class SI concrete, on aggregate base as shown on the detail. A ¾" expansion joint shall be provided when meeting existing sidewalk.

CURB AND GUTTER

Curb and gutter shall be as per the detail shown on the PLANS, which shall include compacted aggregate base course under the curb and gutter. All contraction and expansion joints shall be constructed as per the detail.

CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT

The CONTRACTOR shall saw cut and remove the existing concrete curb where shown on the PLANS and install a curb of similar cross section and pavement to that removed (or depressed curb and gutter if shown on the PLANS). Upon completion of the curb and gutter any voids between the existing pavement and the new curb shall be filled with concrete to within 2" of the final surface, which is to be filled with bituminous pavement. The area behind the curb shall be filled and compacted with embankment material within 6" of the top of the new curb. The CONTRACTOR shall then restore the remaining 6" to its original condition (i.e., sod, gravel, topsoil). Where proposed curb connects to an existing curb, the existing curb shall be saw cut and then two 18" long x ¾" (#6) dowel bars shall be drilled and installed 9" into the existing and proposed curb. Bars shall be installed in a location similar to the expansion joint in the curb.

FRAME ADJUSTMENTS

The road contractor shall be responsible for making final adjustments and the setting on a bituminous mastic jointing compound all castings located in the roadway, sidewalks, and parking areas prior to construction of any curbing, sidewalk, or final surface. Any structures that need to be lowered, or raised in excess of 4" shall be completed and the work backcharged against the underground contractor. This Contractor shall also be responsible for cleaning all of the above structures immediately upon completion of his phase of work. This work shall be incidental to the cost of the pavement.

***PAVEMENT MARKING - PAINT** - INTENTIONALLY OMITTED

PAVEMENT MARKING - THERMOPLASTIC

The CONTRACTOR shall furnish and apply extruded thermoplastic pavement marking lines, letters and symbols of the patterns, sizes and colors where shown on the PLANS. Thermoplastic pavement marking shall be installed in accordance with the IDOT Standard Specifications.

QUALITY CONTROL

The CONTRACTOR shall provide all testing necessary to ensure improvements are in accordance with the project specifications and provide testing documentation that specifications were met.

SHOULD A CONFLICT ARISE BETWEEN THE MANHARD SPECIFICATIONS AND THE CITY SPECIFICATIONS, THE CITY SPECIFICATIONS TAKE PRECEDENCE.

DRAWN BY	REVISIONS	DATE

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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

CITY OF CRYSTAL LAKE, ILLINOIS

CONSTRUCTION SPECIFICATIONS

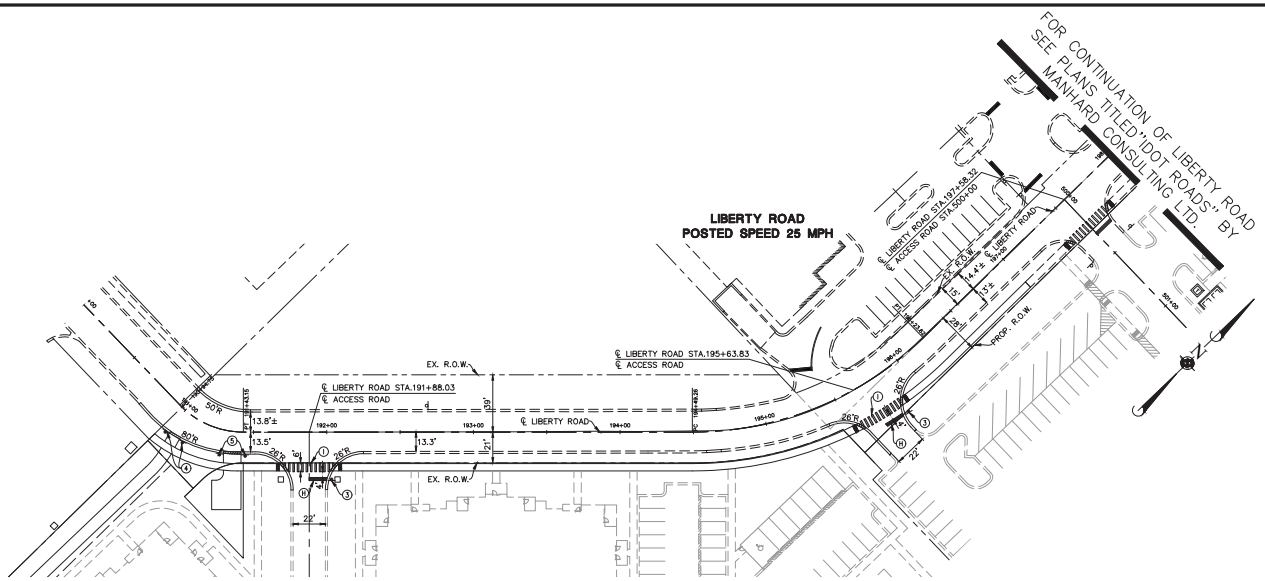
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DATE: 06-02-23
SCALE: N.T.S.

SHEET 25 OF 25

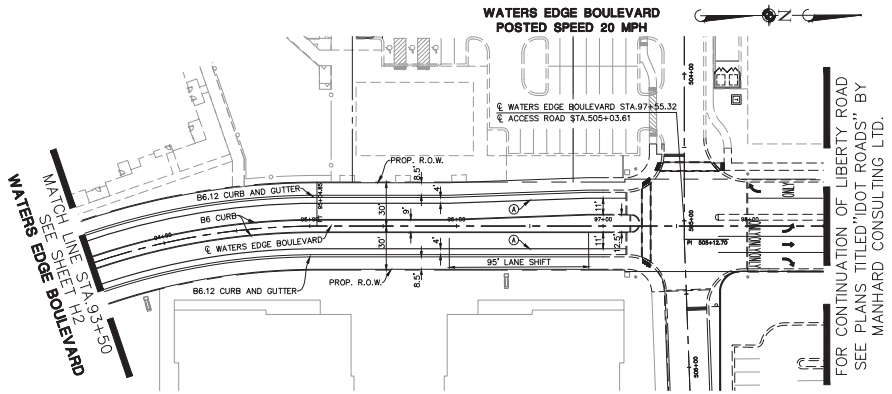
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OVERALL AND PAVEMENT MARKING PLAN



PAVEMENT MARKING LEGEND
(A) 4" WHITE EDGE LINE
(B) 4" DOUBLE YELLOW AT 12" C-C
(C) 6" WHITE
(D) 4" YELLOW (6' SKIP - 2' DASH)
(E) 4" YELLOW
(F) 12" WHITE DIAGONAL (SEE PLAN FOR SPACING)
(G) LETTERS AND SYMBOLS
(H) 24" WHITE
(I) 12" WHITE (3' C-C)
(J) 8" WHITE EDGE LINE
(K) 12" YELLOW DIAGONAL (SEE PLAN FOR SPACING)

NOTES:
1. ALL PAVEMENT MARKINGS ON HMA PAVEMENT TO BE THERMOPLASTIC IN CONFORMANCE WITH SECTION 780 OF THE STANDARD SPECIFICATIONS.
2. EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED IN ACCORDANCE WITH SECTION 783 OF THE STANDARD SPECIFICATIONS.
3. EXISTING RAISED REFLECTIVE PAVEMENT MARKERS WHICH CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS SHALL HAVE THE LENSES REMOVED.
4. RAISED REFLECTIVE PAVEMENT MARKERS SHALL BE INSTALLED IN CONFORMANCE WITH THE APPLICABLE ARTICLES OF SECTION 781 OF THE STANDARD SPECIFICATIONS AND IN ACCORDANCE WITH THE MUTCD, LATEST EDITION.

SIGN LEGEND



R3-5R 36"X36" ①	R5-1 30"X30" ②	R1-1 36"X36" ③	R5-3 24"X24" ④	R5-11 30"X24" ⑤

NOTES:
1. PROPOSED TRAFFIC SIGNS ARE SHOWN FOR INFORMATION ONLY. ALL SIGNS ARE TO BE INSTALLED BY THE CONTRACTOR.
2. EXISTING SIGNS TO BE RELOCATED SHALL BE REMOVED AND STORED ON SITE IN A PROTECTED AREA FOR PICK UP BY IDOT.
3. SIGNS SHALL NOT BE REMOVED UNTIL THE PROGRESS OF WORK NECESSITATES IT.

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NBA	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	

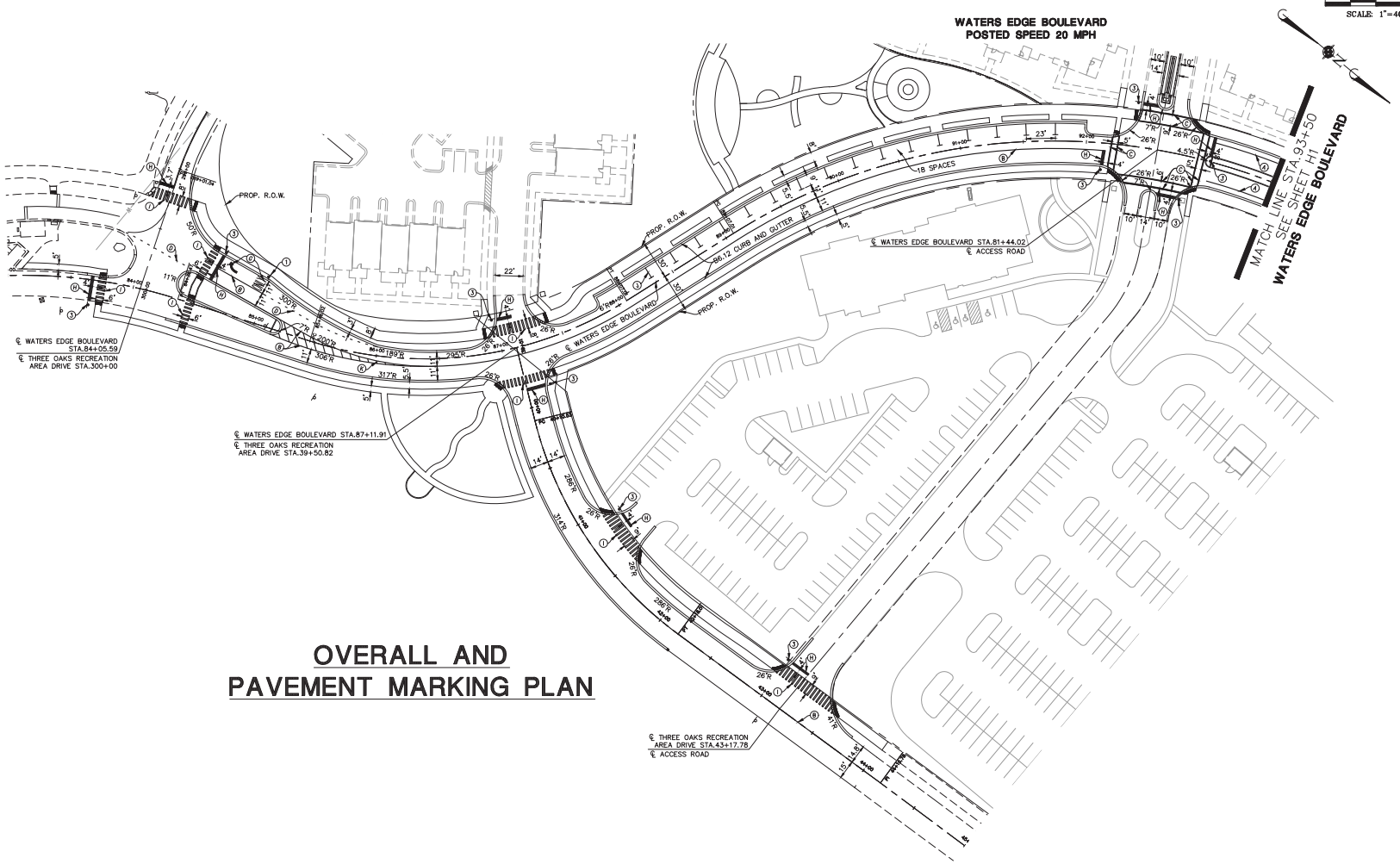
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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
OVERALL AND PAVING MARKING PLAN

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	AS
DATE:	06-02-23
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H1 OF 25
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OVERALL AND PAVEMENT MARKING PLAN

PAVEMENT MARKING LEGEND

- Ⓐ 4" WHITE EDGE LINE
- Ⓑ 4" DOUBLE YELLOW AT 12" C-C
- Ⓒ 6" WHITE
- Ⓓ 4" YELLOW (6' SKIP – 2' DASH)
- Ⓔ 4" YELLOW
- Ⓕ 12" WHITE DIAGONAL (SEE PLAN FOR SPACING)
- Ⓖ LETTERS AND SYMBOLS
- Ⓗ 24" WHITE
- Ⓘ 12" WHITE (3' C-C)
- Ⓙ 8" WHITE EDGE LINE
- Ⓚ 12" YELLOW DIAGONAL (SEE PLAN FOR SPACING)

NOTES:

1. ALL PAVEMENT MARKINGS ON HMA PAVEMENT TO BE THERMOPLASTIC IN CONFORMANCE WITH SECTION 780 OF THE STANDARD SPECIFICATIONS.
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4. RAISED REFLECTIVE PAVEMENT MARKERS SHALL BE INSTALLED IN CONFORMANCE WITH THE APPLICABLE ARTICLES OF SECTION 781 OF THE STANDARD SPECIFICATIONS AND IN ACCORDANCE WITH THE MUTCD, LATEST EDITION.

SIGN LEGEND

①	②	③	④	⑤
R3-5R 36"X36"	R5-1 30"X30"	R1-1 36"X36"	R5-3 24"X24"	R5-11 30"X24"
ONLY	DO NOT ENTER	STOP	NO MOTOR VEHICLES	AUTHORIZED VEHICLES ONLY

NOTES:

1. PROPOSED TRAFFIC SIGNS ARE SHOWN FOR INFORMATION ONLY. ALL SIGNS ARE TO BE INSTALLED BY THE CONTRACTOR.
2. EXISTING SIGNS TO BE RELOCATED SHALL BE REMOVED AND STORED ON SITE IN A PROTECTED AREA FOR PICK UP BY IDOT.
3. SIGNS SHALL NOT BE REMOVED UNTIL THE PROGRESS OF WORK NECESSITATES IT.

DRAWN BY	REVISIONS	DATE
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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
OVERALL AND PAVING MARKING PLAN

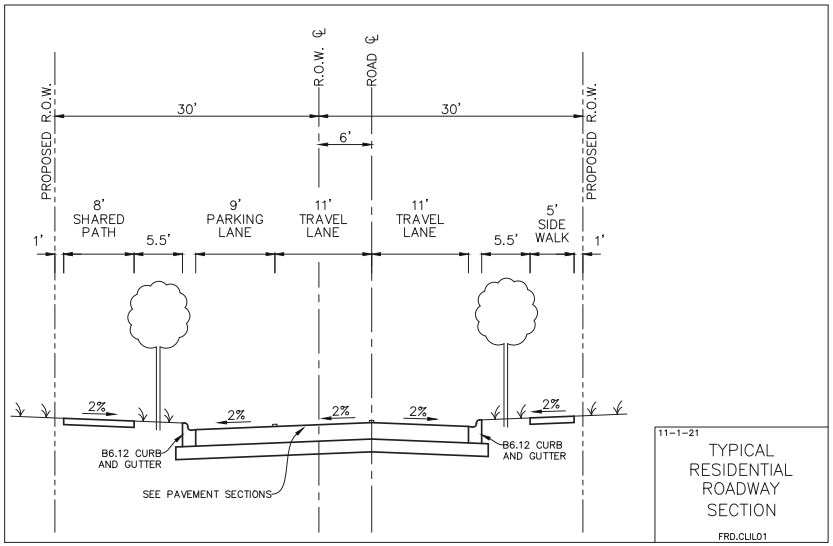
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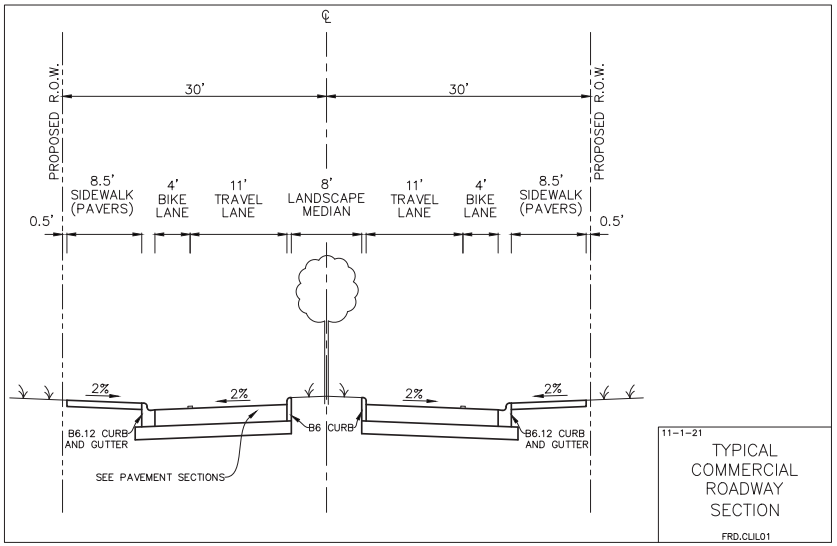
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11-1-21

TYPICAL RESIDENTIAL ROADWAY SECTION

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11-1-21

TYPICAL COMMERCIAL ROADWAY SECTION

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PAVEMENT SECTIONS

MINOR COLLECTOR ALTERNATE 1

- HMA SURFACE COURSE, 1.5", MIX C, N50
- HMA BINDER COURSE, 2.5", IL 19, N50
- HMA BASE COURSE, 6"
- AGGREGATE BASE COURSE, 4", (CA-6, GRADE #9)

MINOR COLLECTOR ALTERNATE 2

- HMA SURFACE COURSE, 1.5", MIX C, N50
- HMA BINDER COURSE, 4", IL 19, N50
- AGGREGATE BASE COURSE, 12", (CA-6, GRADE #9)

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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

CITY OF CRYSTAL LAKE, ILLINOIS

TYPICAL SECTIONS

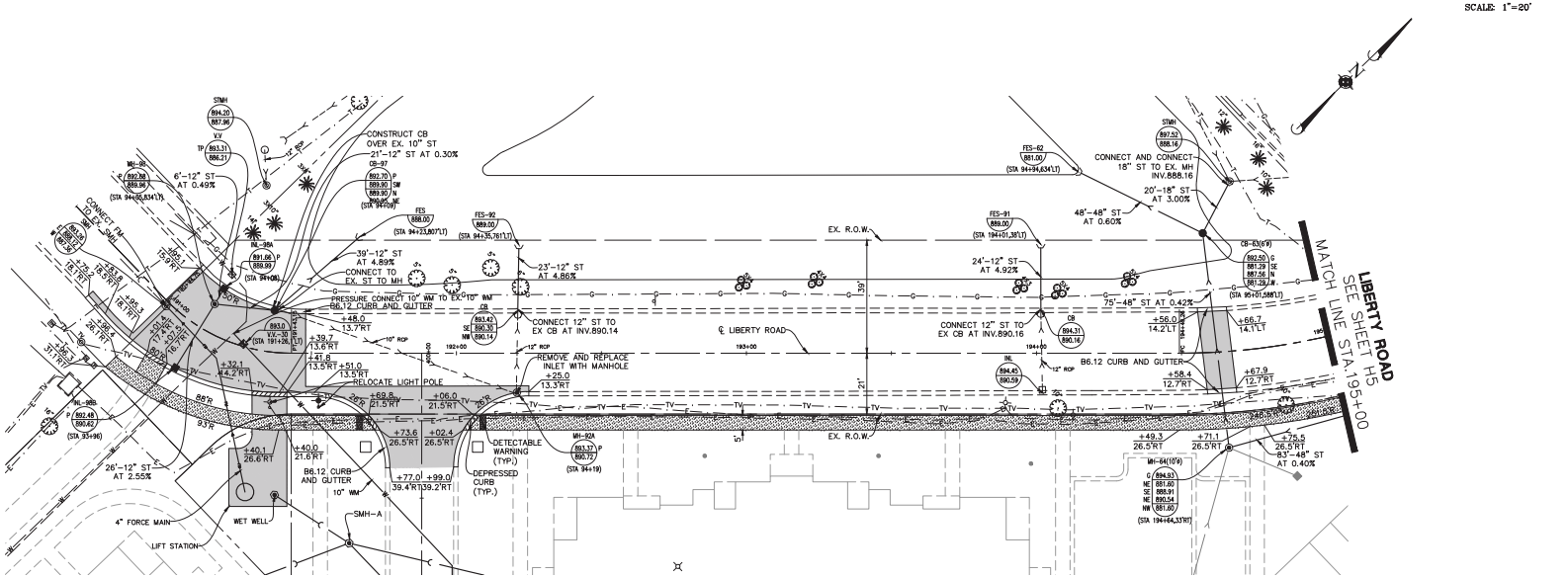
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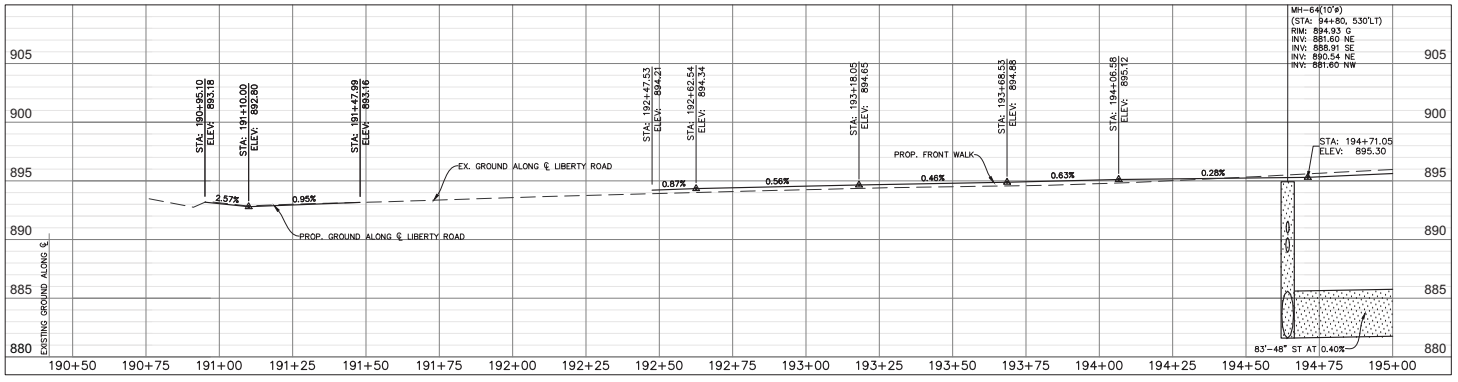
PAVING LEGEND (SEE TYPICAL SECTION FOR MATERIAL)

- CONCRETE SIDEWALK — 6" PCC PAVEMENT, 4" AGGREGATE BASE COURSE
- MILL AND OVERLAY (SEE TYPICAL SECTION FOR MATERIAL)
- ASPHALT WIDENING (SEE TYPICAL SECTION FOR MATERIAL)
- CONCRETE MEDIAN — 6" PCC PAVEMENT, 4" AGGREGATE BASE COURSE
- PAVER SIDEWALK (SEE TYPICAL SECTION FOR MATERIAL)
- PAVER DRIVE (SEE TYPICAL SECTION FOR MATERIAL)

NOTE:

1. CONTRACTOR TO VERIFY EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES AT LOCATIONS OF CONFLICT. CONTRACTOR TO NOTIFY ENGINEER WITH ANY DISCREPANCIES.
2. FOR SIGN REMOVAL, REPLACEMENT AND OR RELOCATION, SEE PAVEMENT MARKING AND SIGNING PLAN.
3. ALL DIMENSIONS TO EDGE OF PAVEMENT.
4. ALL SIDEWALK RAMPS TO BE IN ACCORDANCE WITH ADA REQUIREMENTS.

LIBERTY ROAD



DRAWN BY	DATE	REVISIONS
NBA	07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS

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Construction Managers | Environmental Scientists | Landscape Architects | Planners

MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

CITY OF CRYSTAL LAKE, ILLINOIS

PLAN AND PROFILE - LIBERTY ROAD STA.190+50 TO STA.195+00

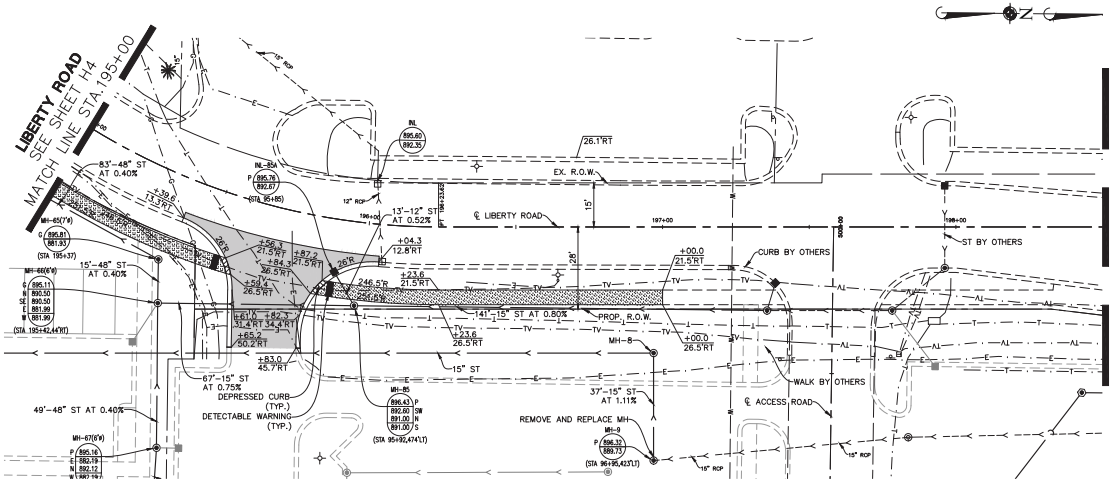
PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	AS
DATE:	06-02-23
SCALE:	H:1"=20',V:1"=5'

SHEET H4 OF 25

FRDCLILO1

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SCALE: 1"=20'

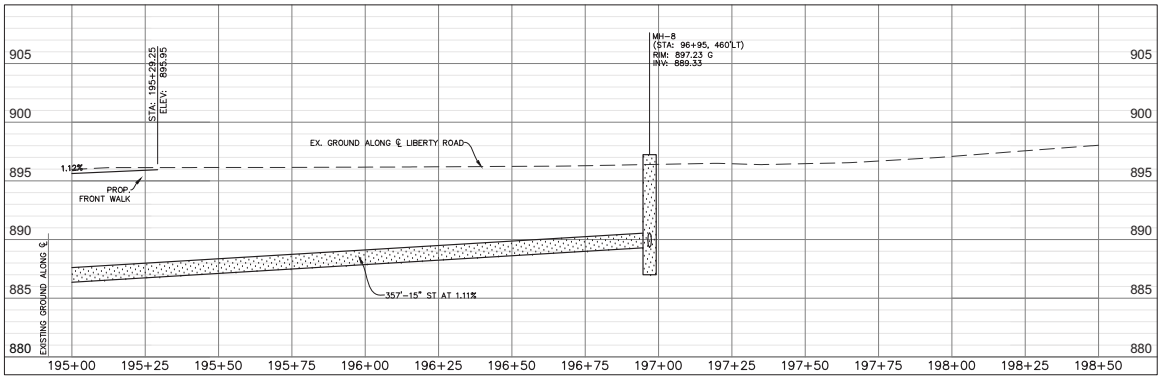


PAVING LEGEND (SEE TYPICAL SECTION FOR MATERIAL)

- CONCRETE SIDEWALK — 6" PCC PAVEMENT, 4" AGGREGATE BASE COURSE
- MILL AND OVERLAY — (SEE TYPICAL SECTION FOR MATERIAL)
- ASPHALT WIDENING — (SEE TYPICAL SECTION FOR MATERIAL)
- CONCRETE MEDIAN — 6" PCC PAVEMENT, 4" AGGREGATE BASE COURSE
- PAVER SIDEWALK — (SEE TYPICAL SECTION FOR MATERIAL)
- PAVER DRIVE — (SEE TYPICAL SECTION FOR MATERIAL)

NOTE:
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3. ALL DIMENSIONS TO EDGE OF PAVEMENT.
4. ALL SIDEWALK RAMPS TO BE IN ACCORDANCE WITH ADA REQUIREMENTS.

LIBERTY ROAD



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NBA	(07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	

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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

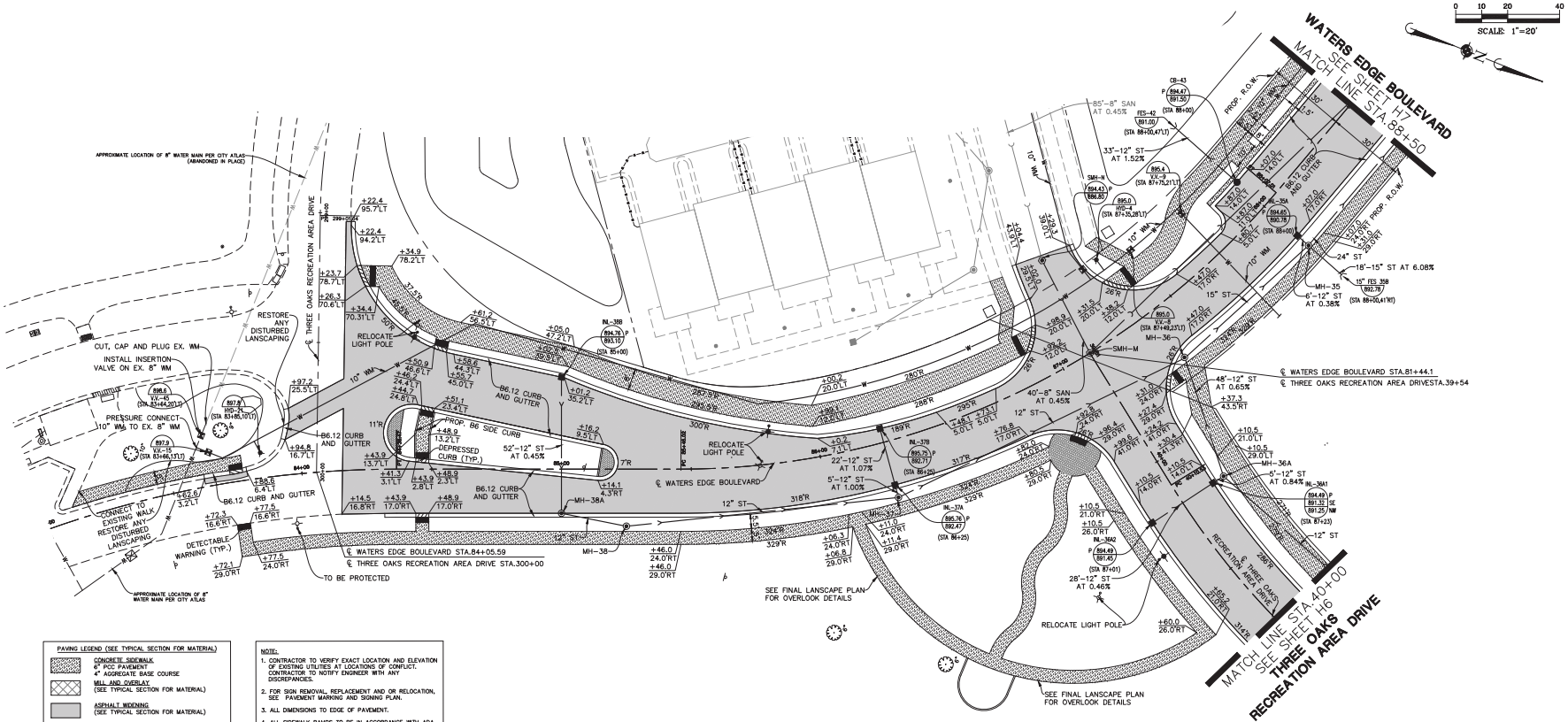
CITY OF CRYSTAL LAKE, ILLINOIS

PLAN AND PROFILE - LIBERTY ROAD STA.195+00 TO STA.198+50

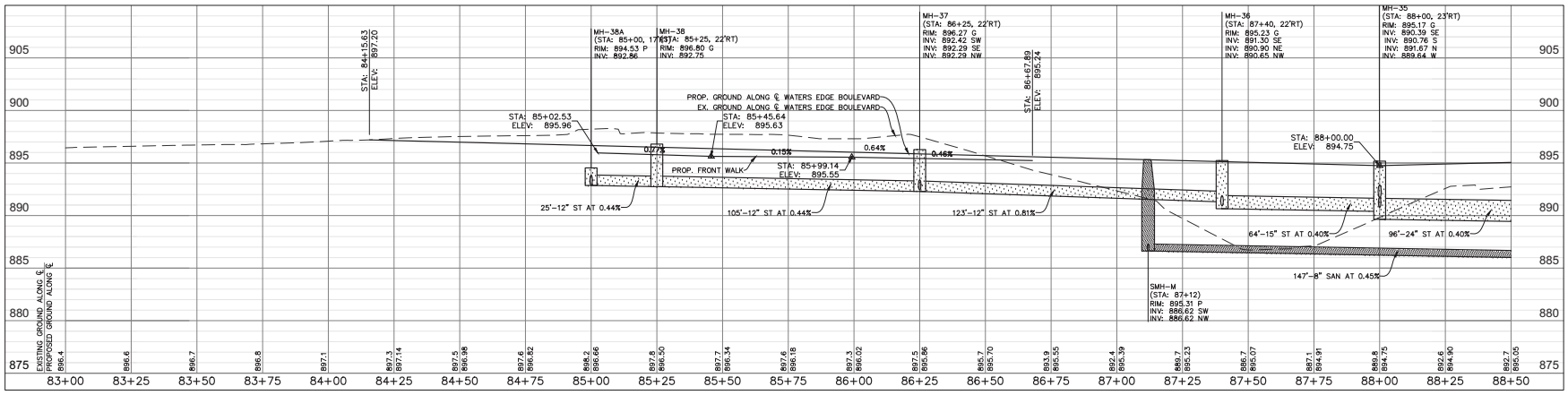
PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	AS
DATE:	06-02-23
SCALE:	H:1"=20',V:1"=5'

SHEET
H5 OF 25
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WATERS EDGE BOULEVARD



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NBA	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-07-23

MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

CITY OF CRYSTAL LAKE, ILLINOIS

PLAN AND PROFILE - WATERS EDGE BOULEVARD STA.83+00 TO STA.88+50

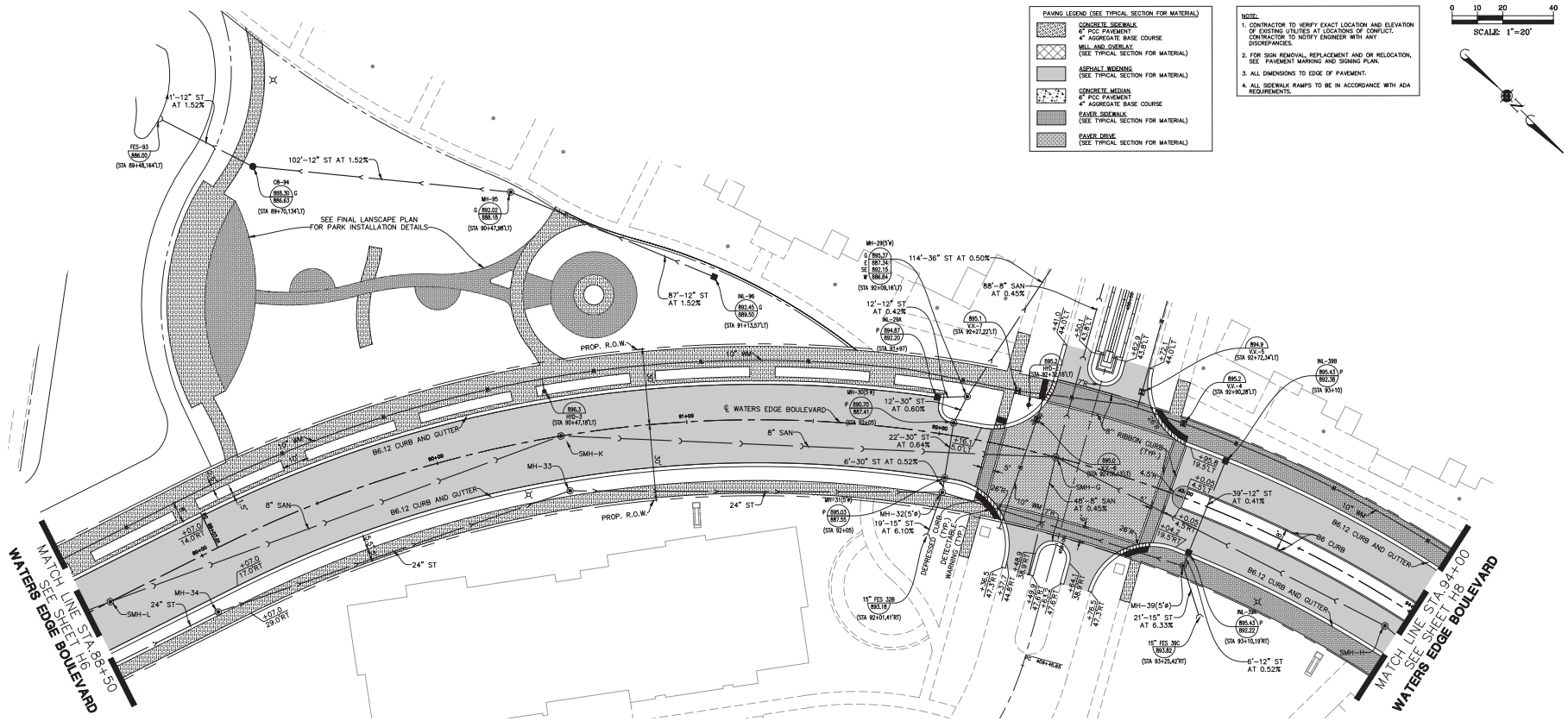
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PROJ. ASSOC.:	MSL
DRAWN BY:	AS
DATE:	06-02-23
SCALE:	H:1"=20',V:1"=5'

SHEET H6 OF 25

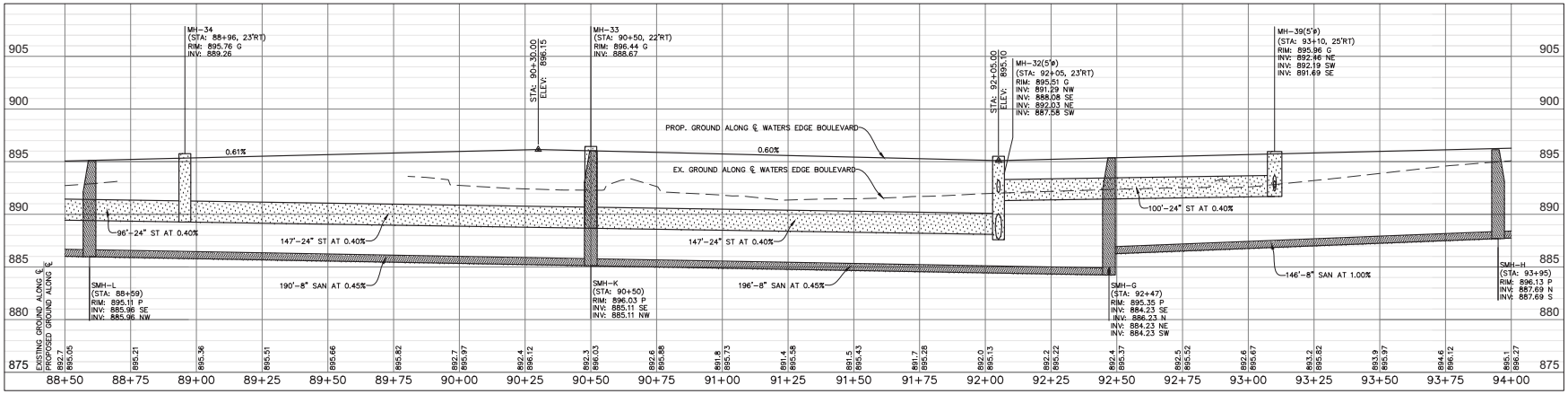
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July 7, 2023 - 12:10p DanNorem P:\Projects\Mixed Use Development at Waters Edge\Civil\Exhibits\Plan and Profile\Waters Edge Blvd\H6 Waters Edge Blvd.dwg



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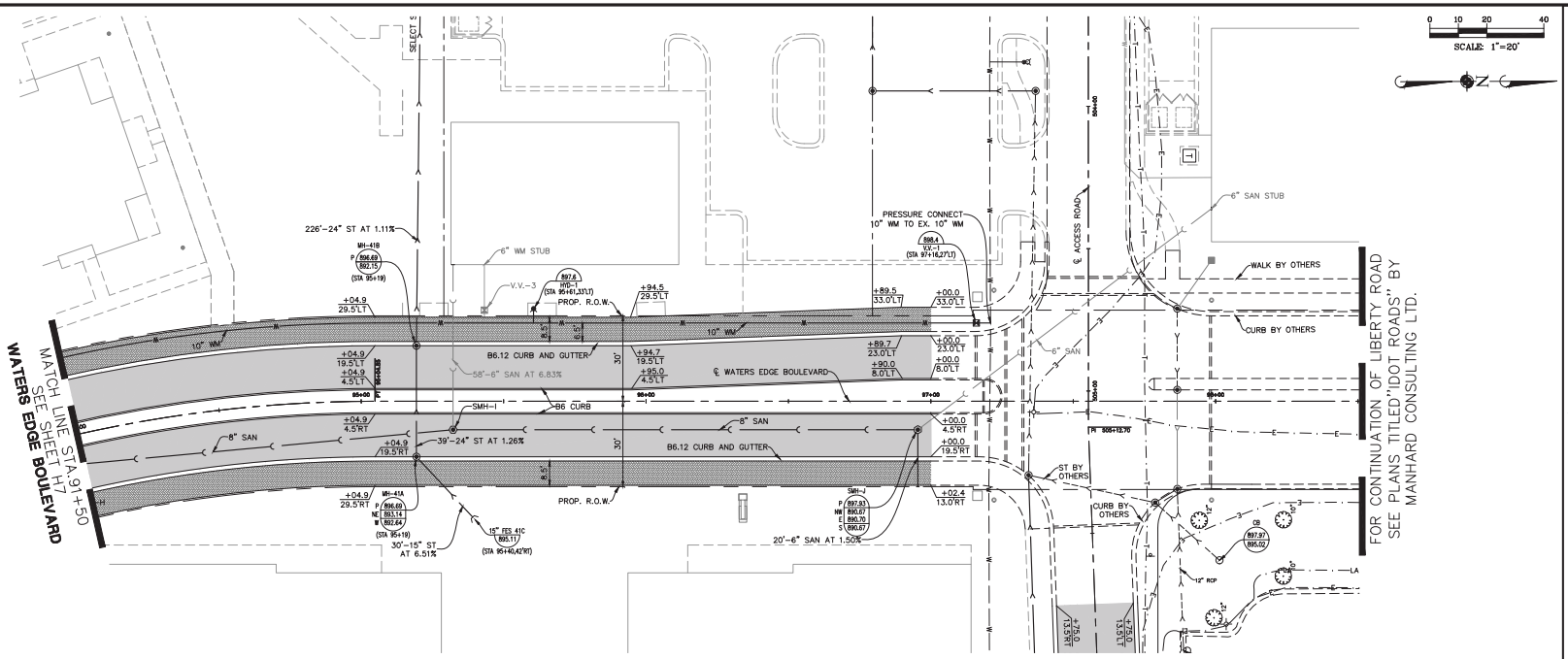
DRAWN BY	REVISIONS	DATE
NBA	2023-07-26 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-26-23

MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
PLAN AND PROFILE - WATERS EDGE BOULEVARD STA.88+50 TO STA.94+00

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	AS
DATE:	06-02-23
SCALE:	H:1"=20',V:1"=5'

SHEET
H7 OF 25
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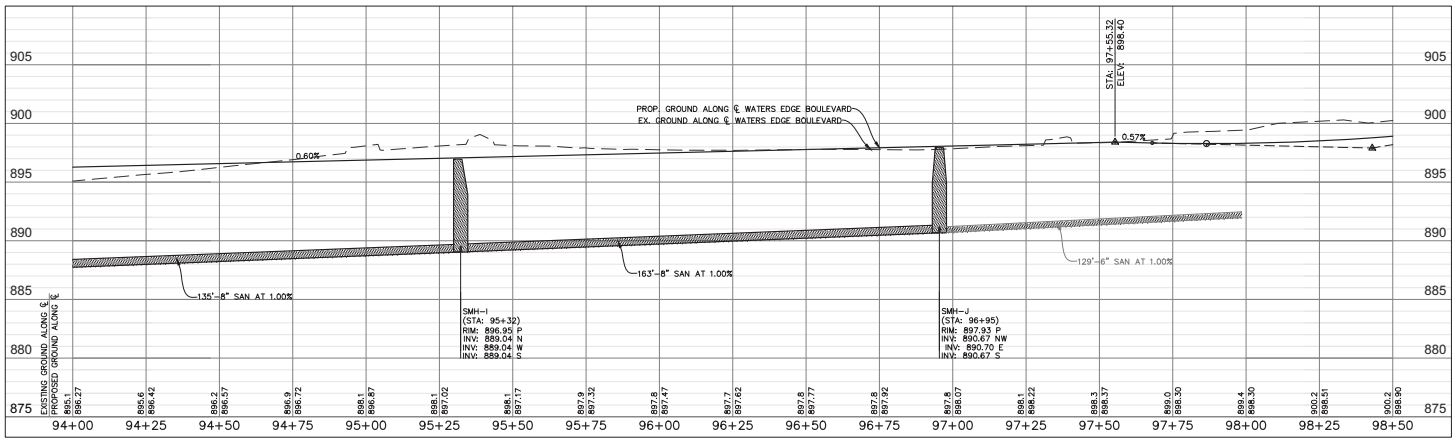
PAVING LEGEND (SEE TYPICAL SECTION FOR MATERIAL)

- CONCRETE SIDEWALK — 6" PCC PAVEMENT, 4" AGGREGATE BASE COURSE
- MILL AND OVERLAY (SEE TYPICAL SECTION FOR MATERIAL)
- ASPHALT WIDENING (SEE TYPICAL SECTION FOR MATERIAL)
- CONCRETE MEDIAN — 6" PCC PAVEMENT, 4" AGGREGATE BASE COURSE
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NOTE:

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WATERS EDGE BOULEVARD



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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

CITY OF CRYSTAL LAKE, ILLINOIS

PLAN AND PROFILE - WATERS EDGE BOULEVARD STA.94+00 TO STA.98+50

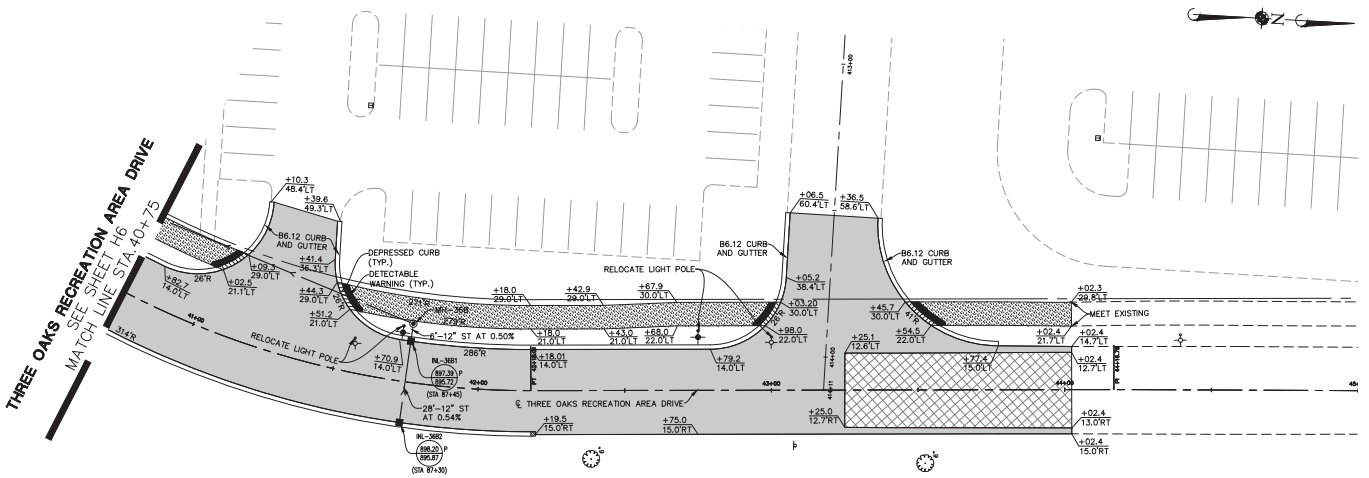
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PROJ. ASSOC.:	MSL
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DATE:	06-02-23
SCALE:	H:1"=20',V:1"=5'

SHEET H8 OF 25

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July 7, 2023 - 10:19a Dan Nixon P:\2021\21-01451\Engr\Civil\Sheets\Plan & Profile\Waters Edge Blvd\Waters Edge Blvd Sta 94+00 to 98+50.dwg Xref(s): Sheet(s): Layout(s): Model

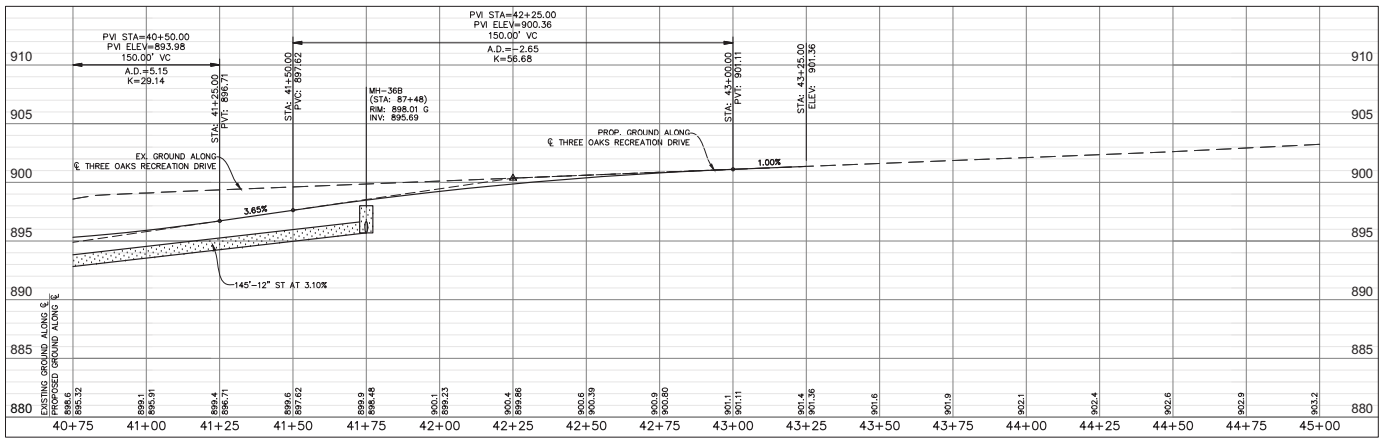


PAVING LEGEND (SEE TYPICAL SECTION FOR MATERIAL)

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THREE OAKS RECREATIONAL AREA DRIVE



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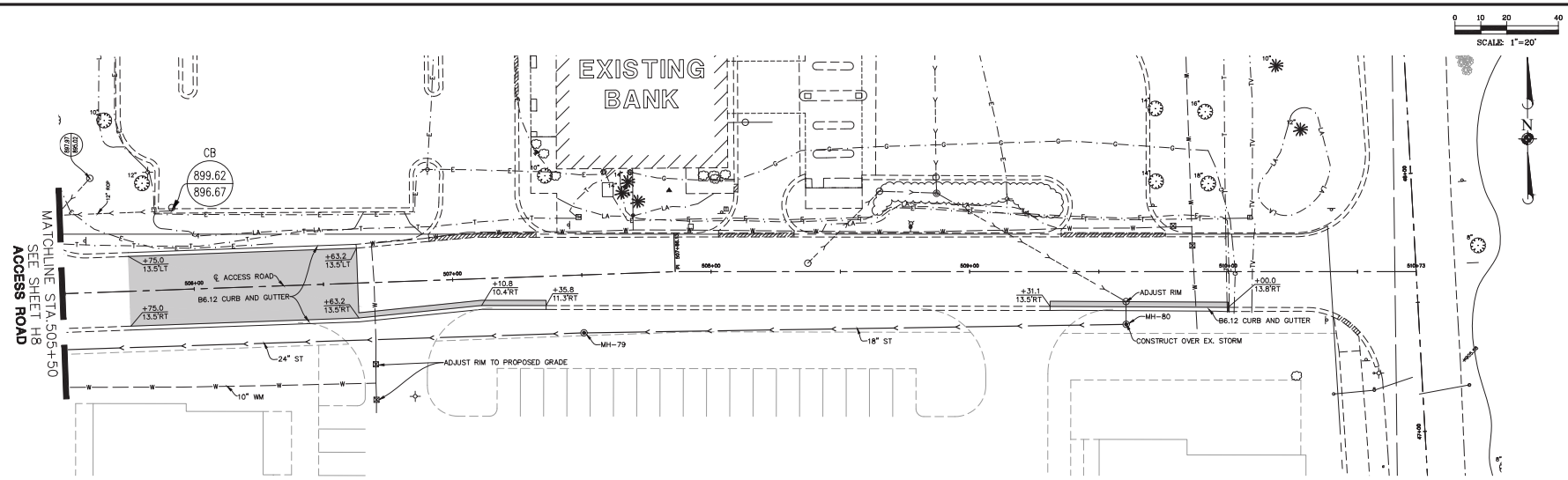
MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
PLAN AND PROFILE - THREE OAKS REC-AREA DR STA.40+00 TO STA.45+00

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	AS
DATE:	06-02-23
SCALE:	H:1"=30',V:1"=5'

SHEET H9 OF 25
FRDCLIL01

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July 7, 2023 - 1:18:06pm, User Name: KYLE.KRAMER, C:\Drawings\Plan and Profile\Three Oaks\Three Oaks Rec-Area Dr Sta 40+00 to Sta 45+00 - Mixed Use Development at Water's Edge.dwg



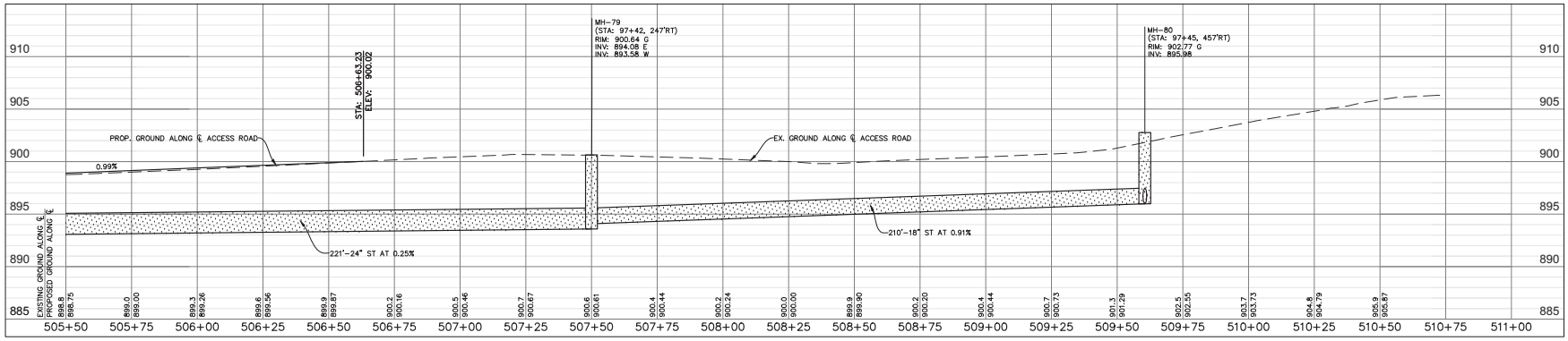
PAVING LEGEND (SEE TYPICAL SECTION FOR MATERIAL)

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ACCESS ROAD



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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
PLAN AND PROFILE - ACCESS ROAD STA.505+50 TO STA.510+73

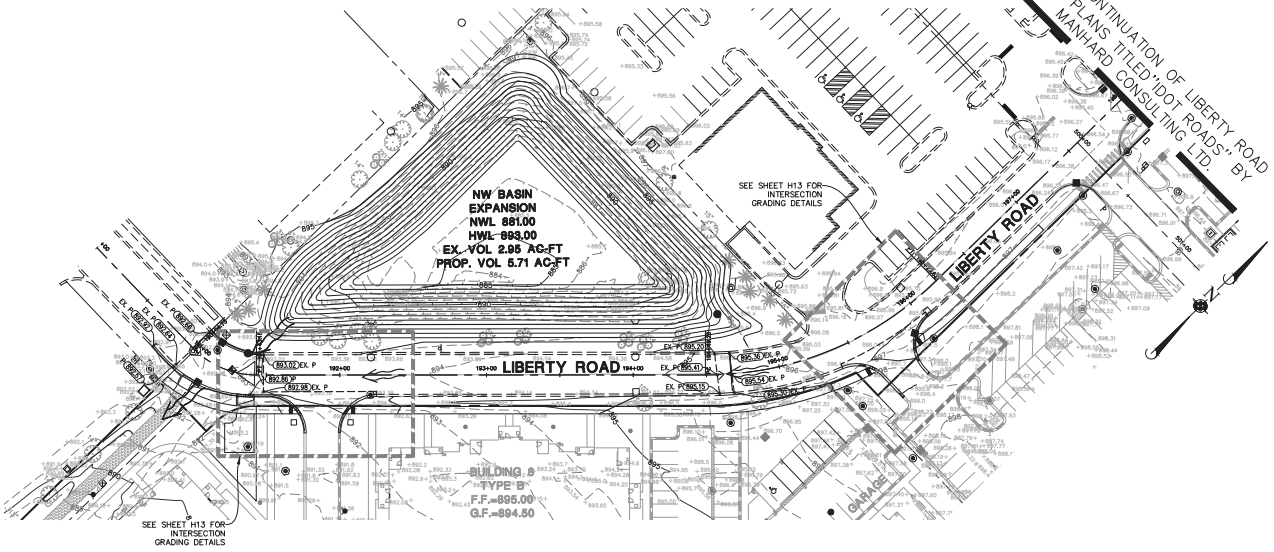
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PROJ. ASSOC.:	MSL
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SCALE:	H:1"=20',V:1"=5'

SHEET H10 OF 25
FRDCLIL01

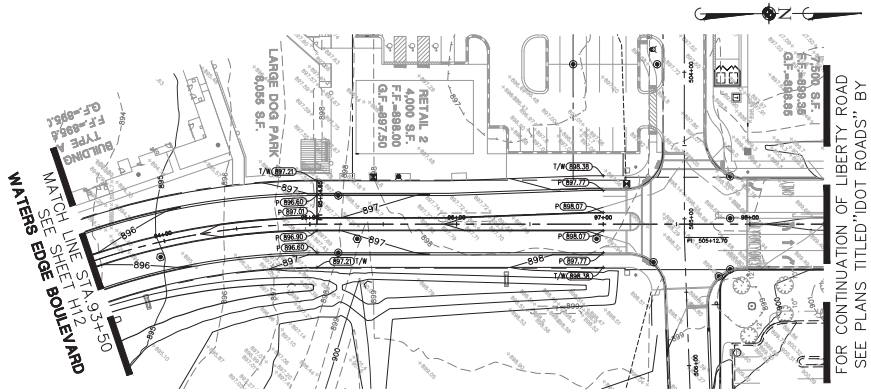
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FOR MULTIFAMILY SITE GRADING, SEE PLAN SET TITLED "PROPOSED IMPROVEMENTS FOR MULTIFAMILY DEVELOPMENT AT WATERS EDGE" DATED DECEMBER 17, 2021, PREPARED BY MANHARD CONSULTING.

SCALE: 1"=40'



GRADING PLAN



GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.8 C	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
D.P.	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
S	PROPOSED SWALE SUMMIT

GRADING NOTES:

1. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
2. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
3. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
5. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
8. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
9. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY MANHARD CONSULTING, LTD. ON OCTOBER 22, 2021. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
10. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

DRAWN BY	NBA
REVISIONS	
DATE	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS

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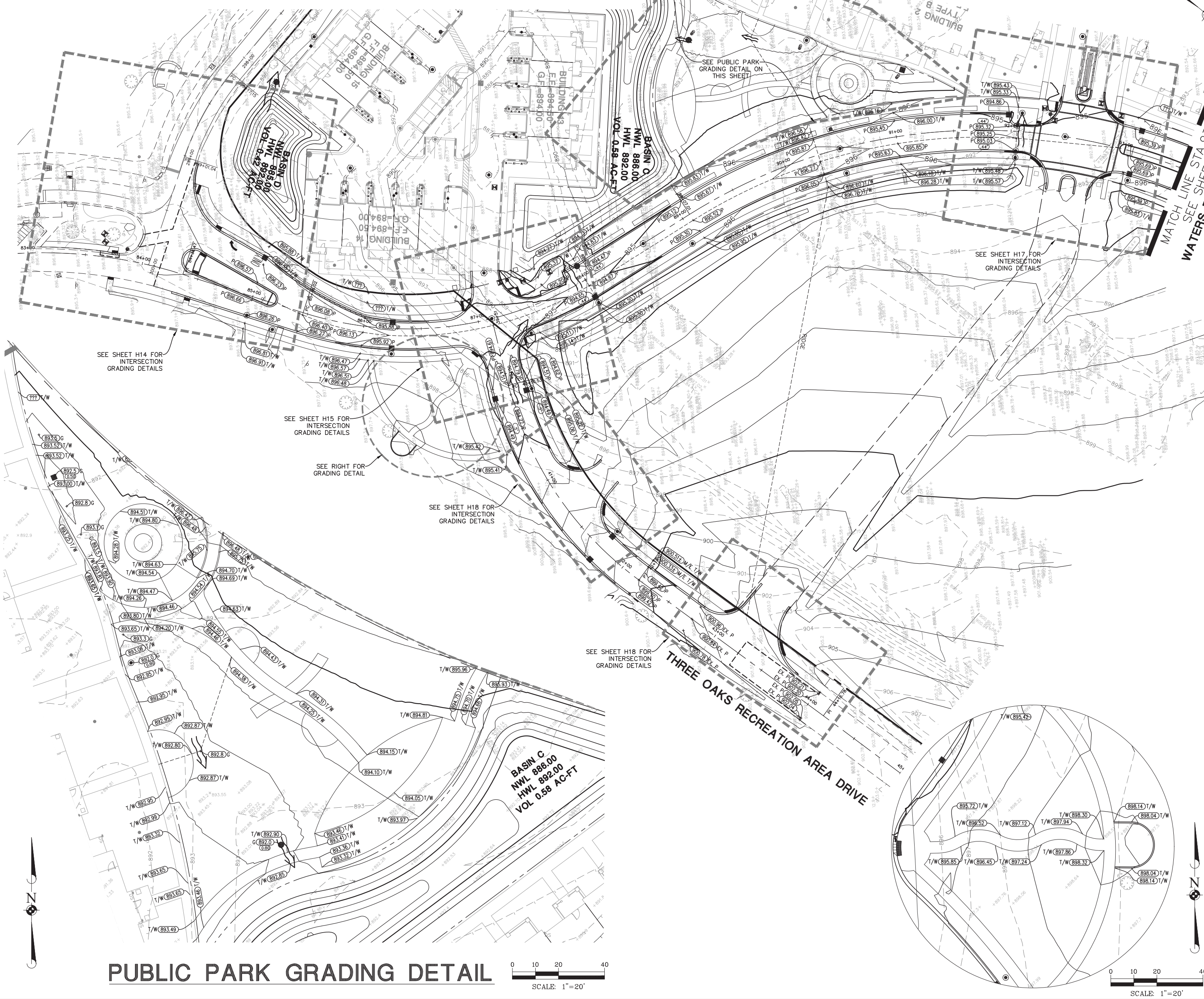
MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
GRADING PLAN - WATERS EDGE BLVD

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	AS
DATE:	06-02-23
SCALE:	1"=40'

SHEET H11 OF 25
FRDCLIL01

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FOR MULTIFAMILY SITE GRADING, SEE PLAN SET TITLED "PROPOSED IMPROVEMENTS FOR MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE" DATED 06-02-23, PREPARED BY MANHARD CONSULTING.



GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.8 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
0.5'	PROPOSED DEPTH OF PONDING
	RETAINING WALL
(L)	PROPOSED SWALE LOW POINT
(S)	PROPOSED SWALE SUMMIT

GRADING NOTES:

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4. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
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6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
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9. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY MANHARD CONSULTING, LTD. ON OCTOBER 22, 2021. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

CITY OF CRYSTAL LAKE, ILLINOIS

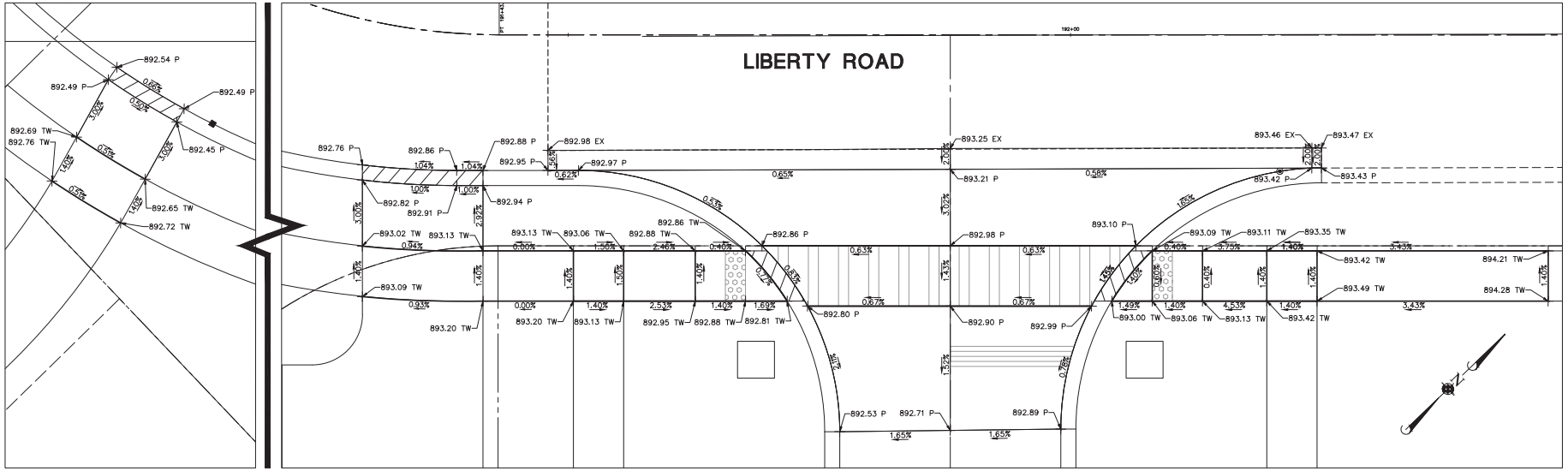
GRADING PLAN - THREE OAKS RECREATION AREA DRIVE

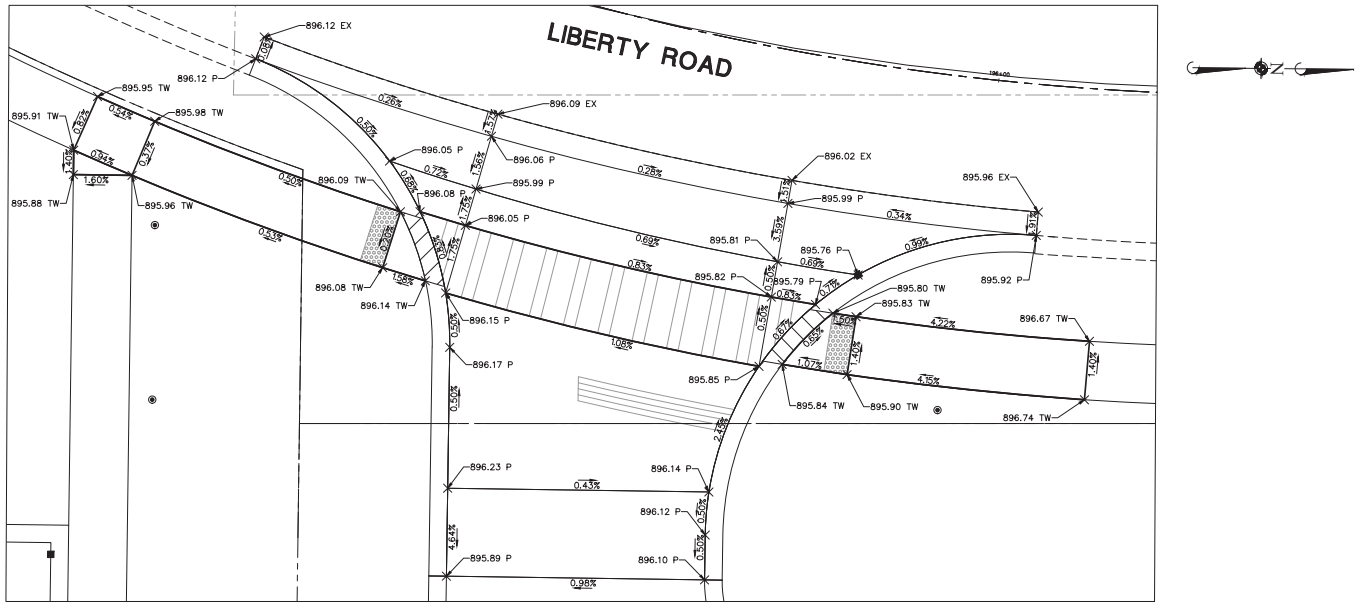
PROJ. MGR.:	KRK
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DATE:	06-02-23
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SHEET **H12** OF **25**

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DATE	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS

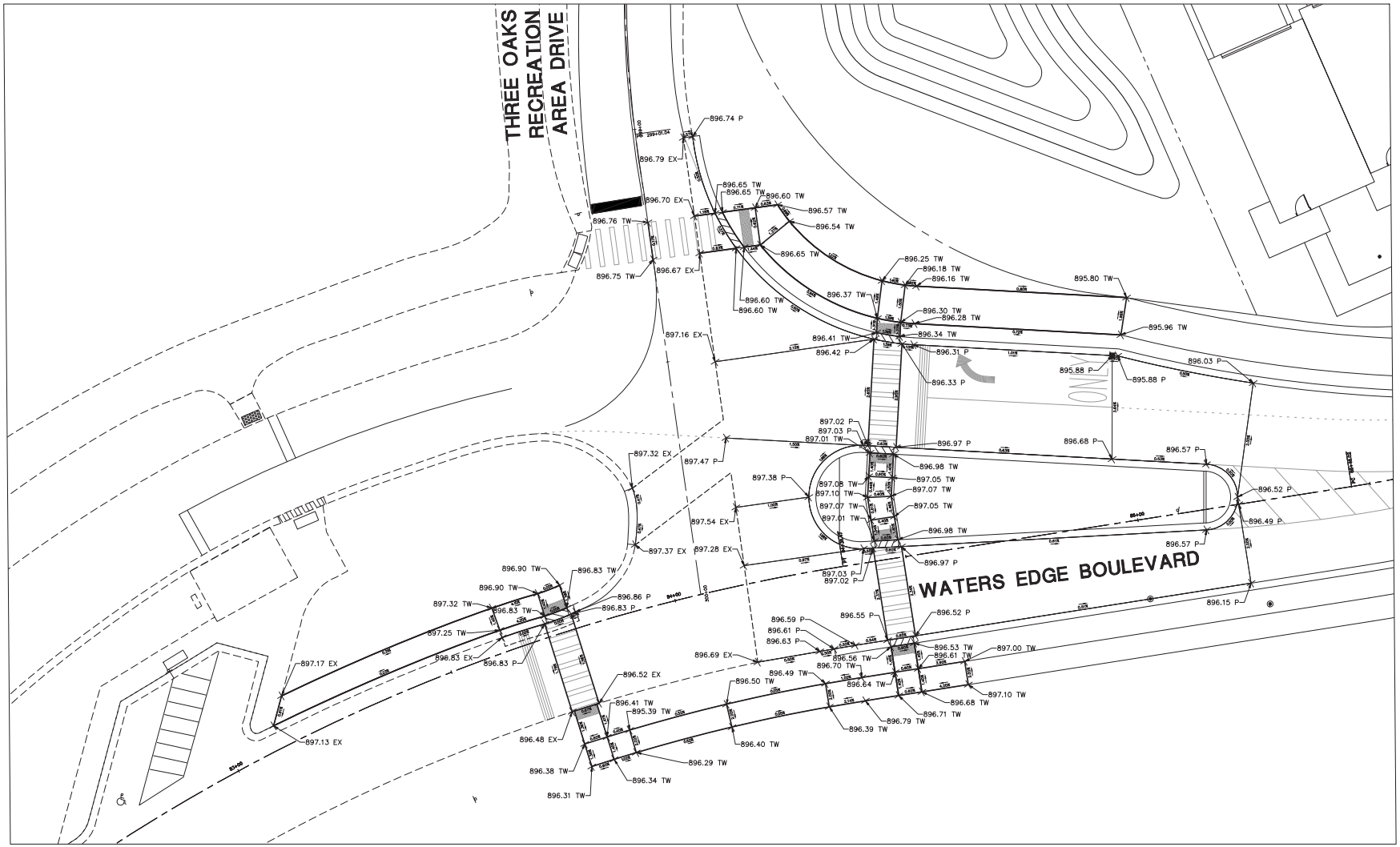
MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
ADA PLAN - LIBERTY ROAD

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	AS
DATE:	06-02-23
SCALE:	1"=10'

SHEET
H13 OF 25
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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE

CITY OF CRYSTAL LAKE, ILLINOIS

ADA PLAN - WATERS EDGE BOULEVARD

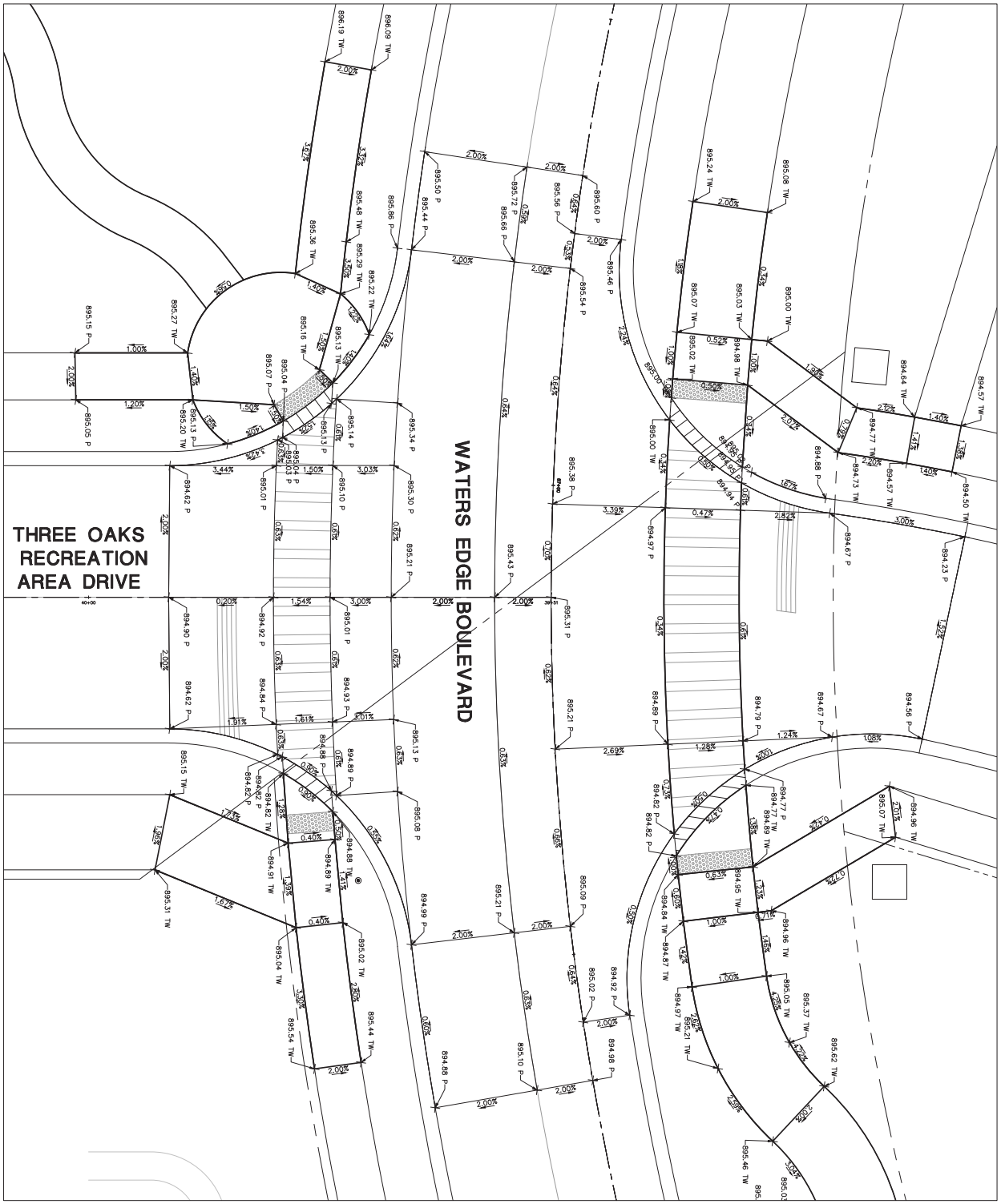
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H14 OF 25

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H15 OF 25 SHEET

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DATE: 06-02-23

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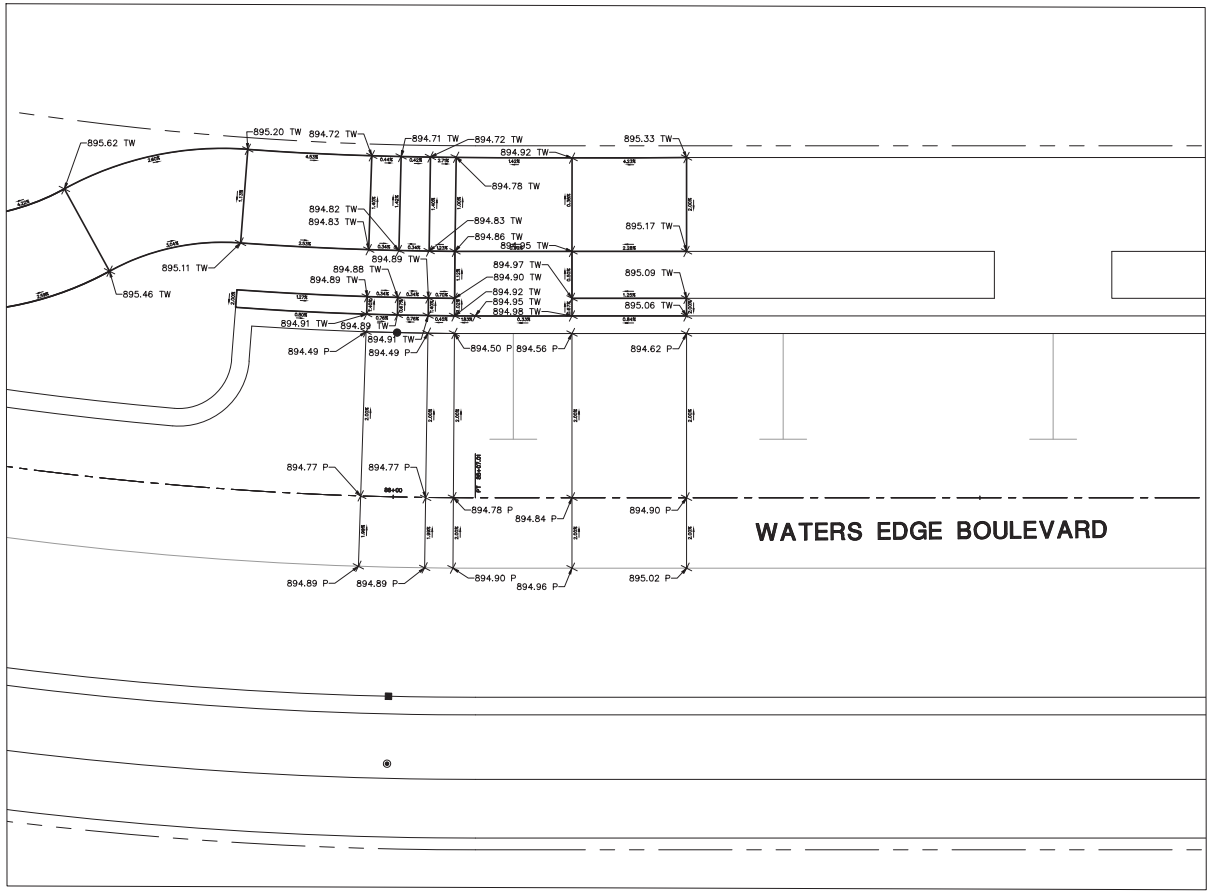
CITY OF CRYSTAL LAKE, ILLINOIS

ADA PLAN - WATERS EDGE BOULEVARD

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CITY OF CRYSTAL LAKE, ILLINOIS

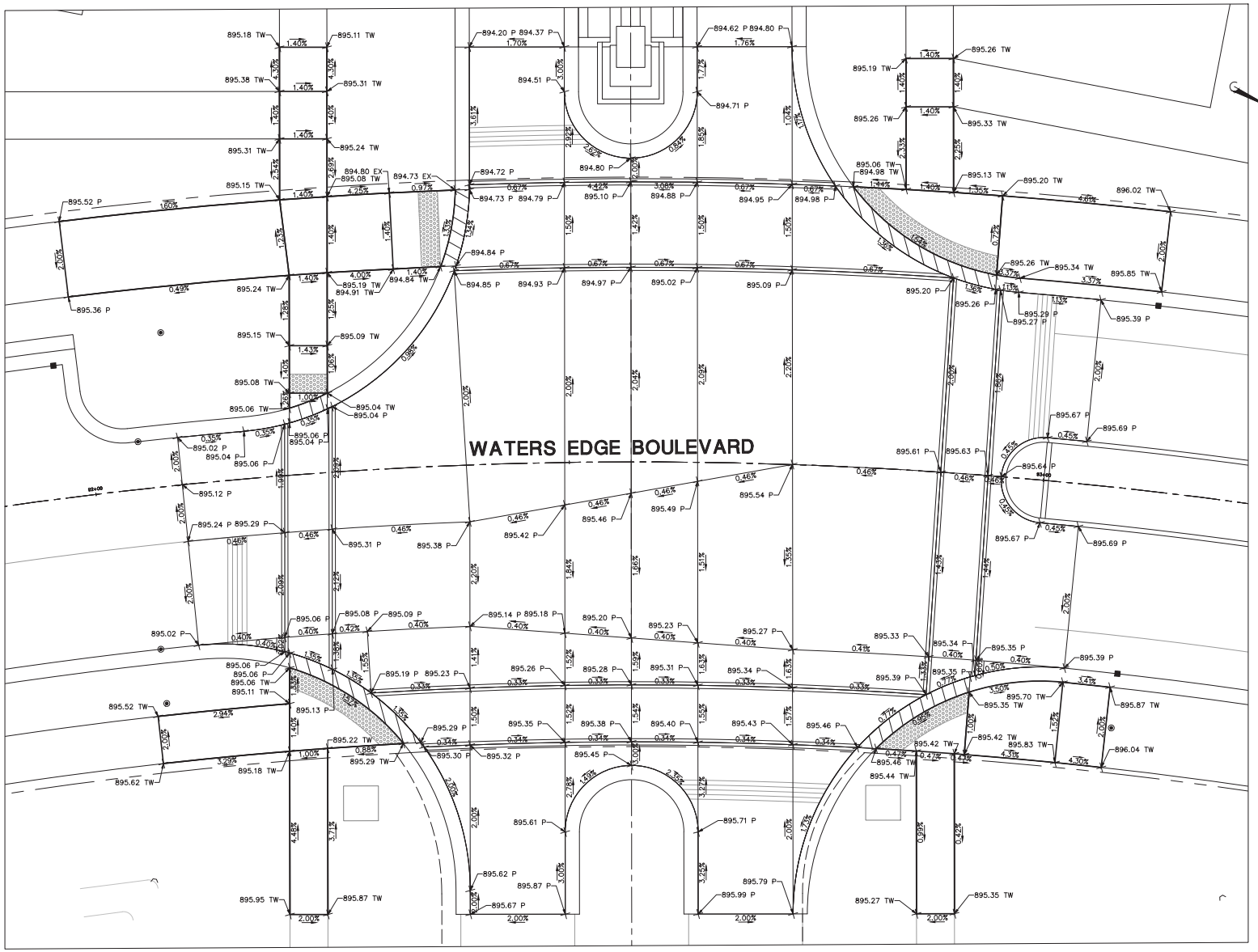
ADA PLAN - WATERS EDGE BOULEVARD

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H16 OF 25
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CITY OF CRYSTAL LAKE, ILLINOIS

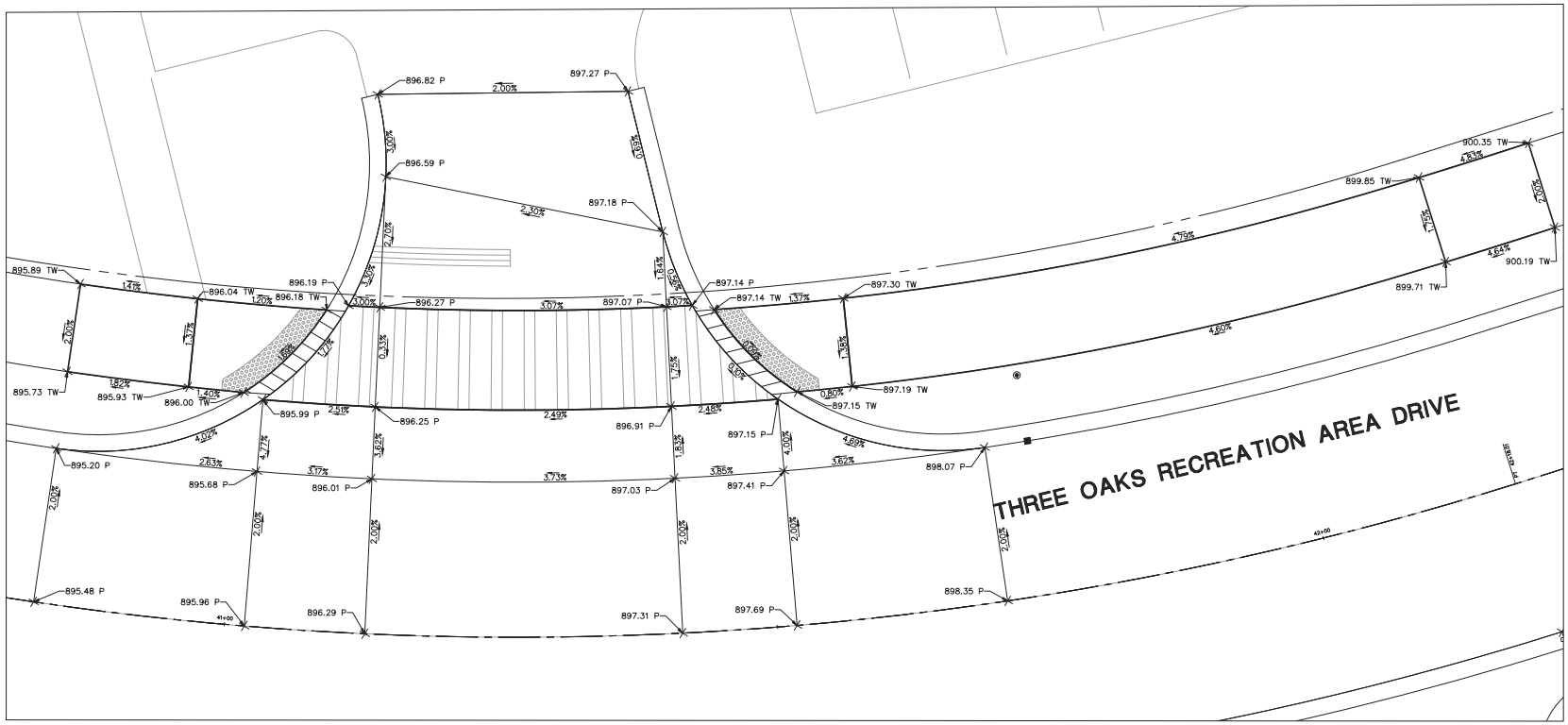
ADA PLAN - WATERS EDGE BOULEVARD

PROJ. MGR.: KRK
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SHEET H17 OF 25

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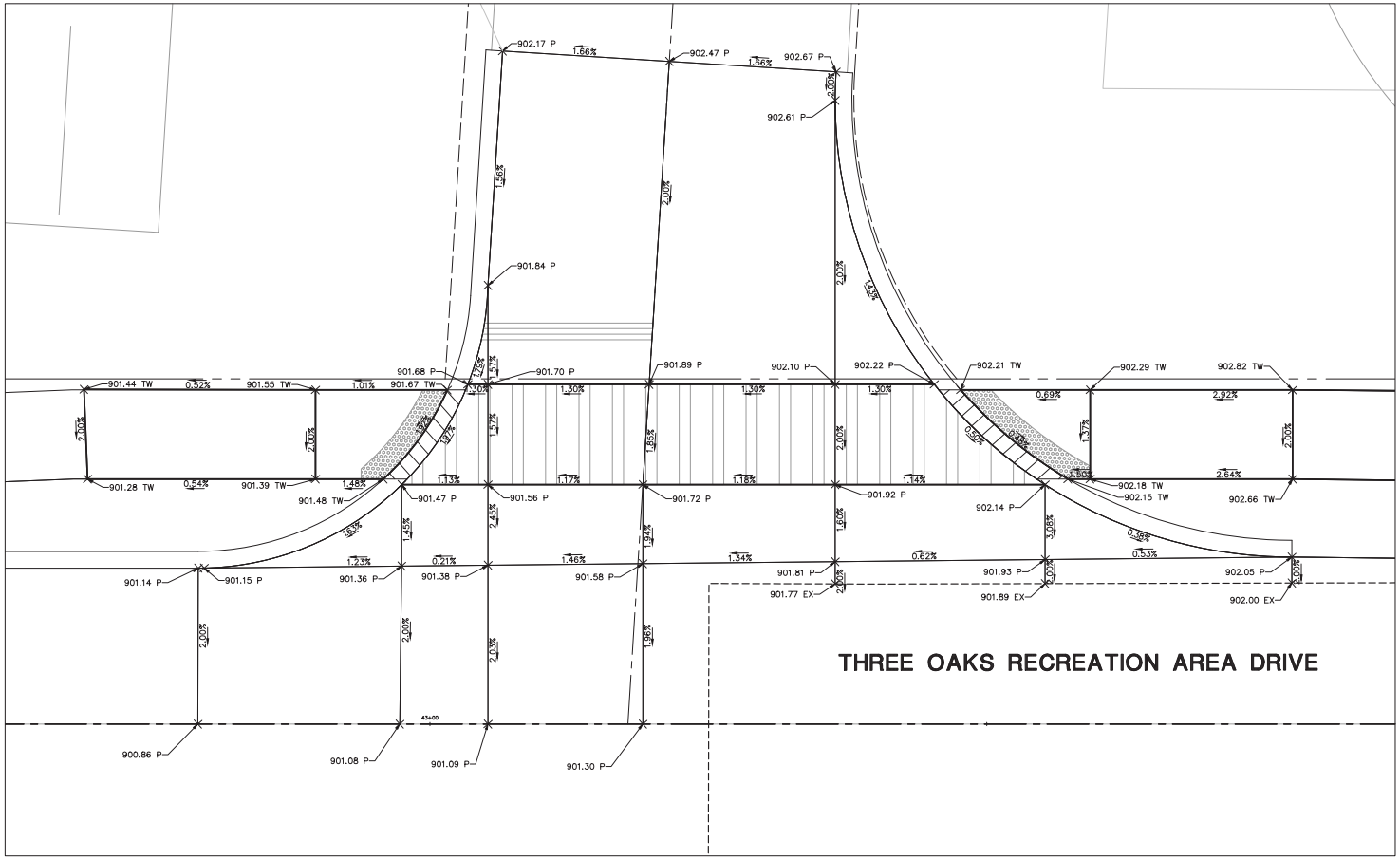
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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
ADA PLAN - THREE OAKS RECREATION AREA DRIVE

PROJ. MGR.: KRK
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SCALE: 1"=10'

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H18 OF 25
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MIXED USE DEVELOPMENT AT WATER'S EDGE - INFRASTRUCTURE
CITY OF CRYSTAL LAKE, ILLINOIS
ADA PLAN - THREE OAKS RECREATION AREA DRIVE

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: WH
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H19 OF 25
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Proposed Improvements for

MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

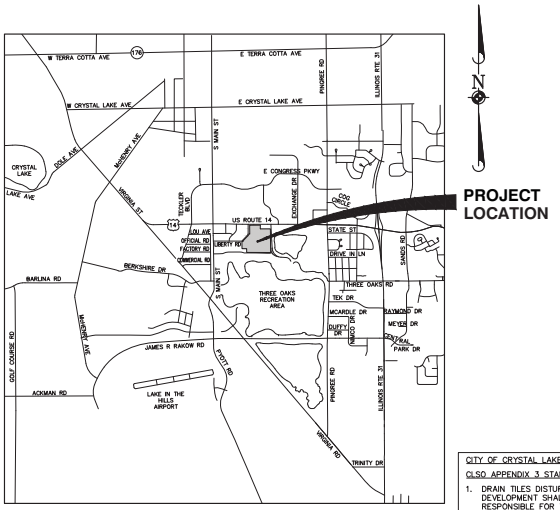
5561-5657 NORTHWEST HIGHWAY
CITY OF CRYSTAL LAKE, ILLINOIS

STANDARD SYMBOLS

EXISTING		PROPOSED
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
	FORCEMAIN	
	DRAINTILE	
	WATER MAIN	
	ELECTRIC	
	GAS	
	TELEPHONE	
	OVERHEAD WIRES	
	SANITARY MANHOLE	
	STORM MANHOLE	
	CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	HAY BALES	
	RIP RAP	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	
	BUFFALO BOX	
	FLARED END SECTION	
	STREET LIGHT	
	SUMMIT / LOW POINT	
795.50 / 790.25	RIM ELEVATION / INVERT ELEVATION	795.20 / 790.20
	DITCH OR SWALE	
	DIRECTION OF FLOW	
	OVERFLOW RELIEF SWALE	
764	1 FOOT CONTOURS	764
	CURB AND GUTTER	
	DEPRESSED CURB AND GUTTER	
	REVERSE CURB AND GUTTER	
	SIDEWALK	
	DETECTABLE WARNINGS	
	PROPERTY LINE	
	EASEMENT LINE	
	SETBACK LINE	
	MAIL BOX	
	SIGN	
	TRAFFIC SIGNAL	
	POWER POLE	
	GUY WIRE	
	GAS VALVE	
	HANDHOLE	
	ELECTRICAL EQUIPMENT	
	TELEPHONE EQUIPMENT	
	CHAIN-LINK FENCE	
	SPOT ELEVATION	792.8 G
	BRUSH/TREE LINE	
	DECIDUOUS TREE WITH TRUNK DIA. IN INCHES (TBR)	
	CONIFEROUS TREE WITH HEIGHT IN FEET (TBR)	
S	SILT FENCE	S
	RETAINING WALL	
	WETLAND	

ABBREVIATIONS

ADJ	ADJUST	F/L	FLOW LINE	R.O.W.	RIGHT-OF-WAY
AGG.	AGGREGATE	FM	FORCE MAIN	RCP	REINFORCED CONCRETE PIPE
ARCH	ARCHITECT	G	GROUND	REM	REMOVAL
B.A.M.	BITUMINOUS AGGREGATE MIXTURE	G/F	GRADE AT FOUNDATION	REV	REVERSE
B-B	BACK TO BACK	GW	GUY WIRE	RR	RAILROAD
B/C	BACK OF CURB	HDWL	HEADWALL	RT	RIGHT
B/P	BOTTOM OF PIPE	HH	HANDHOLE	SAN	SANITARY
B/W	BACK OF WALK	HWL	HIGH WATER LEVEL	SF	SQUARE FOOT
B-BOX	BUFFALO BOX	HYD.	HYDRANT	SHLD.	SHOULDER
BIT.	BITUMINOUS	INL	INLET	SL	STREET LIGHT
BM	BENCHMARK	INV.	INVERT	SMH	SANITARY MANHOLE
B.O.	BY OTHERS	IP	IRON PIPE	ST	STORM
C.E.	COMMERCIAL ENTRANCE	LT	LEFT	STA.	STATION
CB	CATCH BASIN	MAX.	MAXIMUM	STD	STANDARD
℄	CENTERLINE	MB	MAILBOX	SW	SIDEWALK
CMP	CORRUGATED METAL PIPE	M/E	MEET EXISTING	SY	SQUARE YARDS
CNTRL	CONTROL	MH	MANHOLE	TBR	TO BE REMOVED
C.O.	CLEANOUT	MIN.	MINIMUM	T	TELEPHONE
CONC.	CONCRETE	NWL	NORMAL WATER LEVEL	T-A	TYPE A
CY	CUBIC YARD	P.E.	PRIVATE ENTRANCE	T/C	TOP OF CURB
D	DITCH	PC	POINT OF CURVATURE	T/F	TOP OF FOUNDATION
DIA.	DIAMETER	PCC	POINT OF COMPOUND CURVE	T/P	TOP OF PIPE
DIP	DUCTILE IRON PIPE	PGL	PROFILE GRADE LINE	T/W	TOP OF WALK
DIWM	DUCTILE IRON WATER MAIN	PI	POINT OF INTERSECTION	T/WALL	TOP OF WALL
DS	DOWNSPOUT	℗	PROPERTY LINE	TEMP	TEMPORARY
DT	DRAIN TILE	PP	POWER POLE	TRANS	TRANSFORMER
E	ELECTRIC	PROP.	PROPOSED	V.B.	VALVE BOX
E-E	EDGE TO EDGE	PT	POINT OF TANGENCY	VCP	VITRIFIED CLAY PIPE
ELEV.	ELEVATION	PVC	POLYVINYL CHLORIDE PIPE	V.V.	VALVE VAULT
E/P	EDGE OF PAVEMENT	PVC	POINT OF VERTICAL CURVATURE	WL	WATER LEVEL
EX.	EXISTING	PVI	POINT OF VERTICAL INTERSECTION	WM	WATER MAIN
F.E.	FIELD ENTRANCE	PVT	POINT OF VERTICAL TANGENCY		
F-F	FACE TO FACE	P	PAVEMENT		
F.F.	FINISHED FLOOR	P.U.D.E.	PUBLIC UTILITY & DRAINAGE EASEMENT		
FES	FLARED END SECTION	R	RADIUS		



LOCATION MAP
N.T.S.

OWNER:
HEARTLAND REAL ESTATE PARTNERS
1535 NORTH ELSTON AVENUE
CHICAGO, ILLINOIS 60642
(773) 489-7600

NOTES:
THE BOUNDARY LINES AND TOPOGRAPHY FOR THIS PROJECT ARE BASED ON A FIELD SURVEY COMPLETED BY MANHARD CONSULTING, LTD. ON OCTOBER 22, 2021. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY MANHARD CONSULTING AND THE CLIENT IN WRITING OF ANY DIFFERING CONDITIONS.

CITY OF CRYSTAL LAKE

CLSO APPENDIX 3 STANDARD DRAIN TILE NOTES

1. DRAIN TILES DISTURBED DURING REGULATED DEVELOPMENT SHALL BE RECONNECTED BY THOSE RESPONSIBLE FOR THEIR DISTURBANCE, UNLESS THE DEVELOPMENT PLANS SPECIFY ABANDONMENT OF THE DRAIN TILES.
2. ALL ABANDONED DRAIN TILES WITHIN DISTURBED AREAS SHALL BE REMOVED IN THEIR ENTIRETY.
3. DRAIN TILES WITHIN THE DISTURBED AREA OF A DEVELOPMENT SITE SHALL BE REPLACED, BYPASSED AROUND THE DEVELOPMENT SITE OR INTERCEPTED AND CONNECTED TO THE STORMWATER MANAGEMENT SYSTEM FOR THE DEVELOPMENT SITE. THE SIZE OF THE REPLACED OR BYPASSED DRAIN TILE SHALL BE EQUIVALENT TO THE EXISTING DRAIN TILE.

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4	SITE DIMENSIONAL AND PAVING PLAN – 2
5	SITE DIMENSIONAL AND PAVING PLAN – 3
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41	CONSTRUCTION DETAILS
42	CONSTRUCTION DETAILS
43	CONSTRUCTION DETAILS
44	CONSTRUCTION SPECIFICATIONS

BENCHMARKS:

REFERENCE BENCHMARK:
ELEVATIONS AND SITE BENCHMARKS SHOWN HEREON WERE ESTABLISHED UTILIZING A TRIMBLE RAPID STATIC GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) AND THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA'S) ONLINE POSITIONING USER SERVICE (OPUS). THE OBSERVED ELEVATIONS, AS REFINED BY OPUS, IS THE BASIS FOR ALL ELEVATIONS SHOWN HEREON AND THIS INFORMATION HAS NOT BEEN DIRECTLY COMPARED TO ANY OTHER KNOWN OR FIXED BENCHMARK. ALL ELEVATIONS ARE BASED ON NAVD 88 DATUM (GEOID18).

SITE BENCHMARK #1:
CUT SQUARE ON NORTH SIDE OF CONCRETE LIGHT POLE BASE LOCATED APPROXIMATELY 529 FEET SOUTHERLY OF THE CENTERLINE OF LIBERTY ROAD AND APPROXIMATELY 521 FEET EASTERLY OF THE CENTERLINE OF CRYSTAL POINT ROAD.
ELEVATION=885.17 DATUM=NAVD88–GEOID 18

SITE BENCHMARK #2:
CUT SQUARE ON NORTH SIDE OF CONCRETE LIGHT POLE BASE LOCATED APPROXIMATELY 1,348 FEET SOUTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 998 FEET EASTERLY OF THE CENTERLINE OF LIBERTY ROAD AS MEASURED ALONG THE CENTERLINE OF US ROUTE 14.
ELEVATION=897.67 DATUM=NAVD88–GEOID 18

SITE BENCHMARK #3:
CUT SQUARE ON EAST SIDE OF CONCRETE LIGHT POLE BASE LOCATED APPROXIMATELY 1,127 FEET SOUTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 1,097 FEET EASTERLY OF THE CENTERLINE OF LIBERTY ROAD AS MEASURED ALONG THE CENTERLINE OF US ROUTE 14.
ELEVATION=897.81 DATUM=NAVD88–GEOID 18

SITE BENCHMARK #4:
CUT SQUARE ON EAST SIDE OF CONCRETE LIGHT POLE BASE LOCATED APPROXIMATELY 277 FEET SOUTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 1,056 FEET EASTERLY OF THE CENTERLINE OF LIBERTY ROAD.
ELEVATION= 906.50 DATUM=NAVD88–GEOID 18

SITE BENCHMARK #5:
EAST BOLT ON FIRE HYDRANT LOCATED APPROXIMATELY 59 FEET NORTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 1,057 FEET EASTERLY OF THE CENTERLINE OF LIBERTY ROAD AS MEASURED ALONG THE CENTERLINE OF US ROUTE 14.
ELEVATION= 908.68 DATUM=NAVD88–GEOID 18

SITE BENCHMARK #6:
CUT SQUARE ON SOUTH SIDE OF CONCRETE LIGHT POLE BASE LOCATED APPROXIMATELY 68 FEET NORTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 122 FEET WESTERLY OF THE CENTERLINE OF LIBERTY ROAD.
ELEVATION=903.59 DATUM=NAVD88–GEOID 18

SITE BENCHMARK #7:
EAST BOLT ON FIRE HYDRANT LOCATED APPROXIMATELY 277 FEET SOUTHERLY OF THE CENTERLINE OF US ROUTE 14 AND APPROXIMATELY 69 FEET WESTERLY OF THE CENTERLINE OF LIBERTY ROAD.
ELEVATION=898.38 DATUM=NAVD88–GEOID 18

SITE BENCHMARK #8:
EAST BOLT ON FIRE HYDRANT LOCATED APPROXIMATELY 23 FEET NORTHERLY OF THE CENTERLINE OF LIBERTY ROAD AND APPROXIMATELY 380 FEET EASTERLY OF THE CENTERLINE OF CRYSTAL POINT ROAD.
ELEVATION=896.07 DATUM=NAVD88–GEOID 18

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GAS NICOR GAS 1844 FERRY ROAD NAPERVILLE, IL 60563 (630) 399-0600 CONTACT: FORAM SHAH	TELEPHONE AT&T 2004 MINER STREET DES PLAINES, IL 60016 (847) 888-6864 CONTACT: HECTOR SUAREZ

KIMBERLY R. KLAWANS 062-073357 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS
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KRK	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-07-23

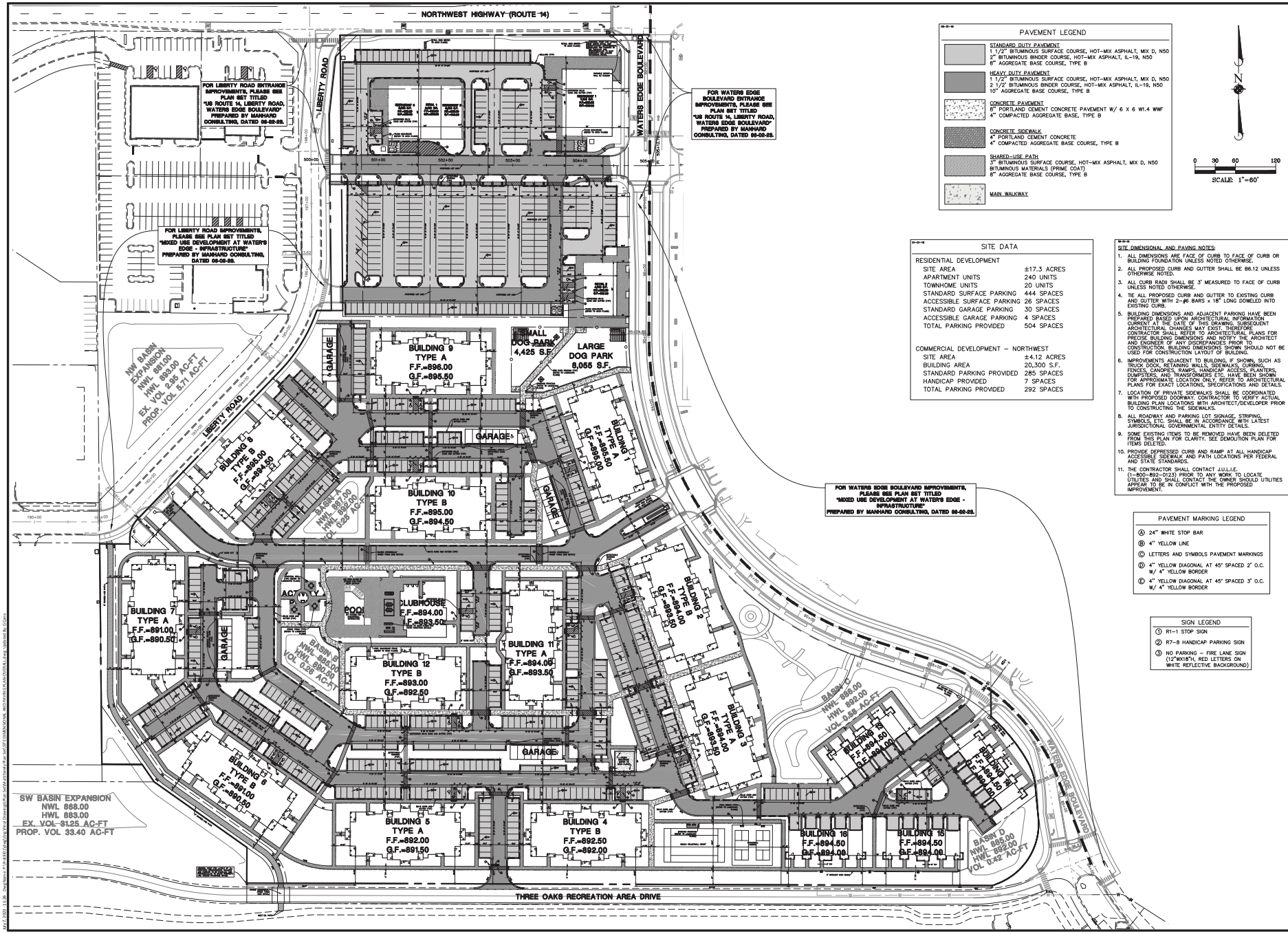
MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
TITLE SHEET

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: MH
DATE: 06-02-23
SCALE: N.T.S.

SHEET 1 OF 44

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Job # 2021-18100 - Drawings 2021\18100\Working\Civil\Drawings\Title Sheet\Title Sheet.dwg, 6/2/2023 8:26:27 AM, krlawanskimberly



SITE DATA

RESIDENTIAL DEVELOPMENT	
SITE AREA	±17.3 ACRES
APARTMENT UNITS	240 UNITS
TOWNHOME UNITS	20 UNITS
STANDARD SURFACE PARKING	444 SPACES
ACCESSIBLE SURFACE PARKING	26 SPACES
STANDARD GARAGE PARKING	30 SPACES
ACCESSIBLE GARAGE PARKING	4 SPACES
TOTAL PARKING PROVIDED	504 SPACES
COMMERCIAL DEVELOPMENT – NORTHWEST	
SITE AREA	±4.12 ACRES
BUILDING AREA	20,300 S.F.
STANDARD PARKING PROVIDED	285 SPACES
HANDICAP PROVIDED	7 SPACES
TOTAL PARKING PROVIDED	292 SPACES

SITE DIMENSIONAL AND PAVING NOTES:

1. ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE.
2. ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
3. ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
4. TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2–#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.
5. BUILDING DIMENSIONS AND ADJACENT PARKING HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. BUILDING DIMENSIONS SHOWN SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT OF BUILDING.
6. IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
7. LOCATION OF PRIVATE SIDEWALKS SHALL BE COORDINATED WITH PROPOSED DOORWAY. CONTRACTOR TO VERIFY ACTUAL BUILDING PLAN LOCATIONS WITH ARCHITECT/DEVELOPER PRIOR TO CONSTRUCTING THE SIDEWALKS.
8. ALL ROADWAY AND PARKING LOT SIGNAGE, STRIPING, SYMBOLS, ETC. SHALL BE IN ACCORDANCE WITH LATEST JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.
9. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
10. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
11. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.

PAVEMENT MARKING LEGEND

- (A) 24" WHITE STOP BAR
- (B) 4" YELLOW LINE
- (C) LETTERS AND SYMBOLS PAVEMENT MARKINGS
- (D) 4" YELLOW DIAGONAL AT 45° SPACED 2' O.C. W/ 4" YELLOW BORDER
- (E) 4" YELLOW DIAGONAL AT 45° SPACED 3' O.C. W/ 4" YELLOW BORDER

SIGN LEGEND

- (1) R1-1 STOP SIGN
- (2) R7-8 HANDICAP PARKING SIGN
- (3) NO PARKING – FIRE LANE SIGN (12"WX18"H, RED LETTERS ON WHITE REFLECTIVE BACKGROUND)

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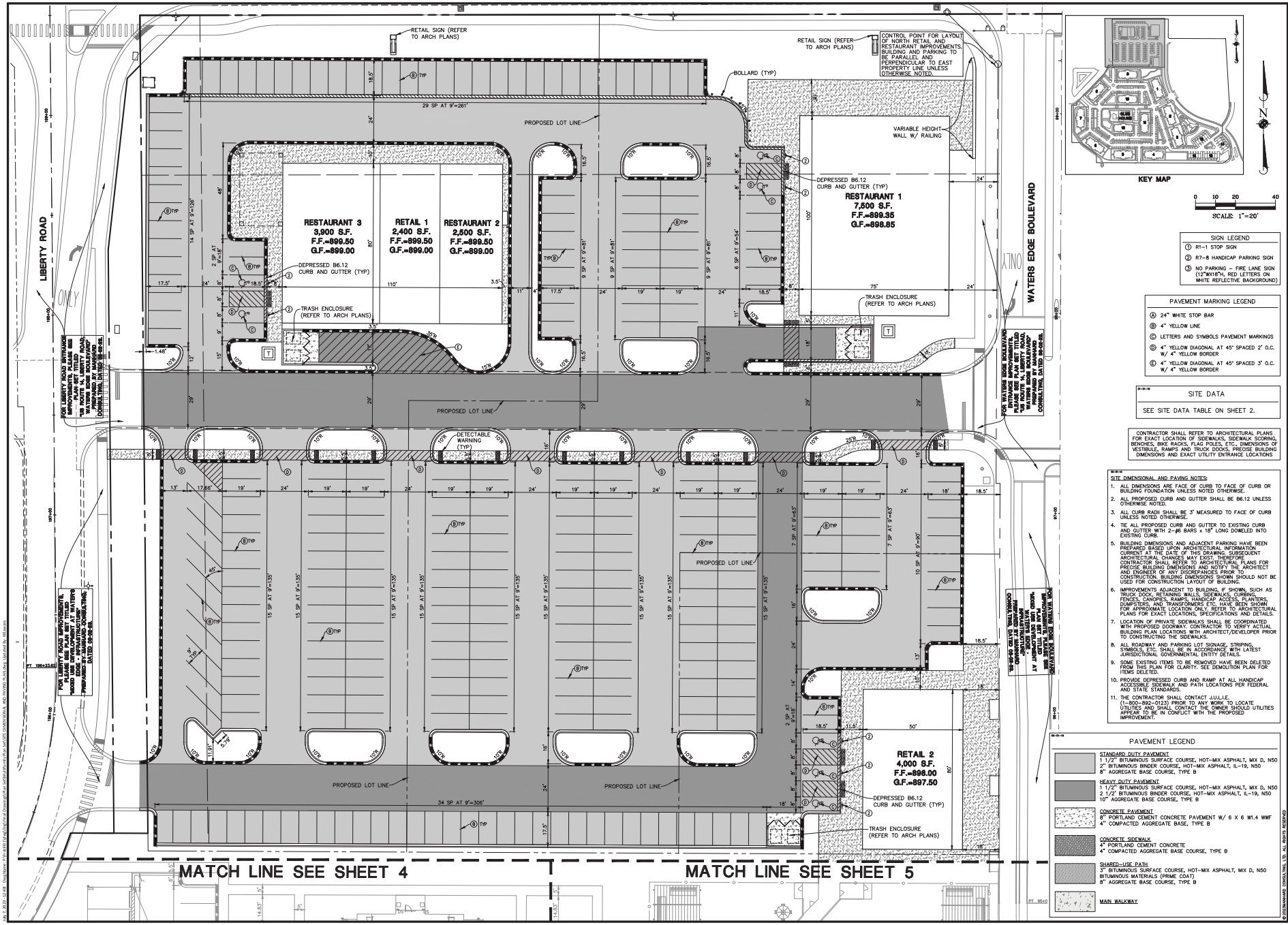
DRAWN BY	REVISIONS	DATE
KRK	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-07-23

MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
OVERALL SITE DIMENSIONAL AND PAVING PLAN

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: MH
DATE: 06-02-23
SCALE: 1"=60'

SHEET 2 OF 44
FRDCLIL01

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SCALE 1"=20'

SIGN LEGEND

1. R1-1 STOP SIGN
2. R7-8 HANDICAP PARKING SIGN
3. NO PARKING – FIRE LANE SIGN (12"Wx18"H, RED LETTERS ON WHITE REFLECTIVE BACKGROUND)

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SITE DATA

SEE SITE DATA TABLE ON SHEET 2.

CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF SIDEWALKS, SIDEWALK SCORING, BENCHES, BIKE RACKS, FLAG POLES, ETC., DIMENSIONS OF VESTIBULE, RAMPS AND TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS

SITE DIMENSIONAL AND PAVING NOTES:

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PAVEMENT LEGEND

- STANDARD DUTY PAVEMENT
  1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
  2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
  8" AGGREGATE BASE COURSE, TYPE B
- HEAVY DUTY PAVEMENT
  1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
  2 1/2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
  10" AGGREGATE BASE COURSE, TYPE B
- CONCRETE PAVEMENT
  8" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF
  4" COMPACTED AGGREGATE BASE, TYPE B
- CONCRETE SIDEWALK
  4" PORTLAND CEMENT CONCRETE
  4" COMPACTED AGGREGATE BASE COURSE, TYPE B
- SHARED-USE PATH
  3" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
  BITUMINOUS MATERIALS (PRIME COAT)
  8" AGGREGATE BASE COURSE, TYPE B
- MAIN WALKWAY

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DATE	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

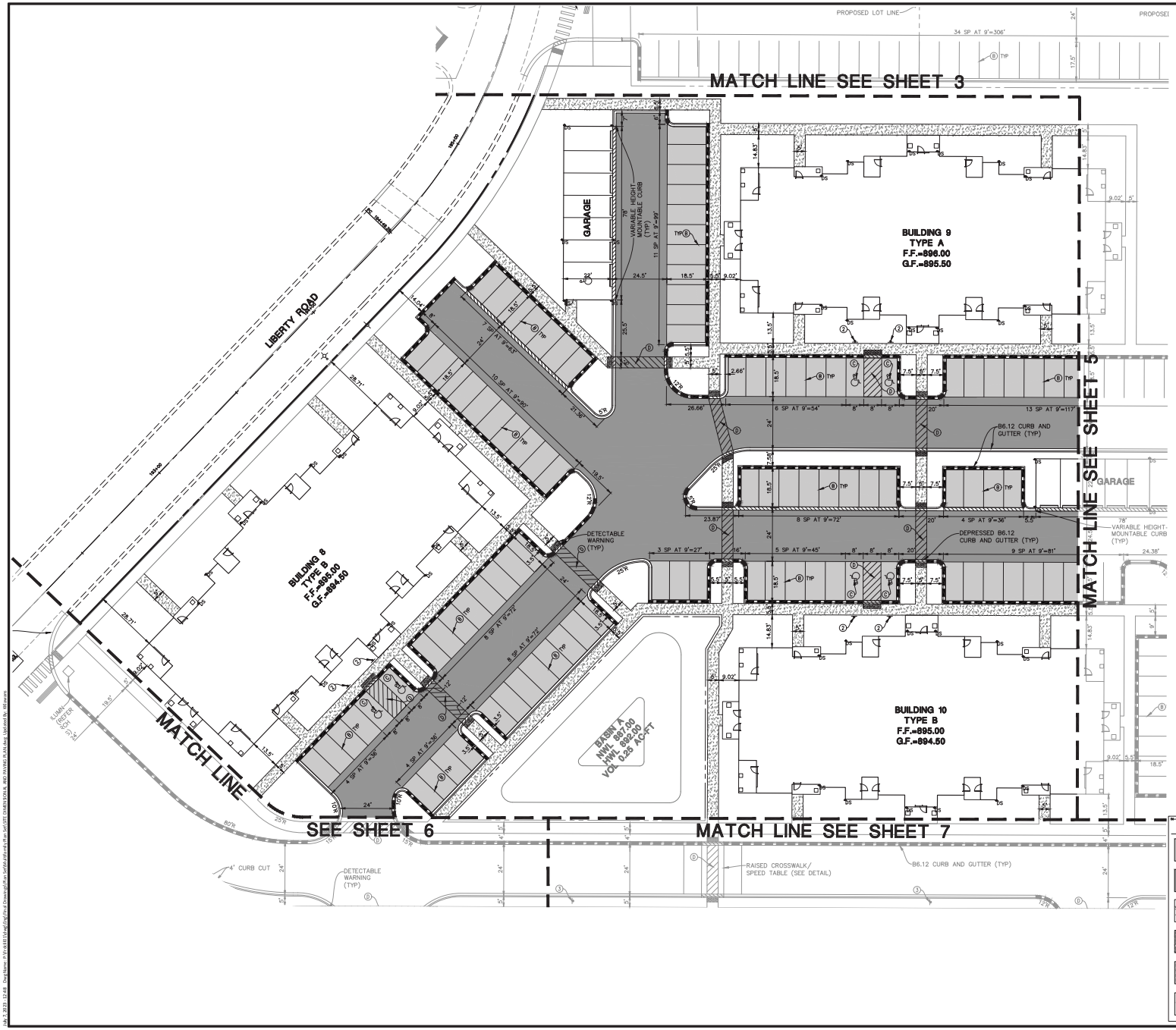
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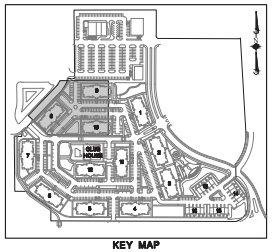
PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=20'

SHEET 3 OF 44

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SCALE: 1"=20'

SIGN LEGEND

1. R1-1 STOP SIGN
2. R7-8 HANDICAP PARKING SIGN
3. NO PARKING – FIRE LANE SIGN (12"WX18"H, RED LETTERS ON WHITE REFLECTIVE BACKGROUND)

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PAVEMENT LEGEND

- STANDARD DUTY PAVEMENT: 1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50; 2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50; 8" AGGREGATE BASE COURSE, TYPE B
- HEAVY DUTY PAVEMENT: 1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50; 2 1/2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50; 10" AGGREGATE BASE COURSE, TYPE B
- CONCRETE PAVEMENT: 8" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF; 4" COMPACTED AGGREGATE BASE, TYPE B
- CONCRETE SIDEWALK: 4" PORTLAND CEMENT CONCRETE; 4" COMPACTED AGGREGATE BASE COURSE, TYPE B
- SHARED-USE PATH: 3" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50; BITUMINOUS MATERIALS (PRIME COAT); 8" AGGREGATE BASE COURSE, TYPE B
- MAIN WALKWAY

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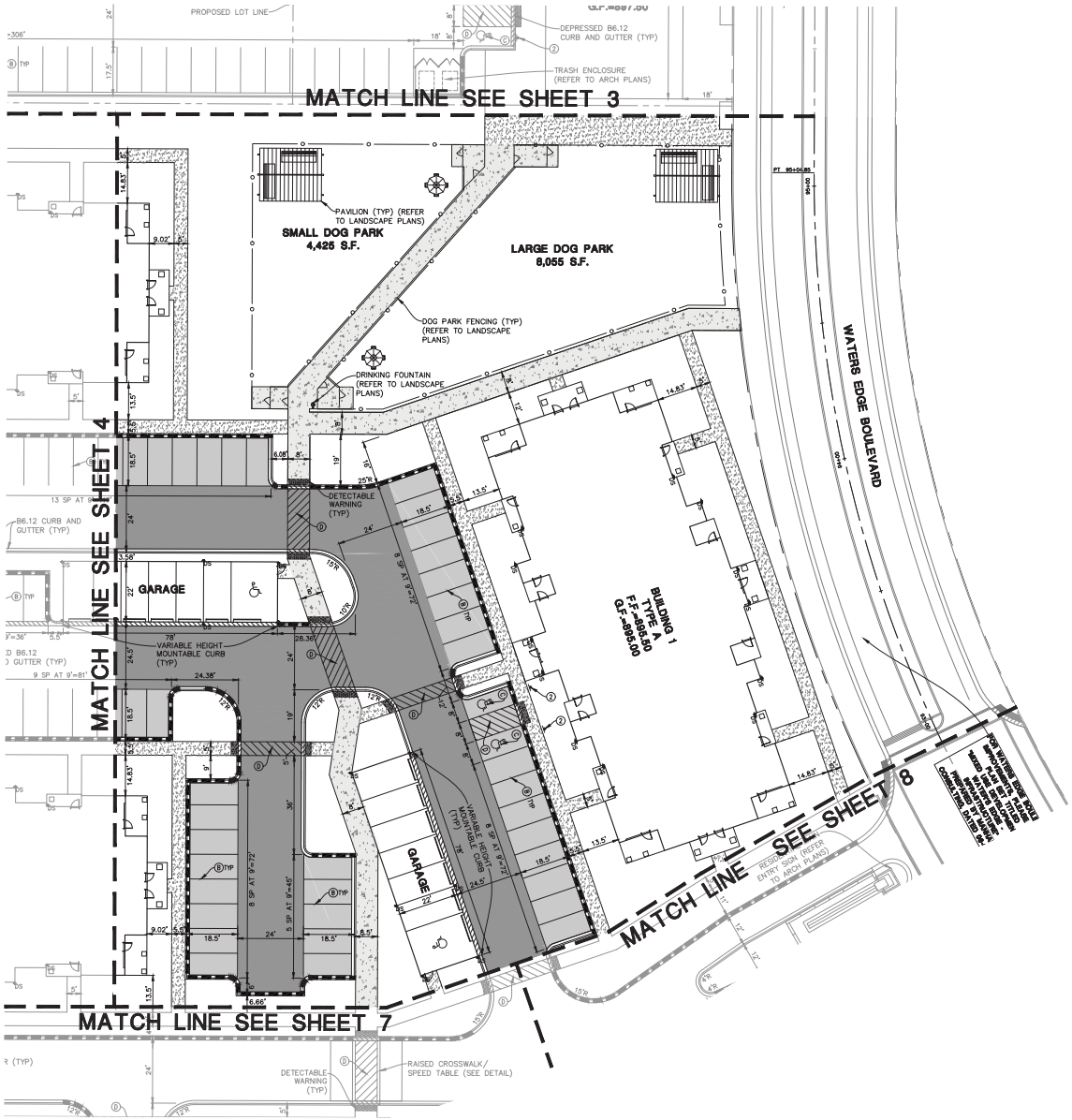
MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
SITE DIMENSIONAL AND PAVING PLAN - 2

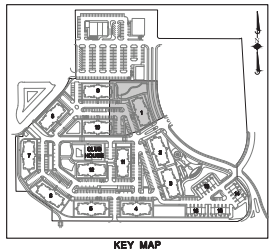
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PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=20'

SHEET 4 OF 44

FRDCLIL01

July 7, 2023 - 12:43 P:\Projects\2021\21-081\Engineering\Civil Drawings\Site Plan\21-081 SITE DIMENSIONAL AND PAVING PLAN - 2.dwg Modified By: MHansen





SIGN LEGEND
① R1-1 STOP SIGN
② R7-8 HANDICAP PARKING SIGN
③ NO PARKING – FIRE LANE SIGN (12"WX18"H, RED LETTERS ON WHITE REFLECTIVE BACKGROUND)

PAVEMENT MARKING LEGEND
Ⓐ 24" WHITE STOP BAR
Ⓑ 4" YELLOW LINE
Ⓒ LETTERS AND SYMBOLS PAVEMENT MARKINGS
Ⓓ 4" YELLOW DIAGONAL AT 45° SPACED 2' O.C. W/ 4" YELLOW BORDER
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PAVEMENT LEGEND

STANDARD DUTY PAVEMENT
1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
8" AGGREGATE BASE COURSE, TYPE B

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3" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
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MAIN WALKWAY

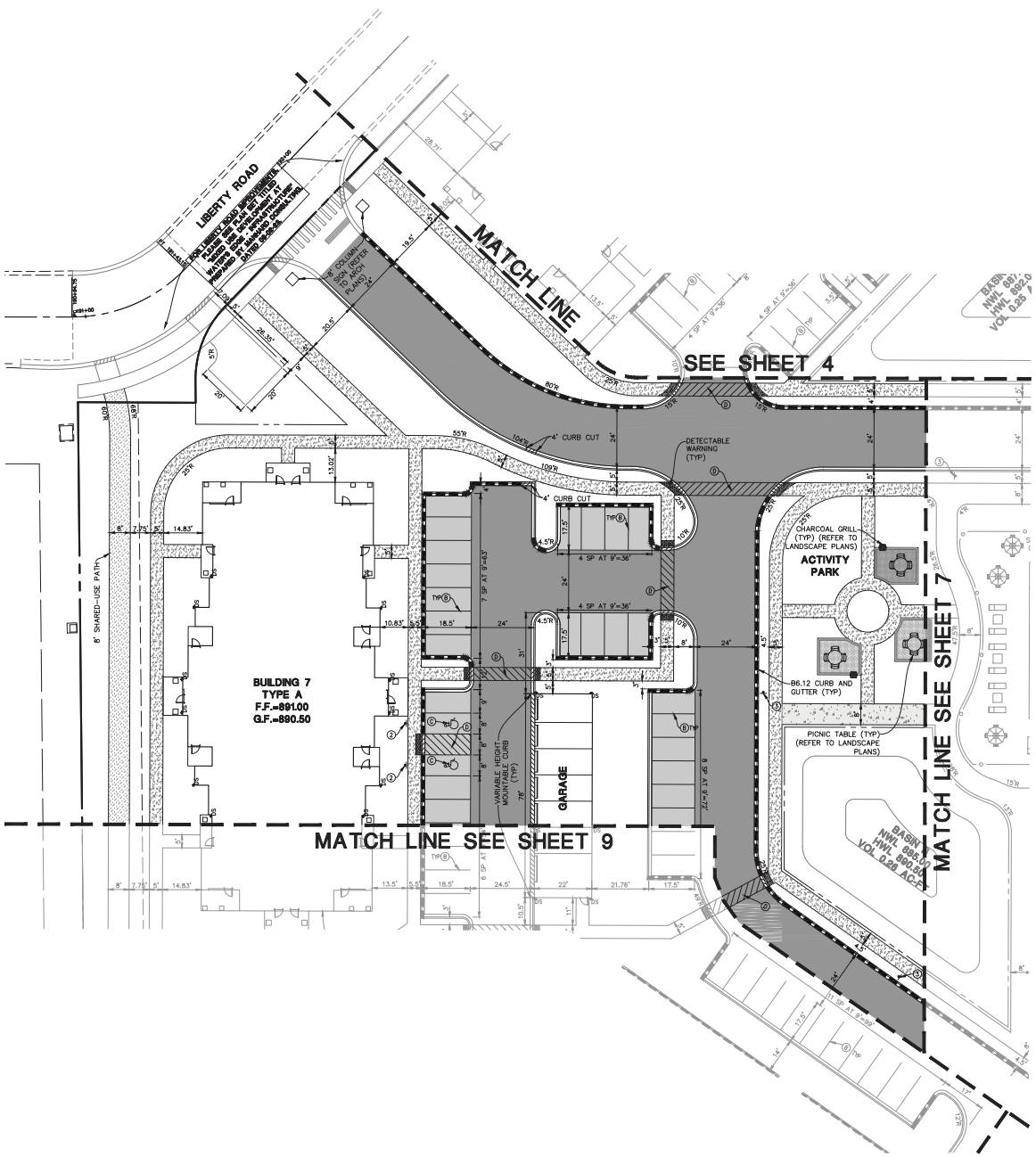
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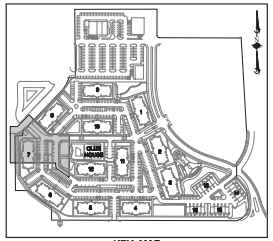
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
SITE DIMENSIONAL AND PAVING PLAN - 3

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: MH
DATE: 06-02-23
SCALE: 1"=20'

SHEET 5 OF 44
FRDCLIL01





KEY MAP

SCALE: 1"=20'

SIGN LEGEND

1. R1-1 STOP SIGN
2. R7-8 HANDICAP PARKING SIGN
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- SHARED-USE PATH: 3" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50; BITUMINOUS MATERIALS (PRIME COAT); 8" AGGREGATE BASE COURSE, TYPE B
- MAIN WALKWAY

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REVISIONS	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS
DATE	

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

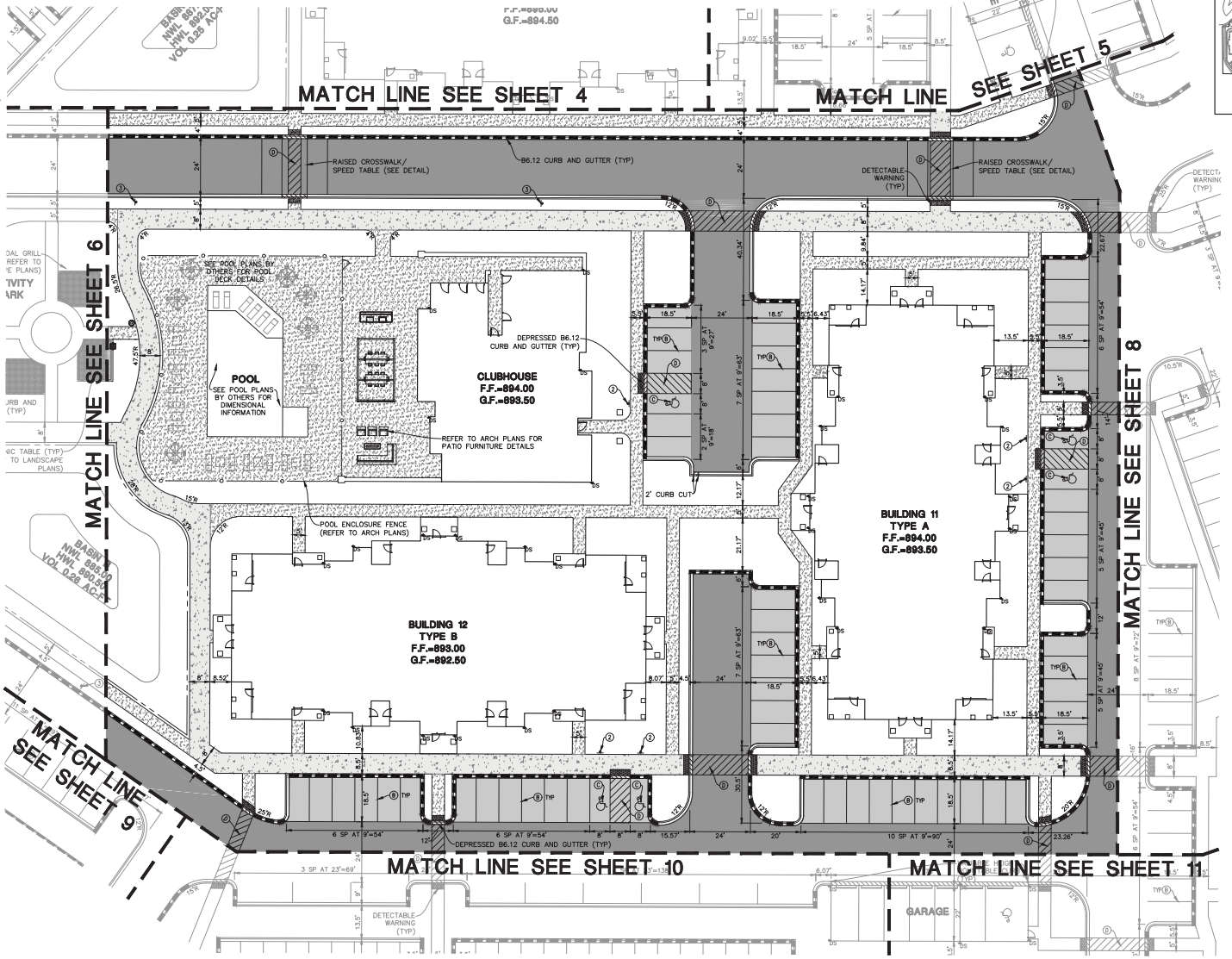
SITE DIMENSIONAL AND PAVING PLAN - 4

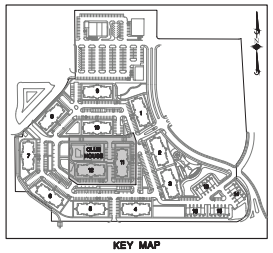
PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=20'

SHEET 6 OF 44

FRDCLIL01

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0 10 20 40
SCALE: 1"=20'

SIGN LEGEND
① R1-1 STOP SIGN
② R7-8 HANDICAP PARKING SIGN
③ NO PARKING – FIRE LANE SIGN (12"Wx18"H, RED LETTERS ON WHITE REFLECTIVE BACKGROUND)

PAVEMENT MARKING LEGEND
(A) 24" WHITE STOP BAR
(B) 4" YELLOW LINE
(C) LETTERS AND SYMBOLS PAVEMENT MARKINGS
(D) 4" YELLOW DIAGONAL AT 45° SPACED 2' O.C. W/ 4" YELLOW BORDER
(E) 4" YELLOW DIAGONAL AT 45° SPACED 3' O.C. W/ 4" YELLOW BORDER

SITE DATA
SEE SITE DATA TABLE ON SHEET 2.

CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF SIDEWALKS, SIDEWALK SCORING, BENCHES, BIKE RACKS, FLAG POLES, ETC., DIMENSIONS OF VESTIBULE, RAMPS AND TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS

SITE DIMENSIONAL AND PAVING NOTES:

1. ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE.
2. ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
3. ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
4. TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2–#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.
5. BUILDING DIMENSIONS AND ADJACENT PARKING HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. BUILDING DIMENSIONS SHOWN SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT OF BUILDING.
6. IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
7. LOCATION OF PRIVATE SIDEWALKS SHALL BE COORDINATED WITH PROPOSED DOORWAY. CONTRACTOR TO VERIFY ACTUAL BUILDING PLAN LOCATIONS WITH ARCHITECT/DEVELOPER PRIOR TO CONSTRUCTING THE SIDEWALKS.
8. ALL ROADWAY AND PARKING LOT SIGNAGE, STRIPING, SYMBOLS, ETC. SHALL BE IN ACCORDANCE WITH LATEST JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.
9. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
10. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
11. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.

PAVEMENT LEGEND

- STANDARD DUTY PAVEMENT: 1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50; 2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50; 8" AGGREGATE BASE COURSE, TYPE B
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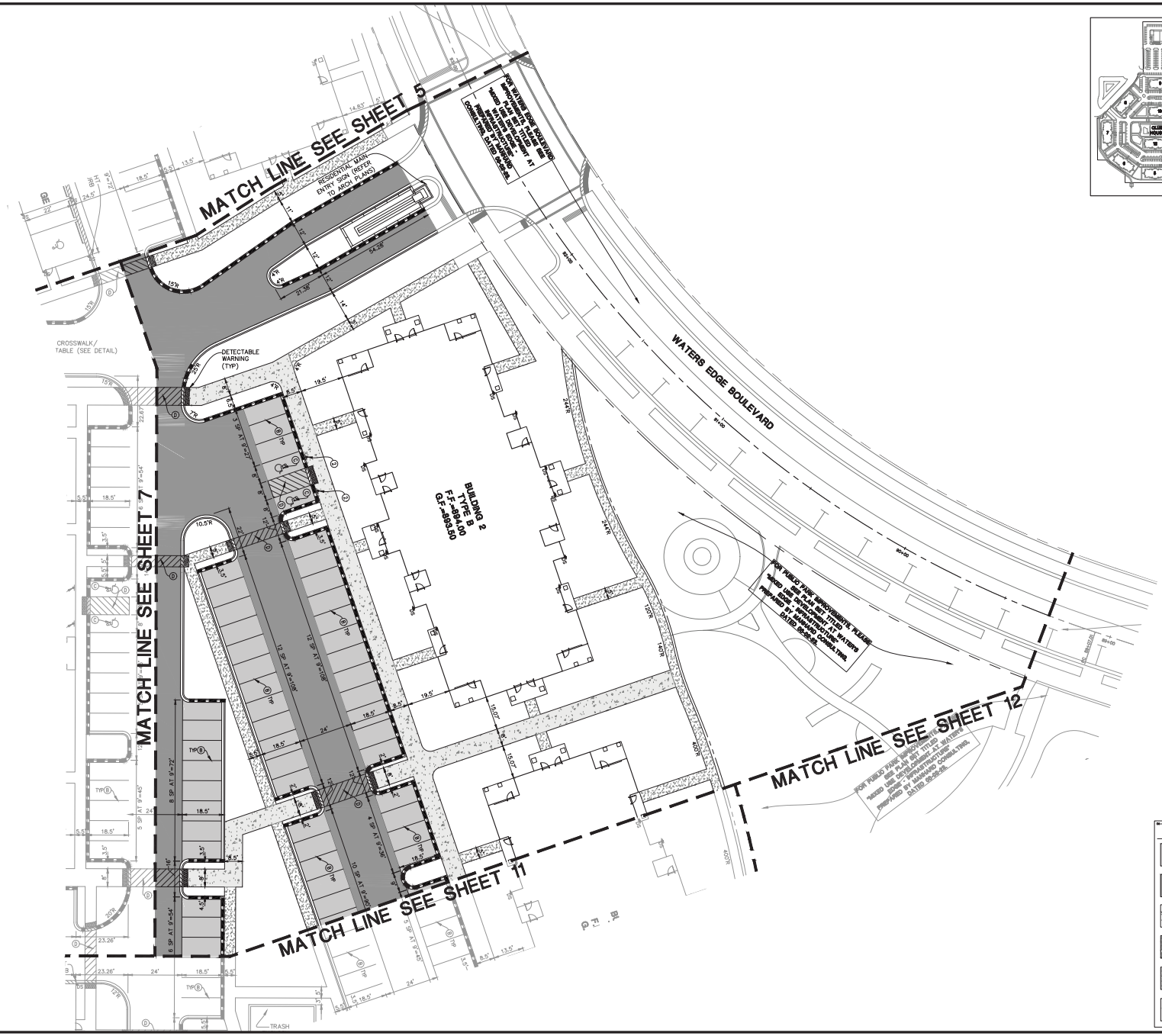
DRAWN BY	DATE	REVISIONS
KRK	07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS

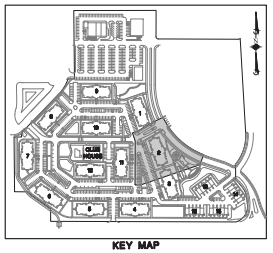
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
SITE DIMENSIONAL AND PAVING PLAN - 5

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=20'

SHEET 7 OF 44
FRDCLIL01





SIGN LEGEND
① R1-1 STOP SIGN
② R7-8 HANDICAP PARKING SIGN
③ NO PARKING – FIRE LANE SIGN (12"WX18"H, RED LETTERS ON WHITE REFLECTIVE BACKGROUND)

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(C) LETTERS AND SYMBOLS PAVEMENT MARKINGS
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PAVEMENT LEGEND

- STANDARD DUTY PAVEMENT: 1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50; 2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50; 8" AGGREGATE BASE COURSE, TYPE B
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- MAIN WALKWAY

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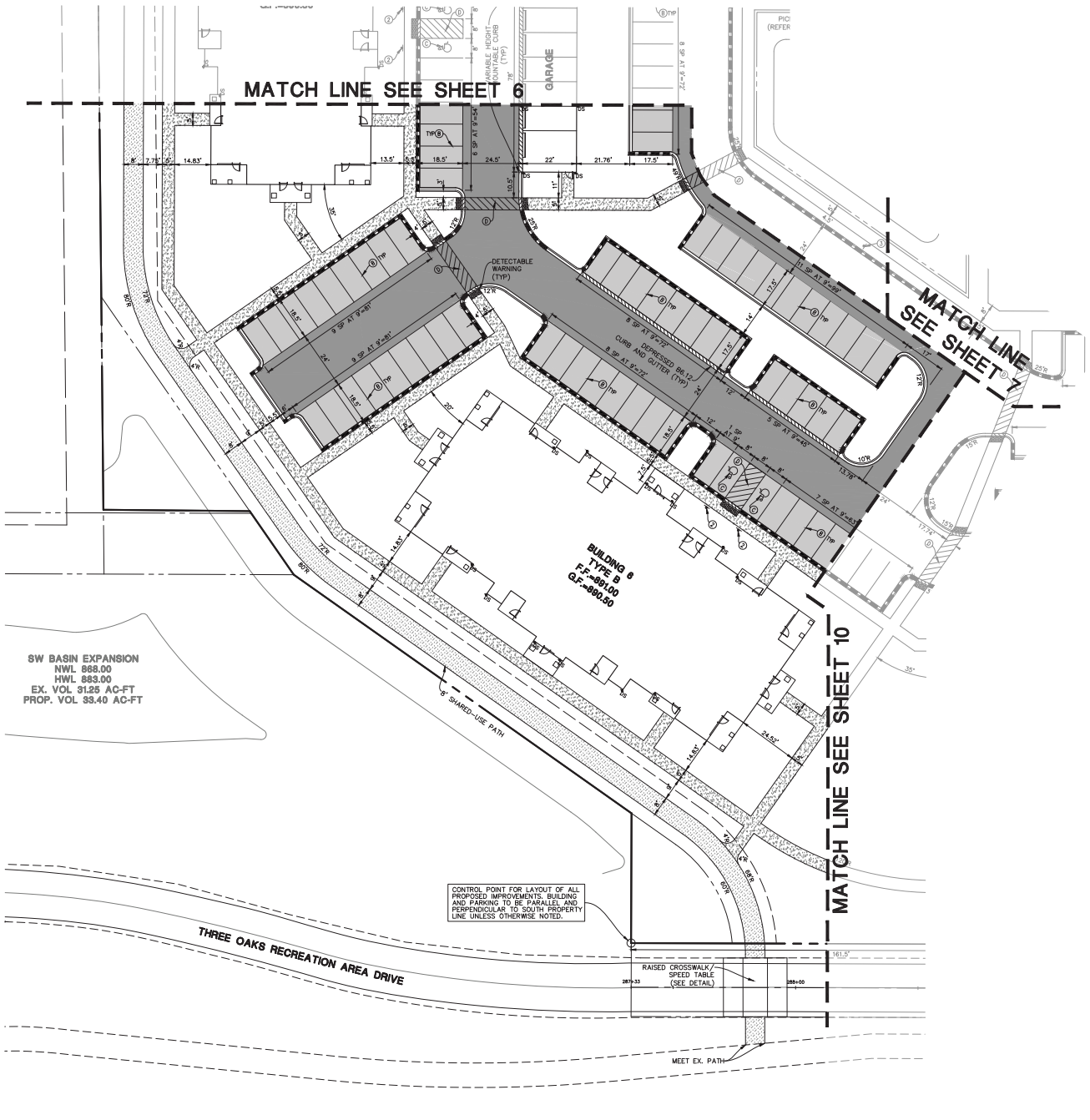
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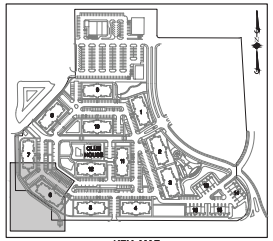
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
SITE DIMENSIONAL AND PAVING PLAN - 6

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=20'

SHEET 8 OF 44
FRDCLIL01





KEY MAP

SCALE: 1"=20'

SIGN LEGEND

1. R1-1 STOP SIGN
2. R7-8 HANDICAP PARKING SIGN
3. NO PARKING – FIRE LANE SIGN (12"Wx18"H, RED LETTERS ON WHITE REFLECTIVE BACKGROUND)

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PAVEMENT LEGEND

- STANDARD DUTY PAVEMENT
  1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
  2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
  8" AGGREGATE BASE COURSE, TYPE B
- HEAVY DUTY PAVEMENT
  1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
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- CONCRETE PAVEMENT
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  3" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
  BITUMINOUS MATERIALS (PRIME COAT)
  8" AGGREGATE BASE COURSE, TYPE B
- MAIN WALKWAY

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DATE	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS

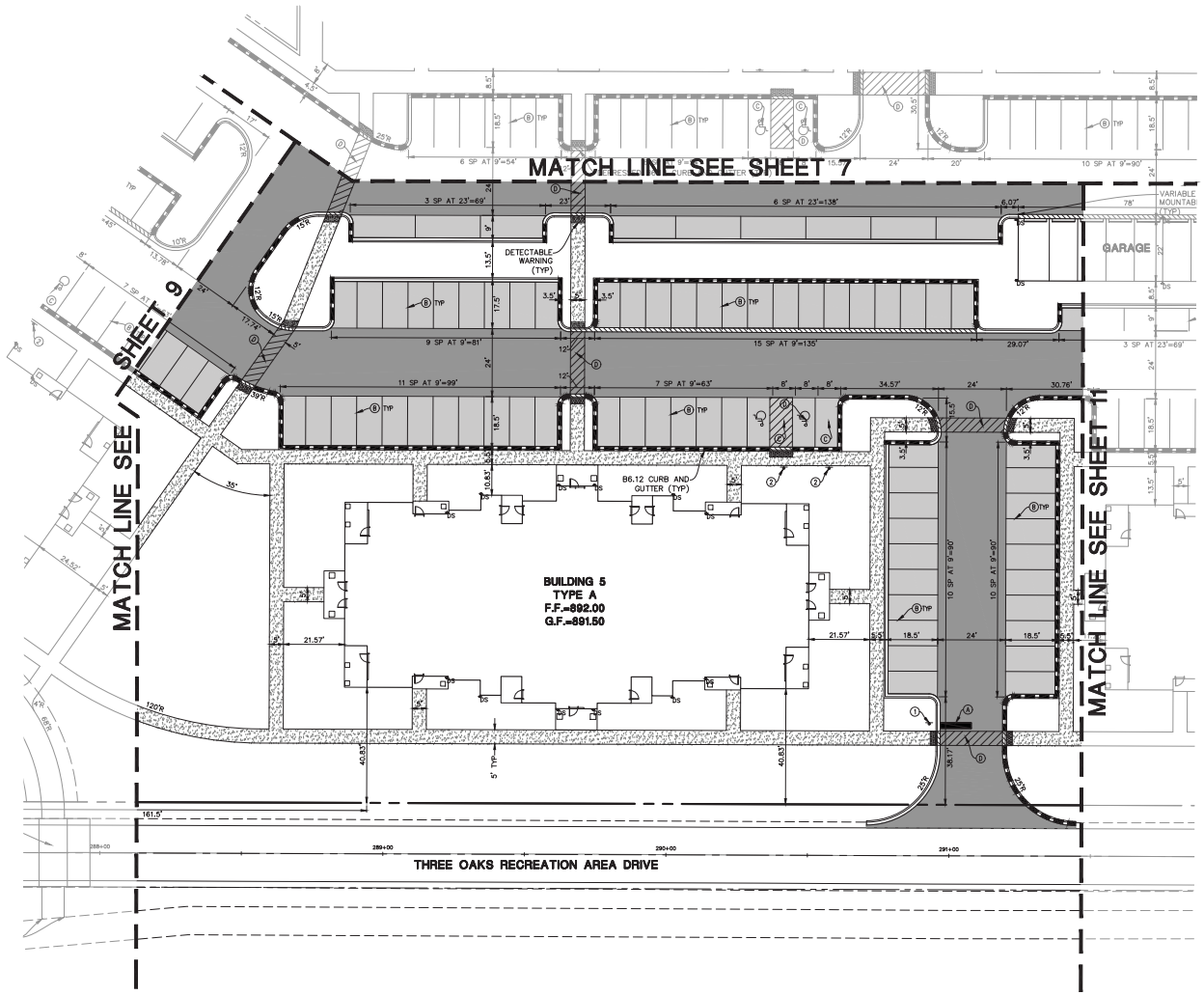
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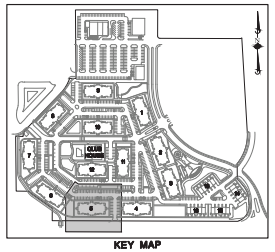
MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
SITE DIMENSIONAL AND PAVING PLAN - 7

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=20'

SHEET 9 OF 44

FRDCLIL01





KEY MAP

SCALE: 1"=20'

SIGN LEGEND
(1) R1-1 STOP SIGN
(2) R7-8 HANDICAP PARKING SIGN
(3) NO PARKING – FIRE LANE SIGN (12"Wx18"H, RED LETTERS ON WHITE REFLECTIVE BACKGROUND)

PAVEMENT MARKING LEGEND
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SITE DATA
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PAVEMENT LEGEND

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8" AGGREGATE BASE COURSE, TYPE B

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MAIN WALKWAY

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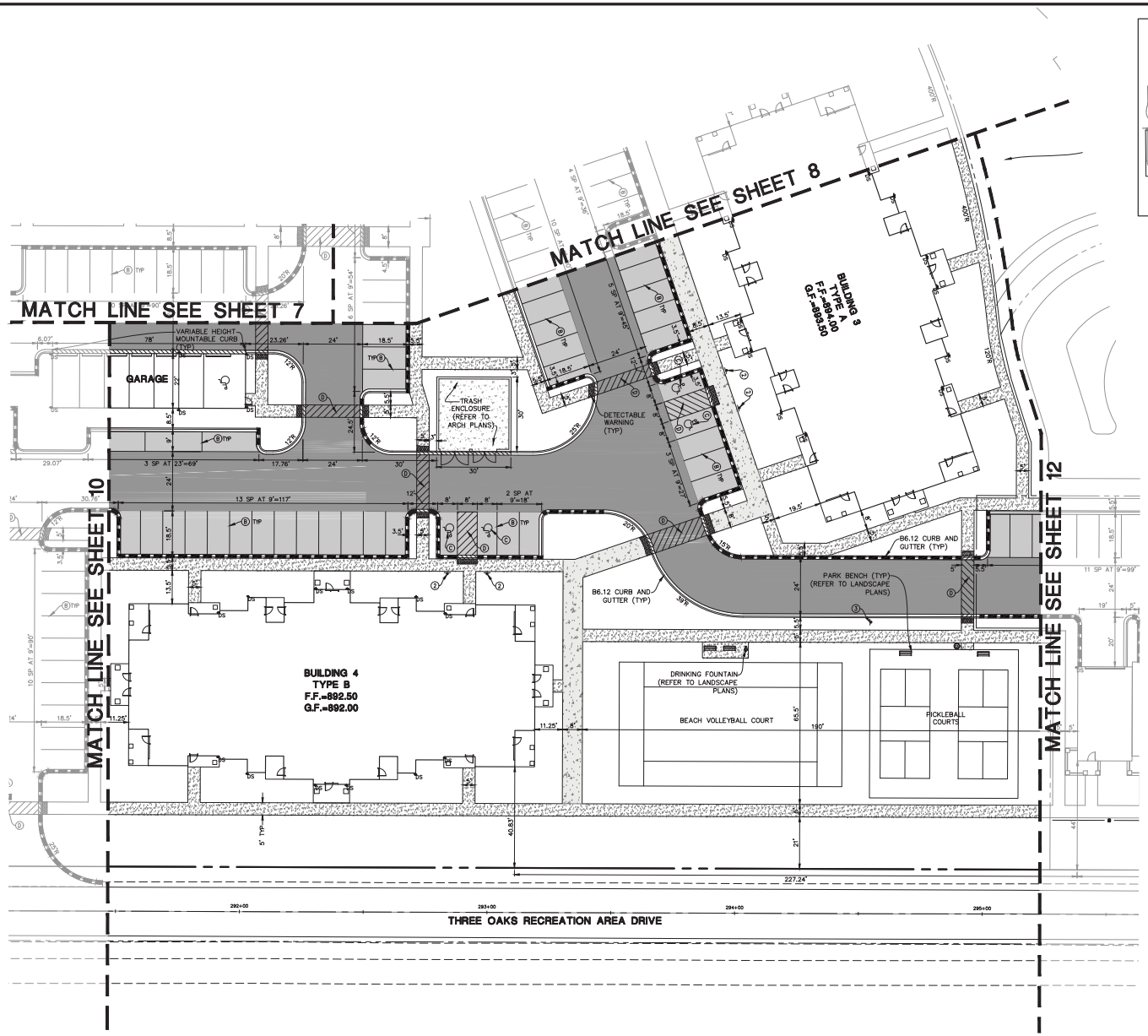
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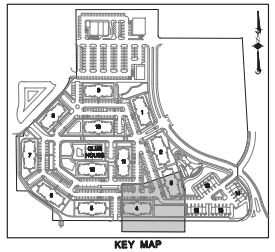
MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
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SITE DIMENSIONAL AND PAVING PLAN - 8

PROJ. MGR.:	KRK
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DRAWN BY:	MH
DATE:	06-02-23
SCALE:	1"=20'

SHEET 10 OF 44

FRDCLIL01





KEY MAP

SIGN LEGEND
① R1-1 STOP SIGN
② R7-8 HANDICAP PARKING SIGN
③ NO PARKING – FIRE LANE SIGN (12"WX18"H, RED LETTERS ON WHITE REFLECTIVE BACKGROUND)

PAVEMENT MARKING LEGEND
(A) 24" WHITE STOP BAR
(B) 4" YELLOW LINE
(C) LETTERS AND SYMBOLS PAVEMENT MARKINGS
(D) 4" YELLOW DIAGONAL AT 45° SPACED 2' O.C. W/ 4" YELLOW BORDER
(E) 4" YELLOW DIAGONAL AT 45° SPACED 3' O.C. W/ 4" YELLOW BORDER

SITE DATA

SEE SITE DATA TABLE ON SHEET 2.

CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF SIDEWALKS, SIDEWALK SCORING, BENCHES, BIKE RACKS, FLAG POLES, ETC., DIMENSIONS OF VESTIBULE, RAMPS AND TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS

SITE DIMENSIONAL AND PAVING NOTES:

1. ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE.
2. ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
3. ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
4. TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2–#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.
5. BUILDING DIMENSIONS AND ADJACENT PARKING HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. BUILDING DIMENSIONS SHOWN SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT OF BUILDING.
6. IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
7. LOCATION OF PRIVATE SIDEWALKS SHALL BE COORDINATED WITH PROPOSED DOORWAY. CONTRACTOR TO VERIFY ACTUAL BUILDING PLAN LOCATIONS WITH ARCHITECT/DEVELOPER PRIOR TO CONSTRUCTING THE SIDEWALKS.
8. ALL ROADWAY AND PARKING LOT SIGNAGE, STRIPING, SYMBOLS, ETC. SHALL BE IN ACCORDANCE WITH LATEST JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.
9. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
10. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
11. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.

PAVEMENT LEGEND

STANDARD DUTY PAVEMENT
1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
8" AGGREGATE BASE COURSE, TYPE B

HEAVY DUTY PAVEMENT
1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
2 1/2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
10" AGGREGATE BASE COURSE, TYPE B

CONCRETE PAVEMENT
8" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF
4" COMPACTED AGGREGATE BASE, TYPE B

CONCRETE SIDEWALK
4" PORTLAND CEMENT CONCRETE
4" COMPACTED AGGREGATE BASE COURSE, TYPE B

SHARED-USE PATH
3" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
BITUMINOUS MATERIALS (PRIME COAT)
8" AGGREGATE BASE COURSE, TYPE B

MAIN WALKWAY

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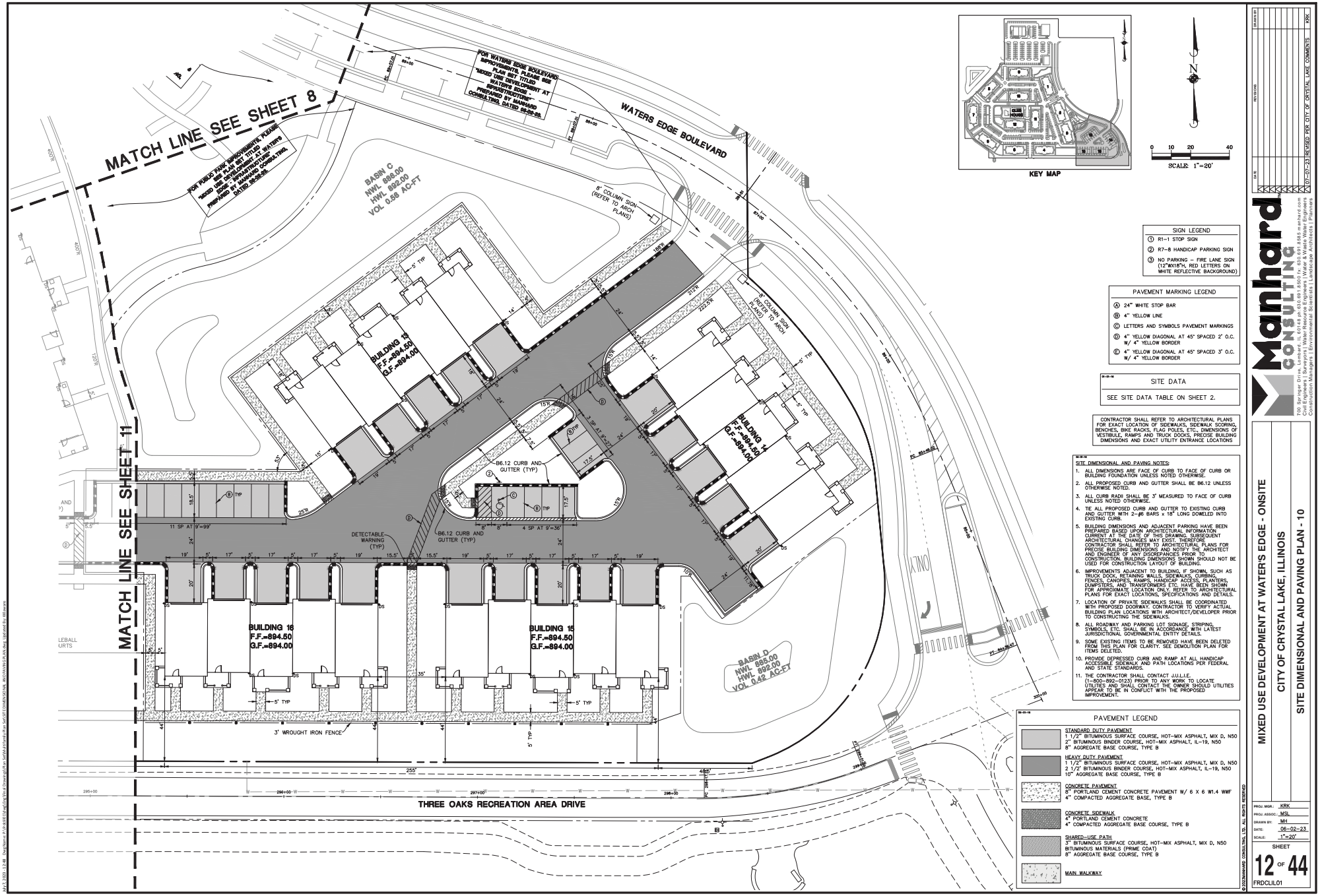
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
SITE DIMENSIONAL AND PAVING PLAN - 9

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: MH
DATE: 06-02-23
SCALE: 1"=20'

SHEET 11 OF 44

FRDCLIL01



SIGN LEGEND
① R1-1 STOP SIGN
② R7-8 HANDICAP PARKING SIGN
③ NO PARKING – FIRE LANE SIGN (12"Wx18"H, RED LETTERS ON WHITE REFLECTIVE BACKGROUND)

PAVEMENT MARKING LEGEND
(A) 24" WHITE STOP BAR
(B) 4" YELLOW LINE
(C) LETTERS AND SYMBOLS PAVEMENT MARKINGS
(D) 4" YELLOW DIAGONAL AT 45° SPACED 2' O.C. W/ 4" YELLOW BORDER
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SITE DATA

SEE SITE DATA TABLE ON SHEET 2.

CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF SIDEWALKS, SIDEWALK SCORING, BENCHES, BIKE RACKS, FLAG POLES, ETC., DIMENSIONS OF VESTIBULE, RAMPS AND TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS

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3. ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
4. TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2–#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.
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6. IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
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10. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
11. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1–800–892–0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.

PAVEMENT LEGEND

STANDARD DUTY PAVEMENT
1 1/2" BITUMINOUS SURFACE COURSE, HOT–MIX ASPHALT, MIX D, N50
2" BITUMINOUS BINDER COURSE, HOT–MIX ASPHALT, IL–19, N50
8" AGGREGATE BASE COURSE, TYPE B

HEAVY DUTY PAVEMENT
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2 1/2" BITUMINOUS BINDER COURSE, HOT–MIX ASPHALT, IL–19, N50
10" AGGREGATE BASE COURSE, TYPE B

CONCRETE PAVEMENT
8" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF
4" COMPACTED AGGREGATE BASE, TYPE B

CONCRETE SIDEWALK
4" PORTLAND CEMENT CONCRETE
4" COMPACTED AGGREGATE BASE COURSE, TYPE B

SHARED–USE PATH
3" BITUMINOUS SURFACE COURSE, HOT–MIX ASPHALT, MIX D, N50
BITUMINOUS MATERIALS (PRIME COAT)
8" AGGREGATE BASE COURSE, TYPE B

MAIN WALKWAY

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DRAWN BY	REVISIONS	DATE
KRK	07–07–23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	

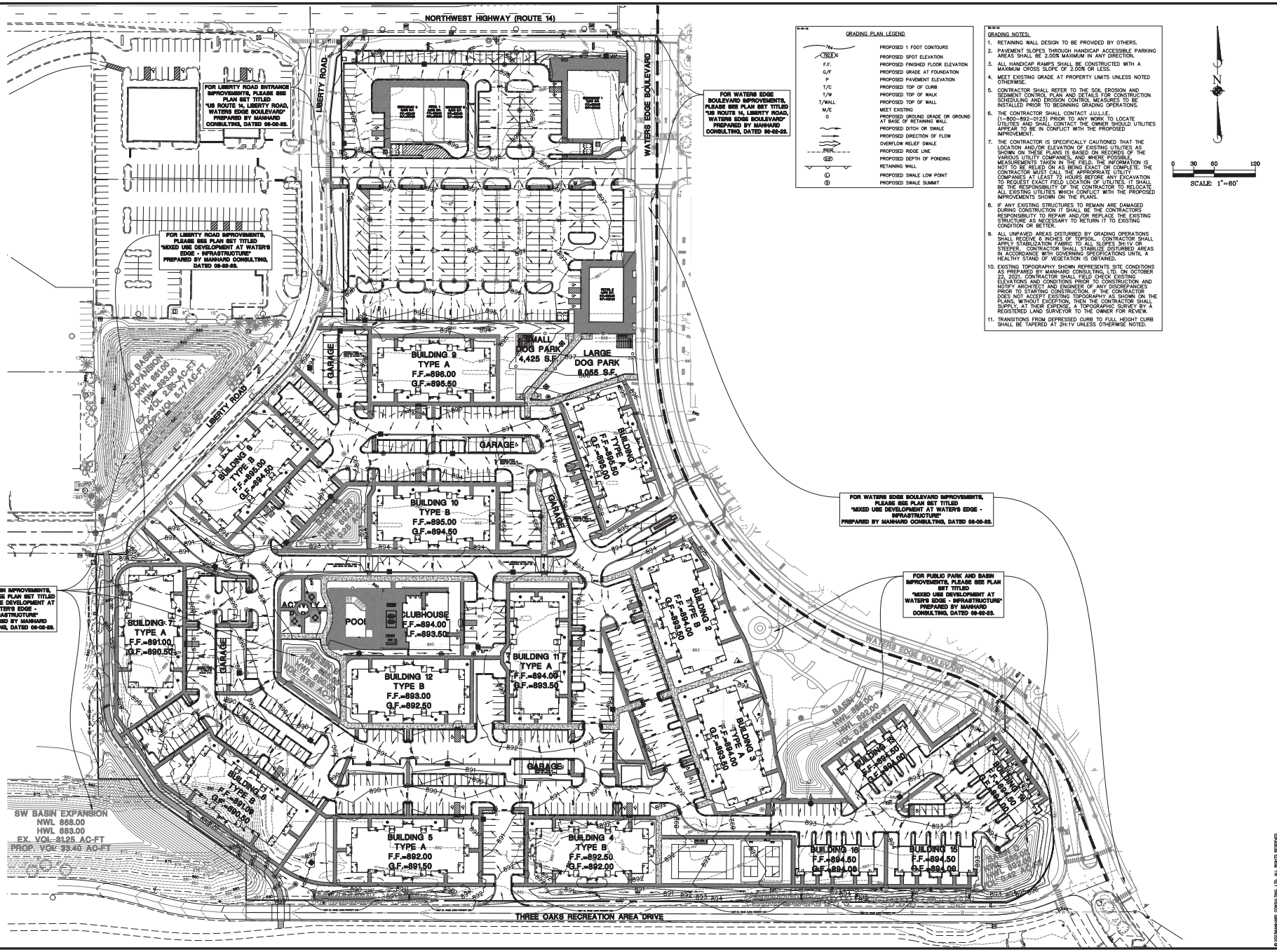
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
SITE DIMENSIONAL AND PAVING PLAN - 10

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	06–02–23
SCALE:	1"=20'

SHEET 12 OF 44

FRDCLIL01



GRADING PLAN LEGEND

792	PROPOSED 1 FOOT CONTOURS
792.0 x	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
2.0	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
H	PROPOSED SWALE SUMMIT

GRADING NOTES:

1. RETAINING WALL DESIGN TO BE PROVIDED BY OTHERS.
2. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
3. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
4. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
6. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
7. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
8. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
9. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
10. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY MANHARD CONSULTING, LTD. ON OCTOBER 22, 2021. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY, BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
11. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

0 30 60 120
SCALE: 1"=60'

DRAWN BY	DATE	REVISIONS
KRK	07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS

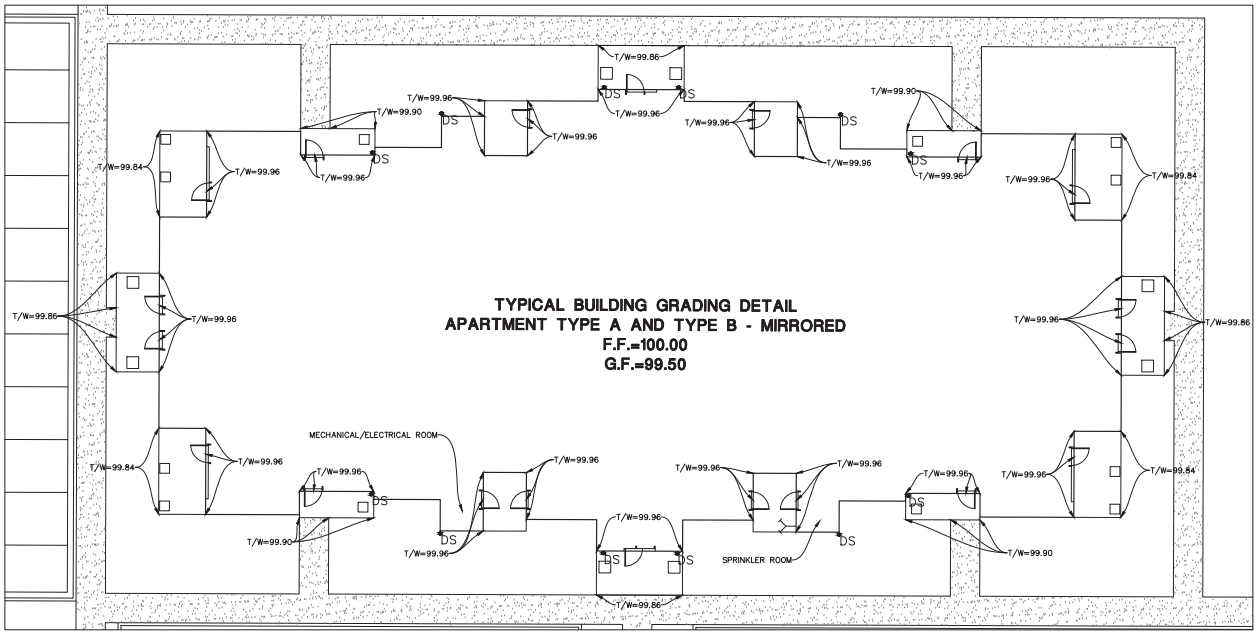
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
OVERALL GRADING PLAN

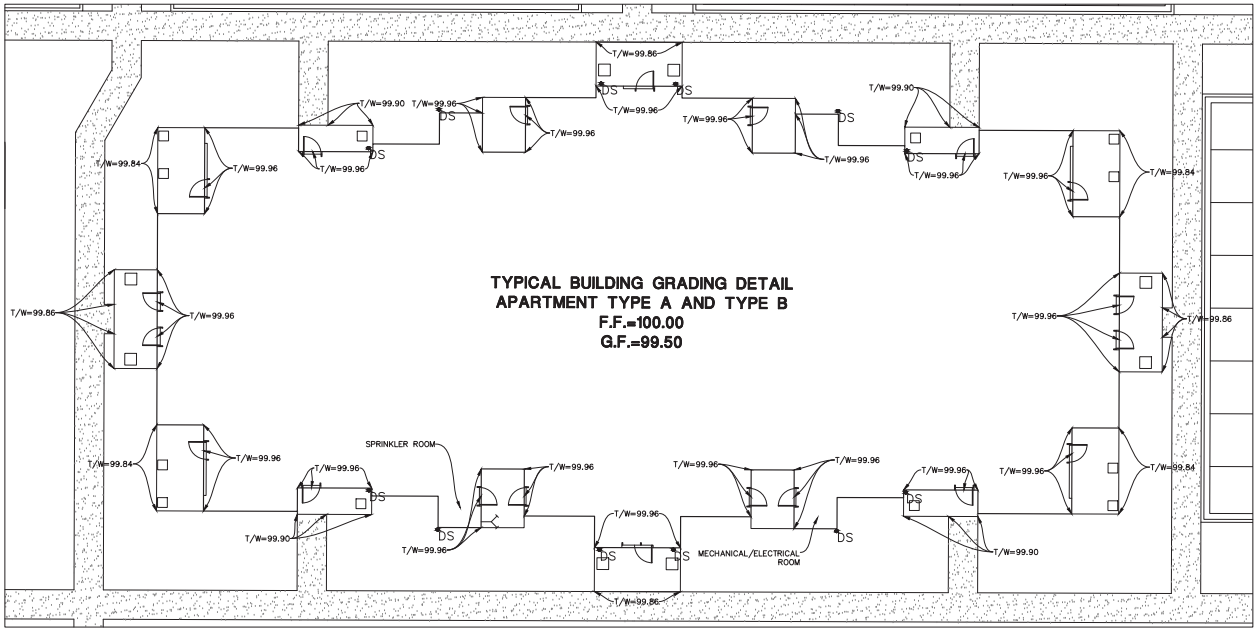
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PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=60'

SHEET 13 OF 44
FRDCLIL01

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TYPICAL BUILDING GRADING DETAIL
APARTMENT TYPE A AND TYPE B - MIRRORED
F.F.=100.00
G.F.=99.50



TYPICAL BUILDING GRADING DETAIL
APARTMENT TYPE A AND TYPE B
F.F.=100.00
G.F.=99.50

0 5 10 20
SCALE: 1"=10'

Date: 6/2/2023 - 13:10 - User Name: KRK\\Desktop\\Revit Central Drawings\\Revit Central Files\\MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE_Kate Kirkham.rvt

DRAWN BY | REVISIONS | DATE

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
TYPICAL BUILDING GRADING DETAILS - APARTMENTS

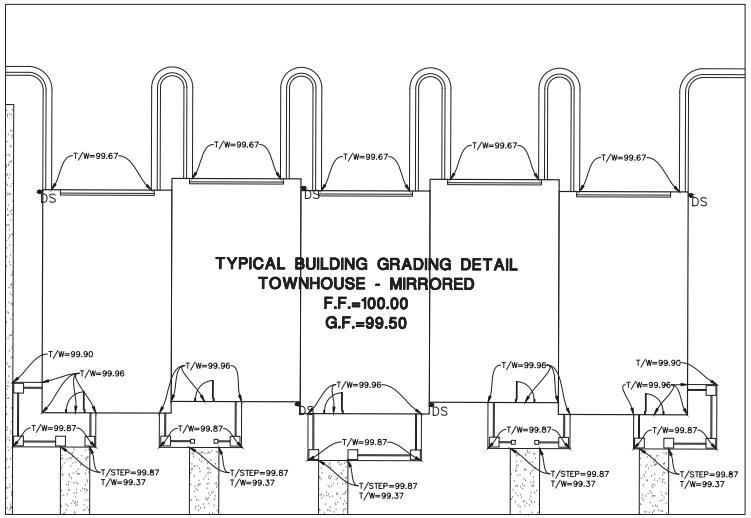
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PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=10'

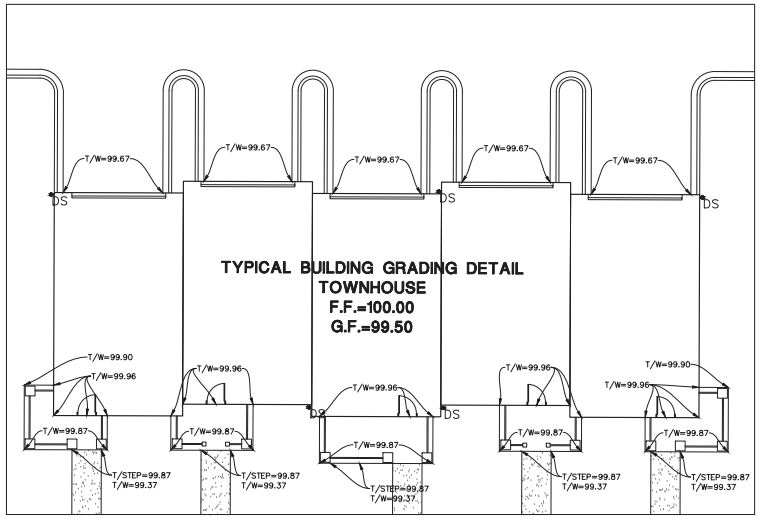
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13A OF 44
FRDCLIL01

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0 5 10 20

SCALE: 1"=10'





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DRAWN BY | REVISIONS | DATE

MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

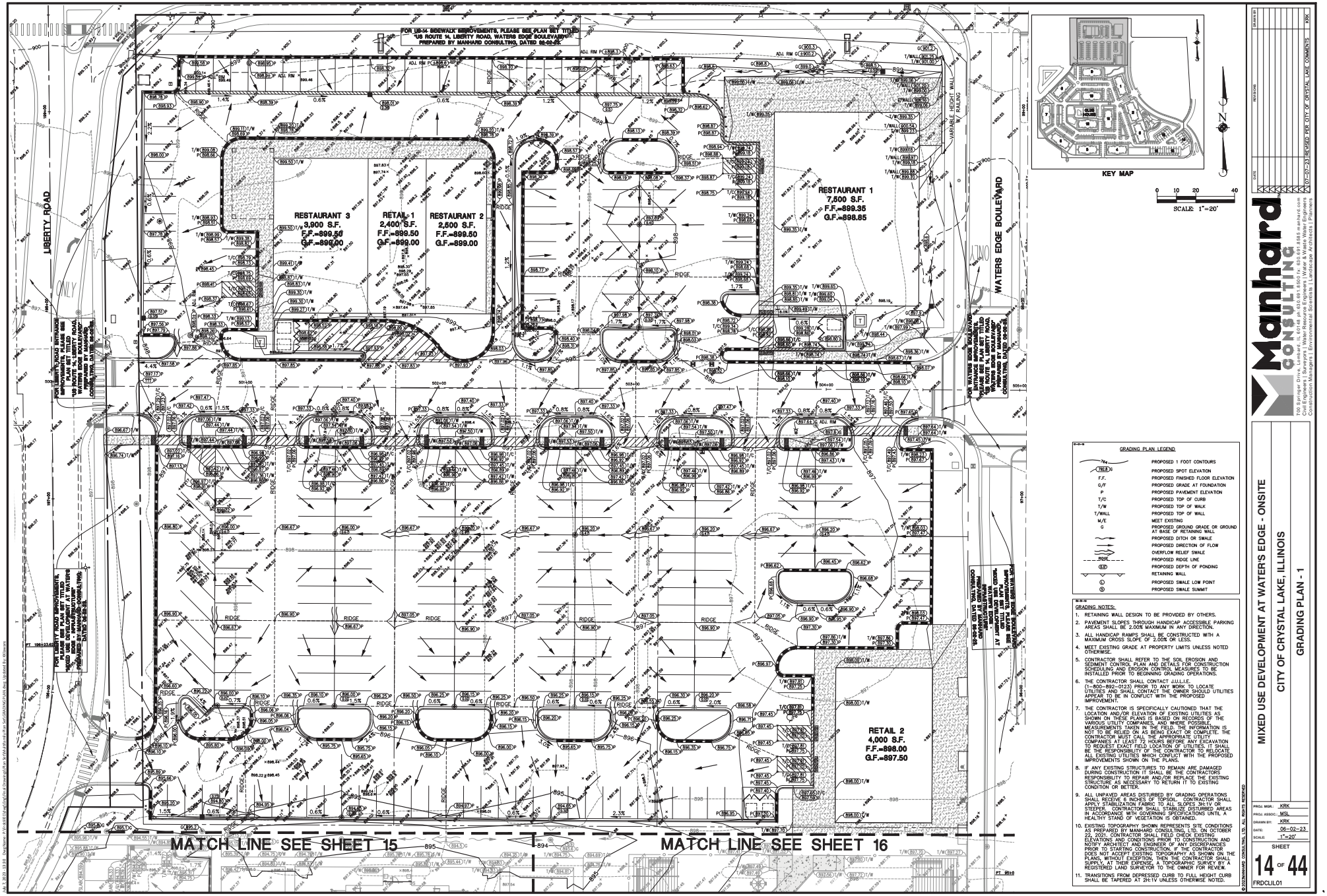
TYPICAL BUILDING GRADING DETAILS - TOWNHOUSES

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: KRK
DATE: 06-02-23
SCALE: 1"=10'

SHEET
13B OF 44
FRDCLIL01

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Date: 6/2023 - 8:35 - User Name: KYoder - File Name: P:\Projects\Frdclil\Civil\Drawings\Plans\Sheet Files\Sheet Files\13 B TOWNHOUSE GRADING DETAILS.dwg - Last saved by: KYoder



KEY MAP

SCALE: 1"=20'

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
762.6	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
0.3 D	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
H	PROPOSED SWALE SUMMIT

GRADING NOTES:

1. RETAINING WALL DESIGN TO BE PROVIDED BY OTHERS.
2. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS TO BE 2.00% MAXIMUM IN ANY DIRECTION.
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4. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
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8. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
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11. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

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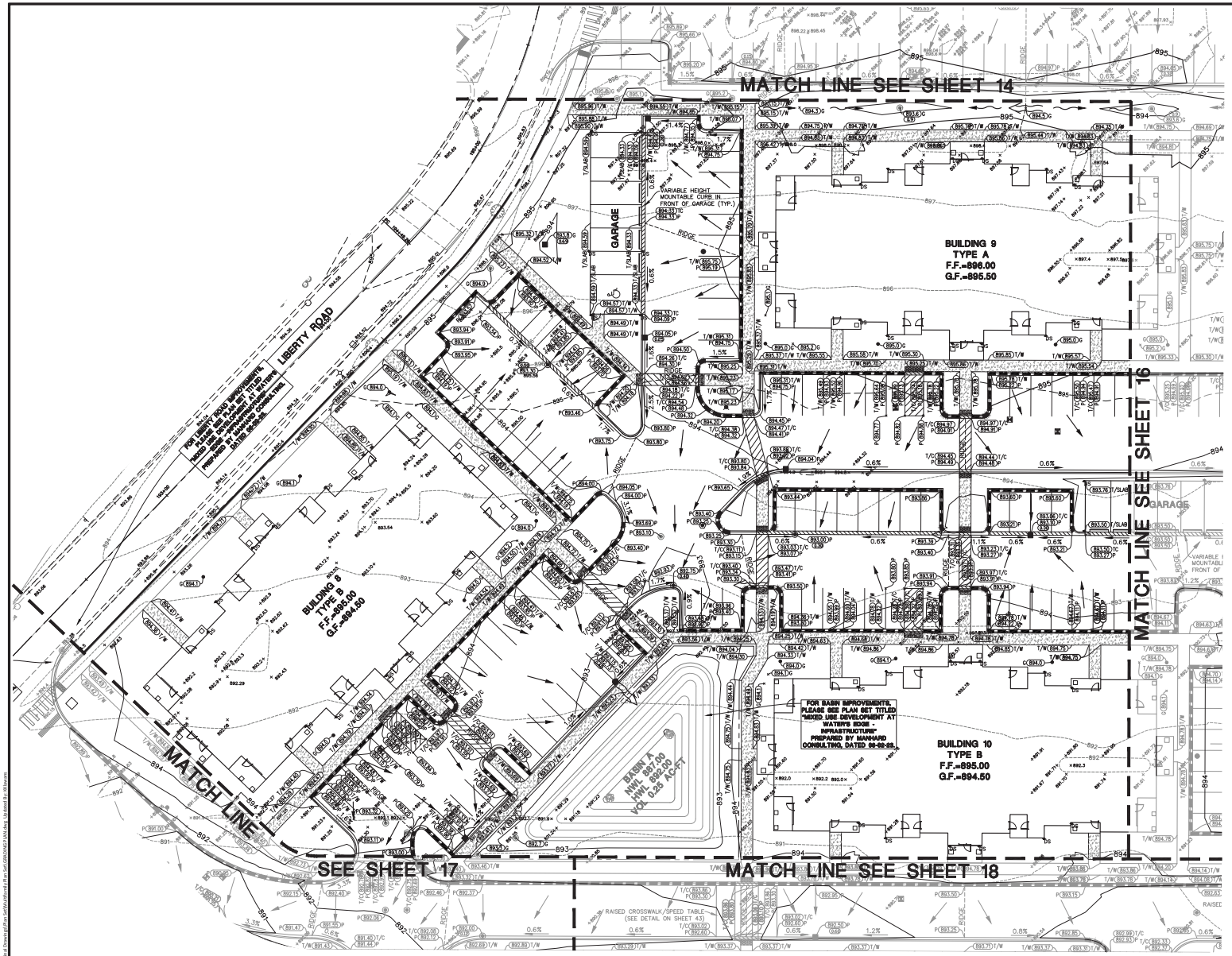
DRAWN BY	REVISIONS	DATE
KRK	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-07-23

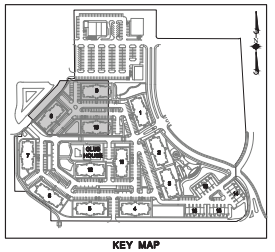
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
GRADING PLAN - 1

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET
14 OF 44
FRDCLIL01





KEY MAP

SCALE: 1"=20'

SEE TYPICAL BUILDING GRADING DETAILS ON SHEET 13A FOR APARTMENT GRADING DETAILS

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.6 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
0.3 D	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
S	PROPOSED SWALE SUMMIT

GRADING NOTES:

1. RETAINING WALL DESIGN TO BE PROVIDED BY OTHERS.
2. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
3. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
4. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
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11. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

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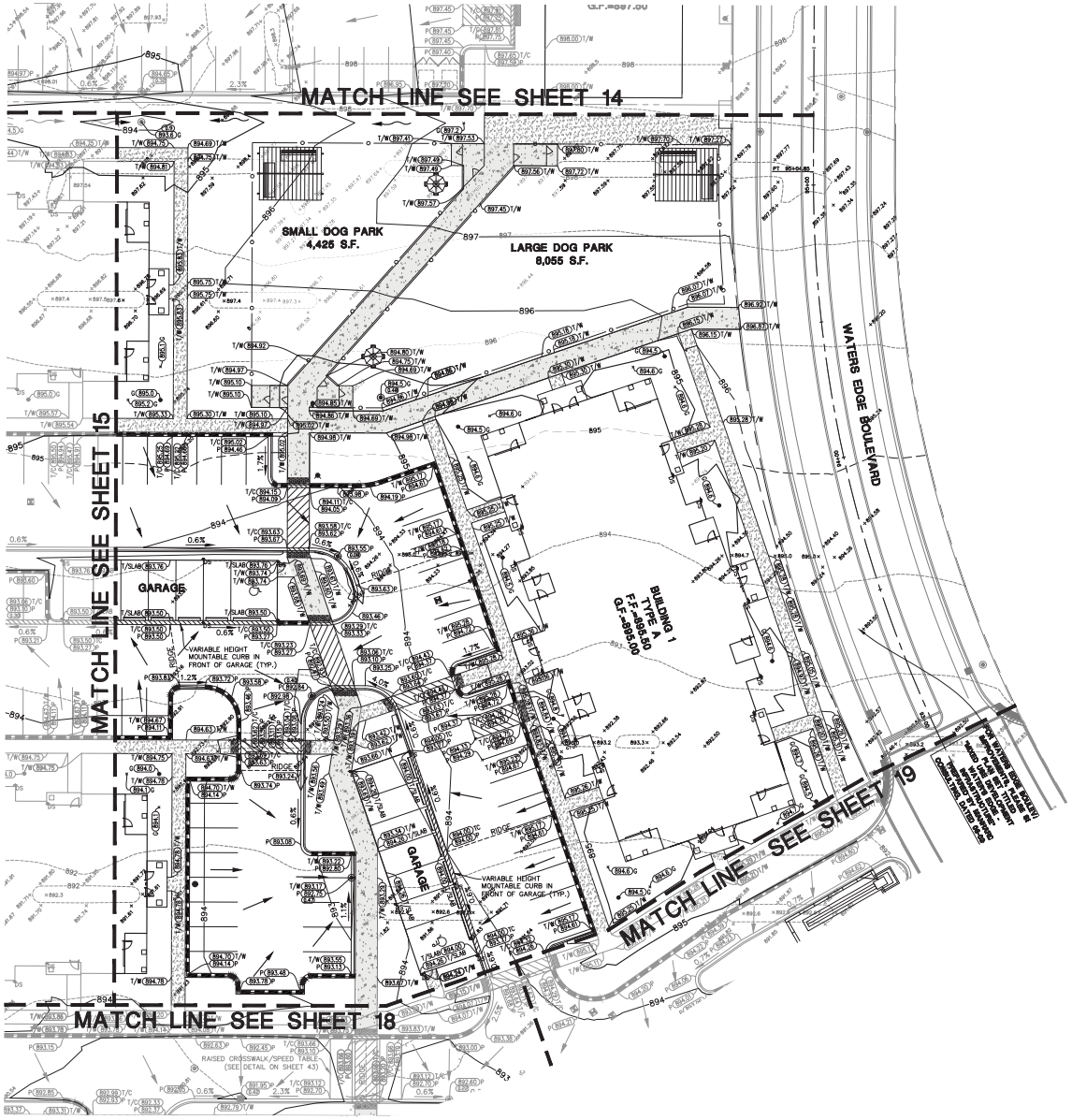
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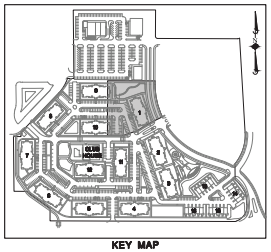
GRADING PLAN - 2

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 15 OF 44

FRDCLIL01





KEY MAP

0 10 20 40

SCALE: 1"=20'

SEE TYPICAL BUILDING GRADING DETAILS ON SHEET 13A FOR APARTMENT GRADING DETAILS

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
762.6 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
0.6'	PROPOSED DEPTH OF PONDING
	RETAINING WALL
(L)	PROPOSED SWALE LOW POINT
(S)	PROPOSED SWALE SUMMIT

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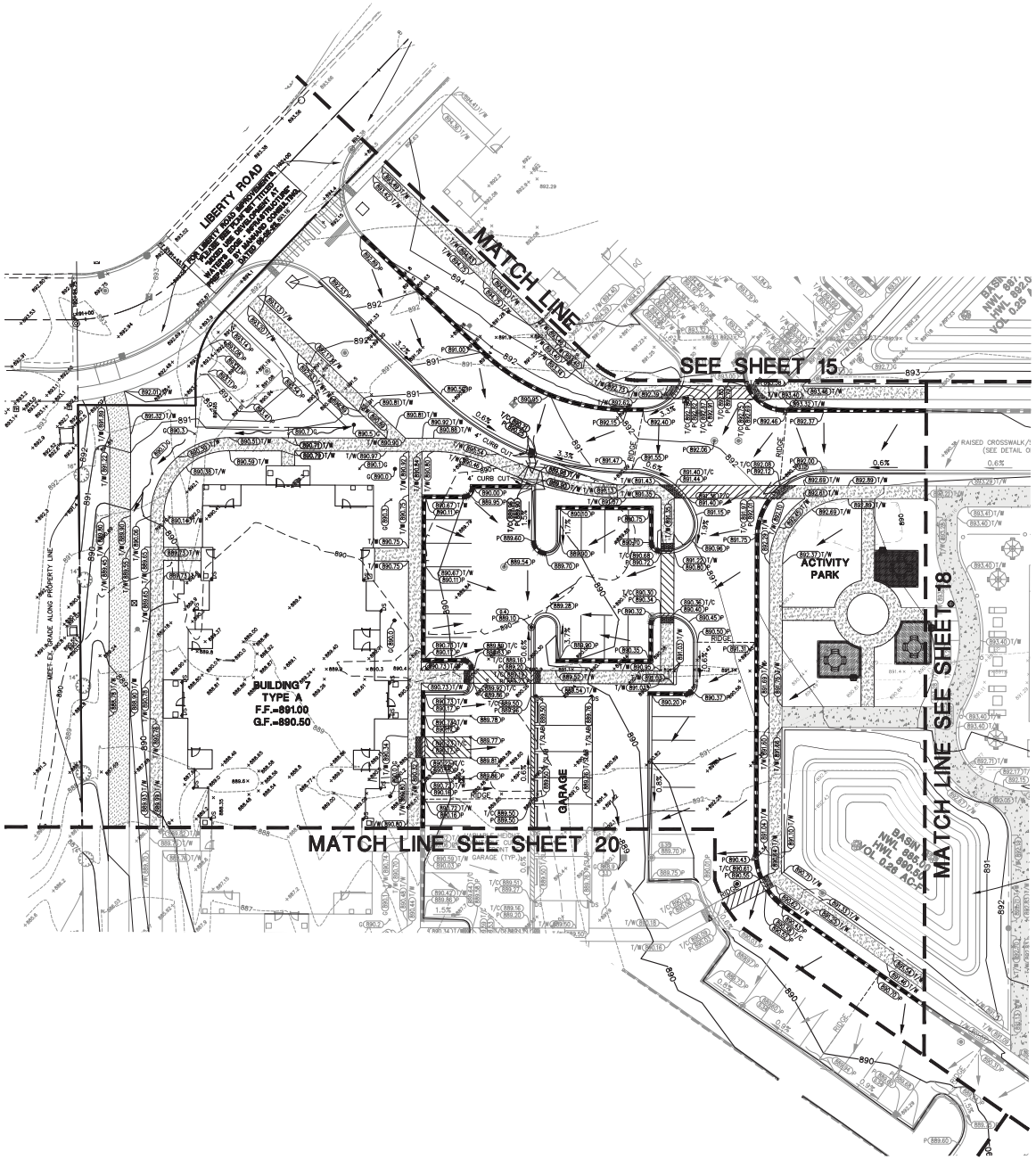
CITY OF CRYSTAL LAKE, ILLINOIS

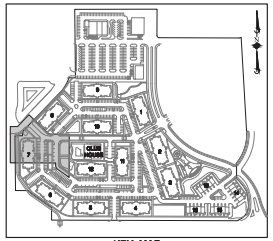
GRADING PLAN - 3

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 16 OF 44

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KEY MAP

SEE TYPICAL BUILDING GRADING DETAILS ON SHEET 13A FOR APARTMENT GRADING DETAILS

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.6 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
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G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
891.0	PROPOSED DEPTH OF PONDING
	RETAINING WALL
(L)	PROPOSED SWALE LOW POINT
(S)	PROPOSED SWALE SUMMIT

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

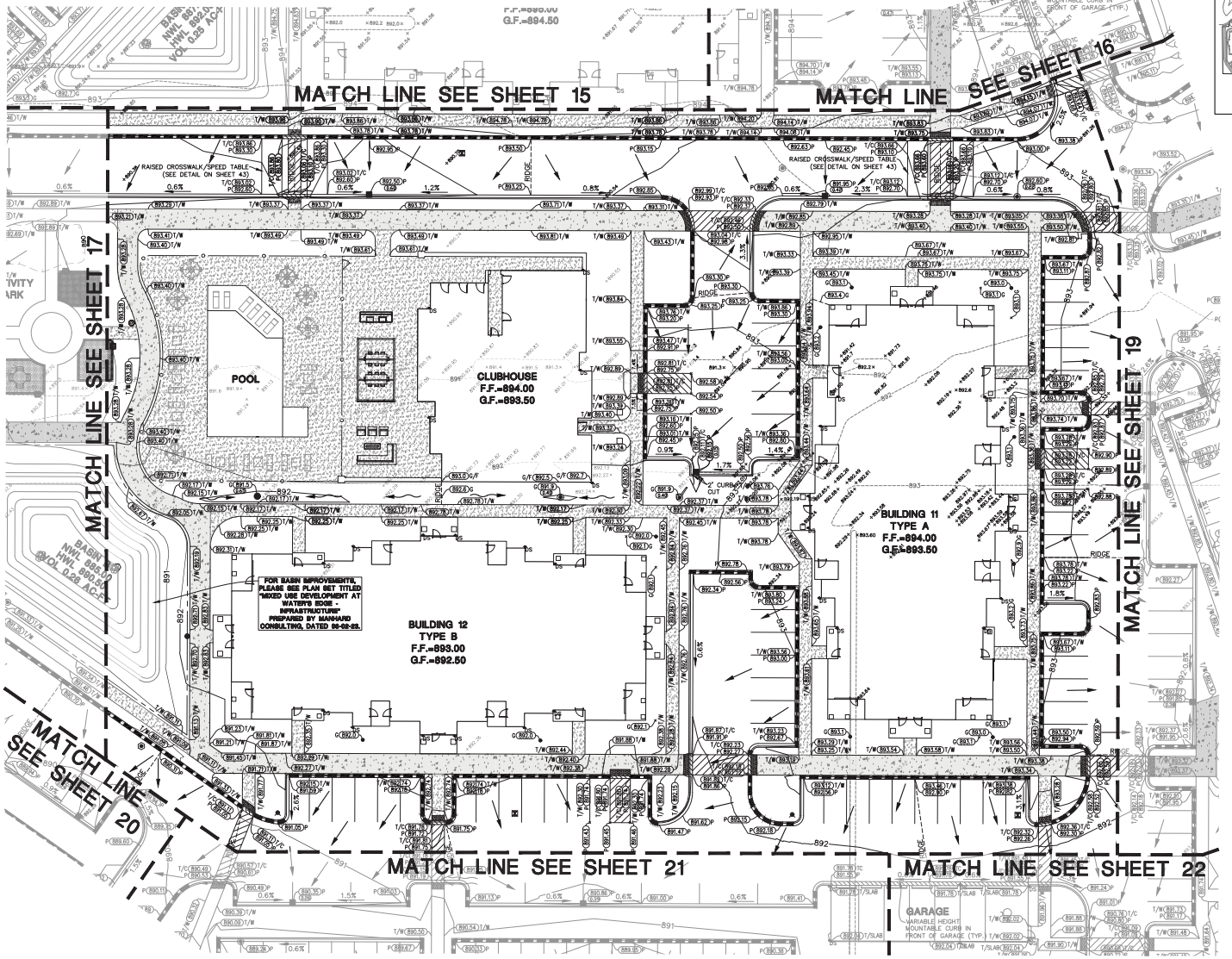
GRADING PLAN - 4

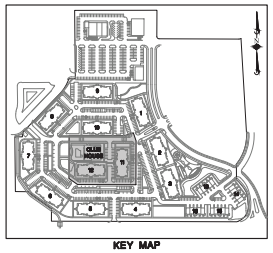
PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 17 OF 44

FRDCLIL01

JULY 7, 2023 - 3:13:39pm - Dan Nixon - K:\Civil\031 Projects\Crystal Lake - Liberty Road\Drawings\Site Plan\Grading Plan - 4.dwg - Sustainability Workroom





SEE TYPICAL BUILDING GRADING DETAILS ON SHEET 13A FOR APARTMENT GRADING DETAILS

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
762.6 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
0.5'	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
S	PROPOSED SWALE SUMMIT

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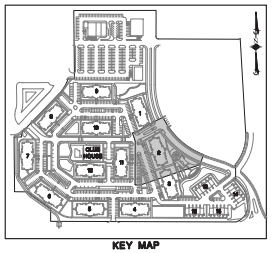
MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
GRADING PLAN - 5

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 18 OF 44

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KEY MAP

0 10 20 40

SCALE: 1"=20'

SEE TYPICAL BUILDING GRADING DETAILS ON SHEET 13A FOR APARTMENT GRADING DETAILS

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.6 G	PROPOSED SPOT ELEVATION
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	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
892	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
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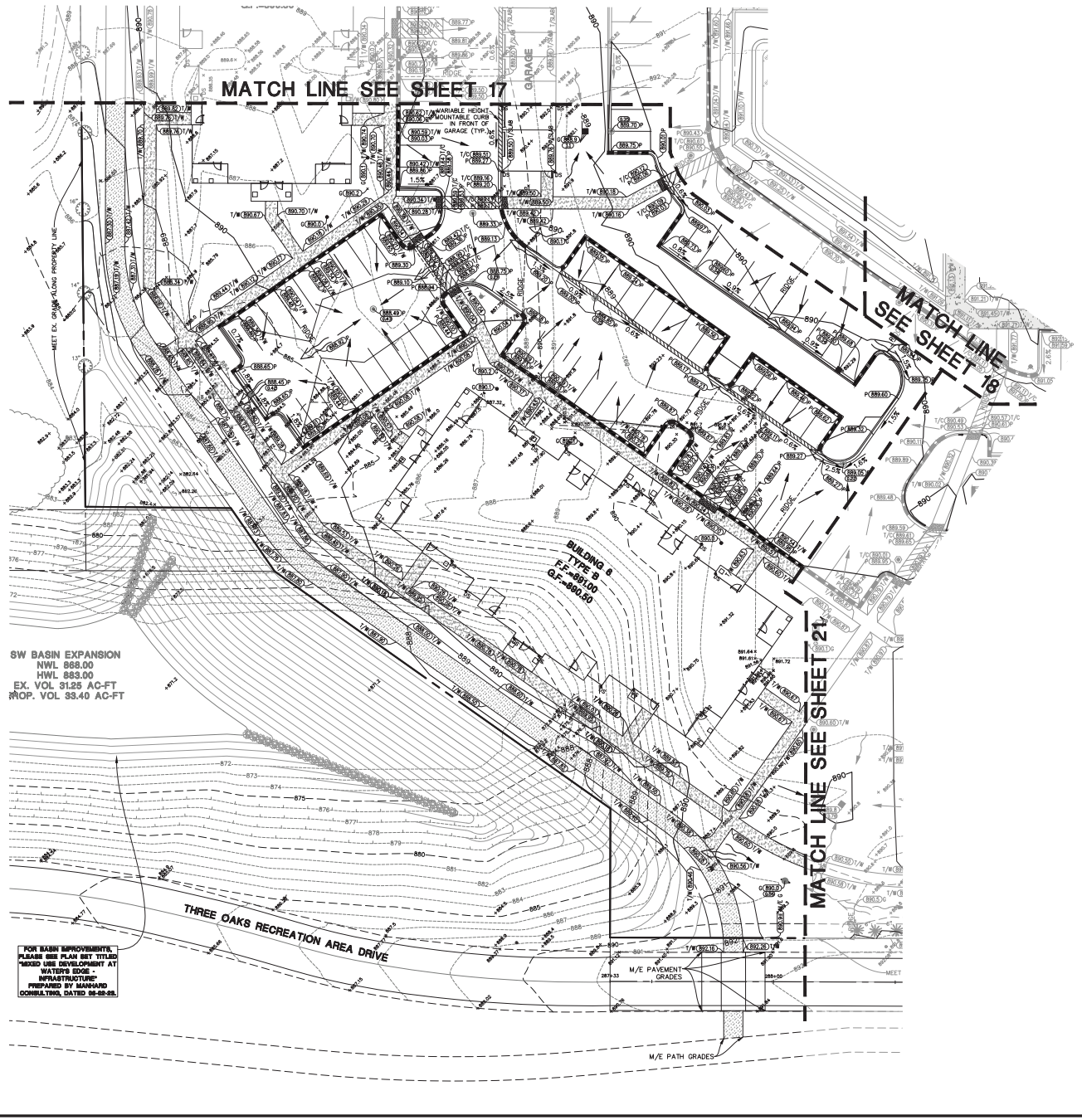
CITY OF CRYSTAL LAKE, ILLINOIS

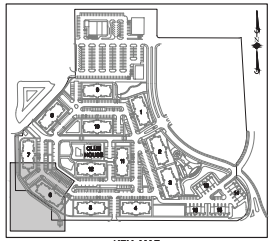
GRADING PLAN - 6

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 19 OF 44

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KEY MAP

SCALE: 1"=20'

SEE TYPICAL BUILDING GRADING DETAILS ON SHEET 13A FOR APARTMENT GRADING DETAILS

GRADING PLAN LEGEND

784	PROPOSED 1 FOOT CONTOURS
792.0 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
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RIDGE	PROPOSED RIDGE LINE
0.2	PROPOSED DEPTH OF PONDING
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3. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
4. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
6. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
7. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND /OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
8. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
9. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
10. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY MANHARD CONSULTING, LTD., ON OCTOBER 22, 2021. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
11. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

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DRAWN BY	REVISIONS	DATE
KRK	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

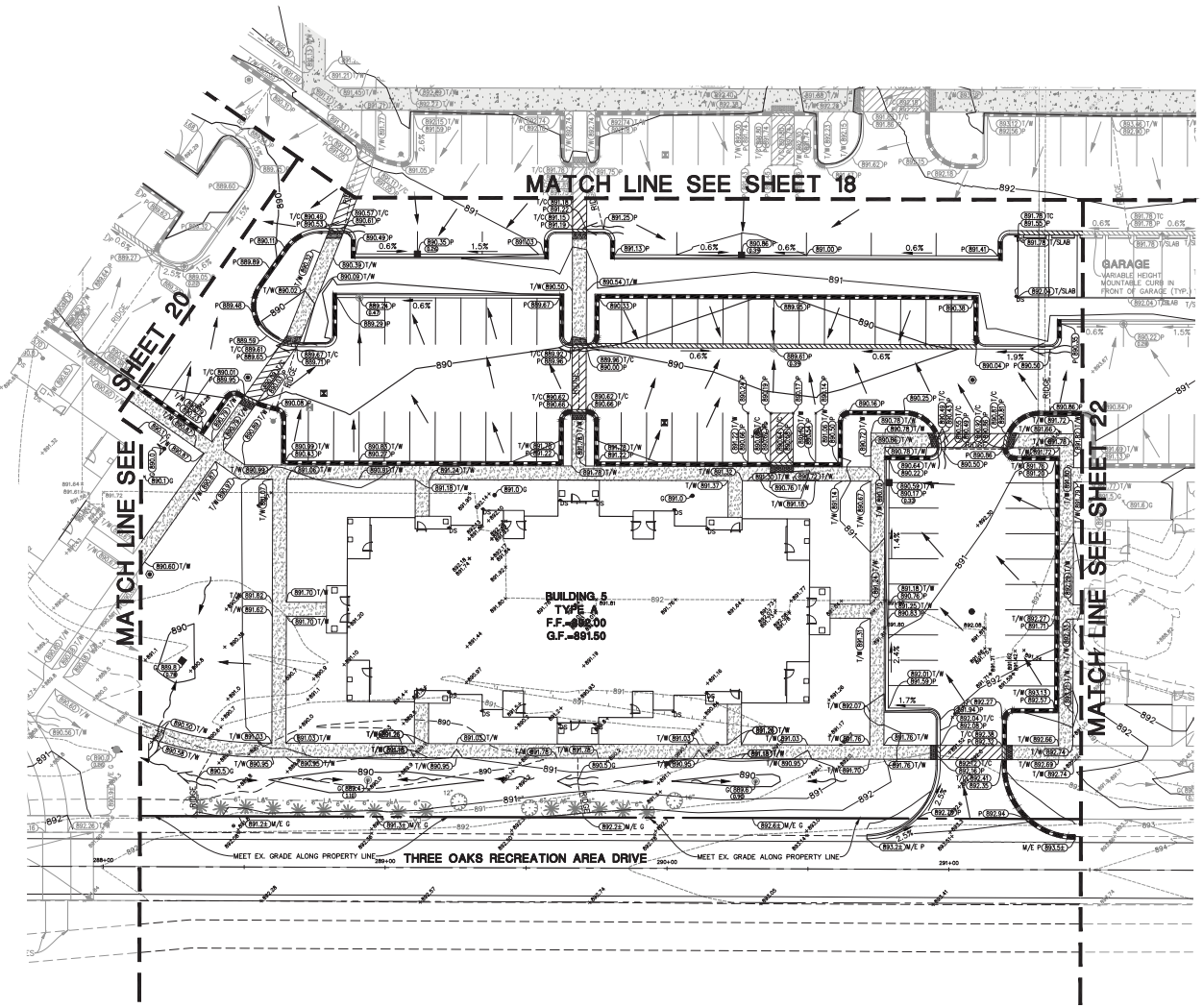
GRADING PLAN - 7

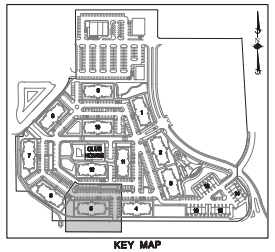
PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 20 OF 44

FRDCLIL01

JULY 7, 2023 - 3:39pm - P:\Projects\2021\021-0331\Engineering\Civil Drawings\Site Grading\Grading Plan - 7.dwg - Layout: Grading Plan - 7





SEE TYPICAL BUILDING GRADING DETAILS ON SHEET 13A FOR APARTMENT GRADING DETAILS

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.8 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
805K	PROPOSED RIDGE LINE
0.3D	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
S	PROPOSED SWALE SUMMIT

GRADING NOTES:

1. RETAINING WALL DESIGN TO BE PROVIDED BY OTHERS.
2. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
3. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
4. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
6. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
7. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND /OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
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11. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

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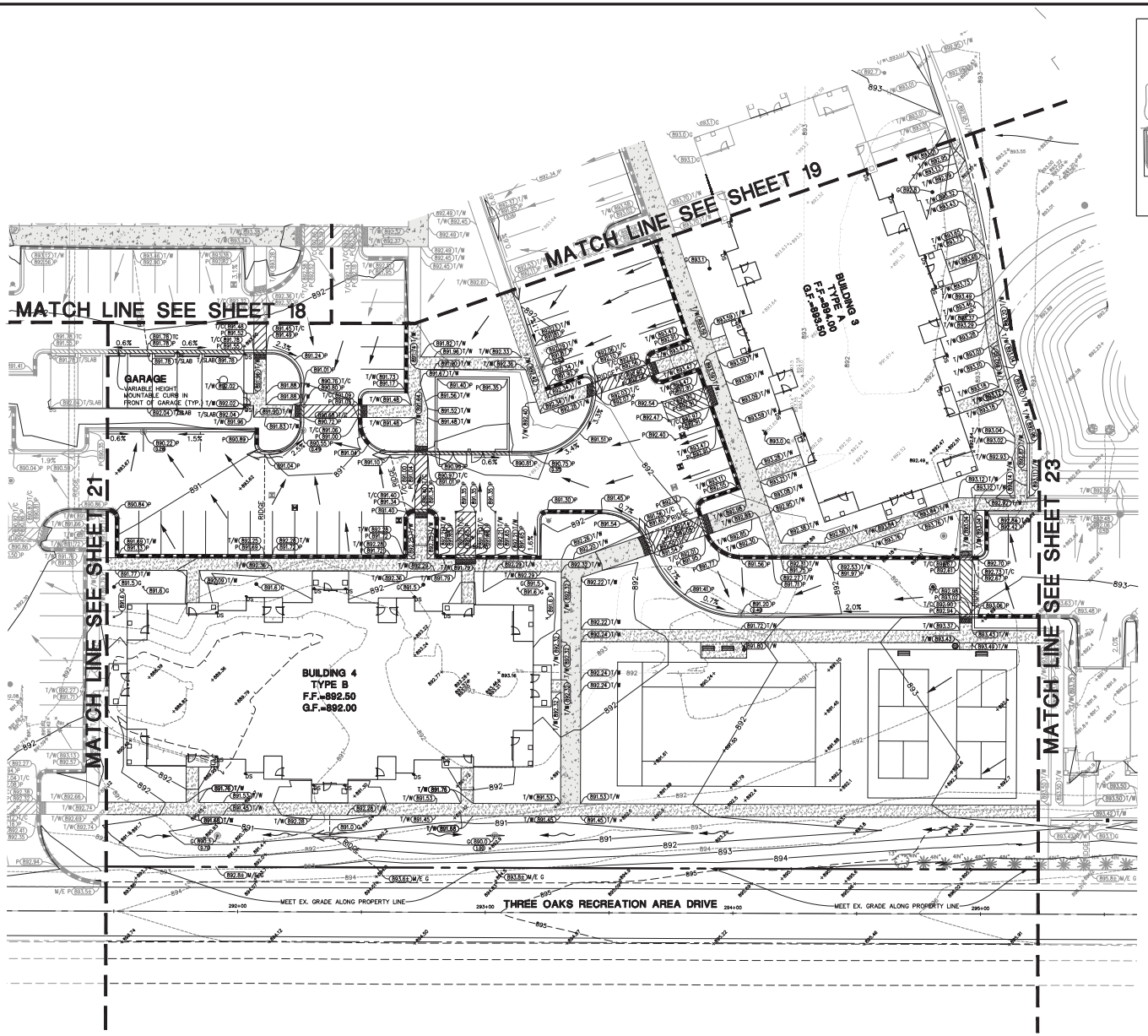
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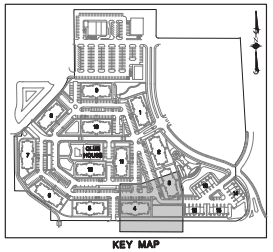
DRAWN BY | REVISIONS | DATE

MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
GRADING PLAN - 8

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: KRK
DATE: 06-02-23
SCALE: 1"=20'

SHEET 21 OF 44
FRDCLIL01





KEY MAP

SEE TYPICAL BUILDING GRADING DETAILS ON SHEET 13A FOR APARTMENT GRADING DETAILS

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.6 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
892.0	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
S	PROPOSED SWALE SUMMIT

GRADING NOTES:

1. RETAINING WALL DESIGN TO BE PROVIDED BY OTHERS.
2. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
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DRAWN BY | REVISIONS | DATE

MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
GRADING PLAN - 9

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 22 OF 44
FRDCLIL01

J:\21-0203 13.3D - Dwg Name: X:\21-0203 Engineering\Civil Drawings\Site Use\Grading\Grading Plan - 9.dwg, Layout: Grading Plan - 9, Saved by: KRK, Date: 6/2/2023 1:13:30 PM



GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.6 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
0.33 D	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
H	PROPOSED SWALE SUMMIT

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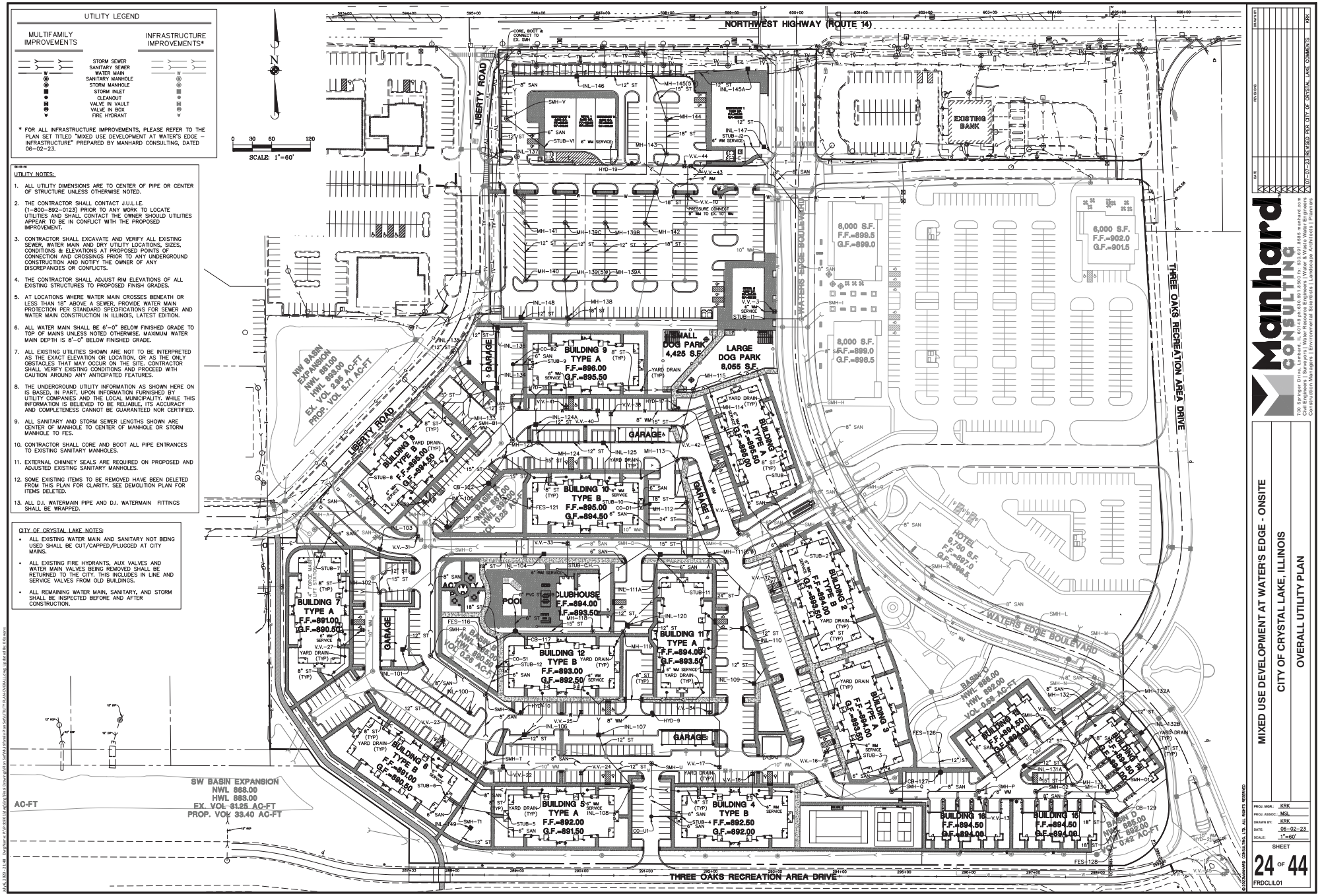
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
GRADING PLAN - 10

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 23 OF 44
FRDCLIL01



DRAWN BY	KRK
REVISIONS	
DATE	06-02-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
OVERALL UTILITY PLAN

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=60'

SHEET 24 OF 44
FRDCLIL01

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UTILITY CROSSINGS

(1) 6" SAN OVER EX. 18" ST
B/P 6" SAN = 894.45
T/P EX. 18" ST = 893.06

(2) 18" ST OVER 6" WM
B/P 18" ST = 892.52
T/P 6" WM = 890.52
LOWER WM

(3) 15" ST OVER EX. 10" WM
B/P 15" ST = 891.84
T/P EX. 10" WM = 889.84
LOWER WM

(4) 18" ST OVER 10" WM
B/P 18" ST = 892.23
T/P 10" WM = 890.23
LOWER WM

(5) 30" ST OVER 10" WM
B/P 30" ST = 891.30
T/P 10" WM = 889.30
LOWER WM

(6) 30" ST OVER 6" SAN
B/P 30" ST = 892.11
T/P 6" SAN = 891.67

(7) 6" SAN OVER EX. 10" WM
B/P 6" SAN = 891.00
T/P EX. 10" WM = 889.00
LOWER WM

(8) 24" ST OVER EX. 10" WM
B/P 24" ST = 893.12
T/P EX. 10" WM = 891.12
LOWER WM

(9) 15" ST OVER 48" ST
B/P 15" ST = 887.26
T/P 48" ST =886.56

(10) 6" SAN OVER 10" WM
B/P 6" SAN = 892.16
T/P 10" WM = 890.66
LOWER WM

(11) 24" ST OVER 10" WM
B/P 24" ST = 891.82
T/P 10" WM = 889.82
LOWER WM

(12) 24" ST OVER 8" SAN
B/P 24" ST = 892.28
T/P 8" SAN = 889.60

(13) 15" ST OVER 8" WM
B/P 15" ST = 885.45
T/P 8" WM = 883.45
LOWER WM

(14) 6" SAN OVER 8" WM
B/P 6" SAN = 886.73
T/P 8" WM = 884.73
LOWER WM

(15) 8" ST OVER 8" WM
B/P 8" ST = 892.36
T/P 8" WM = 889.67

(16) 15" ST OVER 8" WM
B/P 15" ST = 889.53
T/P 8" WM = 887.53
LOWER WM

(17) 12" ST OVER 8" SAN
B/P 12" ST = 892.09
T/P 8" SAN = 887.55

(18) 6" SAN OVER 10" WM
B/P 6" SAN = 884.02
T/P 10" WM = 882.02
LOWER WM

(19) 10" WM OVER 8" SAN
B/P 10" WM = 884.53
T/P 8" SAN = 881.39

(20) 8" WM OVER 8" SAN
B/P 8" WM = 886.63
T/P 8" SAN = 881.75

(21) 8" ST OVER 8" WM
B/P 8" ST = 890.43
T/P 8" WM =888.30

(22) 8" ST OVER 15" ST
B/P 8" ST = 890.07
T/P 15" ST = 885.07

(23) 8" ST OVER 8" SAN
B/P 8" ST = 889.80
T/P 8" SAN = 884.00

(24) 15" ST OVER 8" SAN
B/P 15" ST = 883.24
T/P 8" SAN = 881.80

(25) 8" ST OVER 10" WM
B/P 8" ST = 886.65
T/P 10" WM = 884.23

(26) 15" ST OVER 10" WM
B/P 15" ST = 882.99
T/P 10" WM = 880.99
LOWER WM

(27) 10" WM OVER 8" SAN
B/P 10" WM = 886.06
T/P 8" SAN = 881.94

(28) 12" ST OVER 10" WM
B/P 12" ST = 885.95
T/P 10" WM = 883.95
LOWER WM

(29) 12" ST OVER 8" SAN
B/P 12" ST = 885.83
T/P 8" SAN = 882.13

(30) 6" WM OVER 8" SAN
B/P 6" WM = 887.02
T/P 8" SAN = 882.92

(31) 6" SAN OVER 10" WM
B/P 6" SAN = 885.46
T/P 10" WM =883.46
LOWER WM

(32) 24" ST OVER 10" WM
B/P 24" ST = 887.12
T/P 10" WM = 885.12
LOWER WM

(33) 8" ST OVER 10" WM
B/P 8" ST = 890.79
T/P 10" WM =888.71

(34) 8" ST OVER 6" SAN
B/P 8" ST = 891.84
T/P 6" SAN = 888.76

(35) 6" SAN OVER 10" WM
B/P 6" SAN = 887.54
T/P 10" WM = 885.54
LOWER WM

(36) 24" ST OVER 8" SAN
B/P 24" ST = 887.05
T/P 8" SAN = 883.91

(37) 10" WM OVER 8" SAN
B/P 10" WM = 887.35
T/P 8" SAN = 884.23

(38) 8" ST OVER 8" SAN
B/P 8" ST = 890.24
T/P 8" SAN = 884.37

(39) 10" WM OVER 8" SAN
B/P 10" WM = 888.48
T/P 8" SAN = 884.81

(40) 24" ST OVER 8" SAN
B/P 24" ST = 891.20
T/P 8" SAN = 885.04

(41) 24" ST OVER 10" WM
B/P 24" ST = 891.14
T/P 10" WM = 889.62

(42) 10" WM OVER 8" SAN
B/P 10" WM = 888.94
T/P 8" SAN = 884.98

(43) 36" ST OVER 8" SAN
B/P 36" ST = 886.13
T/P 8" SAN = 885.63

(44) 36" ST OVER 10" WM
B/P 36" ST = 886.46
T/P 10" WM =884.96
LOWER WM

(45) 30" ST OVER 8" SAN
B/P 30" ST = 887.19
T/P 8" SAN = 885.11

(46) 36" ST OVER 10" WM
B/P 36" ST = 885.69
T/P 10" WM = 884.19
LOWER WM

(47) 12" ST OVER 15" ST
B/P 12" ST = 885.90
T/P 15" ST = 883.59

(48) 12" ST OVER 8" SAN
B/P 12" ST = 885.24
T/P 8" SAN = 883.20

(49) 15" ST OVER 10" WM
B/P 15" ST = 880.07
T/P 10" WM =878.07
LOWER WM

(50) 48" ST OVER 10" WM
B/P 48" ST = 877.57
T/P 10" WM = 87.57
LOWER WM

(51) 12" ST OVER 8" SAN
B/P 12" ST = 884.43
T/P 8" SAN = 883.91

(52) 8" ST OVER 10" WM
B/P 8" ST = 886.00
T/P 10" WM = 884.07

(53) 8" SAN OVER 42" ST
B/P 8" SAN = 883.86
T/P 42" ST = 883.32

(54) 8" SAN OVER 10" WM
B/P 8" SAN = 884.31
T/P 10" WM = 882.31
LOWER WM

(55) 8" ST OVER 8" SAN
B/P 8" ST = 887.23
T/P 8" SAN = 885.17

(56) 8" SAN OVER 8" WM
B/P 8" SAN = 884.14
T/P 8" WM = 882.14
LOWER WM

(57) 42" ST OVER 8" WM
B/P 42" ST = 879.21
T/P 8" WM =877.21
LOWER WM

(58) 8" ST OVER 8" WM
B/P 8" ST = 888.11
T/P 8" WM = 885.95

(59) 8" ST OVER 8" WM
B/P 8" ST = 888.08
T/P 8" WM = 885.91

(60) 12" ST OVER 8" SAN
B/P 12" ST = 886.14
T/P 8" SAN = 885.62

(61) 12" ST OVER 10" WM
B/P 12" ST = 886.34
T/P 10" WM = 884.34
LOWER WM

(62) 6" SAN OVER 10" WM
B/P 6" SAN = 885.29
T/P 10" WM = 883.29
LOWER WM

(63) 8" ST OVER 6" SAN
B/P 8" ST = 887.22
T/P 6" SAN = 886.11

(64) 42" ST OVER 8" WM
B/P 42" ST = 882.2
T/P 8" WM = 880.2
LOWER WM

(65) 12" ST OVER 10" WM
B/P 12" ST = 884.76
T/P 10" WM = 882.76
LOWER WM

(66) 8" ST OVER 10" WM
B/P 8" ST = 888.31
T/P 10" WM = 885.97

(67) 12" ST OVER 10" WM
B/P 12" ST = 885.12
T/P 10" WM = 883.12
LOWER WM

(68) 6" SAN OVER 12" ST
B/P 6" SAN = 888.67
T/P 12" ST = 886.74

(70) 8" SAN OVER 8" WM
B/P 8" ST = 888.00
T/P 8" WM = 886.00
LOWER WM

(71) 8" SAN OVER 18" ST
B/P 8" SAN = 888.09
T/P 18" ST = 887.43

(72) 18" ST OVER 8" WM
B/P 18" ST = 885.37
T/P 8" WM = 883.87
LOWER WM

(73) 12" ST OVER 8" SAN
B/P 12" ST = 888.95
T/P 8" SAN = 888.03

(74) 12" ST OVER 8" WM
B/P 12" ST = 889.09
T/P 8" WM = 887.09
LOWER WM

(75) 8" SAN OVER 8" WM
B/P 8" SAN = 887.11
T/P 8" WM = 885.11
LOWER WM

(76) 12" ST OVER 10" WM
B/P 12" ST = 891.19
T/P 10" WM = 889.19
LOWER WM

(77) 8" SAN OVER 10" WM
B/P 8" SAN = 886.32
T/P 10" WM =884.32
LOWER WM

(78) 15" ST OVER 10" WM
B/P 15" ST = 890.31
T/P 10" WM = 888.31
LOWER WM

(79) 8" ST OVER 15" ST
B/P 8" ST = 886.54
T/P 15" ST = 883.22

(80) 8" ST OVER 10" WM
B/P 8" ST = 890.50
T/P 10" WM = 887.21

(81) 8" ST OVER 15" ST
B/P 8" ST = 886.74
T/P 15" ST = 881.24

NOTES:

1. WATER AND SEWER CROSSINGS SHALL MEET STATE EPA SEPARATION AND PIPE MATERIAL REQUIREMENTS. (SEE DETAIL SHEET)
2. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS.

July 6, 2023 – 23:19 Dwg Name: P:\Frdclil01\dwg\Eng\Final Drawings\Plan Set\Multifamily Plan Set\UTILITY CROSSING INFORMATION.dwg Updated By: KKlawans

DATE	REVISIONS	DRAWN BY
07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	KRK

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

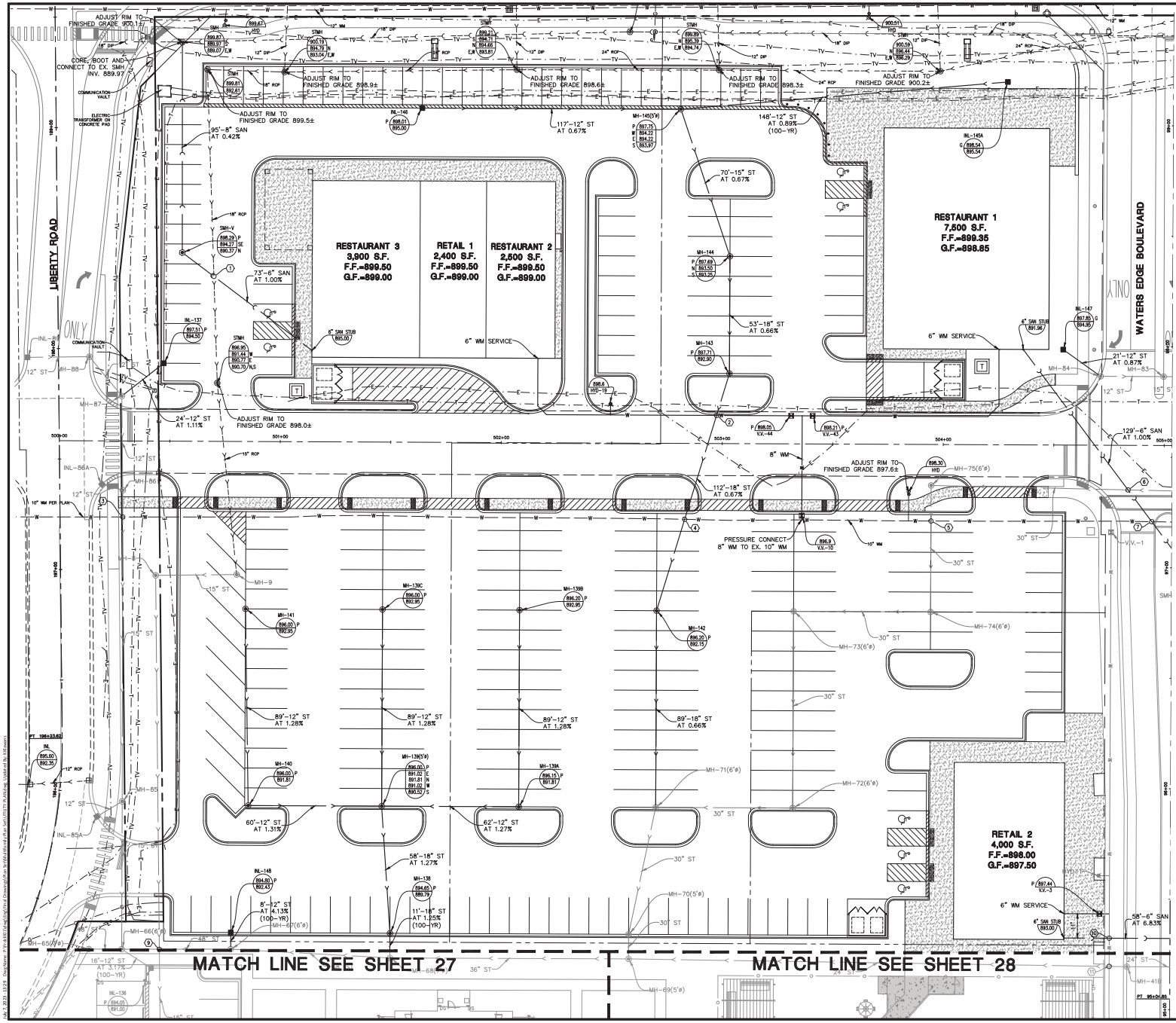
CITY OF CRYSTAL LAKE, ILLINOIS

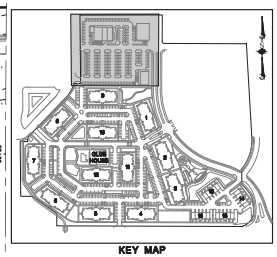
UTILITY CROSSING INFORMATION

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: ----
DATE: 06-02-23
SCALE: N.T.S.

SHEET
25 OF 44
FRDCLIL01

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KEY MAP

SEE SHEET 25 FOR UTILITY CROSSING INFORMATION.

0 10 20 40

SCALE: 1"=20'

UTILITY LEGEND

ONSITE IMPROVEMENTS	INFRASTRUCTURE IMPROVEMENTS*
STORM SEWER	
SANITARY SEWER	
WATER MAIN	
SANITARY MANHOLE	
STORM MANHOLE	
STORM CATCH BASIN	
STORM INLET	
CLEANOUT	
VALVE IN VAULT	
VALVE IN BOX	
FIRE HYDRANT	

* FOR ALL INFRASTRUCTURE IMPROVEMENTS, PLEASE REFER TO THE PLAN SET TITLED "MIXED USE DEVELOPMENT AT WATER'S EDGE – INFRASTRUCTURE" PREPARED BY MANHARD CONSULTING, DATED 06-02-23.

CITY OF CRYSTAL LAKE NOTES:

- ALL EXISTING WATER MAIN AND SANITARY NOT BEING USED SHALL BE CUT/CAPPED/PLUGGED AT CITY MAINS.
- ALL EXISTING FIRE HYDRANTS, AUX VALVES AND WATER MAIN VALVES BEING REMOVED SHALL BE RETURNED TO THE CITY. THIS INCLUDES IN LINE AND SERVICE VALVES FROM OLD BUILDINGS.
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13. ALL D.I. WATERMAIN PIPE AND D.I. WATERMAIN FITTINGS SHALL BE WRAPPED.

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KRK	07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

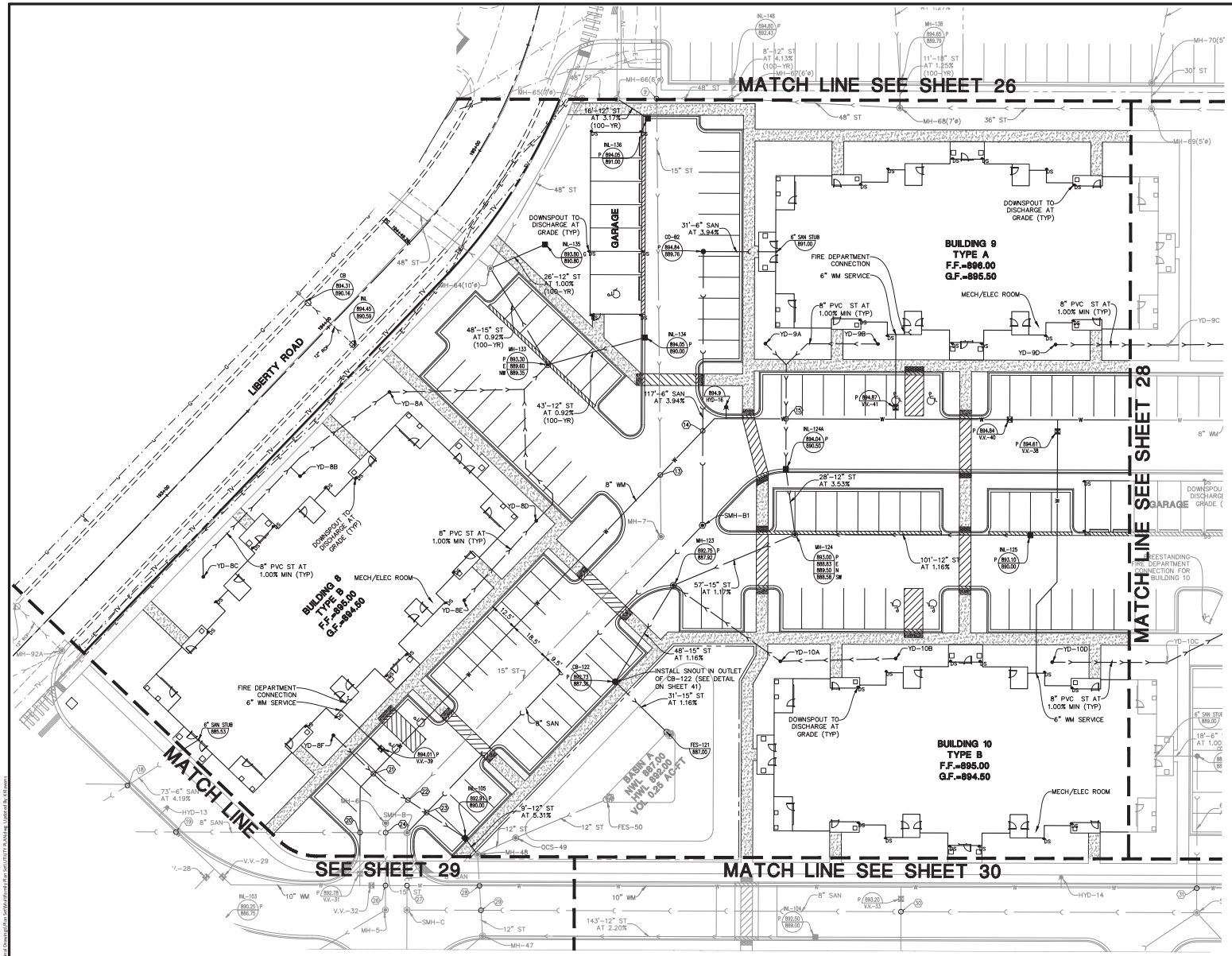
CITY OF CRYSTAL LAKE, ILLINOIS

UTILITY PLAN - 1

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 26 OF 44

FRDCLIL01



UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
W	STORM SEWER	
W	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

* FOR ALL INFRASTRUCTURE IMPROVEMENTS, PLEASE REFER TO THE PLAN SET TITLED "MIXED USE DEVELOPMENT AT WATER'S EDGE – INFRASTRUCTURE" PREPARED BY MANHARD CONSULTING, DATED 06-02-23.

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DRAWN BY	REVISIONS	DATE
KRK	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-07-23

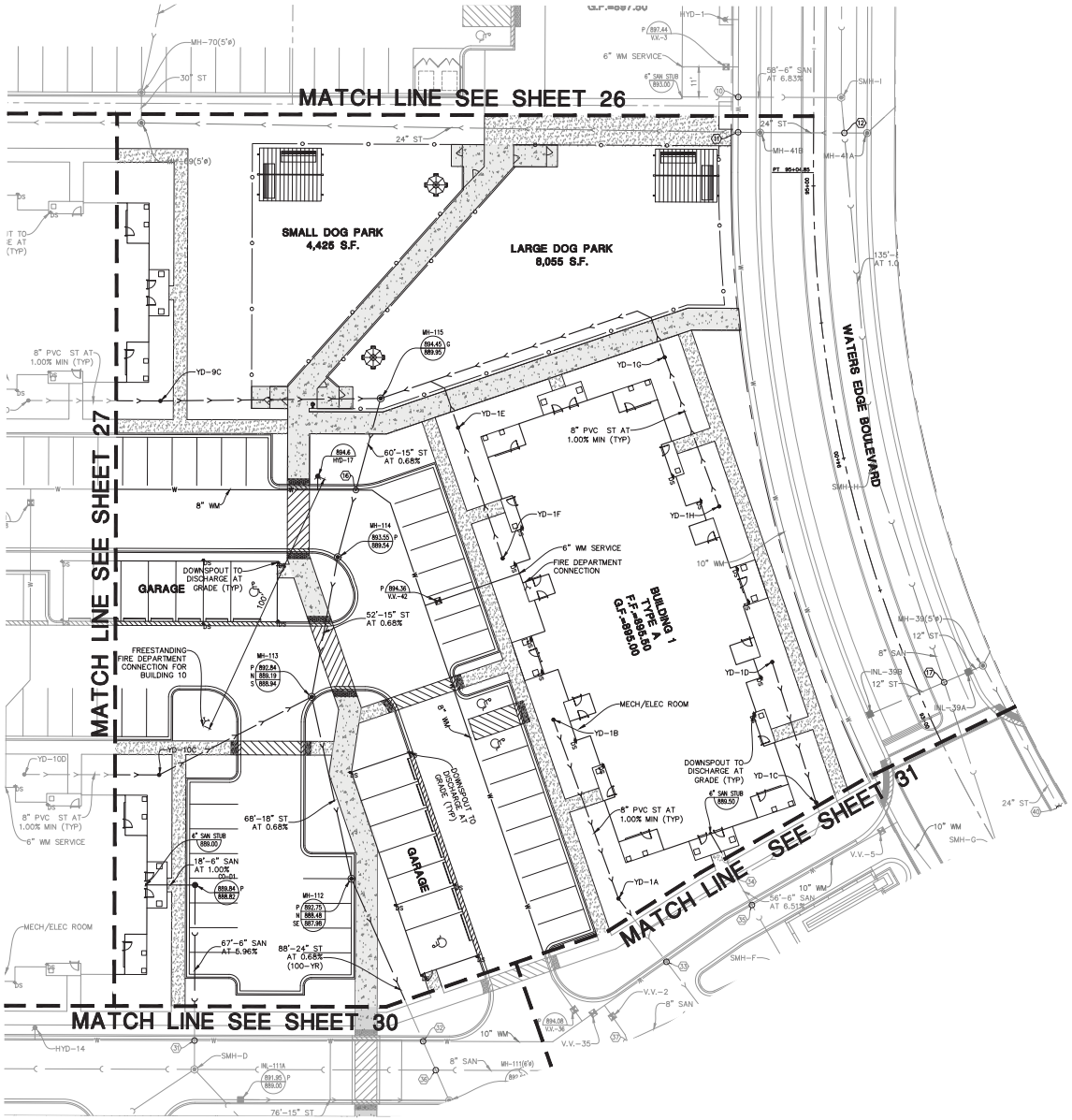
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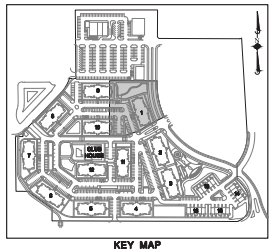
MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
UTILITY PLAN - 2

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 27 OF 44

FRDCLIL01





SEE SHEET 25 FOR UTILITY CROSSING INFORMATION.

UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
V	VALVE IN VAULT	
V	VALVE IN BOX	
	FIRE HYDRANT	

* FOR ALL INFRASTRUCTURE IMPROVEMENTS, PLEASE REFER TO THE PLAN SET TITLED "MIXED USE DEVELOPMENT AT WATER'S EDGE – INFRASTRUCTURE" PREPARED BY MANHARD CONSULTING, DATED 06-02-23.

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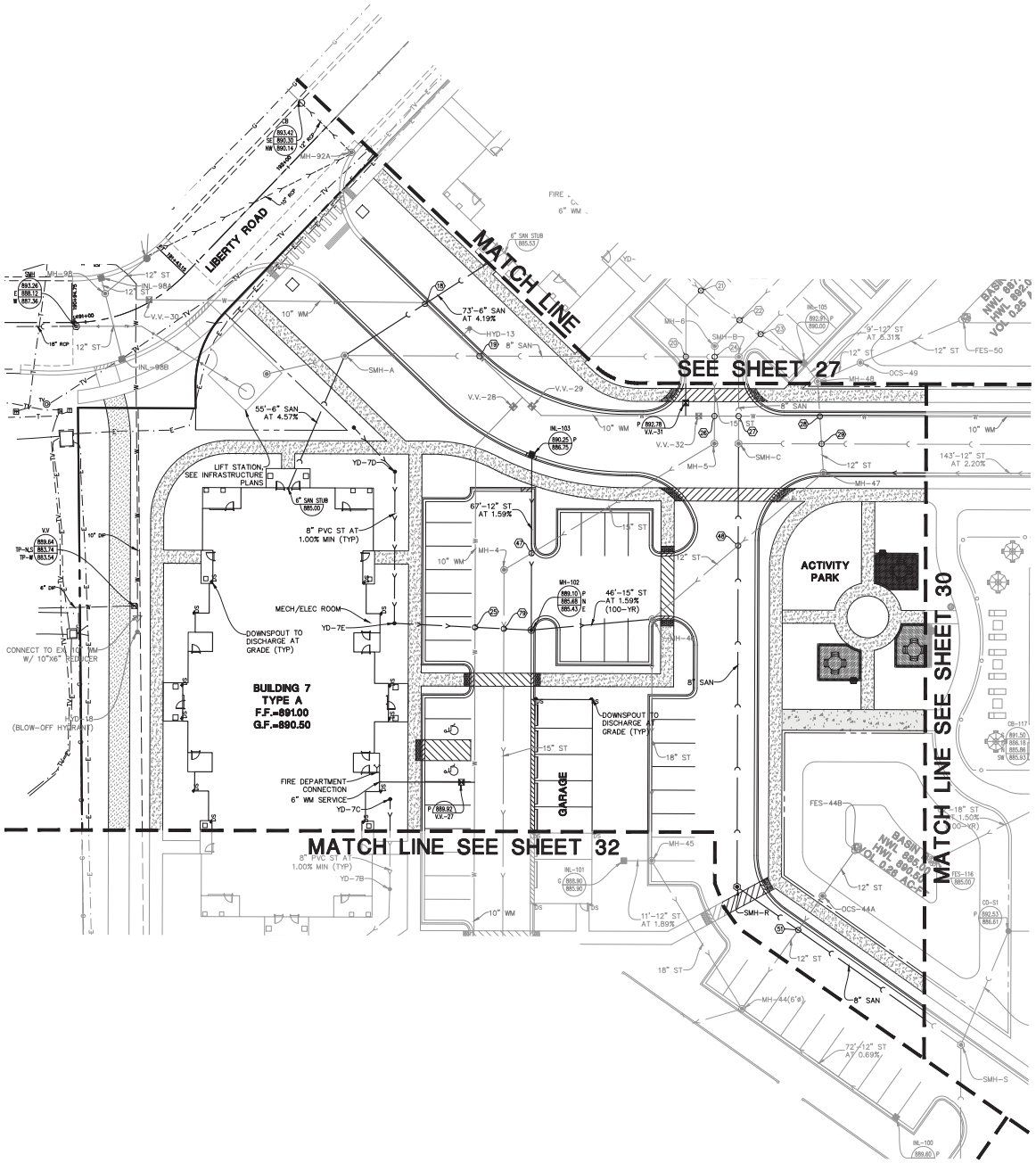
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		KRK
07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	

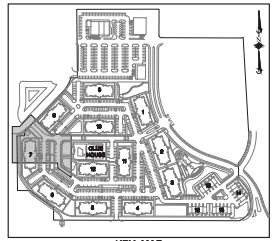
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
UTILITY PLAN - 3

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET
28 OF 44
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KEY MAP

SEE SHEET 25 FOR UTILITY CROSSING INFORMATION.

UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

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		KRK
07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

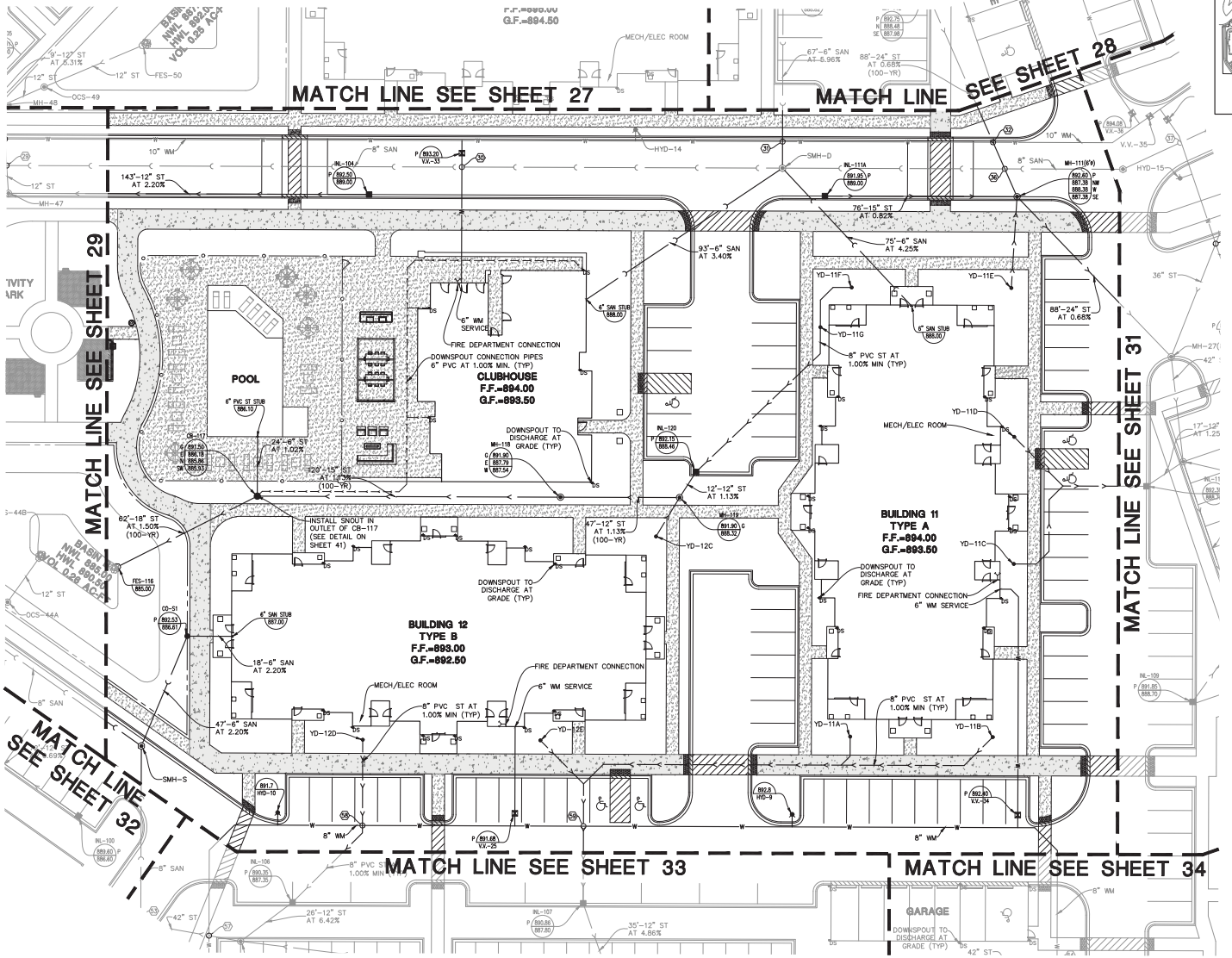
UTILITY PLAN - 4

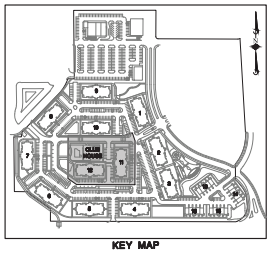
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PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 29 OF 44

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SEE SHEET 25 FOR UTILITY CROSSING INFORMATION.

UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

* FOR ALL INFRASTRUCTURE IMPROVEMENTS, PLEASE REFER TO THE PLAN SET TITLED "MIXED USE DEVELOPMENT AT WATER'S EDGE – INFRASTRUCTURE" PREPARED BY MANHARD CONSULTING, DATED 06-02-23.

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2. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
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4. THE CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF ALL EXISTING STRUCTURES TO PROPOSED FINISH GRADES.
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9. ALL SANITARY AND STORM SEWER LENGTHS SHOWN ARE CENTER OF MANHOLE TO CENTER OF MANHOLE OR STORM MANHOLE TO FES.
10. CONTRACTOR SHALL CORE AND BOOT ALL PIPE ENTRANCES TO EXISTING SANITARY MANHOLES.
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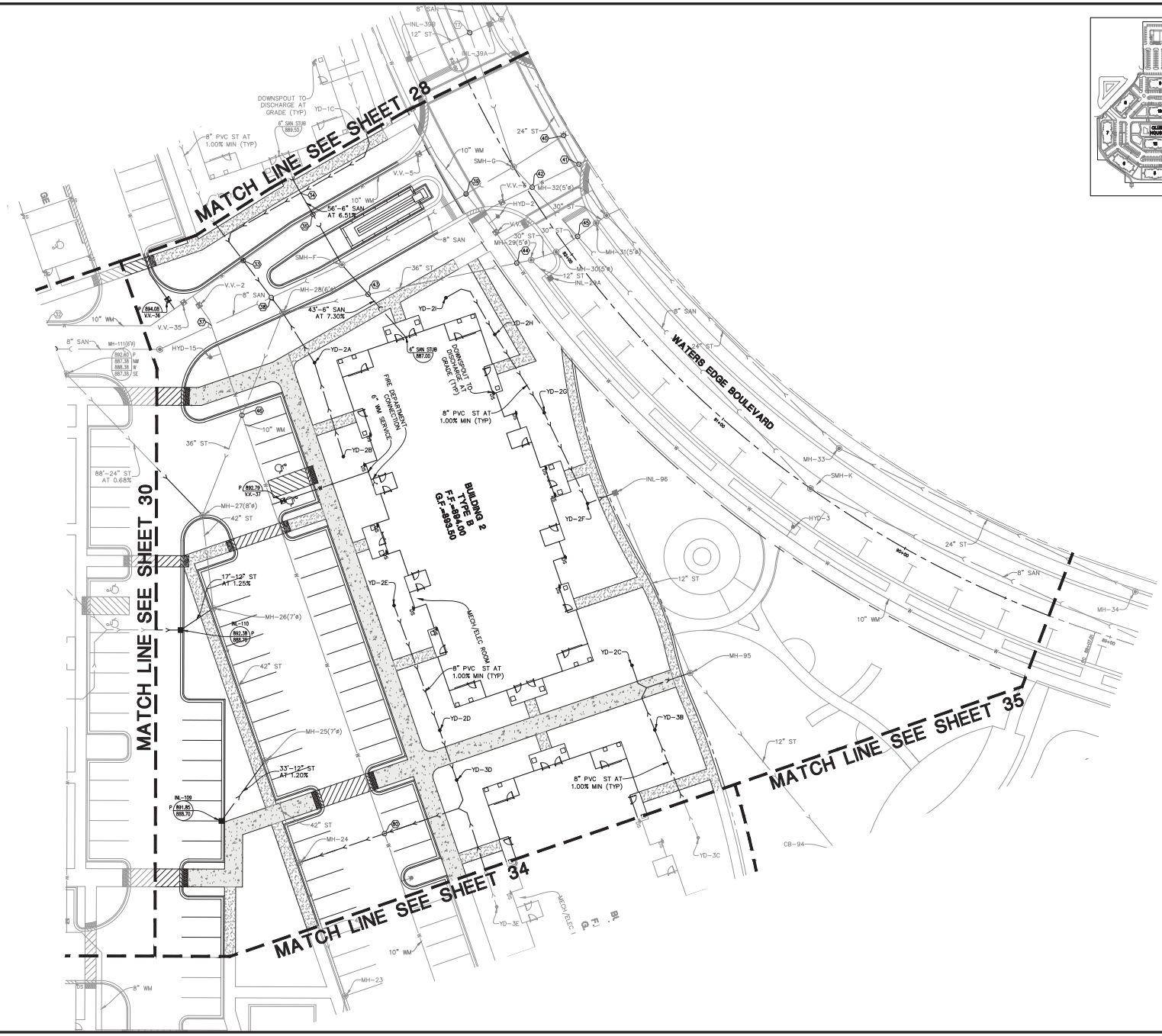
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KRK	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	

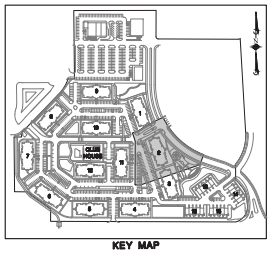
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
UTILITY PLAN - 5

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 30 OF 44
FRDCLIL01





KEY MAP

SCALE: 1"=80'

SEE SHEET 25 FOR UTILITY CROSSING INFORMATION.

UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

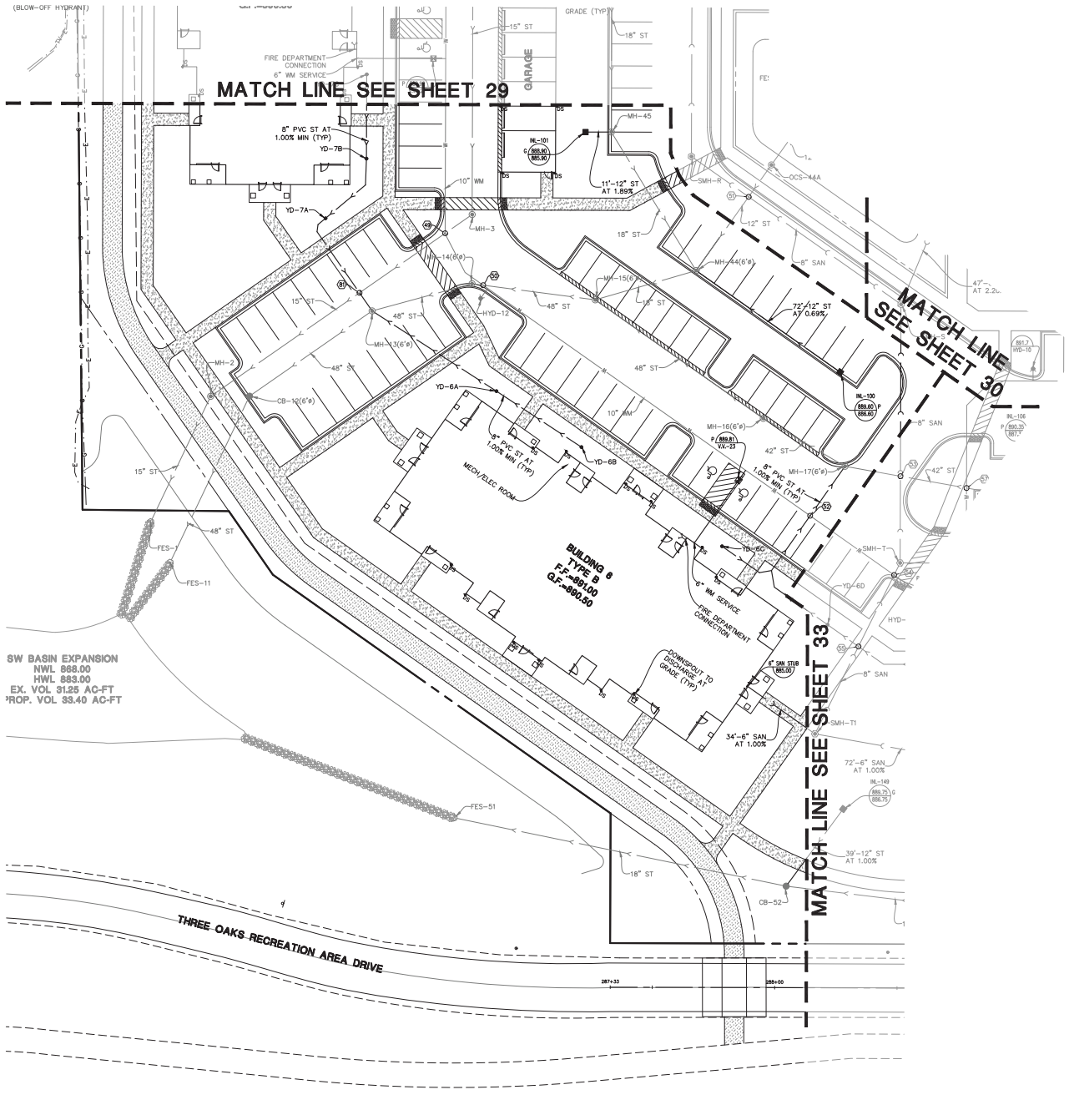
CITY OF CRYSTAL LAKE, ILLINOIS

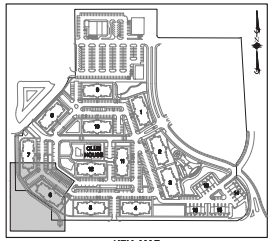
UTILITY PLAN - 6

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 31 OF 44

FRDCLIL01





KEY MAP

0 10 20 40

SCALE: 1"=20'

SEE SHEET 25 FOR UTILITY CROSSING INFORMATION.

UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

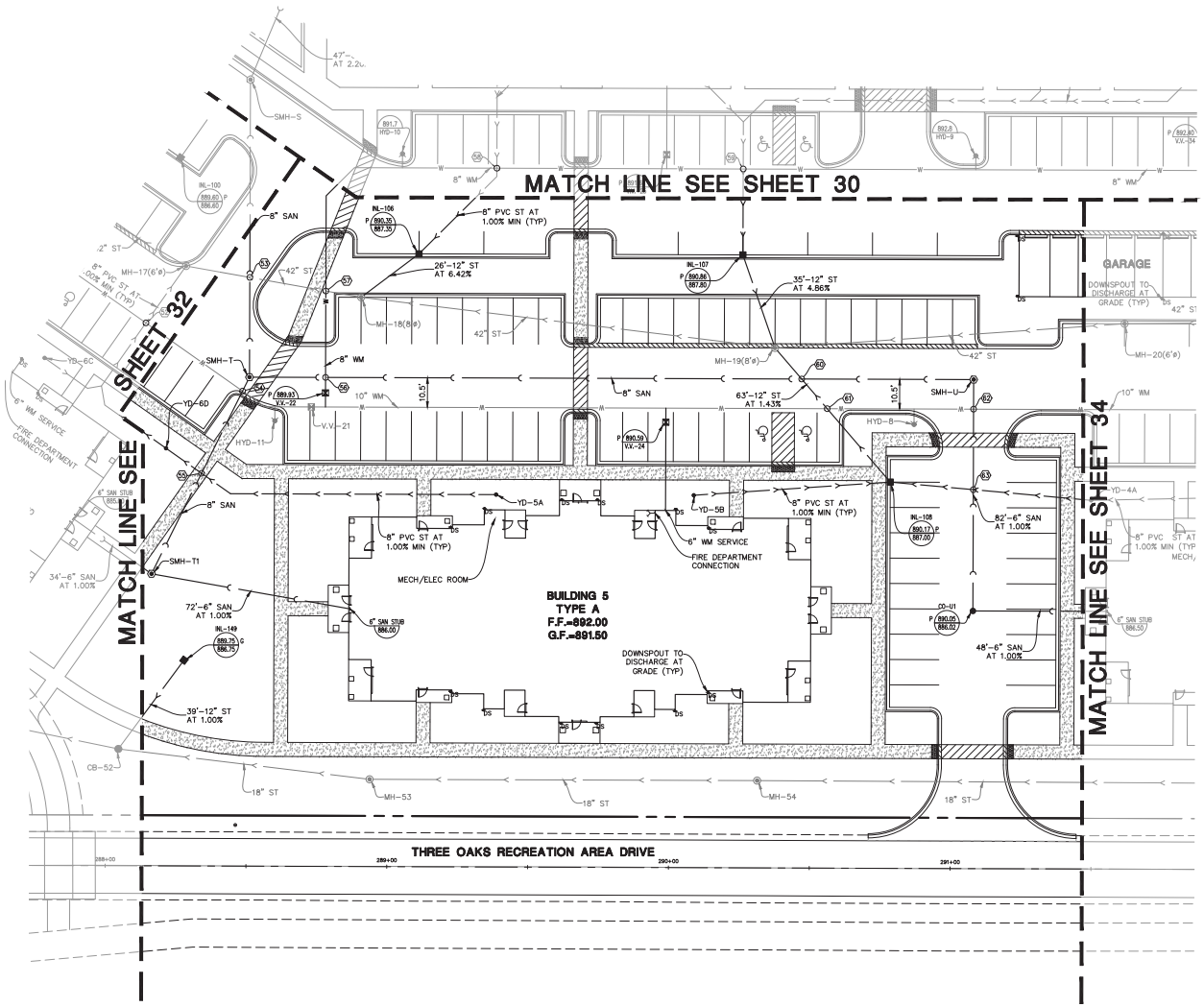
CITY OF CRYSTAL LAKE, ILLINOIS

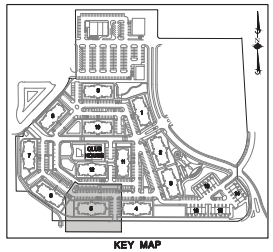
UTILITY PLAN - 7

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 32 OF 44

FRDCLIL01





KEY MAP

SCALE: 1"=20'

SEE SHEET 25 FOR UTILITY CROSSING INFORMATION.

UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

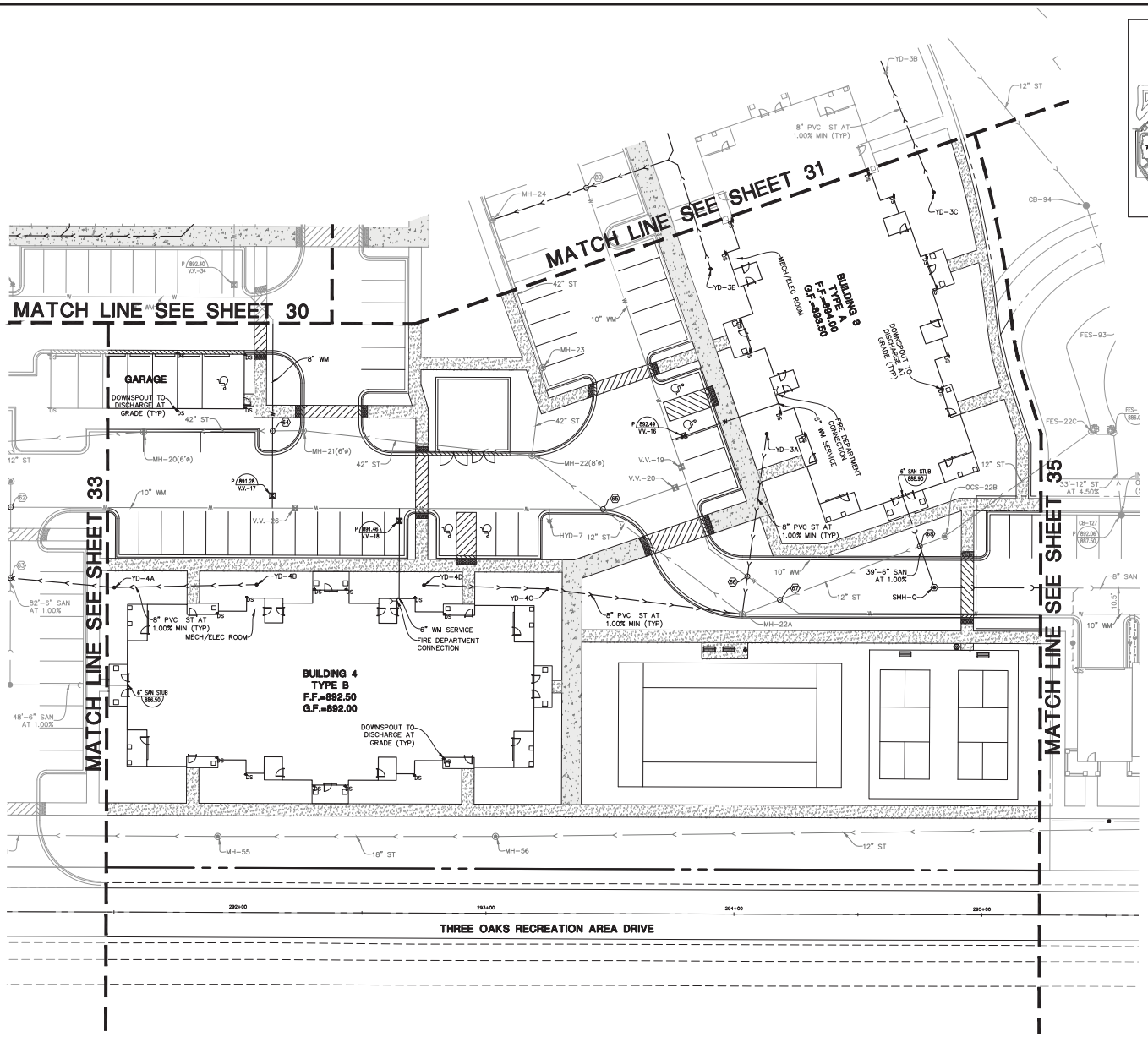
UTILITY PLAN - 8

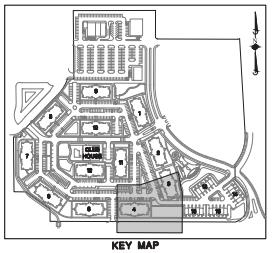
PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 33 OF 44

FRDCLIL01

July 7, 2023 - 12:23p P:\Projects\2021\21-03331\Engineering\Civil Drawings\Plan Sets\Utility Plan.dwg Modified by: AJHansen





SEE SHEET 25 FOR UTILITY CROSSING INFORMATION.

UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

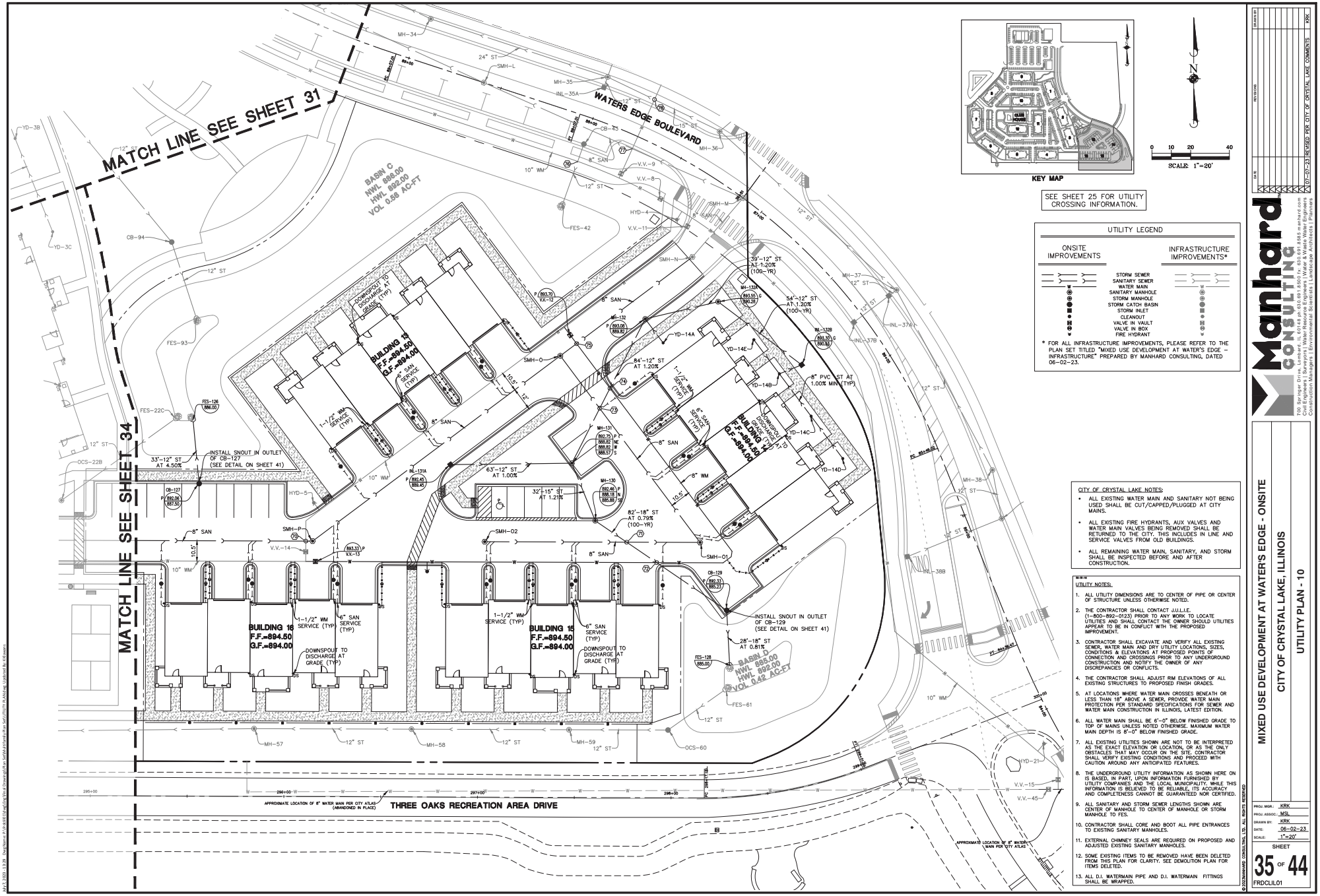
CITY OF CRYSTAL LAKE, ILLINOIS

UTILITY PLAN - 9

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 34 OF 44

FRDCLIL01



SEE SHEET 25 FOR UTILITY CROSSING INFORMATION.

UTILITY LEGEND

ONSITE IMPROVEMENTS	INFRASTRUCTURE IMPROVEMENTS*
STORM SEWER	
SANITARY SEWER	
WATER MAIN	
SANITARY MANHOLE	
STORM MANHOLE	
STORM CATCH BASIN	
STORM INLET	
CLEANOUT	
VALVE IN VAULT	
VALVE IN BOX	
FIRE HYDRANT	

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UTILITY NOTES:

1. ALL UTILITY DIMENSIONS ARE TO CENTER OF PIPE OR CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
3. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
4. THE CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF ALL EXISTING STRUCTURES TO PROPOSED FINISH GRADES.
5. AT LOCATIONS WHERE WATER MAIN CROSSES BENEATH OR LESS THAN 18" ABOVE A SEWER, PROVIDE WATER MAIN PROTECTION PER STANDARD SPECIFICATIONS FOR SEWER AND WATER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.
6. ALL WATER MAIN SHALL BE 6'-0" BELOW FINISHED GRADE TO TOP OF MAINS UNLESS NOTED OTHERWISE. MAXIMUM WATER MAIN DEPTH IS 8'-0" BELOW FINISHED GRADE.
7. ALL EXISTING UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT ELEVATION OR LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES.
8. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HERE ON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED.
9. ALL SANITARY AND STORM SEWER LENGTHS SHOWN ARE CENTER OF MANHOLE TO CENTER OF MANHOLE OR STORM MANHOLE TO FES.
10. CONTRACTOR SHALL CORE AND BOOT ALL PIPE ENTRANCES TO EXISTING SANITARY MANHOLES.
11. EXTERNAL CHIMNEY SEALS ARE REQUIRED ON PROPOSED AND ADJUSTED EXISTING SANITARY MANHOLES.
12. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
13. ALL D.I. WATERMAIN PIPE AND D.I. WATERMAIN FITTINGS SHALL BE WRAPPED.

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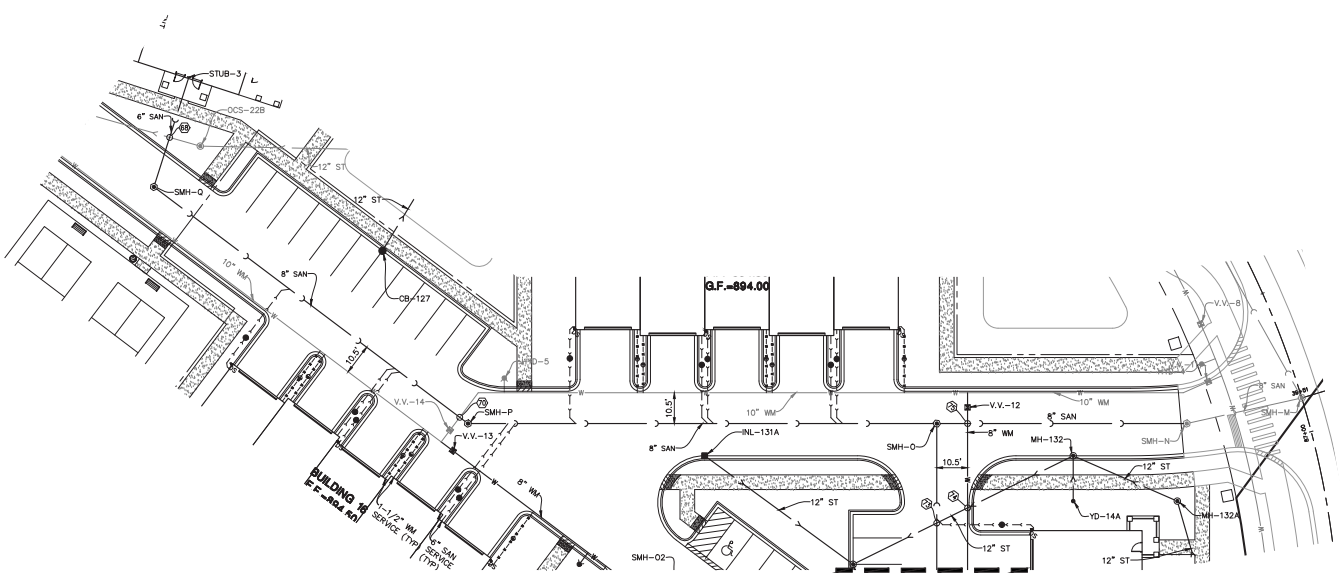
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KRK	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS	

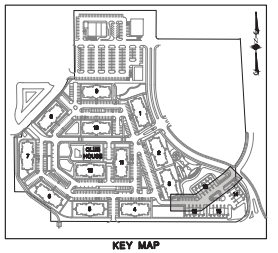
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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
UTILITY PLAN - 10

PROJ. MGR.:	KRK
PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	1"=20'

SHEET 35 OF 44
FRDCLIL01





1. WATER AND SEWER CROSSINGS SHALL MEET STATE EPA SEPARATION AND PIPE MATERIAL REQUIREMENTS. (SEE DETAIL SHEET)
2. CONTRACTOR MAY BEND WATER MAIN PIPE UNIFORMLY UNDER SEWERS WITHOUT USING FITTINGS, PROVIDED THAT JOINT DEFLECTION DOES NOT EXCEED THE ALLOWABLE LIMITS ESTABLISHED BY THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS," OR BY THE PIPE MANUFACTURER. IF FITTINGS ARE USED, CONTINUOUS STRAPPING WITH RODS, STRAPS, NUTS AND BOLTS BELOW NORMAL WATER MAIN DEPTH ARE REQUIRED, OR RETAINER GLANDS MAY BE USED IN LIEU OF STRAPPING.
3. RIM ELEVATIONS GIVEN FOR STORM SEWER STRUCTURES IN CURB LINE ARE PAVEMENT ELEVATIONS. ALL STRUCTURES IN CURB LINE SHALL HAVE CURB TYPE FRAME & GRATE.

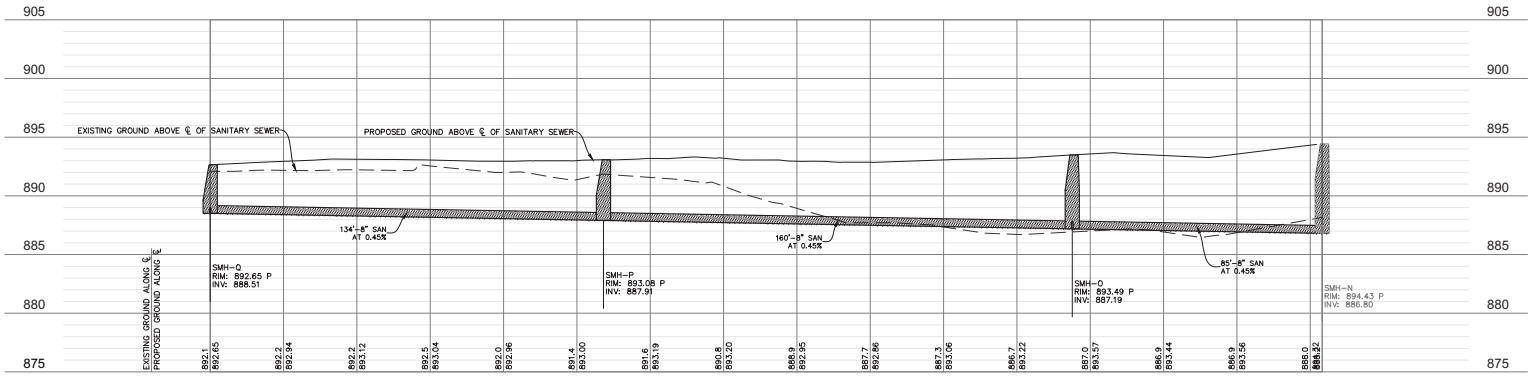
SEE UTILITY CROSSING INFORMATION ON SHEET 25.

UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

* FOR ALL INFRASTRUCTURE IMPROVEMENTS, PLEASE REFER TO THE PLAN SET TITLED "MIXED USE DEVELOPMENT AT WATER'S EDGE – INFRASTRUCTURE" PREPARED BY MANHARD CONSULTING, DATED 06-02-23.

SANITARY SEWER: SMH-Q TO SMH-N



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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
PLAN AND PROFILE-SANITARY SEWER SMH-Q TO SMH-N

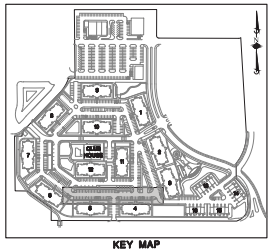
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PROJ. ASSOC.:	MSL
DRAWN BY:	KRK
DATE:	06-02-23
SCALE:	H:1"=20',V:1"=5'

SHEET 36 OF 44
FRDCLIL01

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SEE UTILITY CROSSING INFORMATION ON SHEET 25.

1. WATER AND SEWER CROSSINGS SHALL MEET STATE EPA SEPARATION AND PIPE MATERIAL REQUIREMENTS. (SEE DETAIL SHEET)
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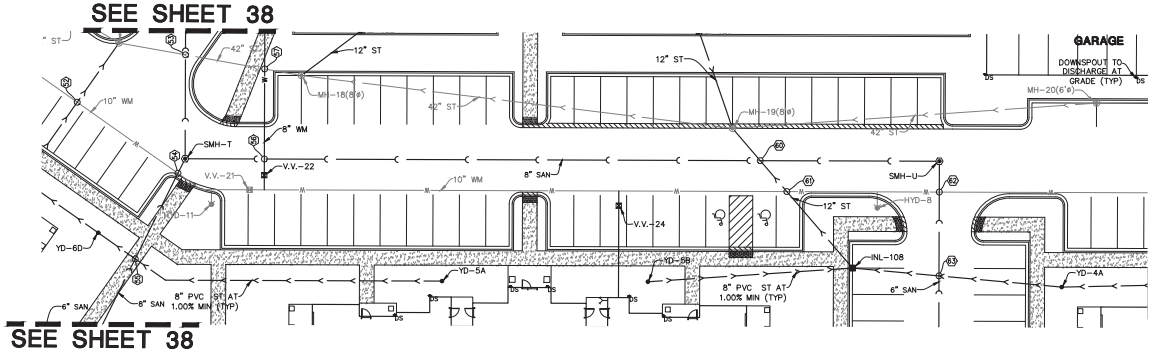


KEY MAP

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VERTICAL SCALE: 1"=5'

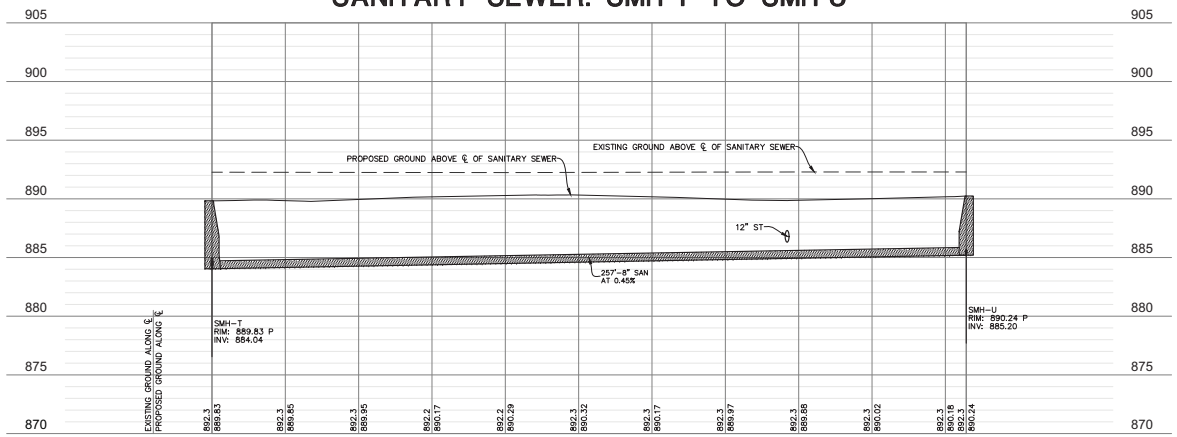


UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

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SANITARY SEWER: SMH-T TO SMH-U



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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
PLAN AND PROFILE-SANITARY SEWER SMH-T TO SMH-U

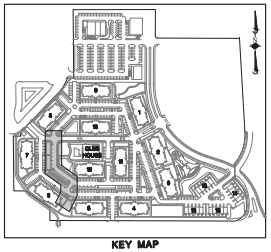
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SHEET 37 OF 44

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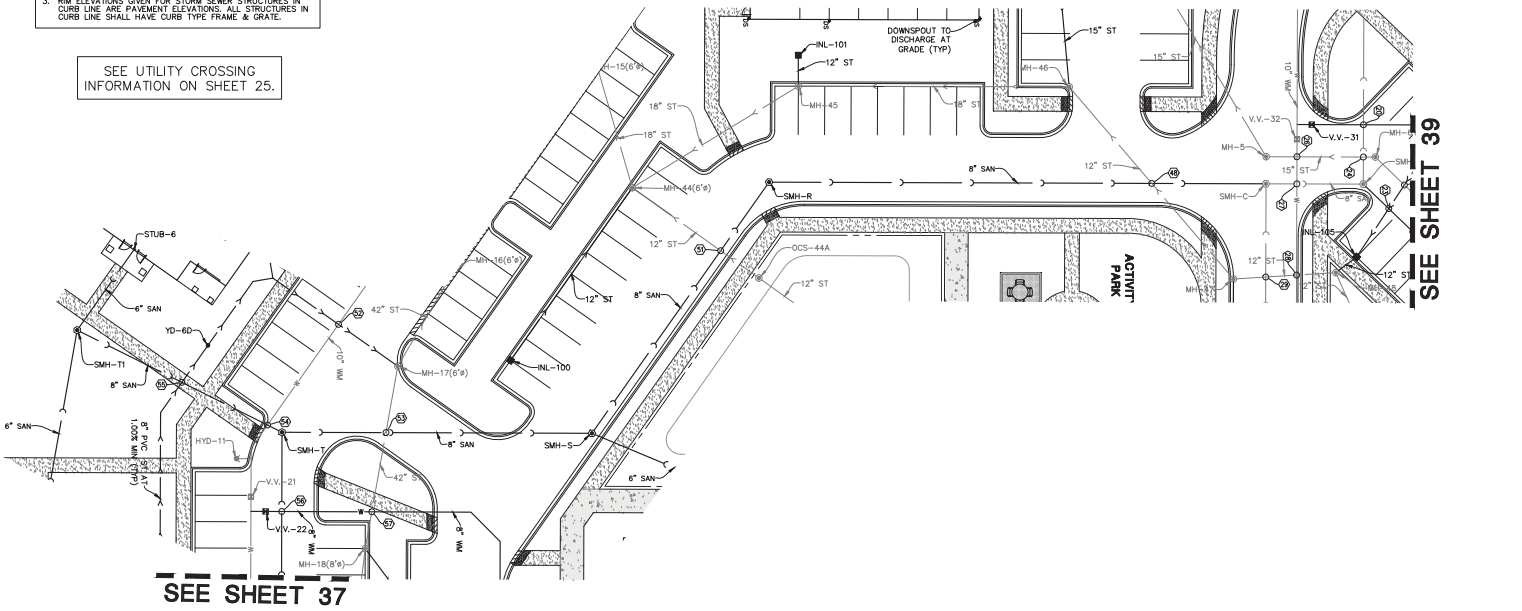
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SEE UTILITY CROSSING INFORMATION ON SHEET 25.

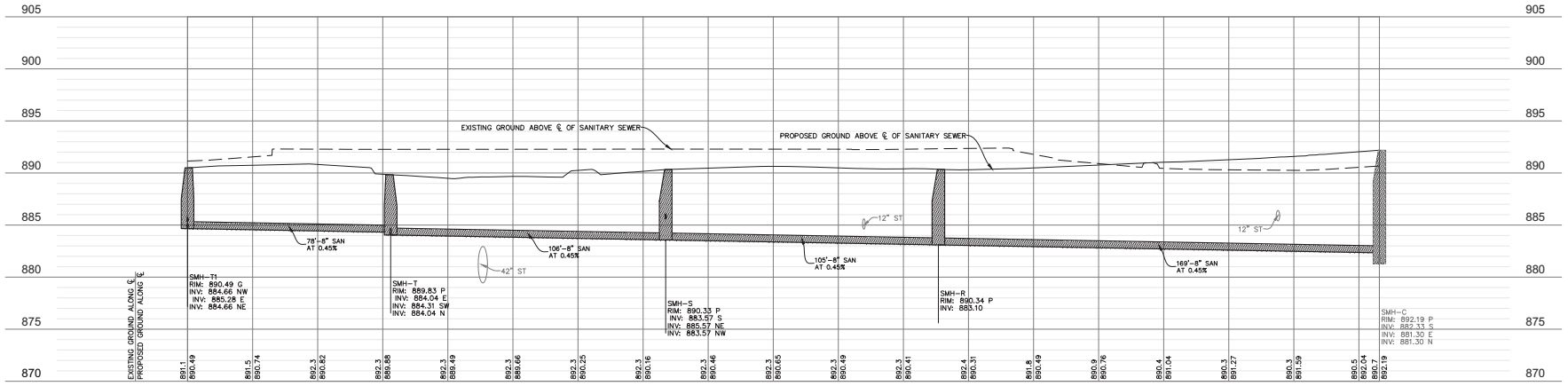
UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
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	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
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SANITARY SEWER: SMH-T1 TO SMH-C



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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

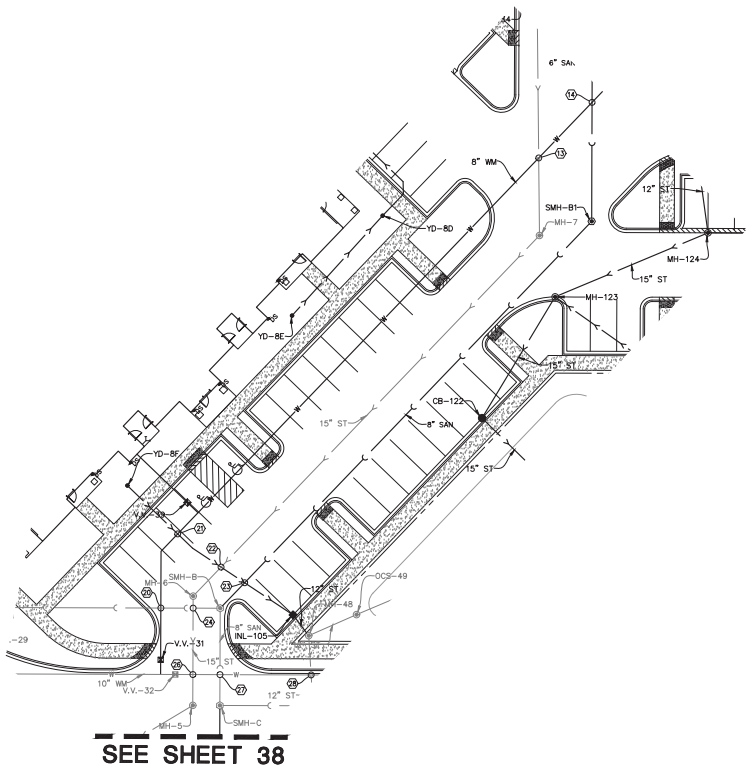
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PROJ. ASSOC.:	MSL
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SHEET 38 OF 44

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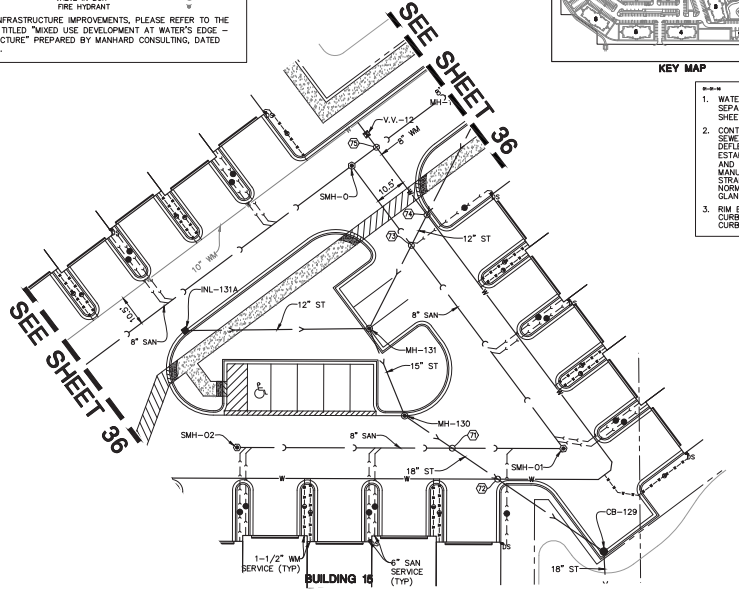
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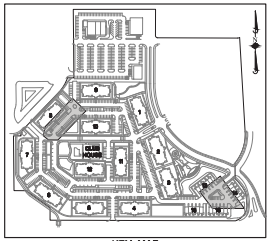


UTILITY LEGEND

ONSITE IMPROVEMENTS		INFRASTRUCTURE IMPROVEMENTS*
	STORM SEWER	
	SANITARY SEWER	
W	WATER MAIN	W
	SANITARY MANHOLE	
	STORM MANHOLE	
	STORM CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	

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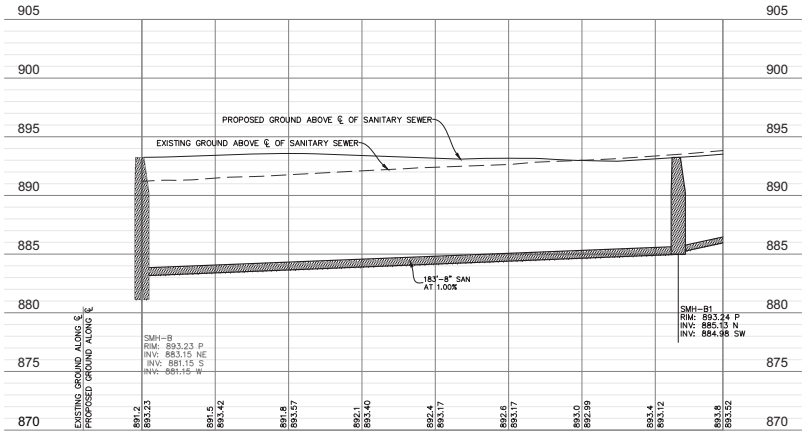
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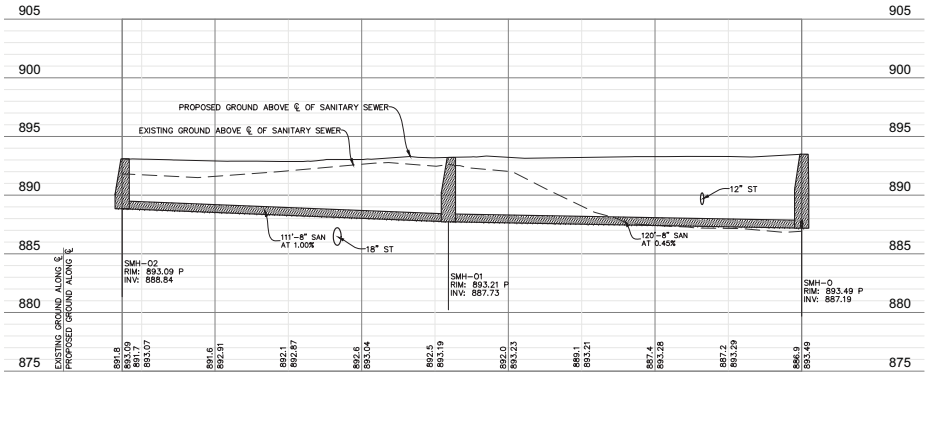
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SEE UTILITY CROSSING INFORMATION ON SHEET 25.

SANITARY SEWER: SMH-B TO SMH-B1



SANITARY SEWER: SMH-O2 TO SMH-O



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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

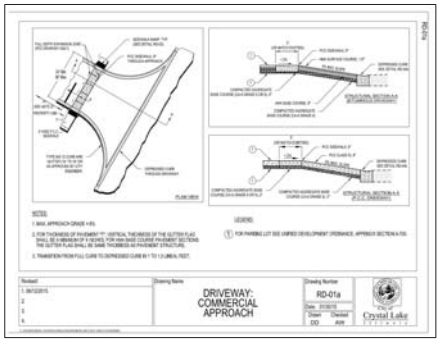
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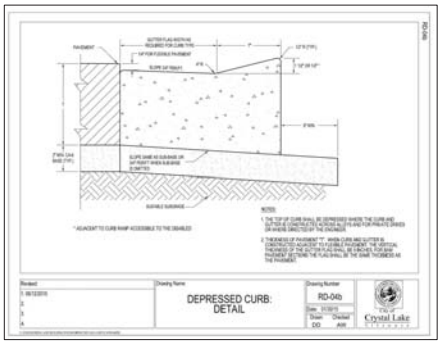
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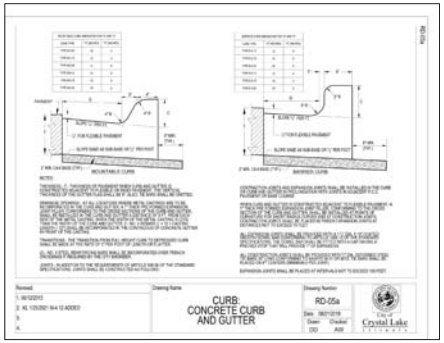
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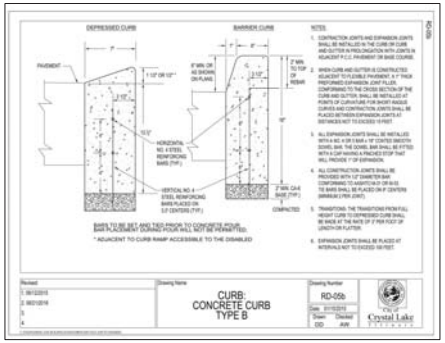
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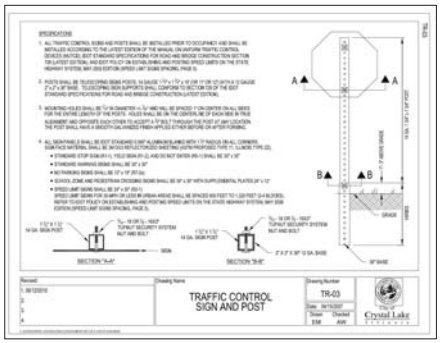
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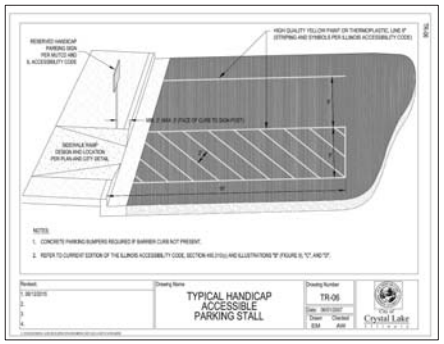


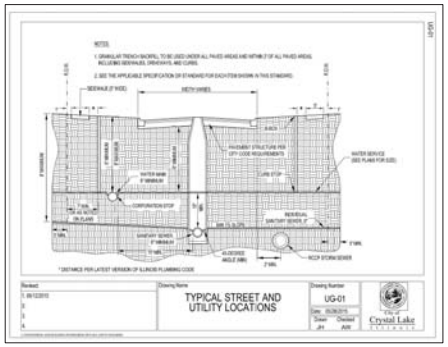


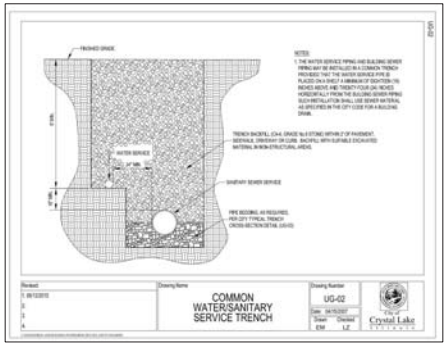


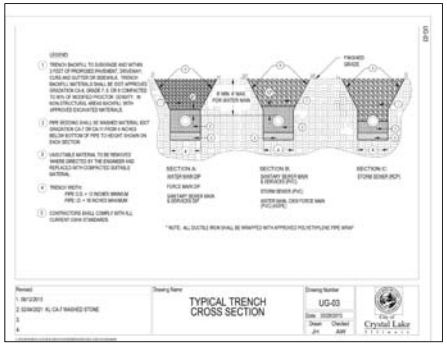


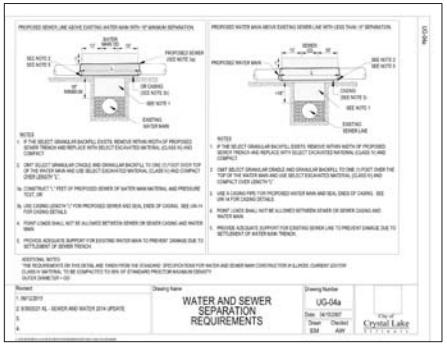


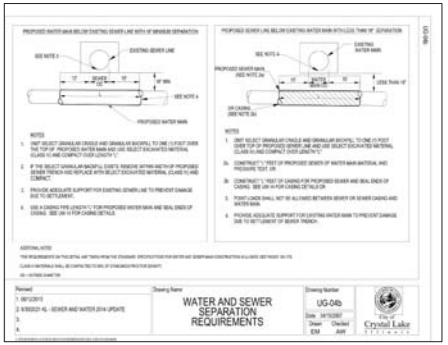


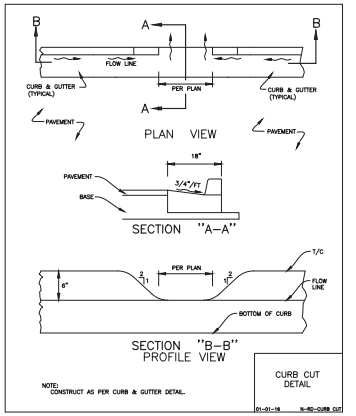












SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE CITY DETAILS, THE CITY DETAILS SHALL TAKE PRECEDENCE.

Job # 2013-2914 - Key Name: KRK - 2013 Wetlanding\Civil Drawings\Plan Sheets\Details\Water and Sewer\CONSTRUCTION DETAILS.dwg, Last saved By: KRK, Plotted By: KRK

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

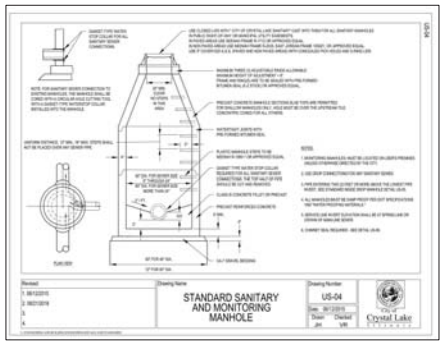
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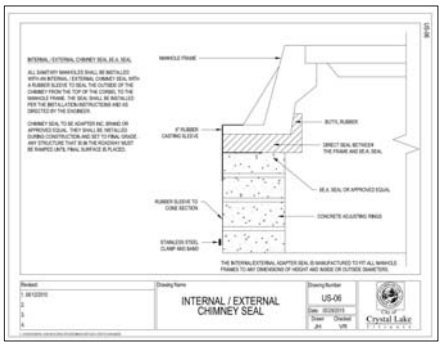
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DRAWN BY:	MH
DATE:	06-02-23
SCALE:	N.T.S.

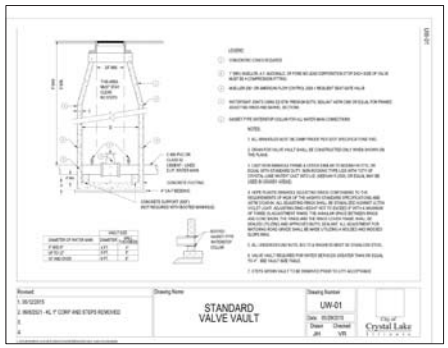
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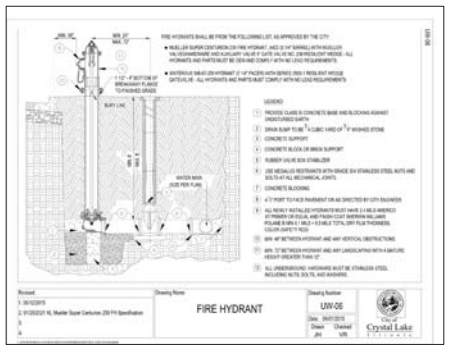
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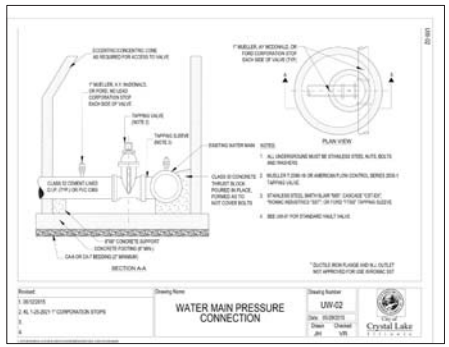
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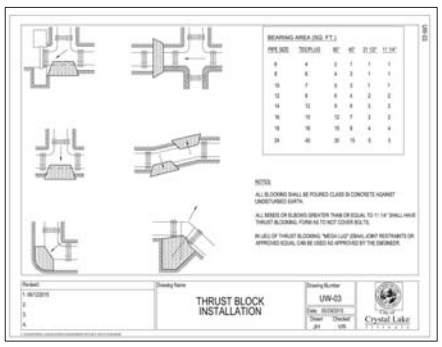


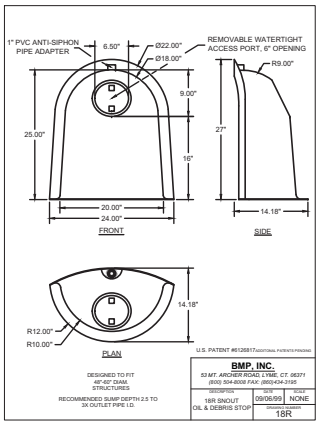


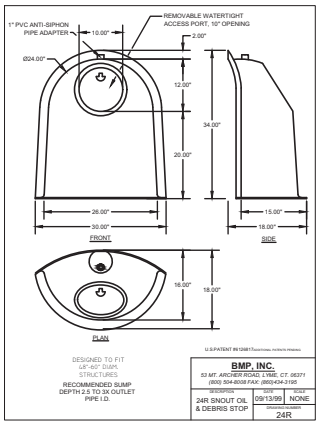


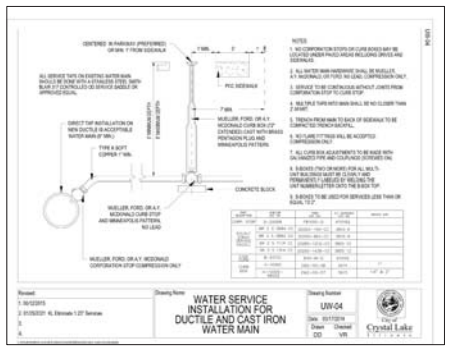


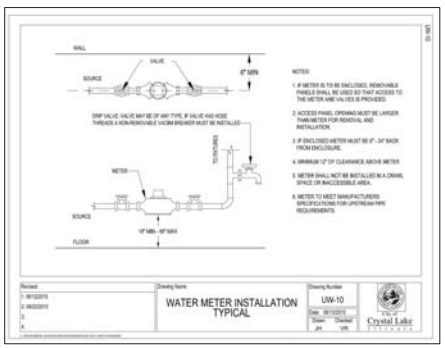




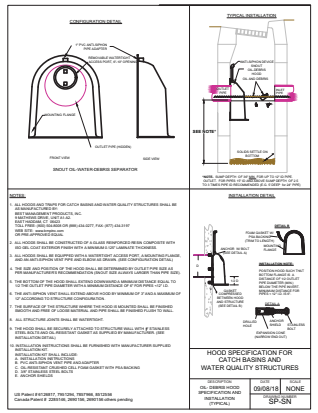












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DRAWN BY	REVISIONS	DATE
KRK	REVISED PER CITY OF CRYSTAL LAKE COMMENTS	07-07-23

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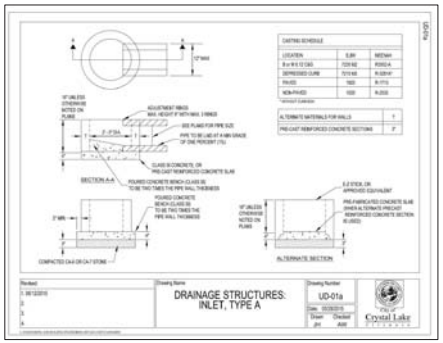
MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
CONSTRUCTION DETAILS

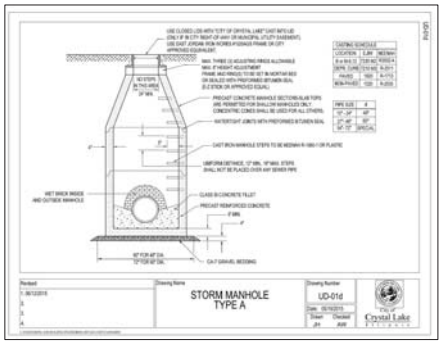
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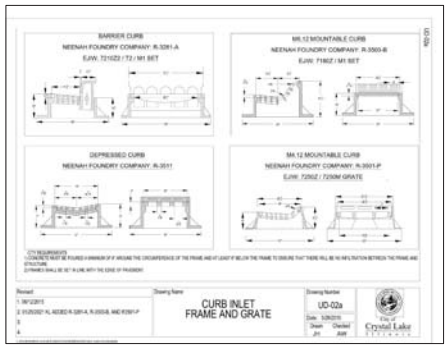
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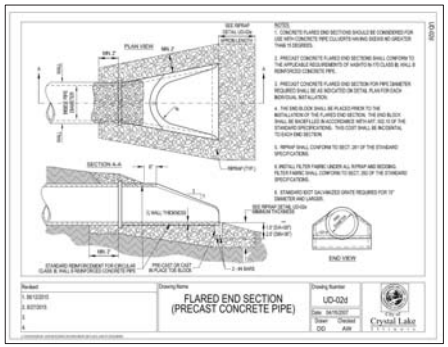
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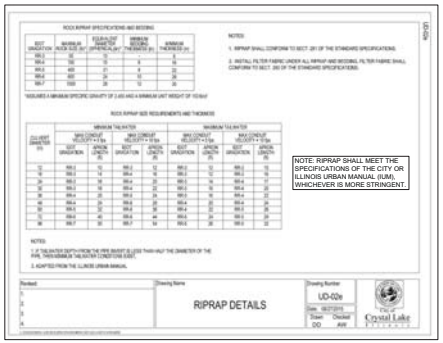
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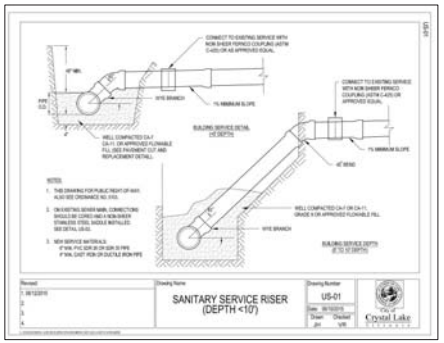


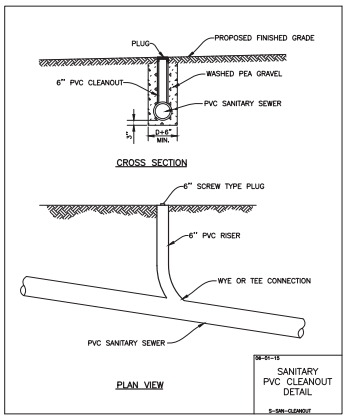


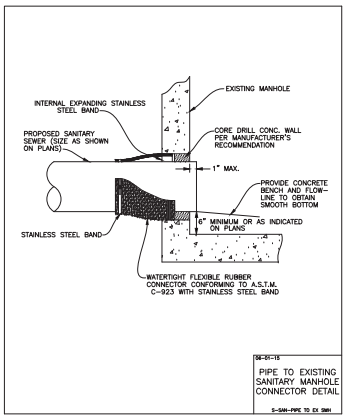






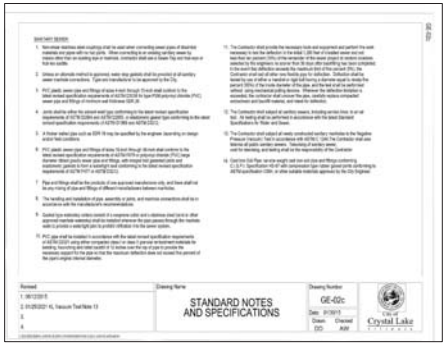














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DRAWN BY	DATE	REVISIONS	
			KRK
		07-07-23	REVISED PER CITY OF CRYSTAL LAKE COMMENTS

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE

CITY OF CRYSTAL LAKE, ILLINOIS

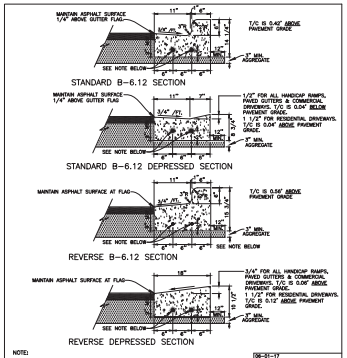
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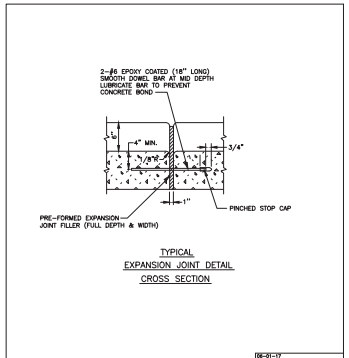
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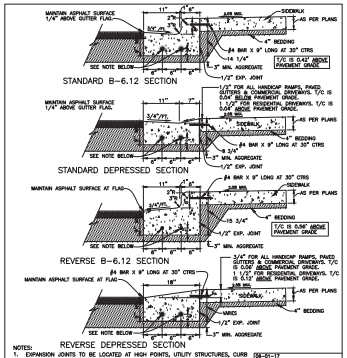
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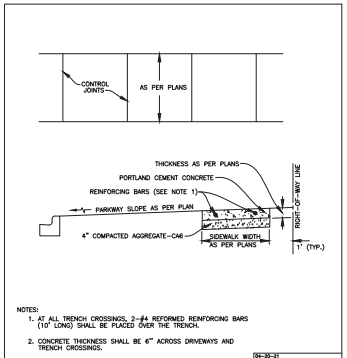
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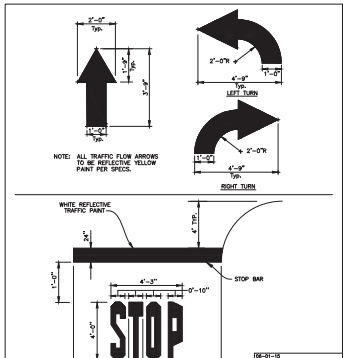
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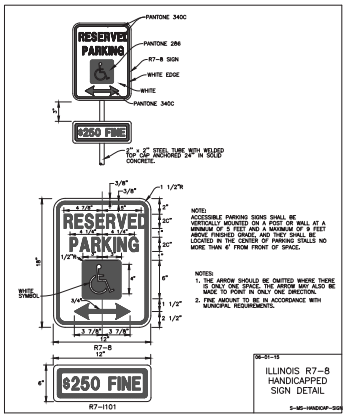


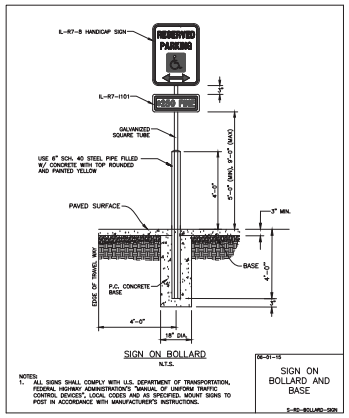


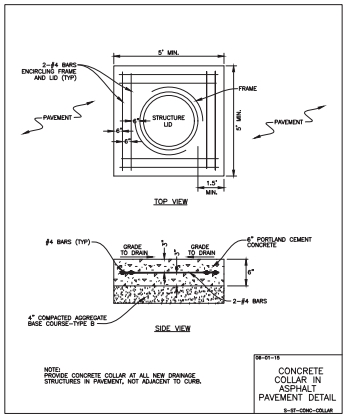


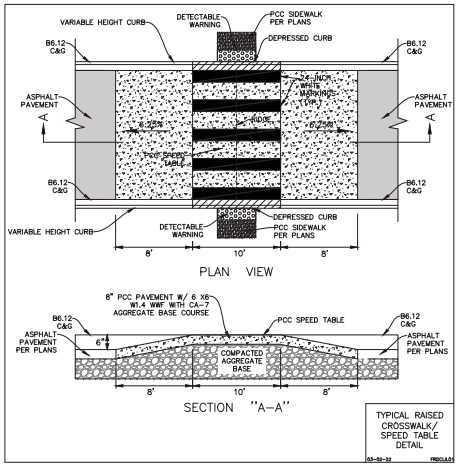


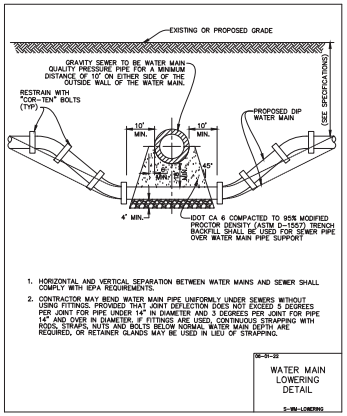


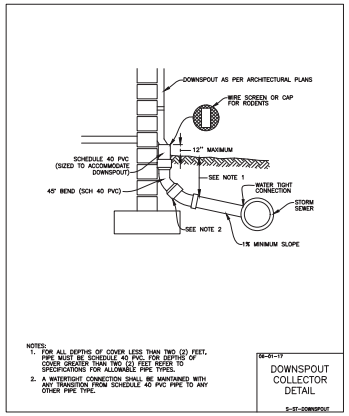


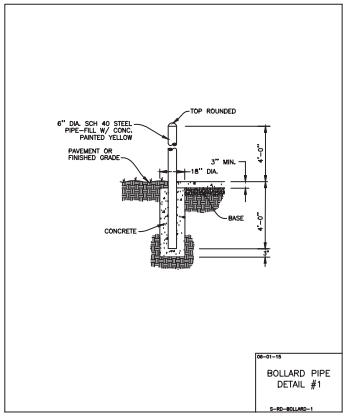












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DRAWN BY	KRK
REVISIONS	
DATE	07-07-23 REVISED PER CITY OF CRYSTAL LAKE COMMENTS

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MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
CONSTRUCTION DETAILS

PROJ. MGR.:	KRK
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DRAWN BY:	MH
DATE:	06-02-23
SCALE:	N.T.S.

SHEET 43 OF 44
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06-01-16

MANHARD CONSULTING
STANDARD SPECIFICATIONS

GENERAL CONDITIONS

CONTRACTOR acknowledges and agrees that the use and reliance of these Plans and Specifications is sufficient consideration for CONTRACTOR'S covenants stated herein.

DEFINITION OF TERMS

a. "CLIENT" shall mean Heartland Real Estate Partners, which is the person or entity with whom Manhard Consulting has contracted with to prepare Civil Engineering PLANS and SPECIFICATIONS.
b. “ENGINEER” shall mean Manhard Consulting, a Civil Engineering consultant on the subject project.
c. “PLANS and SPECIFICATIONS” shall mean the Civil Engineering PLANS and SPECIFICATIONS prepared by the ENGINEER, which may be a part of the contract documents for the subject project.
d. “CONTRACTOR” shall mean any person or entity performing any work described in the PLANS and SPECIFICATIONS.
e. “JURISDICTIONAL GOVERNMENTAL ENTITY” shall mean any municipal, county, state or federal unit of government from whom an approval, permit and/or review is required for any aspect of the subject project.

INTENT OF THE PLANS AND SPECIFICATIONS

The intent of the PLANS and SPECIFICATIONS is to set forth certain requirements of performance, type of equipment and structures, and standards of materials and construction. They may also identify labor and materials, equipment and transportation necessary for the proper execution of the work but are not intended to be infinitely determined so as to include minor items obviously required as part of the work. The PLANS and SPECIFICATIONS require new material and equipment unless otherwise indicated, and to require complete performance of the work in spite of omissions of specific references to any minor component part. It is not intended, however, that materials or work not covered by or properly inferred from any heading, branch, class or trade of the SPECIFICATIONS shall be supplied unless distinctly so noted. Materials or work described in words, which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.

INTERPRETATION OF PLANS AND SPECIFICATIONS

a. The CLIENT and/or CONTRACTOR shall promptly report any errors or ambiguities in the PLANS and SPECIFICATIONS to the ENGINEER. Questions as to meaning of PLANS and SPECIFICATIONS shall be interpreted by the ENGINEER, whose decision shall be final and binding on all parties concerned.
b. The ENGINEER will provide the CLIENT with such information as may be required to show revised or additional details of construction.
c. Should any discrepancies or conflicts on the PLANS or SPECIFICATIONS be discovered either prior to or after award of the contract, the ENGINEER's attention shall be called to the same before the work is begun thereon and the proper corrections made. Neither the CLIENT nor the CONTRACTOR may take advantage of any error or omissions in the PLANS and SPECIFICATIONS. The ENGINEER will provide information when errors or omissions are discovered.

GOVERNING BODIES

All works herein proposed shall be completed in accordance with all requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, and all such pertinent laws, directives, ordinances and the like shall be considered to be a part of these SPECIFICATIONS. If a discrepancy is noted between the PLANS and SPECIFICATIONS and requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, the CLIENT and/or the CONTRACTOR shall immediately notify the ENGINEER in writing.

LOCATION OF UNDERGROUND FACILITIES AND UTILITIES

When the PLANS and SPECIFICATIONS include information pertaining to the location of existing underground facilities and utilities (including but not limited to water mains, sanitary sewers, storm sewers, electric, telephone, gas and cable TV lines), such information represents only the opinion of the ENGINEER as to the approximate location and elevation of such facilities and utilities. At the locations wherein detailed positions of these facilities and utilities become necessary to the new construction, including all points of connection, the CONTRACTOR shall furnish all labor and tools to verify or definitely establish the horizontal location, elevation, size and material (if appropriate) of the facilities and utilities. The CONTRACTOR shall notify the ENGINEER at least 48 hours prior to construction if any discrepancies in existing utility information or conflicts with existing utilities exist. The ENGINEER assumes no responsibility whatever with respect to the sufficiency or accuracy of the information shown on the PLANS and SPECIFICATIONS relative to the location of underground facilities and utilities, nor the manner in which they are removed or adjusted.

It shall be the CONTRACTOR's responsibility prior to construction, to notify all Utility Companies of the intent to begin construction and to verify the actual location of all such facilities and utilities. The CONTRACTOR shall also obtain from the respective Utility Companies the working schedules for removing or adjusting these facilities.

UNSUITABLE SOILS

The PLANS have been prepared by the ENGINEER based on the assumption that all soils on the project are suitable to support the proposed improvements shown. The CLIENT or CONTRACTOR shall immediately notify the ENGINEER if he discovers or encounters an obstruction that prevents the installation of the improvement according to the line and grades shown on the PLANS.

PROTECTION OF TREES

All trees that are not to be removed shall be protected from damage. Trees shall not be removed unless requested to do so in writing by the CLIENT.

NOTIFICATION OF OWNERS OF FACILITIES AND UTILITIES

The CONTRACTOR shall notify all applicable Jurisdictional Governmental Entities or utility companies, i.e., water, sewer, electric, telephone, gas and cable TV prior to beginning any construction so that said entity or company can establish the location and elevation of underground pipes, conduits or cables adjoining or crossing proposed construction.

TRAFFIC CONTROL

The CONTRACTOR shall provide when required by any JURISDICTIONAL GOVERNMENTAL ENTITY, all signs, equipment, and personnel necessary to provide for safe and efficient traffic flow in all areas where the work will interrupt, interfere or cause to change in any form, the conditions of traffic flow that existed prior to the commencement of any portions of the work. The CLIENT may, at his discretion, require the CONTRACTOR to furnish traffic control under these or other circumstances where in his opinion it is necessary for the protection of life and property. Emergency vehicle access shall be maintained at all times. Unless authorized by the CLIENT or CLIENT's construction representative, all existing access points shall be maintained at all times by the CONTRACTOR. The need for traffic control shall be anticipated by the CLIENT.

WORK AREA

The CONTRACTOR, his agents and employees and their employees and all equipment, machinery and vehicles shall confine their work within the boundaries of the project or work area specified by the Client. The CONTRACTOR shall be solely liable for damage caused by him or his agents and employees and their equipment, machinery and vehicles on adjacent property or areas outside designated work areas.

UTILITY POLES

It shall be the responsibility of the CONTRACTOR to arrange for the relocation or bracing of existing utility poles that may be within the working limits of this contract. It is expressly understood that all work and costs connected with the maintenance of these utility poles, their temporary relocations, etc., shall be the responsibility of the CLIENT or the CONTRACTOR.

RESTORATION

It is the intent of these SPECIFICATIONS that clean-up and final restoration shall be performed immediately upon completion of each phase of the work, both inside and outside the Project, or when so directed by the CLIENT so that these areas will be restored as nearly as possible to their original condition or better, and shall include but not be limited to, restoration of maintained lawns and rights-of-way, roadways, driveways, sidewalks, ditches, bushes, hedges, trees, shrubs, fences, mailboxes, sewers, drain tiles, water mains, etc.

CLEANING UP

The CONTRACTOR shall at all times keep the premises free from accumulations of waste material or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish, tools, scaffolding and surplus materials and shall leave his work "broom clean" or its equivalent, unless more exactly specified.

ROAD CLEANING

The CONTRACTOR shall maintain roadways adjoining the project site free from mud and debris at all times. If mud and/or debris is carried onto the roadways from vehicles entering onto the highway from either the CONTRACTOR's trucks, his employees' vehicles, or his material suppliers, the CONTRACTOR shall immediately remove said mud and/or debris.

SAFETY AND PROTECTION

The CONTRACTOR shall be solely and completely responsible for the conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. The CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR's duties and responsibilities for safety and for protection of the work shall continue until such time as all work is completed and the CLIENT has notified CONTRACTOR that the work is acceptable. The duties of the ENGINEER do not include review of the adequacy of either the CONTRACTOR's or the general public's safety in, on, or near the construction site.

HOLD HARMLESS

To the fullest extent permitted by law, any CONTRACTOR; material supplier or other entity by use of these plans and specifications hereby waives any right of contribution and agrees to indemnify, defend, save and hold harmless the CLIENT and ENGINEER and its agents, employees and consultants from and against all manner of claims, causes, causes of action, damages, losses and expenses, including but not limited to, attorneys' fees arising out of, resulting from or in connection with the performance of any work, pursuant to or with respect to these plans and specifications. However, this indemnity shall not be construed to indemnify ENGINEER, its consultants, agents or employees against its own negligence.

Claims, damages, losses and expenses as these words are used in the Agreement shall mean and include, but not be limited to (1) injury or damage occurring by reason of the failure of or use or misuse of any hoist, riggings, blocking, scaffolding or any and all other kinds of items of equipment, whether or not the same be owned, furnished or loaned by any part or entity, including any contractor; (2) all attorneys' fees and costs incurred in bringing an action to enforce the provisions of this indemnity; (3) costs for time expended by the indemnified party and its employees, at its usual rates plus costs or travel, long distance telephone and reproduction of documents and (4) consequential damages.

In any and all claims against the CLIENT or ENGINEER or any of their agents or employees and consultants by any party, including any employee of the CONTRACTOR or any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount of type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts or any insurance maintained by CONTRACTOR or any Subcontractor or any other party.

INSURANCE

Any party using or relying on these plans, including any contractor, material supplier, or other entity shall obtain, (prior to commencing any work) general public liability insurance insuring against all damages and claims for any bodily injuries, death or property damage arising out of any work, including the construction work provided for in these plans, and shall name the CLIENT and ENGINEER and its consultants, agents and representatives as additional insureds under such insurance policy; provided that any party using or relying on these plans having obligations to maintain specific insurance by reason of any agreement with CLIENT or any CONTRACTOR or ENGINEER shall provide evidence and certificates of insurance as required by such contract or agreement. Such insurance must contain a clause stating that the insurance is primary coverage for ENGINEER and ENGINEER's other applicable coverage is considered secondary. Such insurance shall not limit any liability of any party providing work or services or providing materials.

THIRD PARTY BENEFICIARY

Manhard Consulting, Ltd., the ENGINEER, is intended to be a third party beneficiary of this willing agreement and requirement.

Note: These Specifications are for Northern Illinois.

DETAILED SPECIFICATIONS

*I. DEMOLITION

The CONTRACTOR shall coordinate with respective utility companies prior to the removal and/or relocation of utilities. The CONTRACTOR shall coordinate with the utility company concerning portions of work which may be performed by the Utility Company's forces and any fees which are to be paid to the utility company for their services. The CONTRACTOR is responsible for paying for all fees and charges.

Should removal and/or relocation activities damage features indicated to remain, the CONTRACTOR shall provide new materials/structures in accordance with the contract documents. Except for materials designed to be relocated on this plan, all other construction materials shall be new.

Prior to demolition occurring, all erosion control devices are to be installed.

All existing utility lines and conduits located under proposed buildings shall be removed and properly backfilled. All utility lines and conduits located under drives, on-site roads, parking lots or sidewalks shall be filled with a flowable backfill and end plugged. All existing structures shall be removed. All existing utility lines located under landscape areas shall be left in place and plugged at all structures.

The CONTRACTOR is responsible for demolition, removal and disposal (in a location approved by all JURISDICTIONAL GOVERNING ENTITIES) of all structures, pads, walls, flumes, foundations, road, parking lots, drives, drainage structures, utilities, etc., such that the improvements shown on these plans can be constructed. All demolition work shall be in accordance with all applicable federal, state and local requirements. All facilities to be removed shall be undercut to suitable material and brought to grade with suitable compacted fill material per the specifications.

The CONTRACTOR is responsible for obtaining all permits required for demolition and disposal. Clean construction or Demolition Debris (CCDD) testing and certification on 662/663 forms must be requested by the CONTRACTOR in order to be implemented by the owner.

Electrical, telephone, cable, water, fiber optic cable and/or gas lines needing to be removed shall be coordinated by the CONTRACTOR with the affected utility company.

CONTRACTOR must protect the public at all times with fencing, barricades, enclosures, and other appropriate best management practices.

Continuous access shall be maintained for surrounding properties at all times during demolition.

All fire access lanes within the project area shall remain in service, clean of debris, and accessible for use by emergency vehicles.

The CONTRACTOR shall coordinate water main work with the Fire Department and the JURISDICTIONAL GOVERNING ENTITY to plan the proposed improvements and to ensure adequate fire protection is available to the facility and site throughout this specific work and through all phases of construction. CONTRACTOR shall be responsible for any required water main shut offs with the JURISDICTIONAL GOVERNING ENTITY during construction. Any costs associated with water main shut offs will be the responsibility of the CONTRACTOR and no extra compensation will be provided.

CONTRACTOR shall maintain all existing parking areas, sidewalks, drives, etc. clear and free from any construction activity and/or material to ensure easy and safe pedestrian and vehicular traffic to and from the site. CONTRACTOR shall coordinate/phase all construction activity within proximity of the building and utility interruptions with the facility manager to minimize disturbance and inconvenience to facility operations.

CONTRACTOR may limit saw-cut and pavement removal to only those areas where it is required as shown on these construction plans, however if any damage is incurred on any of the surrounding pavement, etc. the CONTRACTOR shall be responsible for ITS removal and repair.

Any existing wells encountered shall be exposed and sealed 3' below proposed finish grade by the CONTRACTOR in accordance with Section 920.120 (latest edition) of the Illinois Water Well Construction Code, Department of Public Health, and all applicable local rules and regulations. CONTRACTOR is responsible for obtaining all permits required by JURISDICTIONAL GOVERNMENTAL ENTITIES for abandoning existing wells.

Any existing septic tanks and grease traps encountered shall have all liquids and solids removed and disposed of by a licensed commercial hauler in accordance with JURISDICTIONAL GOVERNING ENTITY regulations, and the tank and grease traps shall then be filled with suitable materials or removed from the site and disposed of by the CONTRACTOR.

Voids left by any item removed under any proposed building, pavement, walk, etc. or within 24” thereof shall be filled and compacted with suitable materials by the CONTRACTOR.

The CONTRACTOR shall be responsible for the disconnection of utility services to the existing buildings prior to demolition of the buildings.

Any material containing asbestos found within existing structures shall be removed from the site and disposed of off-site by the CONTRACTOR in accordance with County, State and Federal regulations.

CONTRACTOR shall develop and implement a daily program of dust control and shall submit and obtain JURISDICTIONAL GOVERNING ENTITY approval of dust control procedures prior to demolition of any structures. Modification of dust control procedures shall be performed by the CONTRACTOR to the satisfaction of the JURISDICTIONAL GOVERNING ENTITY as requested.

The CONTRACTOR shall coordinate all demolition with the JURISDICTIONAL GOVERNING ENTITY and CLIENT to ensure protection and maintenance of sanitary sewer and water utilities as necessary and to provide stormwater conveyance until new facilities are constructed, tested and placed into operation.

The locations of all existing utilities shown on this plan have been determined from the best information available and are given for the convenience of the CONTRACTOR and are not to be interpreted as the exact location, or as the only obstacles that may occur on the site. The ENGINEER assumes no responsibility for their accuracy. Prior to the start of any demolition activity, the CONTRACTOR shall notify the utility companies for location of existing utilities and shall verify existing conditions and proceed with caution around any anticipated features.

The CONTRACTOR is responsible for removing the existing irrigation system in the areas of proposed improvements. The contractor shall cap the existing irrigation system to remain such that the remaining system shall continue to function properly.

The parking lot shall be completed in sections such that it does not interrupt the facility operations. The CONTRACTOR shall coordinate with the construction manager for work to be performed.

II.EARTHWORK

STANDARDS

This work shall be completed in conformance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition except as modified below.

SOIL BORING DATA

Copies of results of soil boring and reports, if such borings were taken by the CLIENT in the vicinity of the proposed construction site, should be made available by the CLIENT to the CONTRACTOR. These borings are presented for whatever purpose the CONTRACTOR chooses to make of them. The ENGINEER makes no representation or warranty regarding the number, location, spacing or depth of borings taken, nor of the accuracy or reliability of the information given in the results thereof.

Further, the ENGINEER does not assume responsibility for the possibility that during construction, the soil and groundwater condition may be different than indicated. Neither does the ENGINEER assume responsibility for variations of soil and groundwater at location between borings. The CONTRACTOR is required to make its own borings, explorations and observations to determine soil and groundwater conditions.

***EARTHWORK CALCULATIONS AND CROSS SECTIONS**

The CONTRACTOR understands that any earthwork calculations, quantities or cross sections that have been furnished by the ENGINEER are for information only and are provided without any guarantee by the CLIENT or ENGINEER whatsoever as to their sufficiency or accuracy. CONTRACTOR warrants that he has performed his own subsurface investigations as necessary and his own calculations and cross sections to determine site soil conditions and earthwork volumes. The ENGINEER makes no representation or guarantee regarding earthwork quantities or that the earthwork for this project will balance due to the varying field conditions, changing soil types, allowable construction to tolerances and construction methods that are beyond the control of the ENGINEER. The CONTRACTOR shall be responsible for any import or export of material to achieve a balanced site.

CLEARING, GRUBBING AND TREE REMOVAL

The site shall be cleared, grubbed, and trees and stumps removed where designated on the PLANS. Trees designated to remain shall be protected from damage.

TOPSOIL STRIPPING

Upon completion of demolition, clearing, grubbing and tree removal, all topsoil shall be stripped from under all buildings and pavements areas, and other areas necessary to complete the work. Topsoil stripped shall be placed in stockpiles in locations as designated by the CLIENT.

TOPSOIL RESPREAD

Upon completion of roadway and/or parking lot improvements and installation of underground utilities a minimum of six inches (6") of topsoil shall be respread over all unpaved areas which have been disturbed by earthwork construction, except building pads and other designated areas, which shall be kept free from topsoil.

SEEDING

Upon completion of topsoil respread, the CONTRACTOR shall apply seed and fertilizer to all respread areas in accordance with IDOT standards or as designated on landscape drawings and specifications provided by the CLIENT.

SODDING

Upon completion of topsoil respread, the CONTRACTOR shall install sod to all areas designated on the plans or as designated on the landscape drawings and specifications provided by the CLIENT.

***EXCAVATION AND EMBANKMENT**

Upon completion of topsoil stripping, all excavation and embankments shall be completed as shown on the PLANS. All suitable excavated materials shall be hauled, placed (moisture conditioned if necessary) and compacted in the embankment areas. The CONTRACTOR shall include all dewatering, temporary ditching and culverts necessary to complete the excavation and embankment.

Specifically included in the scope of Excavation and Embankments is grading and shaping of all cut or fill areas including swales and ditches; handling of sewer spoil, etc., and all work required to provide positive drainage at the end of each working day and upon completion of a section.

The CONTRACTOR shall be responsible for the excavation of all swales and ditches and for the excavation or filling of the roads, building pads and parking lots within the work limits to lines & grades shown on the plans. He shall be responsible for obtaining compaction in accordance with the minimum values listed in the table below for all embankments unless more stringent values are listed in the soils report or are approved by the CLIENT, and to use any method approved by the CLIENT necessary to obtain this compaction (i.e., soil fabric or any undercutting that may be required).

	Compaction		Minimum Percent Compaction			Required Moisture Content		
Soil Type	Standard	Depth	Building Pads	Pavement	Landscape	Building Pads	Pavement	Landscape
Granular	ASTM D 1557	Full Depth	95%	90%	80%	Min. +2% opt	opt to +2%	as directed
Cohesive (lean clay)	ASTM D 1557	0' to 3'	95%	95%	85%	-1% to +2% opt	opt to +2%	as directed
Cohesive (lean clay)	ASTM D 698	0' to 3'	98%	98%	85%	-1% to +2% opt	opt to +2%	as directed
Cohesive (fat clay)	ASTM D 698	minus 3'	95%	95%	85%	Min. +2% opt	opt to +2%	as directed

The CONTRACTOR shall notify the CLIENT if proper compaction cannot be obtained so that the CLIENT may determine what remedial measures may be needed.

A soils testing firm employed by the CLIENT shall determine which soils are unsuitable. Materials in their natural state being defined as unsuitable that would be suitable material if moisture conditioned, shall be conditioned by the CONTRACTOR and used as suitable embankment material or hauled from the site.

For purposes of definition, unsuitable material shall be as follows unless determined otherwise by the Soils Engineer:

1. Any soil whose optimum moisture content exceeds 25%.
2. Any soil whose silt content exceeds 60% by weight.
3. Any soil whose maximum density is less than 100 pounds per cubic foot.
4. Any soil containing deleterious, or hazardous material.
5. AASHTO T-194, organic content greater than 8.0%.

Upon completion of excavation and shaping of the water retention areas intended to maintain a permanent pool of water, all silt seams and granular or sandy soils shall be removed to a minimum depth of three feet below the subgrade and replaced with an impermeable clay liner, including adjacent to and under storm sewer inlets and outlets. It is the intent of these PLANS and SPECIFICATIONS that the CONTRACTOR shall prepare the lake bottoms, side slopes, and compaction thereof such that the lakes will maintain the proposed normal water level and that leakage does not exceed ½ inch per week.

Ditches and swales are to be excavated to the lines and grades indicated on the PLANS. All suitable materials excavated from the ditches shall be used in construction of the embankments.

The CONTRACTOR shall notify the CLIENT immediately upon encountering groundwater during excavation. If in the opinion of the CLIENT or the JURISDICTIONAL GOVERNING ENTITY this condition necessitates the installation of perforated drain tile bedded in washed gravel or open storm sewer joints wrapped with fabric, the CONTRACTOR shall install the same.

During excavation and embankment, grades may be adjusted to achieve an overall site earthwork balance. The CONTRACTOR shall cooperate fully with the CLIENT in adjustment of grades, construction methods and placement of material to meet the above goals and shall immediately advise CLIENT if he believes that the earthwork will not balance.

It is the intent of these PLANS that storm waters falling on the site be diverted into sedimentation / lake / detention basins during construction. The CONTRACTOR shall construct and maintain any temporary ditches or swales that are necessary to accomplish this prior to beginning mass excavation.

***RETAINING WALLS**

All Retaining Walls greater than 3' shall be signed and sealed by a State of Illinois Structural Engineers. Appropriate safety protection measures shall be provided along the tops of the walls.

***EROSION CONTROL**

Suitable erosion control practices shall be maintained by the CONTRACTOR in accordance with Illinois Urban Manual and all applicable Soil Erosion and Sedimentation Control ordinances and the PLANS. SWPPP monitoring (if required) shall be administered by CONTRACTOR.

UNDERCUTTING DURING EARTHWORK

If the subgrade cannot be dried adequately by discing as outlined above for placement of material to planned grades and if the CLIENT determines that the subgrade does not meet the standards set forth above, the CLIENT may require undercutting.

***MISCELLANEOUS CONTRACT ITEMS**

The following items may be required at the CLIENT's option, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY:

(1) **GEOTEXTILE FABRIC**

Geotextile fabric or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY where proper compaction of embankments over existing soft soils is not possible. Geotextile fabric shall meet the material specifications of and shall be installed in accordance with the above standards.

(2) **EROSION CONTROL BLANKET**

Erosion control blanket or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY for the stabilization of disturbed areas. Erosion control blanket shall meet the material specifications of and shall be installed in accordance with the above standards, the Illinois Urban Manual and/or the details shown on the PLANS.

III.UNDERGROUND IMPROVEMENTS

A. GENERAL

STANDARDS

All underground improvements shall be constructed and tested in accordance with the Standard Specifications for Water and Sewer Construction in Illinois and Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition. In the event of conflicting guidelines, the more restrictive shall govern.

SELECTED GRANULAR BACKFILL

Selected Granular Backfill shall be required for all sewer and water main trenches lying under existing or proposed streets, driveways, parking lots and within 24" thereof, and where noted on PLANS. All material placed in such trenches shall be in accordance with the above standards.

MANHOLES, CATCH BASIN, INLETS & VALVE VAULTS

All Manholes, Catch Basins, Inlets, and Valve Vaults shall be constructed of reinforced precast concrete ring construction with tongue and groove joints in conformance with the latest revision of ASTM designation C-478. All joints between sections and frames (except sanitary manholes, see Section IIIB Manholes, below) shall be sealed with mastic type bituminous jointing compound. CONTRACTOR shall remove all excess mastic on inside of structure and butter joints with mortar. Manholes are to have offset cones except that no cone shall be used on storm manholes 6'-0" deep or less in which case a reinforced concrete flat top section shall be used, and Valve Vaults shall have concentric cones. Only concrete adjustment rings will be permitted where necessary and shall be limited to two adjustment rings totaling not more than 8" in height. All manholes and catch basin steps shall be copolymer polypropylene with continuous ½" steel reinforcement as manufactured by MA Industries, or approved equal.

***AUGER/BORING AND CASING** - INTENTIONALLY OMITTED

***AUGER (OPEN BORE)** - INTENTIONALLY OMITTED

HORIZONTAL AND VERTICAL SEPARATION OF WATER AND SEWER MAINS

Horizontal and vertical separation of water and sewer mains shall be in accordance with Standard Specifications for Water and Sewer Construction in Illinois Section 41-2.01A and 41-2.01B and Standard Drawing 18, 19, 20, 21, 22, 23 and 24.

STRUCTURE ADJUSTMENTS

Structures shall be adjusted to the finished grade as shown on PLANS.

***POOL DESIGN**

Third-party Consultant is responsible for the design of the pool and deck to the edge of the deck. The size, material, and invert elevation of all pipe leaving the deck area shall be indicated with top of slab elevations at the edge of the deck and provided to ENGINEER. ENGINEER shall be responsible for providing design information on PLANS for underground utilities once outside of the pool and deck area. Third-Party Consultant plans shall indicate all other design information within the deck extents on a separate plan.

B. SANITARY SEWERS AND APPURTENANCES

***SANITARY SEWER PIPE**

Sanitary sewer pipe including building services, shall conform to the following:

(1) Polyvinyl Chloride (PVC) Sewer Pipe shall conform to ASTM D3034 (4-inch thru 15-inch) or ASTM F679 (18-inch thru 48-inch) minimum SDR 26 with flexible elastomeric seal gasket gasketed joints conforming to ASTM D3212 and F477.

Sanitary sewers shall include bedding and backfilling.

MANHOLES

Manholes shall be constructed in conformance with Section IIIA Manholes, etc. above. The concrete base and bottom section shall be constructed of precast reinforced concrete monolithically cast sections including benches, pipe connection and invert flow lines. Manhole frame and lids shall be Neenah R-1772 or approved equal, with lids imprinted "SANITARY", with recessed pick holes. Manhole joints between adjustment rings and frames and between manhole sections shall be set on preformed plastic gasket consisting of a homogeneous blend of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler to provide a water tight seal. All pipe connection openings shall be precast with resilient rubber watertight pipe sleeves. A 10" elastomeric band (chimney seal) shall be installed extending from the manhole top to the manhole frame as shown on detail. Manholes shall include steps, frame & grate, bedding, and trench backfill.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

TESTING

Sanitary sewers shall be air tested and tested for deflection in accordance with the requirements of Section 31-1.12 “TESTING AND INSPECTION FOR ACCEPTANCE OF SANITARY SEWERS” of the Standard Specifications for Water and Sewer Construction in Illinois or the JURISDICTIONAL GOVERNING ENTITY, whichever is more restrictive. In addition, a televised inspection of the completed sanitary sewers shall be conducted and a copy of the videotape and report furnished to the JURISDICTIONAL GOVERNING ENTITY.

All sanitary manholes are to be tested for water tightness in accordance with ASTM C969 “Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines”, or ASTM C1244 “Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test”.

SERVICES

A wye branch or "tee" and sanitary service line, properly plugged and sealed shall be constructed as shown on the PLANS. The ends of all services shall be marked with a 4"x4" post extending 36" above grade and painted red. The CONTRACTOR shall keep accurate records of all Wye or Tee locations as measured from the downstream manhole as well as the service lengths and furnish same to CLIENT.

***RISERS** - INTENTIONALLY OMITTED

***DROP MANHOLE CONNECTIONS** - INTENTIONALLY OMITTED

***SANITARY SEWER FORCE MAIN** - INTENTIONALLY OMITTED

TELEVISION INSPECTION

Upon completion of construction a television inspection of the sanitary sewer system shall be performed on all portions of the sewer if required by the JURISDICTIONAL GOVERNING ENTITY. Videotapes and written report of all television inspections shall be provided to the CLIENT. The form of report and type and format of the videotape shall be approved by the JURISDICTIONAL GOVERNING ENTITY.

All sewers and appurtenances shall be cleaned prior to inspection and testing required by this section.

All defects and corrective work required as the result of television inspection shall be performed by the CONTRACTOR without delay. All dips, cracks, leaks, improperly sealed joints and departures from approved grades and alignment shall be repaired by removing and replacing the involved sections of pipe. Upon completion thereof, the sewer shall be retested and such further inspection made as may appear warranted by the CLIENT.

MISCELLANEOUS

All floor drains shall be connected to the sanitary sewer.

C. WATER MAINS AND APPURTENANCES

***WATER MAIN PIPE (3” AND LARGER)**

Water main pipe shall conform to the following:

(1) Ductile iron pipe shall be per ANSI/AWWA C151/A21.51, Thickness Class 52, minimum 150 psi working pressure, cement lined in accordance with ANSI/AWWA C104/A21.4, with “push on” type joints.(2)

Installation shall be in accordance with ANSI/AWWA C600 (Ductile Iron). All water main shall have mechanical joint cast iron or ductile iron fittings in accordance with ANSI/AWWA C110/A21.10 or compact ductile iron fittings in accordance with ANSI/AWWA C153/A21.53 with 250 psi working pressure.

Poured or monolithic concrete thrust blocks are required to brace all tees, plugs, caps, and bends of 11 1/4 degree deflection or greater. Minimum cover for all water mains, including services, shall be 6'-0" from the finished grade. Water main shall include bedding and backfilling.

WATER VALVES

All valves shall be resilient wedge gate valves conforming to the latest revision of ANSI/AWWA C515, with a rated working pressure of 200 psi in accordance with JURISDICTIONAL GOVERNING ENTITY requirements, except that butterfly valves conforming to ANSI/AWWA C504 shall be constructed on all water mains 16” diameter and larger. Valves shall be non-rising stem and shall close by turning clockwise.

VALVE VAULTS

Valve vaults shall be constructed in conformance with Section IIIA Manholes, etc. above. Frame and lids shall be as approved by the JURISDICTIONAL GOVERNING ENTITY and shall be imprinted "WATER".

VALVE BOXES

Valve boxes shall be constructed in conformance with the standard detail. Valve boxes shall be cast iron extension screw type having lids imprinted with the letters “WATER”.

FIRE HYDRANTS

Fire Hydrants shall be per JURISDICTIONAL GOVERNING ENTITY requirements. All fire hydrants shall be located as shown on the PLANS and shall be painted in a manner acceptable to the JURISDICTIONAL GOVERNING ENTITY after installation and shall be adjusted to final grade.

TAP, STOPS AND BOX

The CONTRACTOR shall determine from the JURISDICTIONAL GOVERNING ENTITY as to the exact style, type, and manufacture of corporation stops, ground key stops and services boxes preferred by the JURISDICTIONAL GOVERNING ENTITY and shall furnish same.

SMALL WATER SERVICES (2” DIAMETER OR LESS)

Water services shall be type K copper size as shown on PLANS, and constructed where shown on the PLANS. The ends of all services shall be marked with a 4"x4" post extending 36" above grade and painted blue. The CONTRACTOR shall keep accurate records of tap locations and service box locations, as well as the service lengths and furnish same to CLIENT. Water services shall include bedding and backfilling.

DISINFECTION

Disinfections shall meet all of the requirements of the State of Illinois, Environmental Protection Agency, Public Water Supplies Division. The safe quality of the water supply shall be demonstrated by bacteriological analysis of samples collected at sampling taps on at least two consecutive days following disinfection of the mains and copies of the said report submitted to the JURISDICTIONAL GOVERNING ENTITY and the CLIENT.

PRESSURE TEST

Allowable leakage, test pressure and duration shall be as per the requirements of the JURISDICTIONAL GOVERNING ENTITY.

PRESSURE CONNECTION TO EXISTING WATER MAIN

The CONTRACTOR shall maintain system pressure on existing water main at all times. Existing water main shall be located and material excavated, and valve basin slab and main supports installed. The existing water main shall be cleaned and the exterior disinfected prior to installing the tapping tee (material to conform to AWWA C110). The tapping valve shall be installed (valve to conform to AWWA C500) and the pressure tap completed in accordance with the detail on the plans. Valve shall be constructed in conformance with the detail. Payment for pressure connection to existing water main shall include disinfection, tapping valve and tee, valve vault, frame and lid, bedding, and trench backfill.

DRY CONNECTION TO EXISTING WATER MAIN

A dry connection to existing water main shall include a connection to an existing water main stub where shown on the PLANS. The CONTRACTOR shall obtain approval of the JURISDICTIONAL GOVERNING ENTITY to shut down any main, including submittal of a schedule of the time of shut off and the time the line will be returned to service. All mains shut down that are opened to atmosphere must be disinfected prior to returning main into service.

POLYETHYLENE ENCASEMENT (FOR DUCTILE IRON WATER MAIN ONLY)

The CLIENT, or JURISDICTIONAL GOVERNING ENTITY may request that portions of the water main be enclosed in a polyethylene encasement in accordance with ANSI/AWWA C105/A21.5 should soil conditions so warrant its use.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

TRACER WIRE

If the distance between valves when installing PVC pipe exceeds 1,000', tracer wire stations will be required for current induction. Tracer wire stations in grass areas will be Rhino TriView Flex Tracing Wire Stations or approved equal. In paved areas, they will be Valvco Tracer Wire Access Box for H2O loading or approved equal.

For open cut construction, using PVC pipe, a continuous, insulated, 12 gauge copper wire suitable for direct burial shall be taped on top of all piping to provide for locating following construction. This wire shall be securely terminated inside every valve vault on stainless steel hardware with an exposed lead of at least 12". A mechanically secure and soldered connection shall be provided for all wire splices. Where construction is by directional drilling or similar trenchless technology the tracer wire shall be 3/16" 7x19 PVC coated stainless steel aircraft cable with minimum breaking strength of 3,700 lbs (Lexco, Chicago, IL). Or Trace-Safe water blocking tracerwire RT series 19 gauge conductor (RT 1802W water, RT 1803W sewer).

Before final approval of any water main, there will be a monitored tracer wire continuity test in order to confirm proper installation of any tracer wire.

D. STORM SEWERS AND APPURTENANCES

***STORM SEWER PIPE**

Storm sewer pipe shall conform to the following:

(1) Reinforced concrete pipe minimum Class IV in conformance with the latest revision of ASTM designation C76 with C361 or C443 flexible gasket joints, except that bituminous mastic joints may be used in grass areas.
(2) Polyvinyl Chloride (PVC) Pipe: ASTM D3034 (4-inch thru 15-inch) or ASTM F679 (18-inch thru 36-inch), rated SDR 35, continually marked with manufacturer's name, pipe size, cell classification, SDR rating. Joints shall be flexible elastomeric seals conforming to ASTM D3212.
(3) Ductile Iron Pipe (DIP) shall conform to ANSI/AWWA C151/21.5, Class 50 cement lined with push on type joints conforming to ANSI/AWWA C111/A21.11.
(4) High Density Polyethylene Pipe (HDPE) Smooth Interior, AASHTO Designation M252 and M294, maximum diameter of 48 inches. Pipe joints and fittings shall be watertight gasketed joints. No band seals will be allowed. (Only permitted with Municipality Approval and/or when specifically indicated on PLANS).

Precast tees, bends, and manholes may be used if permitted by the JURISDICTIONAL GOVERNMENTAL ENTITY.

Storm sewers may be constructed with reinforced concrete pipe using only flexible gasket joints (ASTM 361 or 443) for water main crossings.

Storm sewer shall include bedding and trench backfill.

MANHOLES, INLETS & CATCH BASINS

Manholes, Inlets and Catch Basins shall be constructed in conformance with Section IIIA Manholes, etc. above. The space between connecting pipes and the wall of the manhole shall be completely filled with non-shrink hydraulic cement mortar. Frames and lids shall be Neenah or approved equal unless specified otherwise on the PLANS. All frames and grates shall be provided such that the flange fully covers the opening plus 2" of the structure as a minimum. * Provide **“Vane”** Type frame & grate for all structures located in curb where gradient exceed 2.0%. Manholes shall include steps, frame & grate, bedding and trench backfill.

FLARED END SECTION

Flared end sections shall be pre-cast reinforced concrete flared end section with an end block cast separate as per the Illinois Department of Transportation Standard 542301 and shall be installed where shown on the PLANS. All flared end sections for storm sewers 12” in diameter and larger shall be installed with a grating per Standard 542311 and/or as detailed on the PLANS. Work shall include end block.

RIP RAP

Stone rip rap consisting of pieces of "A" quality stone 4" to 8" in diameter shall be furnished and installed in accordance with IDOT Specifications and shall be placed where shown on the plans, to a minimum thickness of 12" and a width as indicated on the plans. Broken concrete or concrete blocks will not be acceptable.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

UNDERDRAINS

Pipe underdrains shall be corrugated flexible plastic pipe conforming to AASHTO Designation M252 perforated corrugated polyethylene pipe (PE) with a smooth interior of the diameter indicated on the PLANS and wrapped in a soil filter fabric supplied and installed by the CONTRACTOR. Perforations may be circular or slotted, but shall provide a minimum inlet area of 1.0 square inch per 2.0 linear feet of pipe. CONTRACTOR shall submit fabric and pipe catalogue Specifications for approval by the CLIENT. CONTRACTOR shall bed and backfill the underdrain in one of the following IDOT gradations of aggregate (CA-5, CA-7, CA-11, CA-14 or CA-15).

MISCELLANEOUS

(1) All existing field drainage tile or storm sewers encountered or damaged during construction shall either be restored to their original condition, properly rerouted and/or connected to the storm sewer system.
(2) Footing drains shall be connected to sump pumps or discharged directly into storm sewers. Footing drains or drainage tile shall not be connected to the sanitary sewer.

CONNECTION FOR STORM SERVICE TO STORM MAIN

Connections of storm sewer services to storm sewer mains should be made with manufactured tees when available. Availability of manufactured tees will be a function of the storm sewer material and pipe diameter size of the service sewer and main. If manufactured tees are not reasonably available, connections should be made in accordance with manufacturer's recommendations for all storm sewer other than concrete pipe. For concrete pipe connections without manufactured tees the storm sewer main shall be machine cored and the service sewer connected using non-shrink grout for the void between pipes. The service sewer shall be cut flush with the inside wall of the sewer main and not extend into the inside flow area of the main or otherwise impede flow.

IV. ROADWAY AND PARKING LOT IMPROVEMENTS

STANDARDS

Work shall be completed in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition (hereinafter referred to collectively as the “Standard Specifications”) except as modified below and except that payment will be defined as detailed in the contract documents between the CLIENT and the CONTRACTOR. Supplementing the Standard Specifications shall be the applicable sections of the latest editions of the “Supplemental Specifications and Recurring Special Provisions”, the “Manual on Uniform Traffic Control Devices for Streets and Highways” and the Illinois Supplement thereto, (hereinafter referred to collectively as the “MUTCD”). Any references to “ENGINEER” in the “Standard Specifications” shall be interpreted as the CLIENT or CLIENT's Construction Representative.

SUBGRADE PREPARATION

The CONTRACTOR shall be responsible for all subgrade compaction and preparation to the lines and grades shown on the plans.

AGGREGATE BASE COURSE TYPE 'B'

Aggregate Base Course Type B shall be limited to CA-6 or CA-10 gradation. Aggregate base courses shall be proof rolled as outlined below.

PROOF ROLL

The CONTRACTOR shall proof roll the subgrade with either a 2-axle truck loaded to 27,000 lbs. Or a 3-axle truck loaded to 45,000 lbs. or as specified by the JURISDICTIONAL GOVERNING ENTITY. The CLIENT and JURISDICTIONAL GOVERNING ENTITY shall observe and approve the proof rolling of the subgrade and the base course. Proof rolling tolerances shall be a maximum deflection of 1” for the subgrade and ½” for the base course. The above criteria is intended as a maximum deflection standard and that proof rolling of a majority of the area will have less deflection than specified above. In any case of deficiency, the subgrade and/or base course shall be repaired and retested before proceeding with the pavement construction.

Pavement subgrade material shall not be removed, placed or disturbed after proof roll testing has been completed prior to the pavement construction. Additional testing will be required if the pavement subgrade is disturbed and/or material is removed from or placed on the pavement subgrade after proof rolling approval.

Trucks or heavy equipment shall not travel on any pavement subgrade after final testing prior to pavement construction.

***HOT-MIX ASPHALT BASE COURSE** - INTENTIONALLY OMITTED

HOT-MIX ASPHALT BINDER AND SURFACE COURSE

HMA binder and surface courses, shall be constructed to the compacted thickness as shown on the PLANS. The base course shall be cleaned and primed in accordance with the JURISDICTIONAL GOVERNING ENTITY. The surface course shall be placed after the base and courses have gone through one winter season, or as directed by the CLIENT. Before applying the surface course, the binder course shall be thoroughly cleaned and primed in accordance with the JURISDICTIONAL GOVERNING ENTITY. Prior to the placement of the surface course, the JURISDICTIONAL GOVERNING ENTITY shall examine the completed pavement, including curb and gutter, and all failures shall be corrected by the CONTRACTOR.

CONCRETE PAVEMENTS

Concrete pavements shall be constructed in accordance with American Concrete Institute Standard ACI330R-08 and as shown on the PLANS.

Slabs and driveway aprons shall be constructed with 6” x 6” - W1.4 x W1.4 welded wire fabric positioned on steel chair supports. Placing fabric during the concrete pouring operation will not be allowed.

Sawing of joints shall commence as soon as the concrete has cured and hardened sufficiently to permit sawing without excessive raveling, but no later than eight hours after the concrete has been placed. All joints shall be sawed to a depth equal to 1/3 of the pavement thickness before uncontrolled shrinkage cracking take place. If necessary, the sawing operation shall occur during the day or at night, regardless of weekends, holidays or weather conditions. The CONTRACTOR shall be aware of jurisdictional noise ordinances and holiday restrictions for scheduling purposes.

The CONTRACTOR is responsible to guard fresh concrete until it sets and hardens sufficiently to prevent people from writing, walking, riding bicycles or otherwise permanently marking, defacing or causing depressions of any type in the concrete. Any concrete so marked will be removed and replaced by the CONTRACTOR at the CONTRACTOR's expense.

The CONTRACTOR shall protect the pavement against all traffic, including that of their own employees or other workers, until test specimens have attained the specified strength.

SIDEWALKS

Concrete sidewalks shall be constructed to width and thickness as shown on the PLANS. Sidewalks shall be thickened to a minimum of 6” at all driveways. All sidewalks shall be IDOT Class SI concrete, on aggregate base as shown on the detail. A ¾” expansion joint shall be provided when meeting existing sidewalk.

CURB AND GUTTER

Curb and gutter shall be as per the detail shown on the PLANS, which shall include compacted aggregate base course under the curb and gutter. All contraction and expansion joints shall be constructed as per the detail.

CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT

The CONTRACTOR shall saw cut and remove the existing concrete curb where shown on the PLANS and install a curb of similar cross section and pavement to that removed (or depressed curb and gutter if shown on the PLANS). Upon completion of the curb and gutter any voids between the existing pavement and the new curb shall be filled with concrete to within 2" of the final surface, which is to be filled with bituminous pavement. The area behind the curb shall be filled and compacted with embankment material within 6" of the top of the new curb. The CONTRACTOR shall then restore the remaining 6" to its original condition (i.e., sod, gravel, topsoil). Where proposed curb connects to an existing curb, the existing curb shall be saw cut and then two 18" long x ¾" (#6) dowel bars shall be drilled and installed 9" into the existing and proposed curb. Bars shall be installed in a location similar to the expansion joint in the curb.

FRAME ADJUSTMENTS

The road contractor shall be responsible for making final adjustments and the setting on a bituminous mastic jointing compound all castings located in the roadway, sidewalks, and parking areas prior to construction of any curbing, sidewalk, or final surface. Any structures that need to be lowered, or raised in excess of 4" shall be completed and the work backcharged against the underground contractor. This Contractor shall also be responsible for cleaning all of the above structures immediately upon completion of his phase of work. This work shall be incidental to the cost of the pavement.

PAVEMENT MARKING - PAINT

The CONTRACTOR shall furnish and apply painted marking lines, letters & symbols of the patterns, sizes and colors where shown on the PLANS. Paint pavement marking shall be applied in accordance with the IDOT Standard Specifications.

***PAVEMENT MARKING - THERMOPLASTIC** - INTENTIONALLY OMITTED

QUALITY CONTROL

The CONTRACTOR shall provide all testing necessary to ensure improvements are in accordance with the project specifications and provide testing documentation that specifications were met.

SHOULD A CONFLICT ARISE BETWEEN THE MANHARD SPECIFICATIONS AND THE CITY SPECIFICATIONS, THE CITY SPECIFICATIONS TAKE PRECEDENCE.

DATE	REVISIONS	DRAWN BY

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Civil Engineers | Surveyors | Water Resource Engineers | Water & Waste Water Engineers
Construction Managers | Environmental Scientists | Landscape Architects | Planners

MIXED USE DEVELOPMENT AT WATER'S EDGE - ONSITE
CITY OF CRYSTAL LAKE, ILLINOIS
CONSTRUCTION SPECIFICATIONS

PROJ. MGR.: KRK
PROJ. ASSOC.: MSL
DRAWN BY: MH
DATE: 06-02-23
SCALE: N.T.S.

FRDCLIL01

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