## EXISTING TOPOGRAPHIC SYMBOLS

- ACCESS GRATE
- AIR CONDITION UNIT
- ANTENNA
- AUTO SPRINKLER CONNECTION
- BARRICADE PERMANENT
- BASKETBALL POST
- BENCH
- BIRD FEEDER
- BOLLARD
- BUSH
- CATCH BASIN RECTANGULAR CASTING
- CATCH BASIN CIRCULAR CASTING
- CURB STOP
- CLEAN OUT
- CULVERT END
- DRINKING FOUNTAIN
- DOWN SPOUT
- FILL PIPE
- FIRE HYDRANT
- FLAG POLE
- FLARED END / APRON
- FUEL PUMP
- GRILL
- GUY WIRE ANCHOR
- HANDHOLE
- HANDICAP SPACE
- IRRIGATION SPRINKLER HEAD
- IRRIGATION VALVE BOX
- LIFT STATION CONTROL PANEL
- LIFT STATION
- LIGHT POLE
- MAILBOX
- MANHOLE-COMMUNICATION
- MANHOLE-ELECTRIC
- MANHOLE-GAS
- MANHOLE-HEAT
- MANHOLE-SANITARY SEWER
- MANHOLE-STORM SEWER
- MANHOLE-UTILITY
- MANHOLE-WATER
- METER
- ORDER MICROPHONE
- PARKING METER
- PAVEMENT MARKING
- PEDESTAL-COMMUNICATION
- PEDESTAL-ELECTRIC
- PEDESTRIAN PUSH BUTTON
- PICNIC TABLE
- POLE-UTILITY
- POST
- RAILROAD SIGNAL POLE
- REGULATION STATION GAS
- SATELLITE DISH
- SIGN TRAFFIC
- SIGNAL CONTROL CABINET
- SOIL BORING
- SIREN
- TELEPHONE BOOTH
- TILE INLET
- TILE OUTLET
- TILE RISER
- TRANSFORMER-ELECTRIC
- TREE-CONIFEROUS
- TREE-DEAD
- TREE-DECIDUOUS
- TREE STUMP
- TRAFFIC ARM BARRIER
- TRAFFIC SIGNAL
- TRASH CAN
- UTILITY MARKER
- VALVE
- VALVE POST INDICATOR
- VALVE VAULT
- VENT PIPE
- WATER SPIGOT
- WELL
- WETLAND DELINEATED MARKER
- WETLAND
- WET WELL
- YARD HYDRANT

## PROPOSED TOPOGRAPHIC SYMBOLS

- CLEANOUT
- MANHOLE
- LIFT STATION
- STORM SEWER CIRCULAR CASTING
- STORM SEWER RECTANGULAR CASTING
- STORM SEWER FLARED END / APRON
- STORM SEWER OUTLET STRUCTURE
- STORM SEWER OVERFLOW STRUCTURE
- CURB BOX
- FIRE HYDRANT
- WATER VALVE
- WATER REDUCER
- WATER BEND
- WATER TEE
- WATER CROSS
- WATER SLEEVE
- WATER CAP / PLUG
- RIP RAP
- DRAINAGE FLOW
- TRAFFIC SIGNS

## SURVEY SYMBOLS

- BENCH MARK LOCATION
- CONTROL POINT
- MONUMENT IRON FOUND
- CAST IRON MONUMENT

## EXISTING TOPOGRAPHIC LINES

- RETAINING WALL
- FENCE
- FENCE-DECORATIVE
- GUARD RAIL
- TREE LINE
- BUSH LINE

## SURVEY LINES

- CONTROLLED ACCESS
- BOUNDARY
- CENTERLINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- SETBACK LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- TEMPORARY EASEMENT

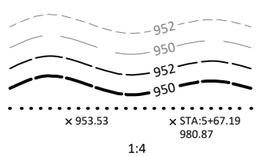
## EXISTING UTILITY LINES

- FORCEMAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- STORM SEWER DRAIN TILE
- WATERMAIN
- WATER SERVICE

## PROPOSED UTILITY LINES

- FORCEMAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- STORM SEWER DRAIN TILE
- WATERMAIN
- WATER SERVICE
- PIPE CASING

## GRADING INFORMATION




- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED CONTOUR MAJOR
- PROPOSED GRADING LIMITS / SLOPE LIMITS
- PROPOSED SPOT ELEVATION
- RISE:RUN (SLOPE)

## HATCH PATTERNS

- BITUMINOUS
- CONCRETE
- GRAVEL

## EXISTING PRIVATE UTILITY LINES

NOTE:
EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA"

- F F F F — UNDERGROUND FIBER OPTIC
- E E E E — UNDERGROUND ELECTRIC
- G G G G — UNDERGROUND GAS
- C C C C — UNDERGROUND COMMUNICATION
- OE OE OE — OVERHEAD ELECTRIC
- OC OC OC — OVERHEAD COMMUNICATION
- OU OU OU — OVERHEAD UTILITY

UTILITIES IDENTIFIED WITH A QUALITY LEVEL OTHER THAN D:

LINE TYPES FOLLOW THE FORMAT: UTILITY TYPE - QUALITY LEVEL
EXAMPLE: G-A G-A — UNDERGROUND GAS, QUALITY LEVEL A
UTILITY QUALITY LEVEL (A,B,C,D) DEFINITIONS CAN BE FOUND IN CI/ASCE 38-02.

UTILITY QUALITY LEVELS:

LEVEL D - INFORMATION COMES SOLELY FROM EXISTING UTILITY RECORDS.

LEVEL C - SURVEYING ABOVE GROUND UTILITY FACILITIES, SUCH AS MANHOLES, VALVE BOXES, ETC; AND CORRELATING THIS INFORMATION WITH EXISTING UTILITY RECORDS.

LEVEL B - THE USE OF SURFACE GEOPHYSICAL TECHNIQUES TO DETERMINE THE EXISTENCE AND HORIZONTAL POSITION OF UNDERGROUND UTILITIES.

LEVEL A - THE USE OF NONDESTRUCTIVE DIGGING EQUIPMENT AT HORIZONTAL AND VERTICAL POSITION OF UNDERGROUND UTILITIES, AS WELL AS THE TYPE, SIZE, CONDITION, MATERIAL, AND OTHER CHARACTERISTICS.

## ABBREVIATIONS

| | | | | | |
|---|---|---|---|---|---|
| A | ALGEBRAIC DIFFERENCE | GRAV | GRAVEL | RT | RIGHT |
| ADJ | ADJUST | GU | GUTTER | SAN | SANITARY SEWER |
| ALT | ALTERNATE | GV | GATE VALVE | SCH | SCHEDULE |
| B-B | BACK TO BACK | HDPE | HIGH DENSITY POLYETHYLENE | SERV | SERVICE |
| BIT | BITUMINOUS | HH | HANDHOLE | SHLD | SHOULDER |
| BLDG | BUILDING | HP | HIGH POINT | STA | STATION |
| BMP | BEST MANAGEMENT PRACTICE | HWL | HIGH WATER LEVEL | STD | STANDARD |
| BR | BEGIN RADIUS | HYD | HYDRANT | STM | STORM SEWER |
| BV | BUTTERFLY VALVE | I | INVERT | TC | TOP OF CURB |
| CB | CATCH BASIN | K | CURVE COEFFICIENT | TE | TEMPORARY EASEMENT |
| C&G | CURB AND GUTTER | L | LENGTH | TEMP | TEMPORARY |
| CIP | CAST IRON PIPE | LO | LOWEST OPENING | TNH | TOP NUT HYDRANT |
| CIPP | CURED-IN-PLACE PIPE | LP | LOW POINT | TP | TOP OF PIPE |
| CL | CENTER LINE | LT | LEFT | TYP | TYPICAL |
| CL. | CLASS | MH | MANHOLE | VCP | VITRIFIED CLAY PIPE |
| CMP | CORRUGATED METAL PIPE | MIN | MINIMUM | VERT | VERTICAL |
| C.O. | CHANGE ORDER | MR | MID RADIUS | VPC | VERTICAL POINT OF CURVE |
| COMM | COMMUNICATION | NIC | NOT IN CONTRACT | VPI | VERTICAL POINT OF INTERSECTION |
| CON | CONCRETE | NMC | NON-METALLIC CONDUIT | VPT | VERTICAL POINT OF TANGENT |
| CSP | CORRUGATED STEEL PIPE | NTS | NOT TO SCALE | WM | WATERMAIN |
| CLVT | CULVERT | NWL | NORMAL WATER LEVEL | | |
| DIA | DIAMETER | OHW | ORDINARY HIGH WATER LEVEL | | |
| DIP | DUCTILE IRON PIPE | PC | POINT OF CURVE | AC | ACRES |
| DWY | DRIVEWAY | PCC | POINT OF COMPOUND CURVE | CF | CUBIC FEET |
| E | EXTERNAL CURVE DISTANCE | PE | PERMANENT EASEMENT | CV | COMPACTED VOLUME |
| ESMT | EASEMENT | PED | PEDESTRIAN, PEDESTAL | CY | CUBIC YARD |
| ELEC | ELECTRIC | PERF | PERFORATED PIPE | EA | EACH |
| ELEV | ELEVATION | PERM | PERMANENT | EV | EXCAVATED VOLUME |
| EOF | EMERGENCY OVERFLOW | PI | POINT OF INTERSECTION | LB | POUND |
| ER | END RADIUS | PL | PROPERTY LINE | LF | LINEAR FEET |
| EX | EXISTING | PRC | POINT OF REVERSE CURVE | LS | LUMP SUM |
| FES | FLARED END SECTION | PT | POINT OF TANGENT | LV | LOOSE VOLUME |
| F-F | FACE TO FACE | PVC | POLYVINYL CHLORIDE PIPE | SF | SQUARE FEET |
| FF | FINISHED FLOOR | PVMT | PAVEMENT | SV | STOCKPILE VOLUME |
| F&I | FURNISH AND INSTALL | R | RADIUS | SY | SQUARE YARD |
| FM | FORCEMAIN | RCP | REINFORCED CONCRETE PIPE | | |
| FO | FIBER OPTIC | RET | RETAINING | | |
| F.O. | FIELD ORDER | R/W | RIGHT-OF-WAY | | |
| GRAN | GRANULAR | RSC | RIGID STEEL CONDUIT | | |



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

JASON W. COOK, P.E.
LIC. NO. 47451 DATE 09/08/2020

BOLTON & MENK
7533 SUNWOOD DR NW, SUITE 206
RAMSEY, MINNESOTA 55303
Phone: (763) 433-2851
Email: Ramsey@bolton-menk.com
www.bolton-menk.com

DESIGNED JWC
DRAWN KGA
CHECKED JWC
CLIENT PROJ. NO. R19.122405

| NO. | ISSUED FOR | DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

ELK RIVER, MINNESOTA
WINDSOR PARK 3RD. ADDITION - SEWER EXTENSION
GENERAL

SHEET 2 OF 16