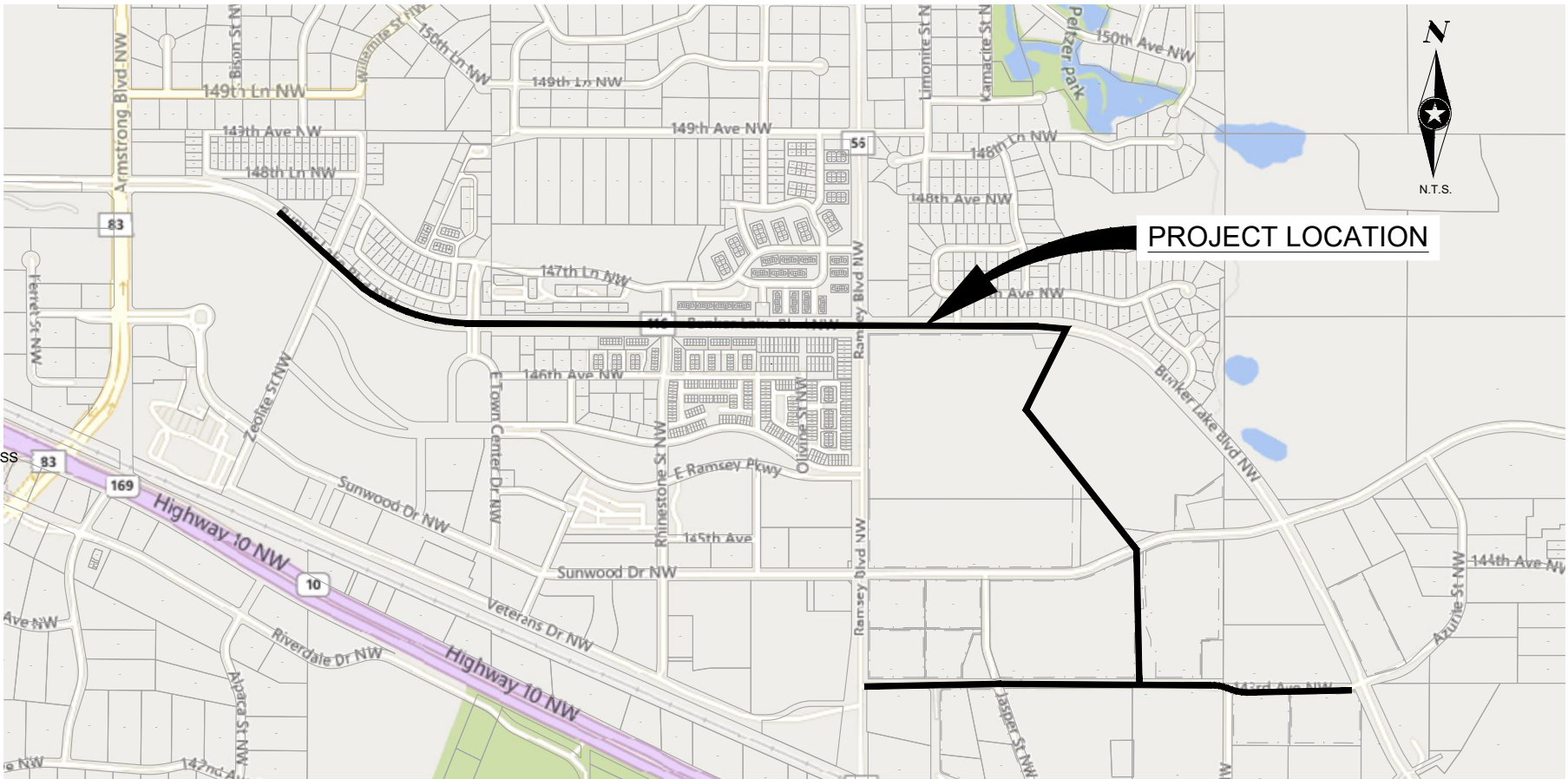


CITY OF
RAMSEY, MINNESOTA

CONSTRUCTION
PLANS FOR
WATER MAIN INSTALLATION, EXCAVATION, HORIZONTAL DIRECTIONAL DRILLING,
GRADING, BITUMINOUS PAVING, & RESTORATION
WATER TREATMENT PLANT TRUNK
WATER MAIN IMPROVEMENTS

CITY PROJECT NO. 21-08



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

THE CONTRACTOR SHALL CALL THE GOPHER STATE ONE CALL SYSTEM AT
811 BEFORE COMMENCING EXCAVATION.



GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND "AND THE SUPPLEMENTAL SPECIFICATIONS DATED SEPTEMBER 2022 SHALL GOVERN EXCEPT AS MODIFIED BY THE SPECIFICATIONS FOR THIS PROJECT.

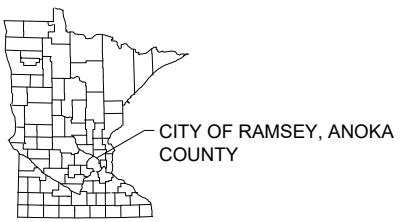
THE 2018 EDITION OF THE CITY ENGINEERS ASSOCIATION OF MINNESOTA "STANDARD SPECIFICATIONS" SHALL GOVERN FOR UTILITY INSTALLATION EXCEPT AS MODIFIED BY THE SPECIFICATIONS FOR THIS PROJECT.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PROJECT OVERVIEW
3	STATEMENT OF ESTIMATED QUANTITIES
4	CONSTRUCTION NOTES
5-6	CONSTRUCTION PHASING - 143RD AVE.
7-10	DETAILS
11-20	REMOVAL PLAN
21-38	WATER MAIN PLAN AND PROFILE
39-40	COTTONWOOD TRAIL PLAN AND PROFILE
41-48	EROSION CONTROL AND TURF ESTABLISHMENT
49-50	SWPPP
51-53	TRAFFIC CONTROL PLAN
54	PAVEMENT MARKING AND SIGNING PLAN
55	METER VAULT PLAN & SECTION
56	METER VAULT DETAILS
57	ELECTRICAL SYMBOLS, ABBREVIATIONS AND NOTES
58	ELECTRICAL PLANS, ELEVATION AND DIAGRAMS

THIS PLAN CONTAINS 58 SHEETS.

PROJECT LOCATION



RAMSEY, MINNESOTA



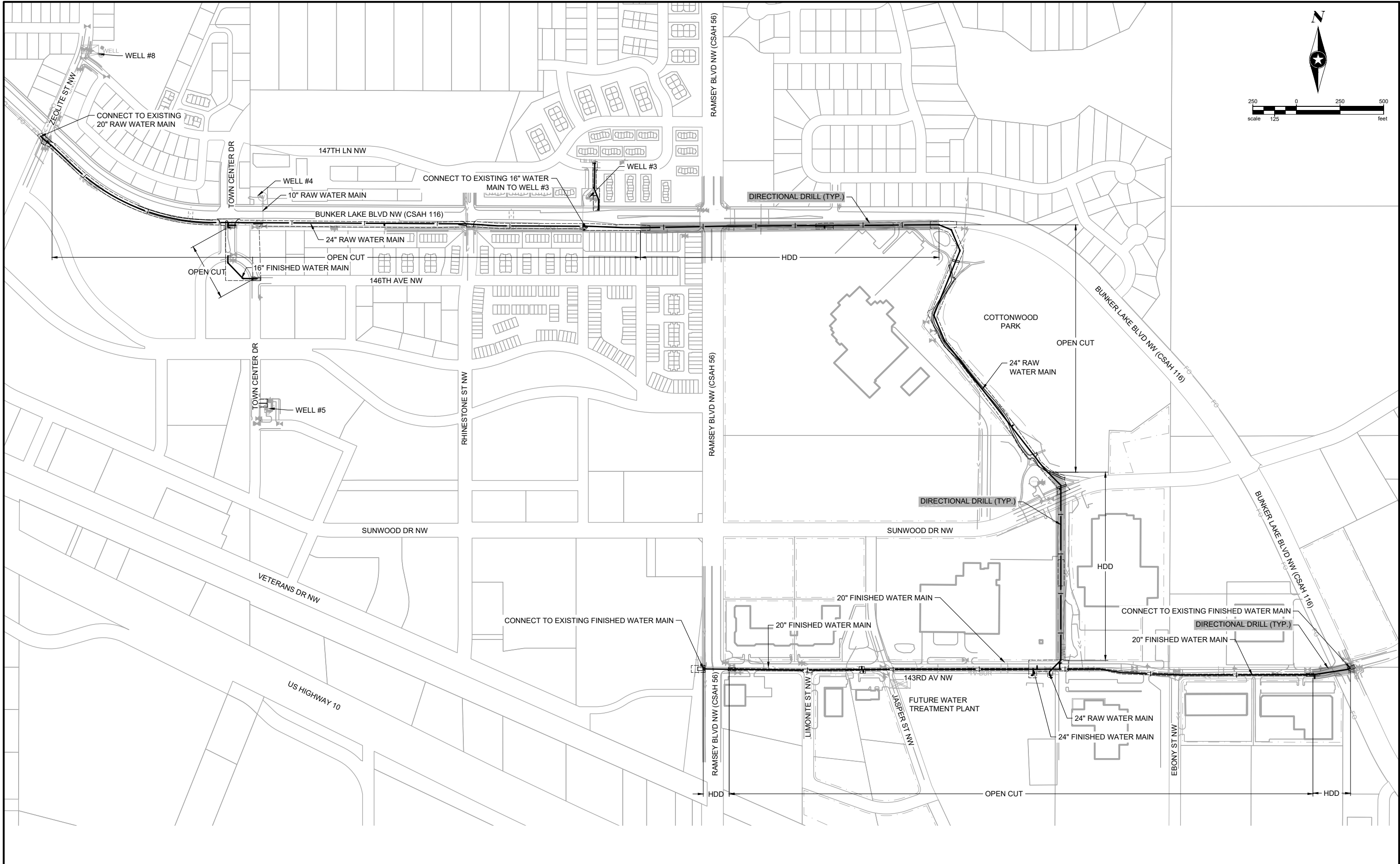
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MN.

Signature: David E. Hutton
Date: 09-29-2023
Lic. No.: 19133

FILE NO.
RAMSY174498
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of 58

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STATEMENT OF ESTIMATED QUANTITIES											
LINE	ITEM NO.	ITEM DESCRIPTION	UNITS	TOTAL ESTIMATED QUANTITY	BUNKER LAKE BOULEVARD	COTTONWOOD PARK/ SUNWOOD DRIVE EASEMENT	143RD AVE NW	TOWN CENTER DRIVE	WELL #3 CROSSING	WELL #5	
SECTION A: STREET											
1	2021.601	MOBILIZATION	LS	1.00	0.42	0.26	0.24	0.05	0.02	0.01	
2	2101.505	CLEARING	ACRE	0.50	0.00	0.50	0.00	0.00	0.00	0.00	
3	2101.505	GRUBBING	ACRE	0.50	0.00	0.50	0.00	0.00	0.00	0.00	
4	2101.502	CLEARING	EA	12.00	2.00	10.00	0.00	0.00	0.00	0.00	
5	2101.502	GRUBBING	EA	12.00	2.00	10.00	0.00	0.00	0.00	0.00	
6	2104.502	SALVAGE SIGN TYPE C	EA	13.00	9.00	0.00	2.00	0.00	2.00	0.00	
7	2104.503	REMOVE CURB AND GUTTER	LF	915.00	0.00	0.00	805.00	85.00	25.00	0.00	
8	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LF	2325.00	430.00	110.00	1425.00	280.00	80.00	0.00	
9	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LF	47.00	26.00	0.00	16.00	0.00	5.00	0.00	
10	2104.504	REMOVE BITUMINOUS PAVEMENT	SY	1185.00	380.00	0.00	0.00	759.00	46.00	0.00	
11	2104.504	REMOVE BITUMINOUS PAVEMENT (DRIVEWAY & TRAIL)	SY	1662.00	101.00	1547.00	0.00	0.00	14.00	0.00	
12	2104.518	REMOVE CONCRETE WALK	SF	825.00	380.00	0.00	320.00	0.00	125.00	0.00	
13	2105.610	EXPLORATORY EXCAVATION	HR	31.00	8.00	6.00	12.00	3.00	1.00	1.00	
14	2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HR	34.00	6.00	2.00	24.00	2.00	0.00	0.00	
15	2211.509	AGGREGATE BASE CLASS 5 (MODIFIED)	TON	688.00	125.00	350.00	13.00	175.00	25.00	0.00	
16	2215.504	FULL DEPTH RECLAMATION	SY	15667.00	0.00	0.00	15667.00	0.00	0.00	0.00	
17	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C)	TON	1416.00	28.00	0.00	1328.00	56.00	4.00	0.00	
18	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (3,C)	TON	354.00	59.00	201.00	0.00	86.00	8.00	0.00	
19	2360.509	SODDING TYPE MINERAL	SY	1950.00	0.00	110.00	1700.00	50.00	20.00	70.00	
20	2504.602	ADJUST VALVE BOX	EA	14.00	8.00	0.00	3.00	3.00	0.00	0.00	
21	2506.502	ADJUST FRAME AND RING CASTING	EA	2.00	1.00	0.00	1.00	0.00	0.00	0.00	
22	2531.503	CONCRETE CURB AND GUTTER DESIGN B612	LF	100.00	0.00	0.00	100.00	0.00	0.00	0.00	
23	2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LF	815.00	0.00	0.00	705.00	85.00	25.00	0.00	
24	2563.601	TRAFFIC CONTROL	LS	1.00	0.00	0.00	0.00	0.00	0.00	0.00	
25	2564.502	INSTALL SIGN TYPE C	EA	11.00	9.00	0.00	2.00	0.00	0.00	0.00	
26	2573.501	STORM DRAIN INLET PROECTION	EA	49.00	20.00	5.00	23.00	1.00	0.00	0.00	
27	2573.503	SILT FENCE, TYPE MS	LF	8500.00	4000.00	4500.00	0.00	0.00	0.00	0.00	
28	2575.505	TURF RESTORATION (SEEDING)	ACRE	4.00	2.00	1.00	1.00	0.00	0.00	0.00	
29	2575.505	TEMP SEEDING	ACRE	4.00	2.00	1.00	1.00	0.00	0.00	0.00	
SECTION B: STORM SEWER											
30	2104.503	REMOVE PIPE CULVERTS	LF	52.00	52.00	0.00	0.00	0.00	0.00	0.00	
31	2104.503	SALVAGE STORM SEWER PIPE	LF	65.00	45.00	0.00	20.00	0.00	0.00	0.00	
32	2501.502	PROTECT AND SUPPORT 73" SPAN RC PIPE-ARCH	EACH	1.00	1.00	0.00	0.00	0.00	0.00	0.00	
SECTION C: WATER MAIN											
33	2104.502	REMOVE/SALVAGE HYDRANT & VALVE	EACH	2.00	1.00	0.00	1.00	0.00	0.00	0.00	
34	2104.503	REMOVE WATER MAIN	LF	320.00	110.00	0.00	0.00	200.00	10.00	0.00	
35	2105.601	DEWATERING	LS	1.00	0.25	0.75	0.00	0.00	0.00	0.00	
36	2105.609	CRUSHED ROCK	TON	2000.00	1500.00	500.00	0.00	0.00	0.00	0.00	
37	2503.604	4" INSULATION	SY	8.00	8.00	0.00	0.00	0.00	0.00	0.00	
38	2504.602	CONNECT TO EXISTING WATER MAIN (RAW WATER)	EACH	6.00	1.00	0.00	0.00	5.00	0.00	0.00	
39	2504.602	CONNECT TO EXISTING WATER MAIN TAPPING SLEEVE AND 8" VALVE (FINISHED WATER)	EACH	1.00	0.00	0.00	1.00	0.00	0.00	0.00	
40	2504.602	CONNECT TO EXISTING WATER MAIN TAPPING SLEEVE AND 12" VALVE (FINISHED WATER)	EACH	1.00	0.00	0.00	1.00	0.00	0.00	0.00	
41	2504.602	CONNECT TO EXISTING WATER MAIN TAPPING SLEEVE AND 16" VALVE (FINISHED WATER)	EACH	2.00	0.00	0.00	1.00	0.00	1.00	0.00	
42	2504.602	CONNECT TO EXISTING WATER MAIN (HYDRANT LEAD)	EACH	2.00	0.00	0.00	0.00	0.00	0.00	0.00	
43	2504.602	HYDRANT	EACH	12.00	5.00	2.00	3.00	0.00	0.00	0.00	
44	2504.602	INSTALL SALVAGED HYDRANT	EACH	1.00	0.00	0.00	1.00	1.00	1.00	0.00	
45	2504.602	6" GATE VALVE AND BOX	EACH	13.00	5.00	2.00	4.00	0.00	0.00	0.00	
46	2504.602	16" GATE VALVE AND BOX	EACH	8.00	2.00	0.00	0.00	1.00	1.00	0.00	
47	2504.602	20" GATE VALVE AND BOX	EACH	3.00	0.00	0.00	3.00	5.00	1.00	0.00	
48	2504.602	24" GATE VALVE AND BOX	EACH	5.00	4.00	0.00	1.00	0.00	0.00	0.00	
49	2504.603	1" COPPER SERVICE	LF	145.00	25.00	0.00	0.00	0.00	0.00	0.00	
50	2504.603	6" DIP WATER MAIN	LF	225.00	50.00	20.00	110.00	60.00	0.00	60.00	
51	2504.603	8" DIP WATER MAIN	LF	288.00	0.00	0.00	18.00	45.00	0.00	0.00	
52	2504.603	10" DIP WATER MAIN	LF	20.00	20.00	0.00	0.00	0.00	270.00	0.00	
53	2504.603	12" DIP WATER MAIN	LF	25.00	0.00	0.00	25.00	0.00	0.00	0.00	
54	2504.603	16" DIP WATER MAIN	LF	355.00	0.00	0.00	5.00	0.00	0.00	0.00	
55	2504.603	20" PVC WATER MAIN STAB JOINT TRENCHED (FINISHED WATER)	LF	3035.00	0.00	0.00	3035.00	340.00	10.00	0.00	
56	2504.603	20" PVC WATER MAIN RJ TRENCHED (FINISHED WATER)	LF	330.00	0.00	0.00	330.00	0.00	0.00	0.00	
57	2504.603	20" DR 18 FUSIBLE PVC WATER MAIN (HDD) (FINISHED WATER)	LF	360.00	0.00	0.00	360.00	0.00	0.00	0.00	
58	2504.603	24" DR 18 FUSIBLE PVC WATER MAIN (HDD) (RAW WATER)	LF	2635.00	1650.00	985.00	0.00	0.00	0.00	0.00	
59	2504.603	24" PVC WATER MAIN RJ TRENCHED (FINISHED WATER)	LF	45.00	0.00	0.00	45.00	0.00	0.00	0.00	
60	2504.603	24" PVC WATER MAIN RJ TRENCHED (RAW WATER)	LF	1320.00	850.00	470.00	0.00	0.00	0.00	0.00	
61	2504.603	24" PVC WATER MAIN STAB JOINT TRENCHED (RAW WATER)	LF	4310.00	2810.00	1500.00	0.00	0.00	0.00	0.00	
62	2504.603	WATER METER VAULT	LS	1.00	1.00	0.00	0.00	0.00	0.00	0.00	
63	2504.608	DUCTILE IRON FITTINGS	LB	24966.00	9060.00	7370.00	5864.00	0.00	0.00	0.00	
ALTERNATE BID ITEM											
64		ADDITIONAL BID COST IF PREVAILING WAGES ARE ADDED AS A REQUIREMENT	LS	1.00							
SEH Project RAMSY174498 Rev.# Revision Issue Description Date Rev.# Revision Issue Description Date I HEREBY CERTIFY THAT THIS PLAN 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 MN. WATER TREATMENT PLANT TRUNK WATER MAIN IMPROVEMENTS Ramsey, Minnesota STATEMENT OF ESTIMATED QUANTITIES 3 of 58											
Drawn By JRB, SRP		Rev.# .		Revision Issue Description Date		Rev.# .		Revision Issue Description Date		David E. Hutton LICENSE NO. _19133_	
Designed By KLK		Rev.# .		Revision Issue Description Date		Rev.# .		Revision Issue Description Date		DATE _09-29-2023_	
Checked By CES		Rev.# .		Revision Issue Description Date		Rev.# .		Revision Issue Description Date		DATE _09-29-2023_	

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CONSTRUCTION NOTES

ANY USE OF TRENCH BOX, SHEETING, SHORING OR OTHER METHODS OR MEANS OF CONSTRUCTION NECESSARY TO COMPLETE CONSTRUCTION WITHIN THE CONSTRUCTION LIMITS OR SLOPE EASEMENTS SHOWN WILL BE CONSIDERED TO BE INCIDENTAL AND NO DIRECT COMPENSATION WILL BE MADE THEREFORE.

COMPACTION OF GRADING ITEMS, INCLUDING AGGREGATE BASE, SHALL BE ACCOMPLISHED BY THE "QUALITY COMPACTION METHOD".

BACKFILLING OF CURBS WITH ON-SITE MATERIAL IS INCIDENTAL TO CURB CONSTRUCTION.

WHEN CONNECTION TO EXISTING BITUMINOUS PAVEMENT IS REQUIRED, THE EDGE OF EXISTING PAVEMENT SHALL BE CUT TO A NEAT LINE AND COMPLY WITH CITY OF RAMSEY STANDARD DETAIL STR-25.

PROVIDE FOR A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL COURSES. THE TACK COAT SHALL BE IN ACCORDANCE WITH MN/DOT SPECIFICATION 2357 WITH THE FOLLOWING MODIFICATIONS:

1.

THE TACK COAT SHALL CONSIST OF EMULSIFIED ASPHALT (CSS-1 OR CSS-1H) AND SHALL BE APPLIED TO THE MILLED BITUMINOUS SURFACE AND BETWEEN ALL NEWLY CONSTRUCTED COURSES.
2.

THE TACK COAT BETWEEN BITUMINOUS LIFTS SHALL BE APPLIED AT A UNIFORM RATE OF 0.08 GALLONS PER SQUARE YARD BETWEEN BITUMINOUS LAYERS. THE APPLICATION RATES ARE BASED ON DILUTED TACK MATERIAL

WATER, GAS, ELECTRIC, TELEPHONE, SEWER, AND TV CABLE LINES SHOWN ON THE DRAWINGS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE BEGINNING CONSTRUCTION WHICH MAY BE AFFECTED BY A UTILITY CONFLICT. THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE OWNERS OF ALL KNOWN UTILITIES BEFORE STARTING ANY OPERATIONS AFFECTING THOSE PROPERTIES, OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES. THE CONTRACTORS ATTENTION IS DIRECTED TO SECTION 1507 IN THE STANDARD SPECIFICATIONS. THE CONTRACTOR IS HEREBY REMINDED OF HIS RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.

ALL USES OF THE WORD "INCIDENTAL" IN THESE CONSTRUCTION DOCUMENTS SHALL BE CONSTRUED TO MEAN INCIDENTAL WORK FOR WHICH NO DIRECT COMPENSATION SHALL BE MADE.

(P) DENOTES A PLAN QUANTITY ITEM

CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL EROSION CONTROL MEASURES AS SHOWN ON THESE PLANS AND SPECIFICATION, AND WILL IMPLEMENT ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY, OR AS DIRECTED BY ENGINEER, IN ORDER TO PROTECT ADJACENT PROPERTY.

ALL DIMENSIONS SHALL BE TO FACE OF CURB UNLESS STATED OTHERWISE.

PROVIDE FOR THE REMOVAL AND DISPOSAL, OUTSIDE THE CONSTRUCTION ZONE, OF ANY INPLACE SURFACING OR OTHER STRUCTURES THAT WOULD INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED TO THE EXTENT ALLOWED OR DISPOSED OF OUTSIDE THE RIGHT OF WAY IN ACCORDANCE WITH SPECIFICATION 2104.3C. PROVIDE FOR SAW CUTTING AS DEEMED NECESSARY BY THE DESIGNER.

ALL EXCAVATED MATERIAL SHALL BE USED ONSITE FOR BORROW ITEMS IF MEETS GRADATION REQUIREMENTS UNLESS DIRECTED OTHERWISE BY THIS PLAN OR AS DIRECTED BY THE ENGINEER.

IN FILL SECTIONS, TOPSOIL AND OTHER UNSUITABLE MATERIALS SHALL BE ELIMINATED FROM THE UPPER 3 FEET OF THE "GRADING GRADE" BENEATH THE ROADWAY AS DIRECTED BY THE ENGINEER.

THE FOLLOWING STANDARD PLATES APPROVED BY THE DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

STANDARD PLATES	
7100H	CONCRETE CURB AND GUTTER DESIGN B & V
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
8000I	STANDARD BARRICADES

KNOWN PRIVATE UTILITIES WITHIN THE PROJECT AREA:

ARVIG (COMM.)
CENTERPOINT ENERGY (GAS)
COMCAST (COMM.)
CENTURYLINK (COMM.)
CONNEXUS (ELECTRIC)
ZAYO (COMM.)

TEST ROLLING WILL BE REQUIRED ON THIS PROJECT.

PLACE A MINIMUM OF 4 INCHES OF TOPSOIL BORROW ON ALL DISTURBED AREAS AND ALL AREAS SCHEDULED FOR TURF RESTORATION. TOPSOIL SHALL CONTAIN NO MORE THAN 35% SAND CONTENT. SEE CITY OF RAMSEY STANDARD DETAIL ERO-6. REFERENCE MNDOT SPECIFICATION 3877

USE SEED MIXTURES AS INDICATED ON EROSION CONTROL AND TURF ESTABLISHMENT PLANS.

FERTILIZE ALL AREAS TO BE RESTORED WITH SEED.

THE CONTRACTOR SHALL LIMIT EQUIPMENT USE AND NUMBER OF ACCESS ROUTES ON PRIVATE PROPERTY TO COMPLETE THE PROJECT WITH MINIMAL DISTURBANCE WHERE PRACTICAL. ANY DAMAGE TO PRIVATE PROPERTY, TURF AND/OR OTHER DRIVING SURFACES DEEMED UNNECESSARY BY THE ENGINEER SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR SHALL PROTECT ANY NEWLY CONSTRUCTED ASPHALT OR CONCRETE SURFACE FROM DAMAGE DURING UTILITY INSTALLATION. ANY DAMAGE DEEMED UNNECESSARY BY THE ENGINEER SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE. THE DEFINITION OF DAMAGE SHALL INCLUDE, BUT IS NOT LIMITED TO: GOUGES, DENTS, PERMANENT SCRAPES, CRACKING OR ANY OTHER PHYSICAL OR VISIBLE CHANGE FROM THE SURFACE'S PREVIOUS CONDITION CAUSED BY THE CONSTRUCTION PROCESS.

THE CONTRACTOR SHALL SUPPLY "AS BUILT" INFORMATION OF WATER SERVICES INCLUDING LENGTH AND LOCATION.

CONCRETE DRIVEWAY PAVEMENT (HIGH EARLY) - CONTRACTOR SHALL POUR CONCRETE DRIVEWAYS IN HALVES TO MAINTAIN CONTINUOUS ACCESS TO HOMES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TOP OF GRADING GRADE

TOP OF "GRADING GRADE" IS HEREBY DEFINED AS THE TOP OF THE SELECT GRANULAR MATERIAL OR THE BOTTOM OF THE AGGREGATE BASE.

SUITABLE MATERIALS

SUITABLE MATERIALS SHALL BE ALL GRANULAR SOILS ENCOUNTERED ON THE PROJECT FROM BORROW, NOT DEFINED AS BEING UNSUITABLE BY THE ENGINEER, EXCEPT THAT ONLY SELECT GRANULAR MATERIAL SHALL BE USED WHERE SPECIFIED AS SUCH IN THE PLANS.

UNSUITABLE MATERIALS

UNSUITABLE MATERIALS ARE ALL MATERIALS DETERMINED BY THE ENGINEER AS BEING UNSUITABLE FOR GRANULAR BORROW OR STRUCTURAL BACKFILL FOR ROADWAY CONSTRUCTION.

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER AND AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THE LOCATION.

BASIS OF ESTIMATED QUANTITIES

SELECT GRANULAR BORROW	140 #/CF
AGGREGATE BASE CLASS 5	1.8 TONS/CU YD
TYPE SP 9.5 WEARING COURSE	113 #/SY/INCH
TYPE SP 12.5 NON-WEARING COURSE	113 #/SY/INCH
BITUMINOUS MATERIAL FOR TACK COAT	0.08 GAL/S.Y.
MULCH MATERIAL TYPE 6	80 CY/ACRE
COMM. FERT. ANALYSIS 25-5-10	400 #/ACRE
SEED MIXTURE 25-151	300 #/ACRE
SEED MIXTURE 25-141	59 #/ACRE

CONSTRUCTION SEQUENCING

RAW WATER MAIN SEQUENCING

1.

VERIFY LOCATION OF EXISTING 20" RAW WATER MAIN AT BUNKER LAKE BLVD NW AND ZEOLITE ST NW
2.

SHUT DOWN EXISTING RAW WATER MAIN FROM WELL #8 TO WELL #7
3.

INSTALL 24"x20" REDUCER ON EXISTING 20" RAW WATER MAIN
4.

LAY 24" RAW WATER MAIN AND APPURTENANCES FROM 24"x20" REDUCER TO 24"x10" TEE
5.

CONNECT 24"x10" TEE TO EXISTING 10" RAW WATER MAIN USING A BEND, PIPING, AND APPURTENANCES
6.

LAY 24" RAW WATER MAIN FROM 24"x10" TEE TO 24" GATE VALVE ON THE EAST SIDE OF BUNKER LAKE BLVD NW AND ZEOLITE ST NW; CLOSE 24" GATE VALVE
7.

PLACE RAW WATER MAIN IN SERVICE FROM WELL #8 TO WELL #7
8.

INSTALL 24" RAW WATER MAIN AND APPURTENANCES FROM 24" GATE VALVE ON THE EAST SIDE OF BUNKER LAKE BLVD NW AND ZEOLITE ST NW TO 24"x16" TEE AT BUNKER LAKE BLVD NW AND TOWN CENTER DR NW
9.

INSTALL 16" STUB FOR A FUTURE CONNECTION TO THE EXISTING 16" RAW WATER MAIN UTILIZING A VALVE, PIPING, AND APPURTENANCES
10.

INSTALL 24" RAW WATER MAIN AND APPURTENANCES FROM 24"x16" TEE AT BUNKER LAKE BLVD NW AND TOWN CENTER DR NW TO 24"x16" TEE AT STA. 33+35
11.

INSTALL 16" STUB FOR A FUTURE CONNECTION TO THE EXISTING 16" FINISHED WATER MAIN UTILIZING A VALVE, PIPING, AND APPURTENANCES
12.

INSTALL 24" RAW WATER MAIN AND APPURTENANCES FROM 24"x16" TEE AT STA. 33+35 TO HYDRANT ASSEMBLY AND PLUG AT THE FUTURE WATER TREATMENT PLANT SITE AT STA. 83+05
13.

PRESSURE TEST 24" RAW WATER MAIN AGAINST EVERY 24" GATE VALVE TO VERIFY A "SURE CUT" AT EACH 24" GATE VALVE
14.

CHLORINATE RAW WATER MAIN
15.

VERIFY THE FOLLOWING GATE VALVES ARE CLOSED WHEN PRESSURE TESTING AND CHLORINATING IS COMPLETE:
- 15.1.

24" GATE VALVE AT STA. 1+27 (EAST GATE VALVE AT BUNKER LAKE BLVD NW AND ZEOLITE ST NW)
- 15.2.

24" GATE VALVE AT STA. 12+77 AT BUNKER LAKE BLVD NW AND TOWN CENTER DR NW
- 15.3.

16" GATE VALVE ON 16" STUB AT BUNKER LAKE BLVD NW AND TOWN CENTER DR NW
- 15.4.

24" GATE VALVE AT STA. 33+27
- 15.5.

16" GATE VALVE ON 16" STUB AT STA. 33+35
- 15.6.

24" GATE VALVE AT STA. 83+00 AT THE FUTURE WATER TREATMENT PLANT SITE
16.

VERIFY THE 24" GATE VALVE AT STA. 0+90 (WEST GATE VALVE AT BUNKER LAKE BLVD NW AND ZEOLITE ST NW) IS OPEN WHEN PRESSURE TESTING IS COMPLETE

FINISHED WATER MAIN SEQUENCING

17.

INSTALL 12"x12" TAPPING SLEEVE AND TAPPING VALVE AT 143RD AVE NW AND RAMSEY BLVD NW
18.

INSTALL 20"x12" REDUCER ON EAST SIDE OF THE 12" TAPPING VALVE AT 143RD AVE NW AND RAMSEY BLVD NW
19.

INSTALL 20" FINISHED WATER MAIN AND APPURTENANCES FROM 20"x12" REDUCER TO 20"x8" TEE AT STA. 109+17
20.

INSTALL 8" STUB UTILIZING PIPING, APPURTENANCES, AND A TEMPORARY VALVED BLOWOFF ASSEMBLY FOR A CONNECTION TO THE EXISTING 8" FINISHED WATER MAIN; THIS CONNECTION WILL TAKE PLACE AFTER THE FINISHED WATER MAIN HAS BEEN PLACED IN SERVICE
21.

INSTALL 20"/24" FINISHED WATER MAIN AND APPURTENANCES FROM 20"x8" TEE TO 20" GATE VALVE AT STA. 119+10
22.

INSTALL 24" FINISHED WATER MAIN AND APPURTENANCES FROM 24"x24" TEE AT STA. 200+75 TO 24"x12" TEE AT STA. 200+61
23.

INSTALL 12" STUB UTILIZING PIPING, APPURTENANCES, AND A TEMPORARY VALVED BLOWOFF ASSEMBLY FOR A CONNECTION TO THE EXISTING 12" FINISHED WATER MAIN; THIS CONNECTION WILL TAKE PLACE AFTER THE FINISHED WATER MAIN HAS BEEN PLACED IN SERVICE
24.

INSTALL 24" FINISHED WATER MAIN FROM 24"x12" TEE AT STA. 200+61 TO HYDRANT ASSEMBLY AND PLUG AT THE FUTURE WATER TREATMENT PLANT SITE
25.

DISINFECT 20"/24" FINISHED WATER MAIN BETWEEN RAMSEY BLVD NW AND THE FUTURE WATER TREATMENT PLANT SITE
26.

PRESSURE TEST EVERY SEGMENT OF 20"/24" FINISHED WATER MAIN AGAINST EVERY 20"/24" GATE VALVE TO VERIFY A "SURE CUT" AT EACH 20"/24" GATE VALVE BETWEEN RAMSEY BLVD NW AND THE FUTURE WATER TREATMENT PLANT SITE
27.

AFTER 20"/24" FINISHED WATER MAIN ON 143RD ST NW BETWEEN RAMSEY BLVD NW AND THE FUTURE WATER TREATMENT PLANT SITE HAS PASSED PRESSURE TEST AND THE DISINFECTION PROCESS, REMOVE TEMPORARY VALVED BLOWOFF ASSEMBLY AT STA. 109+17 AND CONNECT 8" STUB TO THE EXISTING 8" FINISHED WATER MAIN UTILIZING A TAPPING SLEEVE, TAPPING VALVE, PIPING, AND APPURTENANCES; SWAB CONNECTION PIPING AND APPURTENANCES WITH A MINIMUM OF 50 PPM CHLORINE SOLUTION
28.

AFTER 20"/24" FINISHED WATER MAIN ON 143RD ST NW BETWEEN RAMSEY BLVD NW AND THE FUTURE WATER TREATMENT PLANT SITE HAS PASSED PRESSURE TEST AND THE DISINFECTION PROCESS, REMOVE TEMPORARY VALVED BLOWOFF ASSEMBLY AT STA. 200+61 AND CONNECT 12" STUB TO THE EXISTING 12" FINISHED WATER MAIN UTILIZING A TAPPING SLEEVE, TAPPING VALVE, PIPING, AND APPURTENANCES; SWAB CONNECTION PIPING AND APPURTENANCES WITH A MINIMUM OF 50 PPM CHLORINE SOLUTION
29.

INSTALL 16"x16" TAPPING SLEEVE AND TAPPING VALVE AT 143rd AVE NW AND BUNKER LAKE BLVD NW
30.

INSTALL 20"x16" REDUCER ON WEST SIDE OF THE 16" TAPPING VALVE AT 143RD AVE NW AND BUNKER LAKE BLVD NW
31.

INSTALL 20" FINISHED WATER MAIN AND APPURTENANCES FROM 20"x16" REDUCER TO 20"x6" TEE AT STA. 135+49
32.

INSTALL HYDRANT TEE, VALVE, AND TEMPORARY VALVED BLOWOFF AT STA. 135+49; THIS CONNECTION TO THE EXISTING HYDRANT WILL TAKE PLACE AFTER THE FINISHED WATER MAIN HAS BEEN PLACED IN SERVICE
33.

INSTALL 20" FINISHED WATER MAIN AND APPURTENANCES FROM 20"x6" TEE AT STA. 135+49 TO 20"x6" TEE AT STA. 120+52
34.

INSTALL HYDRANT TEE, VALVE, AND TEMPORARY VALVED BLOWOFF AT STA. 120+52; THIS CONNECTION TO THE EXISTING HYDRANT WILL TAKE PLACE AFTER THE FINISHED WATER MAIN HAS BEEN PLACED IN SERVICE
35.

INSTALL 20" FINISHED WATER MAIN AND APPURTENANCES FROM 20"x6" TEE AT STA. 120+52 TO THE TEMPORARY VALVED BLOWOFF ASSEMBLY AT STA. 119+30
36.

DISINFECT 20" FINISHED WATER MAIN BETWEEN BUNKER LAKE BLVD NW AND THE TEMPORARY VALVED BLOWOFF ASSEMBLY NEAR THE FUTURE WATER TREATMENT PLANT SITE
37.

PRESSURE TEST 20" FINISHED WATER MAIN BETWEEN BUNKER LAKE BLVD NW AND THE TEMPORARY VALVED BLOWOFF ASSEMBLY NEAR THE FUTURE WATER TREATMENT PLANT SITE.
38.

AFTER 20" FINISHED WATER MAIN BETWEEN BUNKER LAKE BLVD NW AND THE TEMPORARY VALVED BLOWOFF ASSEMBLY NEAR THE FUTURE WATER TREATMENT PLANT SITE HAS PASSED PRESSURE TEST AND THE DISINFECTION PROCESS, REMOVE TEMPORARY VALVED BLOWOFF ASSEMBLY AT STA. 119+30 AND CONNECT 20" FINISHED WATER MAIN TO THE 20" GATE VALVE AT STA. 119+10 UTILIZING PIPING AND APPURTENANCES; SWAB CONNECTION PIPING AND APPURTENANCES WITH A MINIMUM OF 50 PPM CHLORINE SOLUTION
39.

AFTER 20" FINISHED WATER MAIN BETWEEN BUNKER LAKE BLVD NW AND THE TEMPORARY VALVED BLOWOFF ASSEMBLY NEAR THE FUTURE WATER TREATMENT PLANT SITE HAS PASSED PRESSURE TEST AND THE DISINFECTION PROCESS, REMOVE TEMPORARY VALVED BLOWOFF ASSEMBLY AT STA. 135+49 AND CONNECT TO EXISTING HYDRANT BRANCH AFTER THE EXISTING HYDRANT HAS BEEN REMOVED, INSTALL HYDRANT ASSEMBLY UTILIZING A TEE, VALVES, PIPING, HYDRANT, AND APPURTENANCES; SWAB HYDRANT ASSEMBLY AND CONNECTION PIPING AND APPURTENANCES WITH A MINIMUM OF 50 PPM CHLORINE SOLUTION
40.

AFTER 20" FINISHED WATER MAIN BETWEEN BUNKER LAKE BLVD NW AND THE TEMPORARY VALVED BLOWOFF ASSEMBLY NEAR THE FUTURE WATER TREATMENT PLANT SITE HAS PASSED PRESSURE TEST AND THE DISINFECTION PROCESS REMOVE TEMPORARY VALVED BLOWOFF ASSEMBLY AT STA. 120+52 AND CONNECT TO EXISTING HYDRANT BRANCH AFTER THE EXISTING HYDRANT HAS BEEN REMOVED, INSTALL HYDRANT ASSEMBLY UTILIZING A TEE, VALVES, PIPING, HYDRANT, AND APPURTENANCES; SWAB HYDRANT ASSEMBLY AND CONNECTION PIPING AND APPURTENANCES WITH A MINIMUM OF 50 PPM CHLORINE SOLUTION
41.

VERIFY THE 24" GATE VALVE AT THE FUTURE WATER TREATMENT PLANT SITE IS CLOSED WHEN CONNECTIONS ARE COMPLETE
42.

VERIFY THE FOLLOWING GATE VALVES ARE OPEN WHEN CONNECTIONS ARE COMPLETE:
- 42.1.

12" GATE VALVE AT 143RD AVE NW AND RAMSEY BLVD NW
- 42.2.

8" GATE VALVE AT STA. 109+17
- 42.3.

12" GATE VALVE AT STA. 200+61
- 42.4.

6" GATE VALVE AT HYDRANT ASSEMBLY AT STA. 120+52
- 42.5.

6" GATE VALVE AT HYDRANT ASSEMBLY AT STA. 135+49
- 42.6.

16" GATE VALVE AT 143RD AVE NW AND BUNKER LAKE BLVD NW



I HEREBY CERTIFY THAT THIS PLAN 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 MN.

David E. Hutton
LICENSE NO. 19133

DATE 09-29-2023

WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

CONSTRUCTION NOTES

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LEGEND

- PHASE 1
- PHASE 2
- PHASE 3

CONSTRUCTION PHASING:

- MILL AND RECLAIM ASPHALT ON SOUTH HALF OF 143RD AVE. FOR WATER MAIN INSTALLATION. ALLOW TRAFFIC TO USE NORTH SIDE. ONCE WATER MAIN COMPLETED, PAVE BASE COURSE ASPHALT. RECLAIM MATERIAL NOT IMMEDIATELY REUSED AS AGGREGATE BASE MATERIAL SHALL BE STOCKPILED ON THE CITY OWNED PROPERTY AT 14210 JASPER STREET. ALL EXCESS RECLAIM MATERIAL SHALL REMAIN ON THIS PROPERTY AFTER THE PROJECT IS COMPLETE.
- MOVE TRAFFIC TO SOUTH HALF OF 143RD AVE. FOR MILL AND RECLAIM OF NORTH HALF OF 143RD AVE. PAVE BASE COURSE ASPHALT. NO CURB SHALL BE TOUCHED UNLESS DAMAGED AND IDENTIFIED FOR REPLACEMENT BY THE ENGINEER.
- PAVE WEAR COURSE FULL WIDTH 143RD AVE.

SEH Project	RAMSY174498	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JRB, SRP	.			.		
Designed By	KLK	.			.		
Checked By	CES	.			.		



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DATE 09-29-2023

WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS

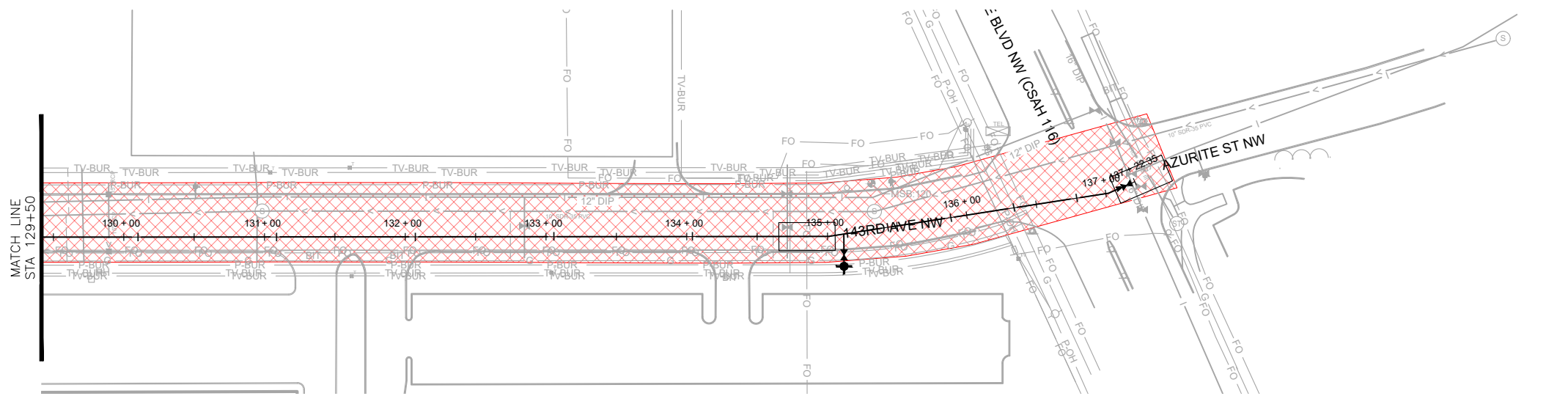
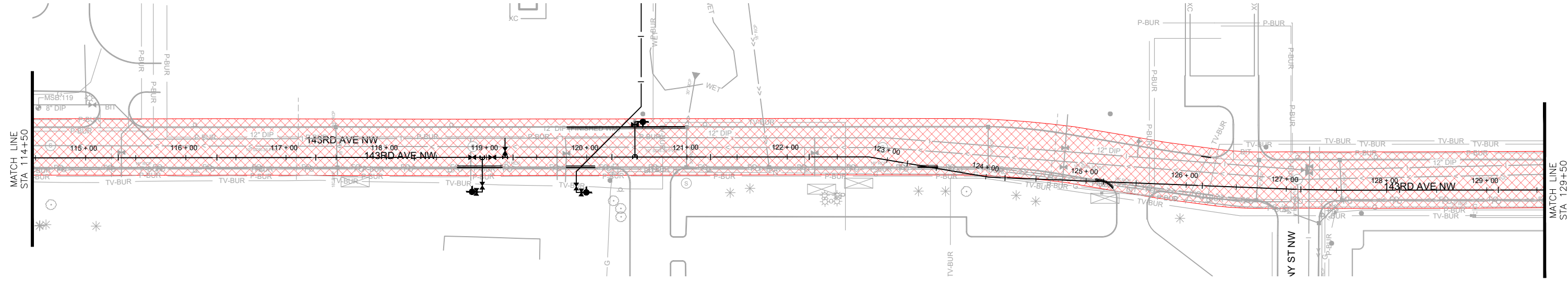
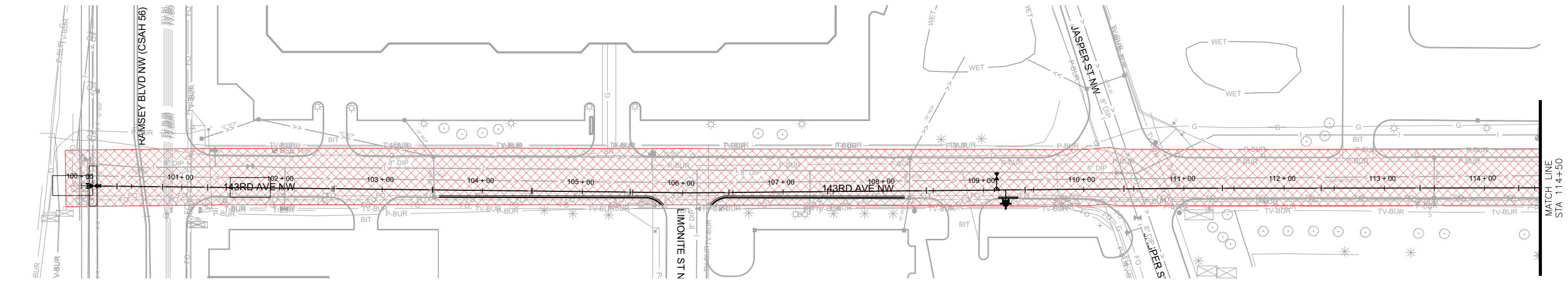
Ramsey, Minnesota

CONSTRUCTION PHASING - 143RD AVE.

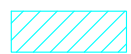


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of 58

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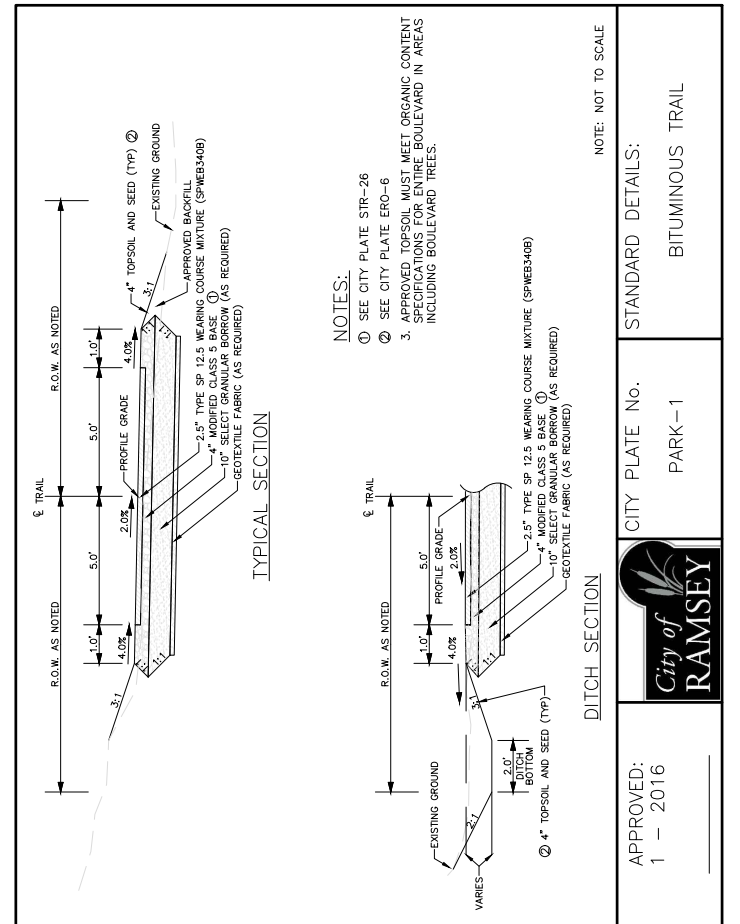
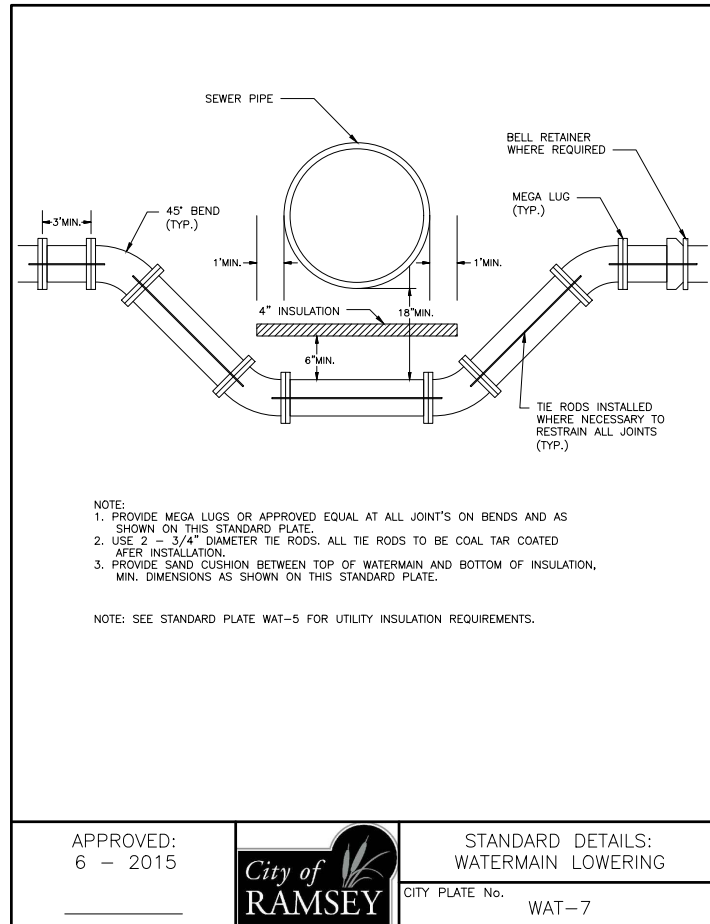
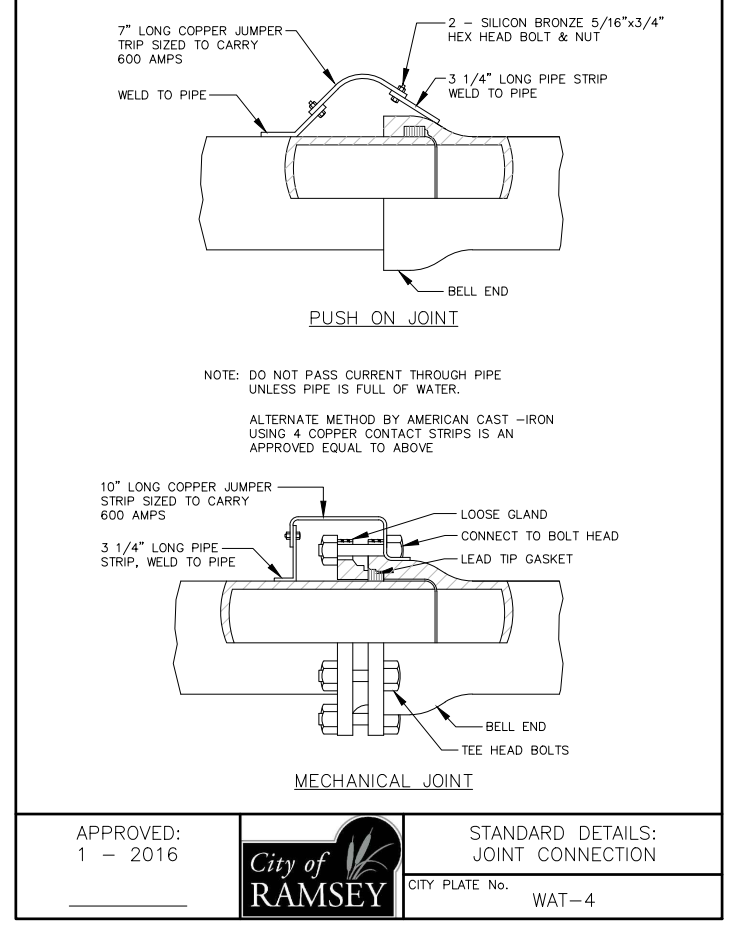
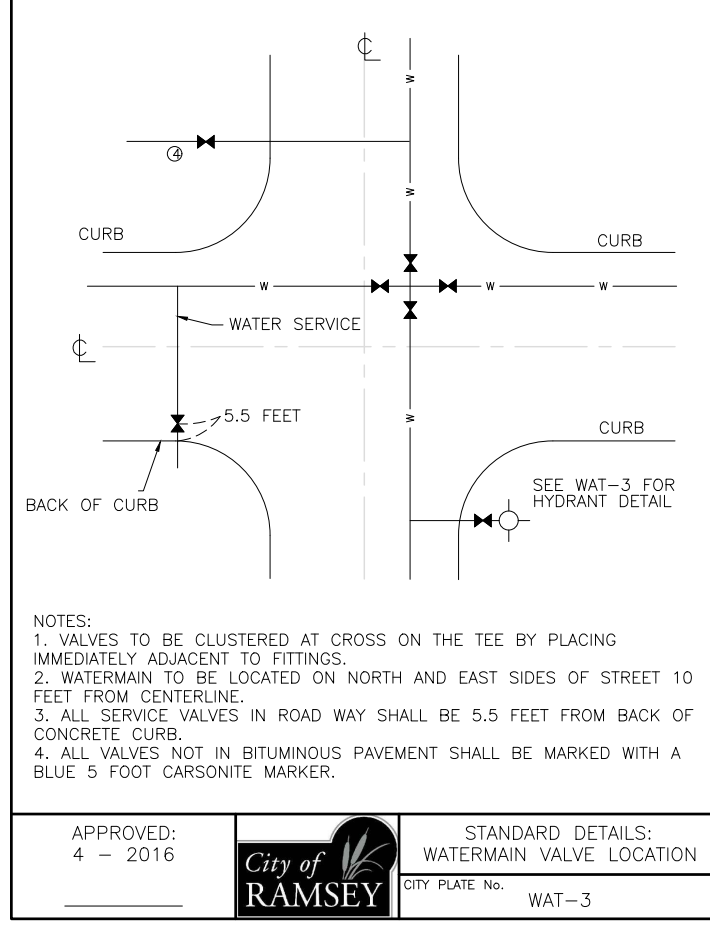
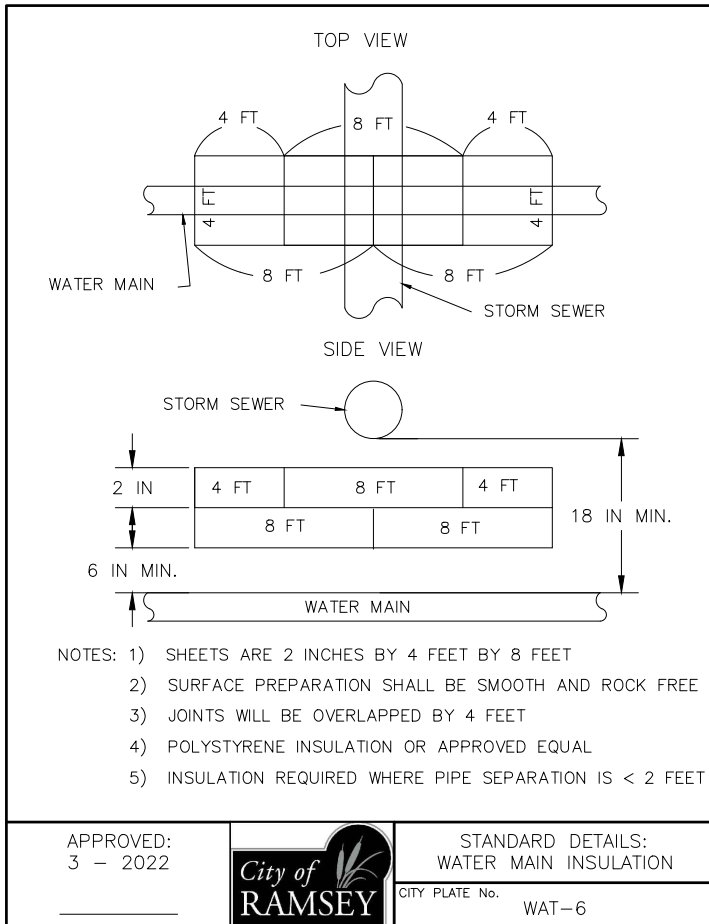
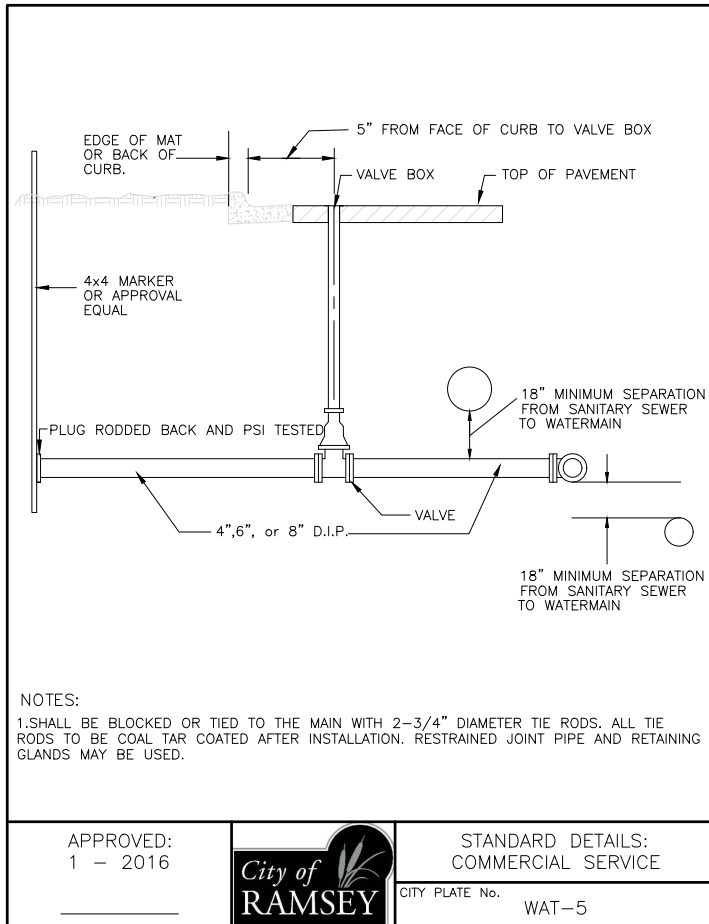
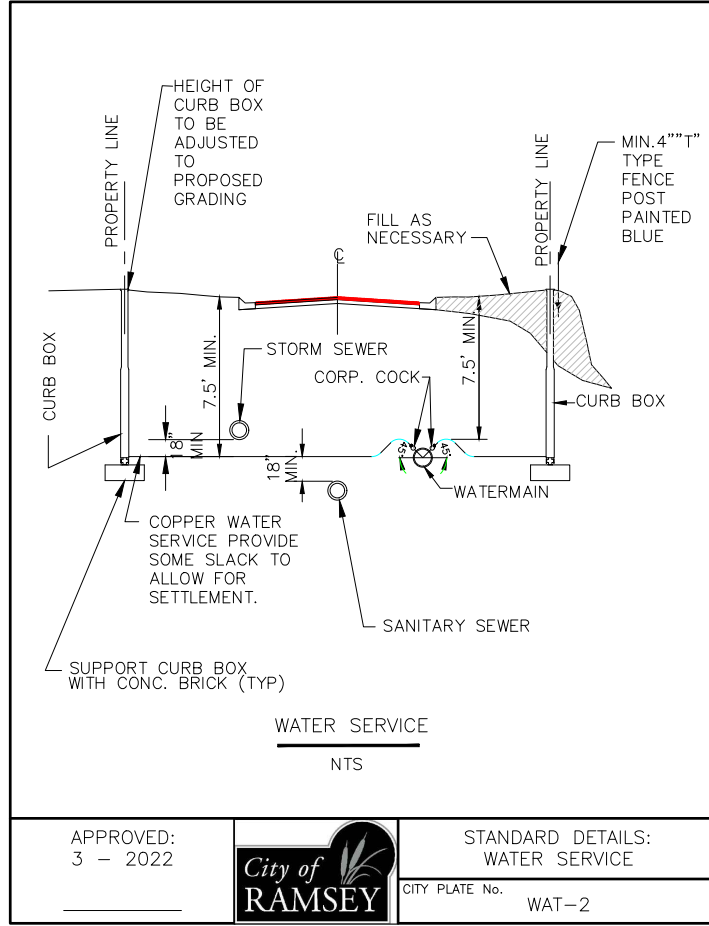
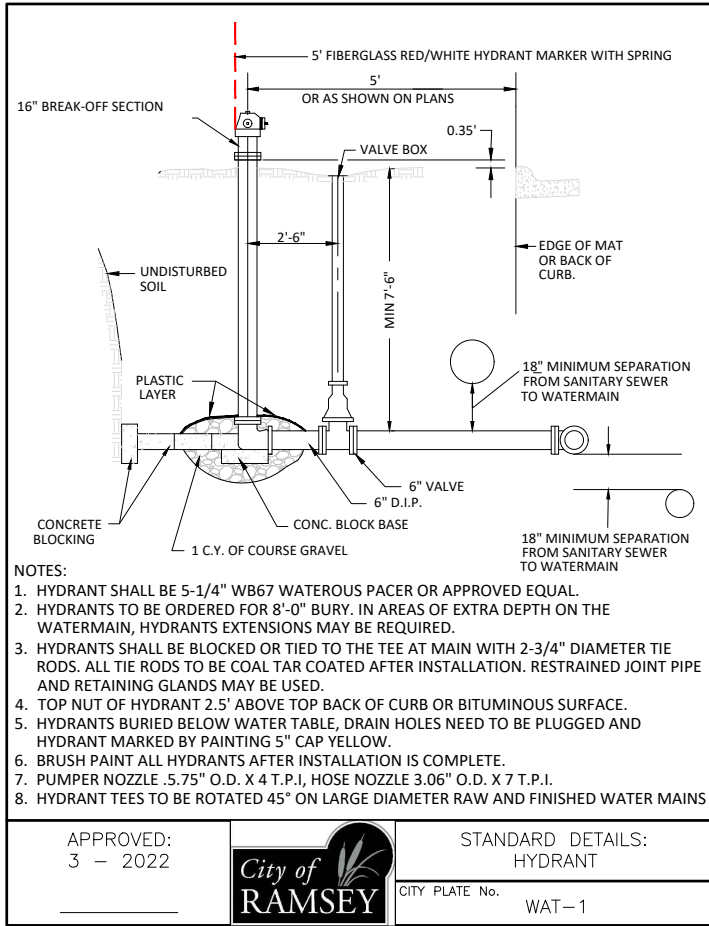
LEGEND

-  PHASE 1
-  PHASE 2
-  PHASE 3

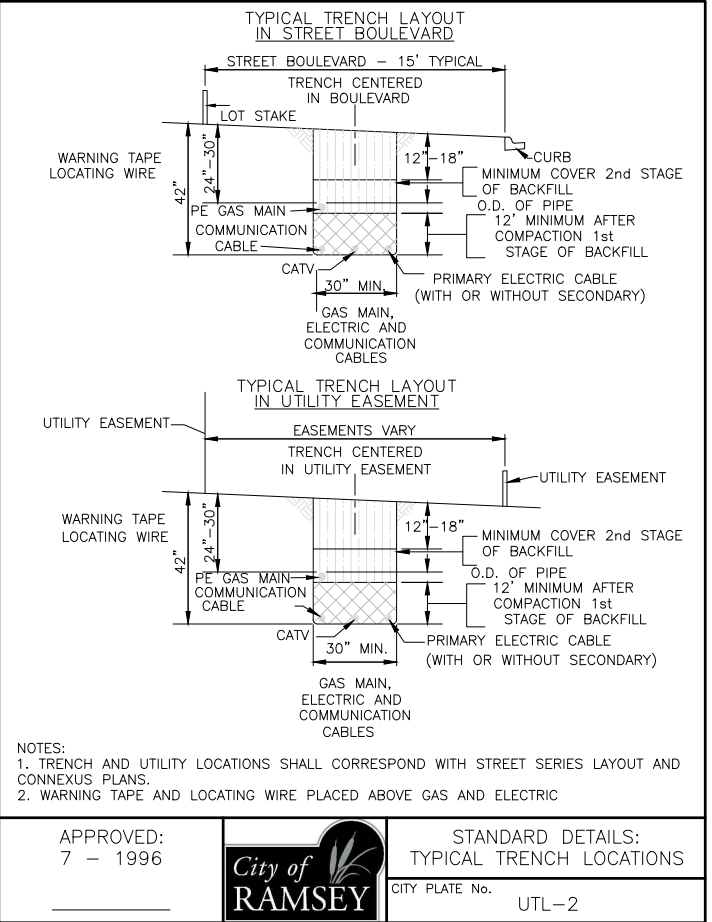
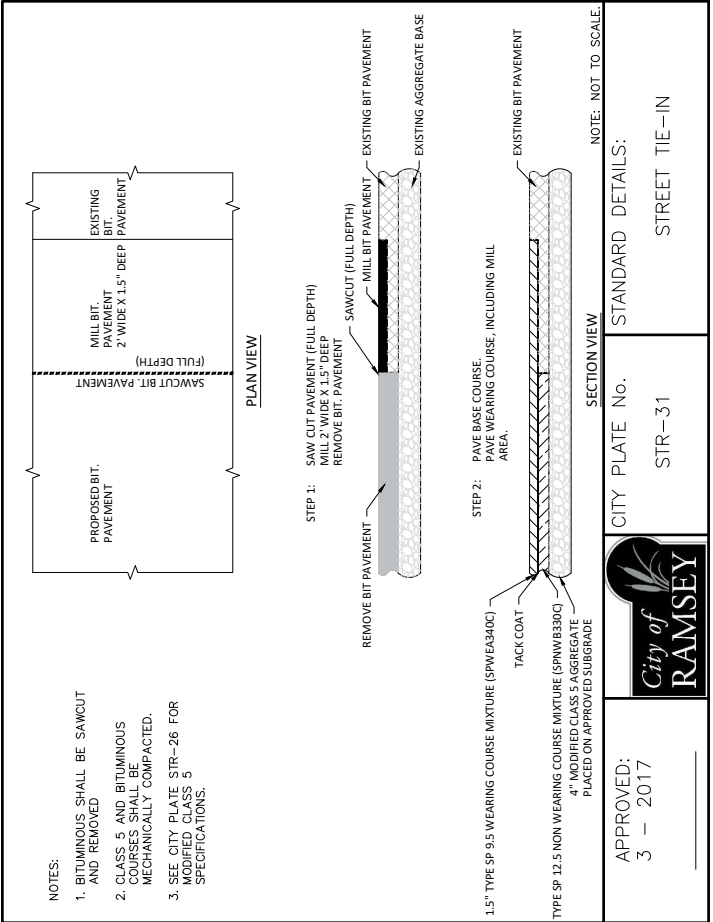
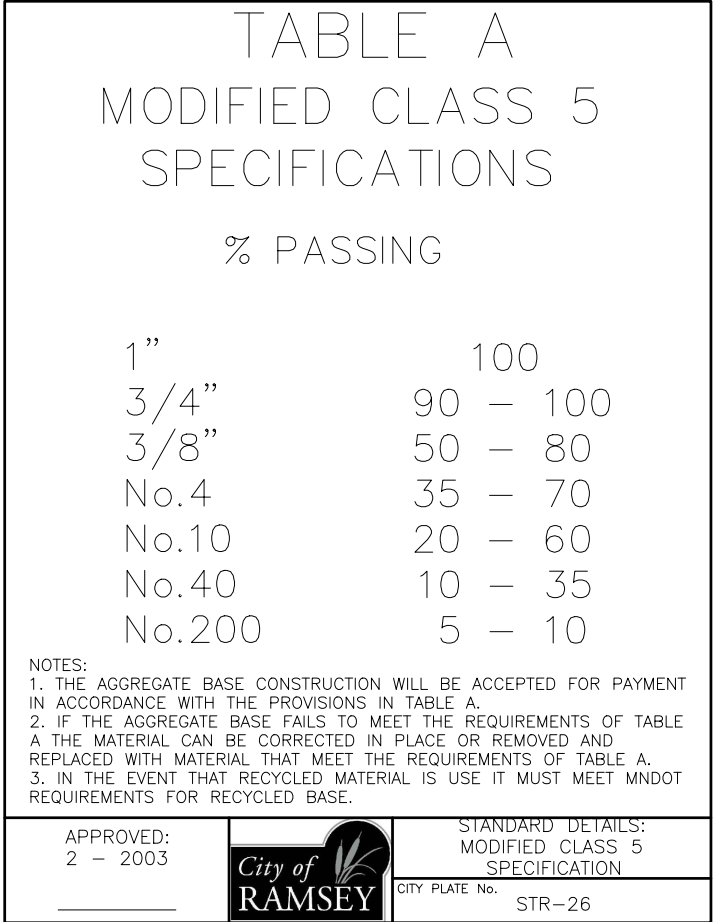
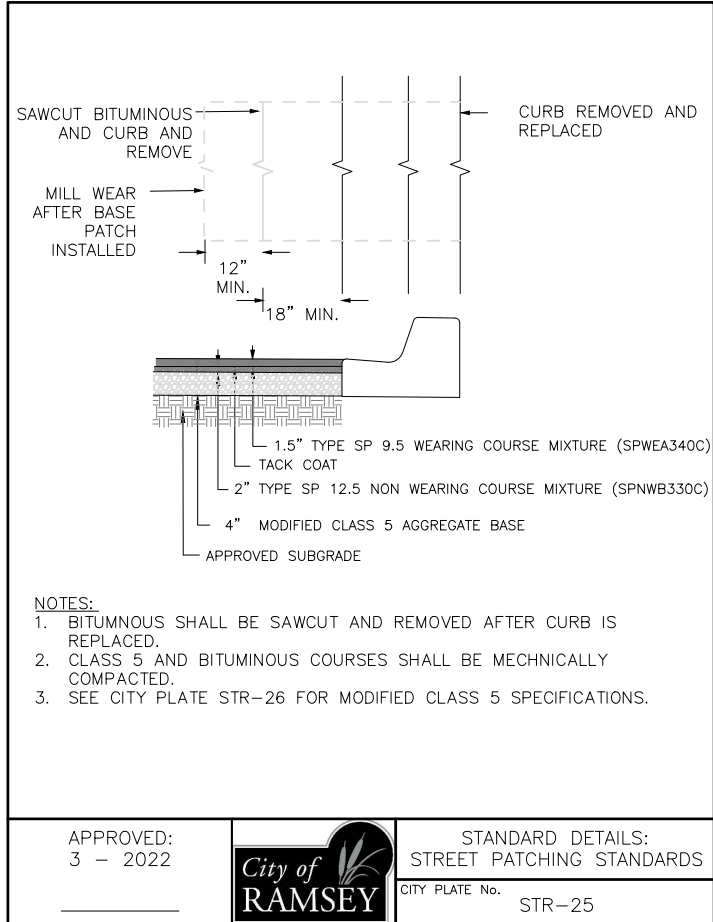
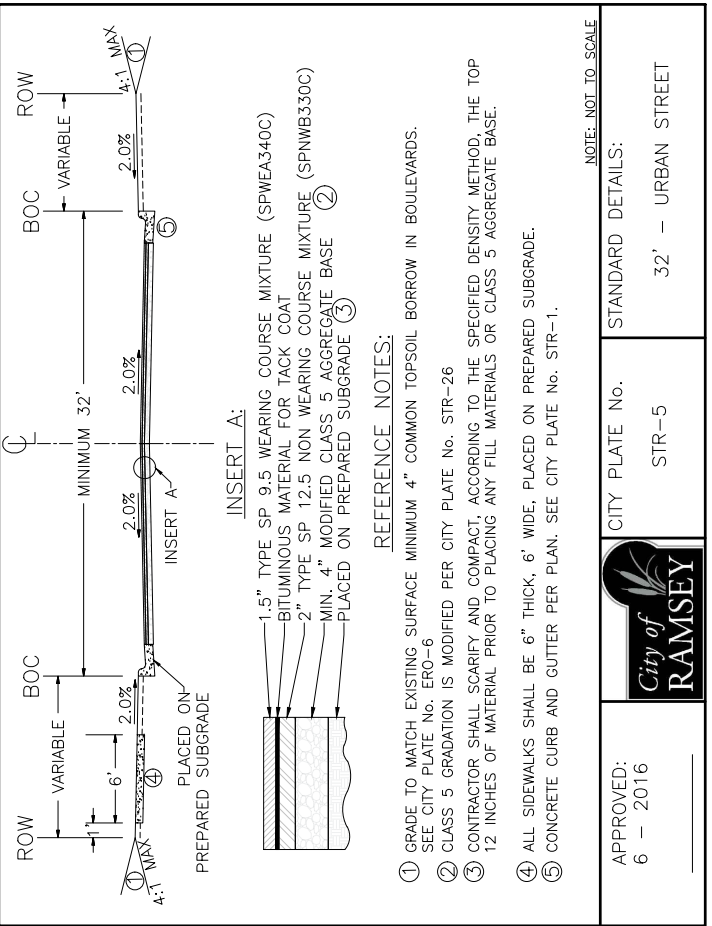
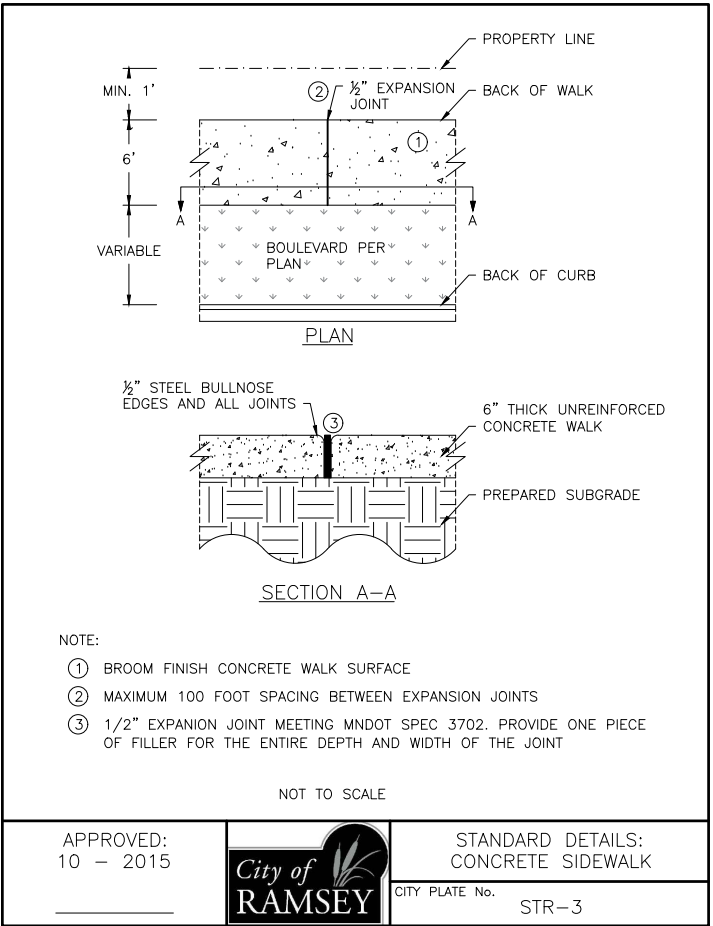
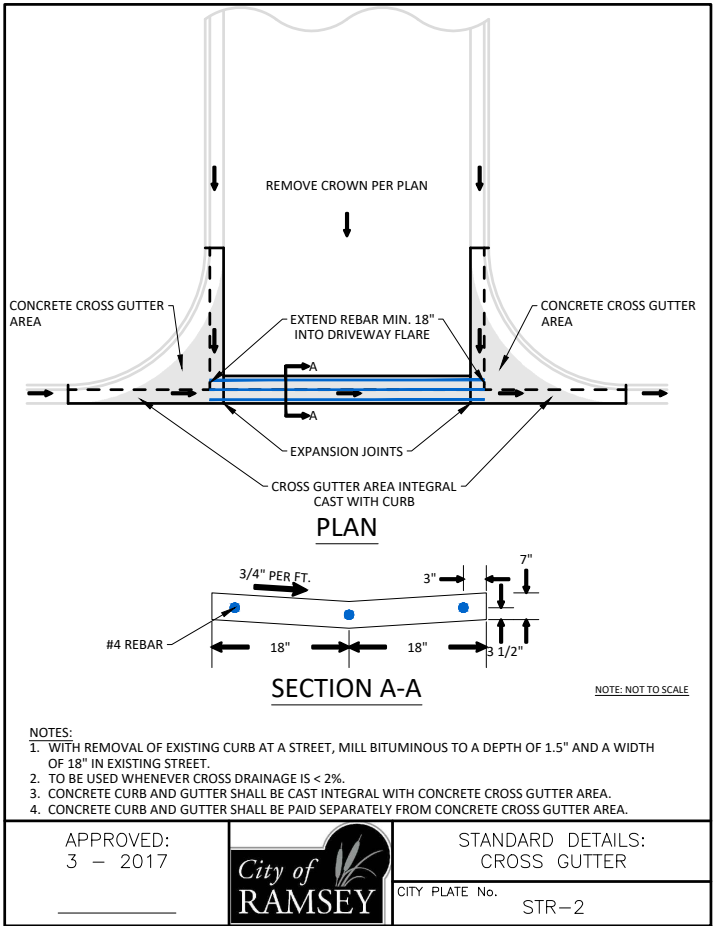
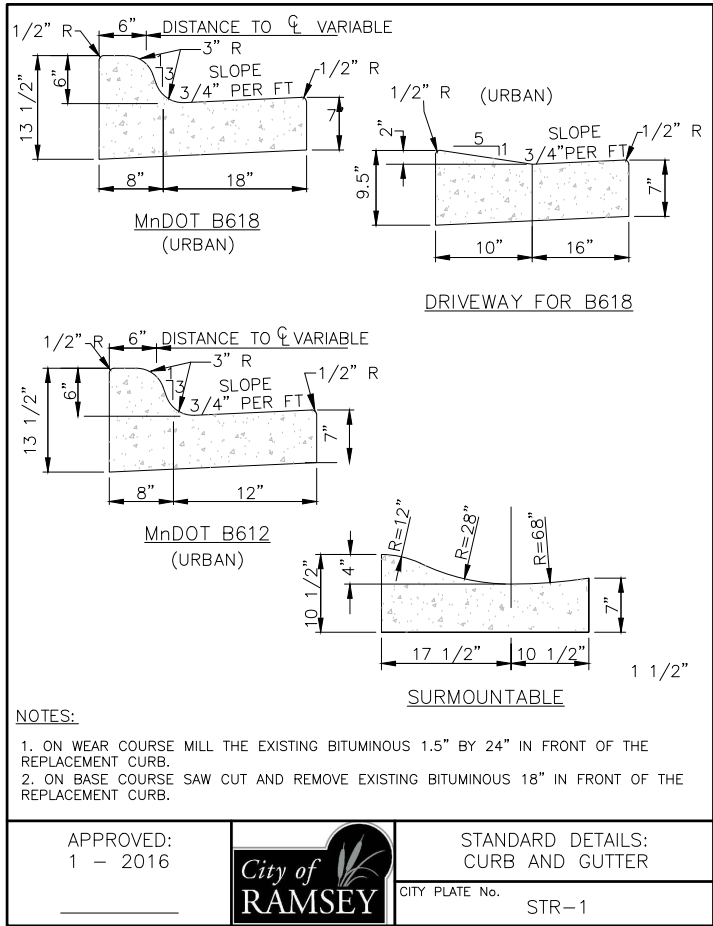
CONSTRUCTION PHASING:

- MILL AND RECLAIM ASPHALT ON SOUTH HALF OF 143RD AVE. FOR WATER MAIN INSTALLATION. ALLOW TRAFFIC TO USE NORTH SIDE. ONCE WATER MAIN COMPLETED, PAVE BASE COURSE ASPHALT. RECLAIM MATERIAL NOT IMMEDIATELY REUSED AS AGGREGATE BASE MATERIAL SHALL BE STOCKPILED ON THE CITY OWNED PROPERTY AT 14210 JASPER STREET. ALL EXCESS RECLAIM MATERIAL SHALL REMAIN ON THIS PROPERTY AFTER THE PROJECT IS COMPLETE.
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- PAVE WEAR COURSE FULL WIDTH 143RD AVE.

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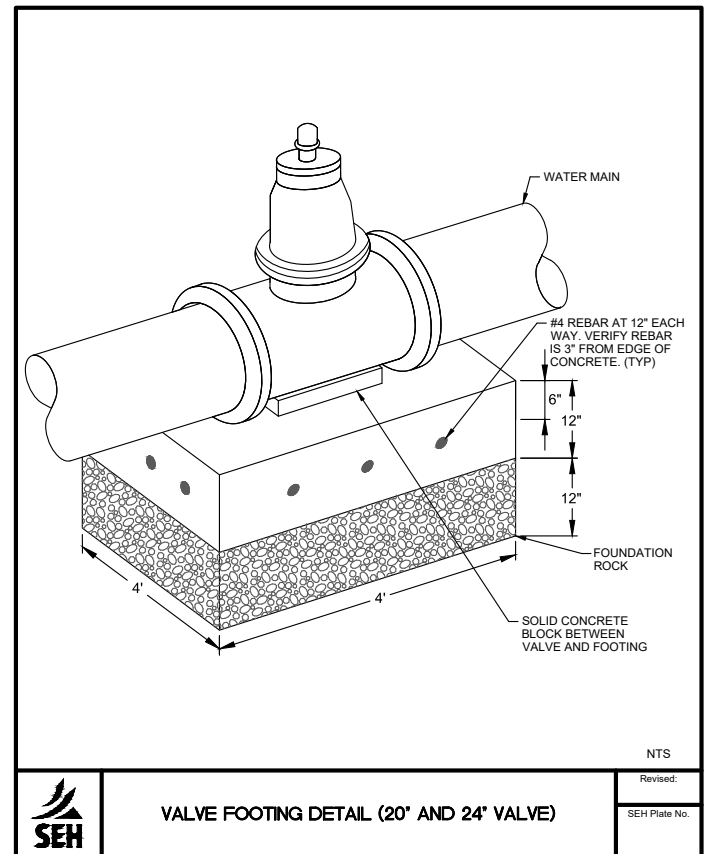
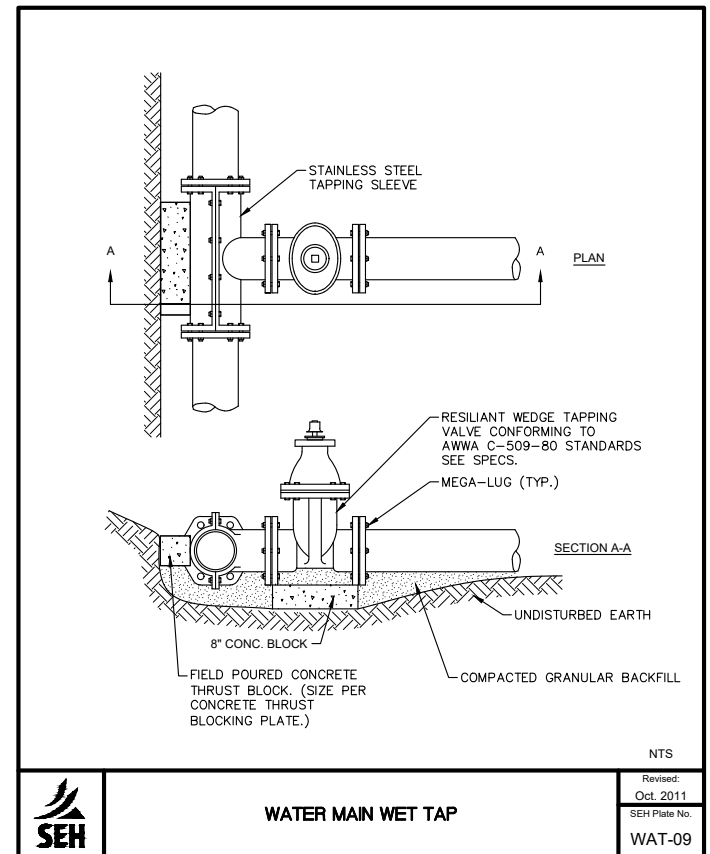
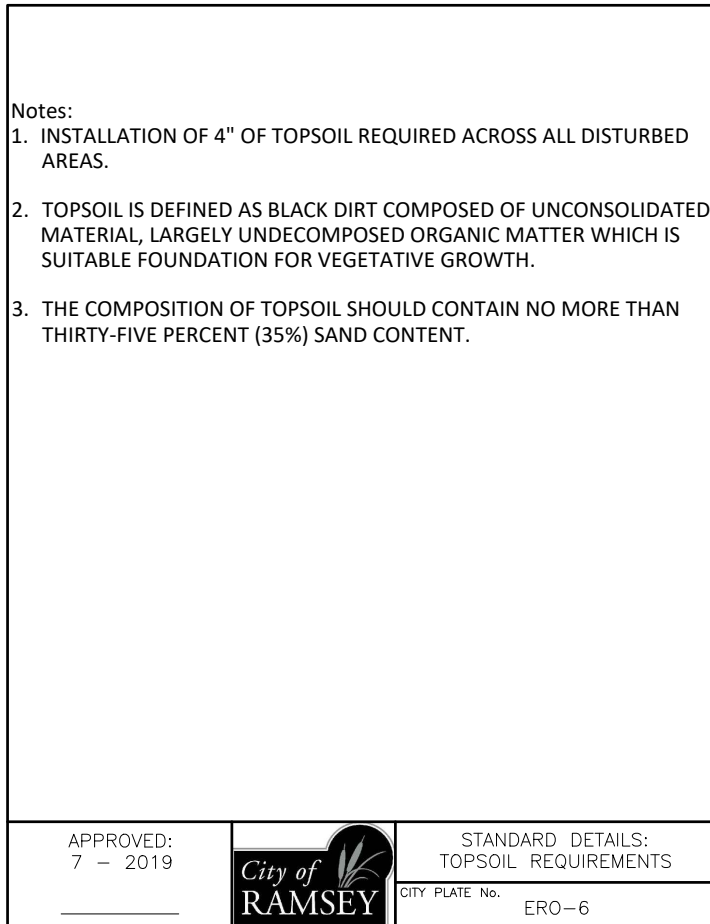
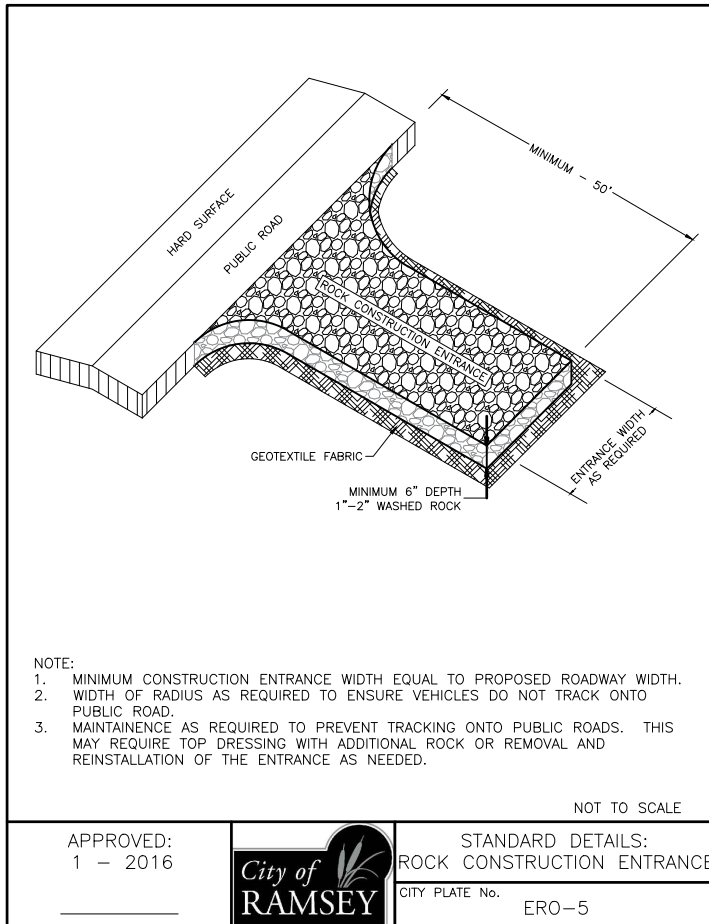
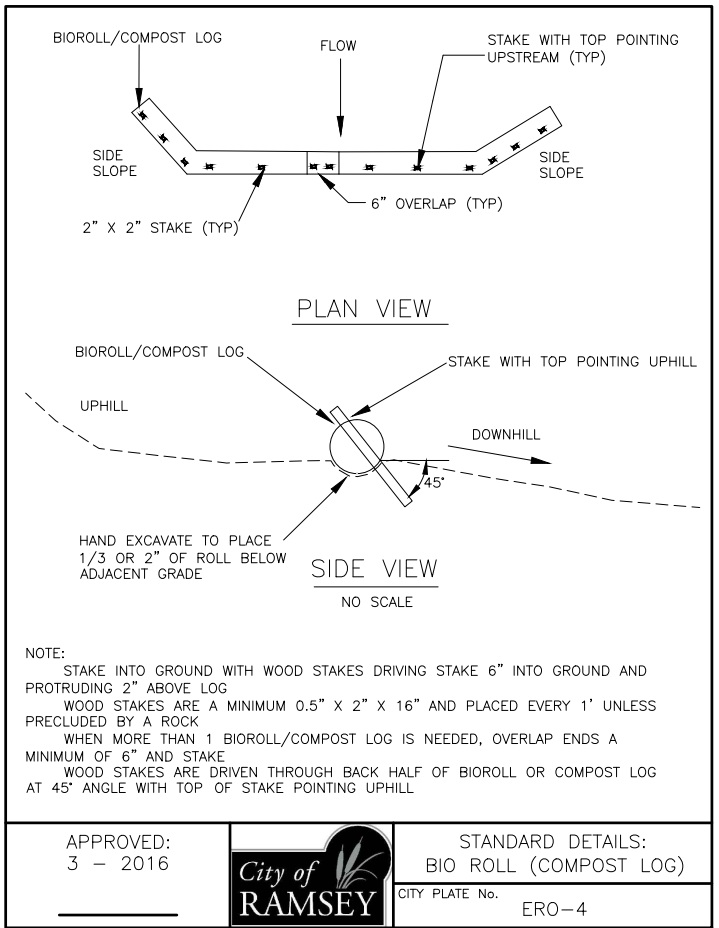
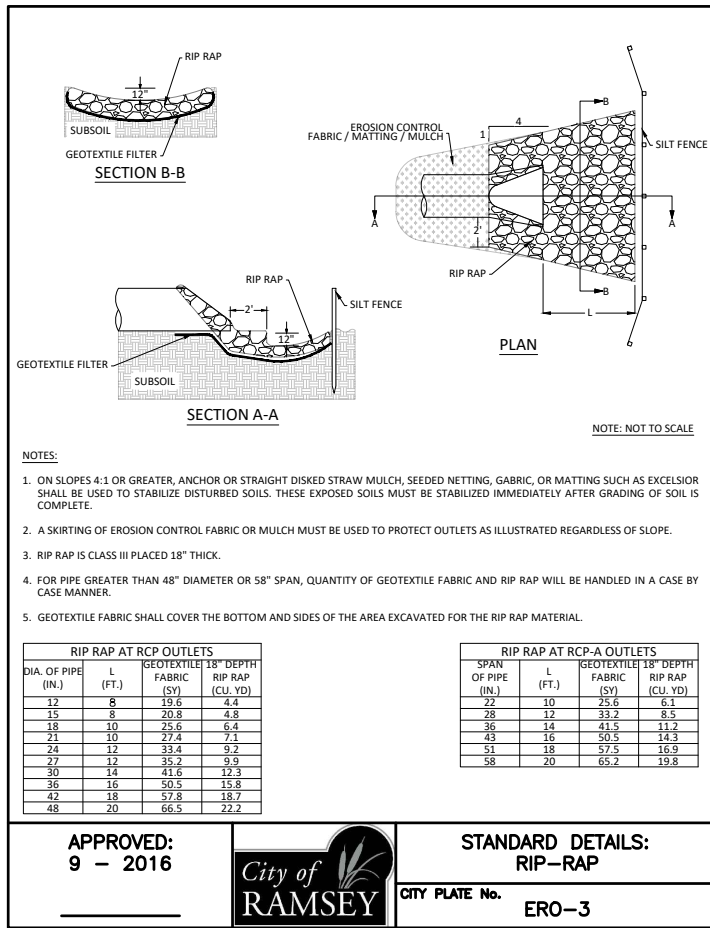
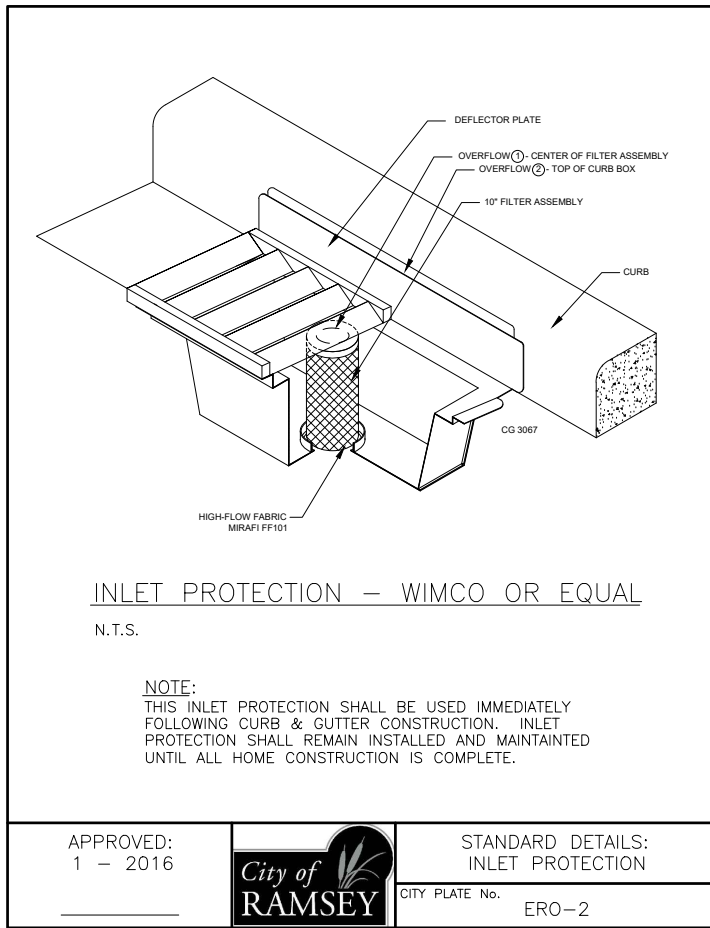
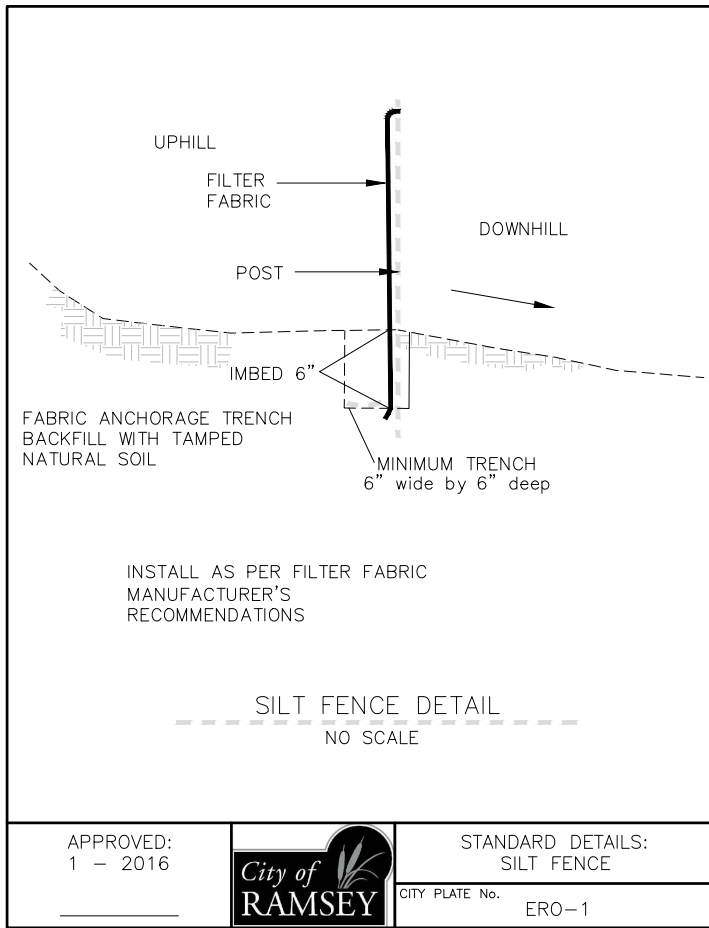


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SEH Project	RAMSY174498	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JRB, SRP	.			.		
Designed By	KLK	.			.		
Checked By	CES	.			.		

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SEH Project	RAMSY174498	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JRB, SRP	.			.		
Designed By	KLK	.			.		
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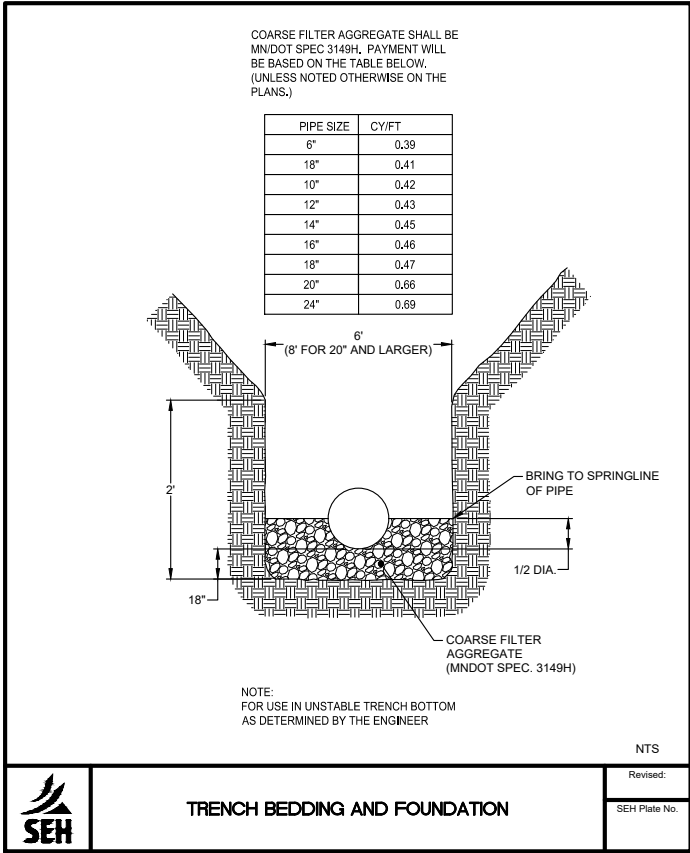
DATE 09-29-2023

David E. Hutton
LICENSE NO. 19133

WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

DETAILS

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SEH Project	RAMSY174498
Drawn By	JRB, SRP
Designed By	KLK
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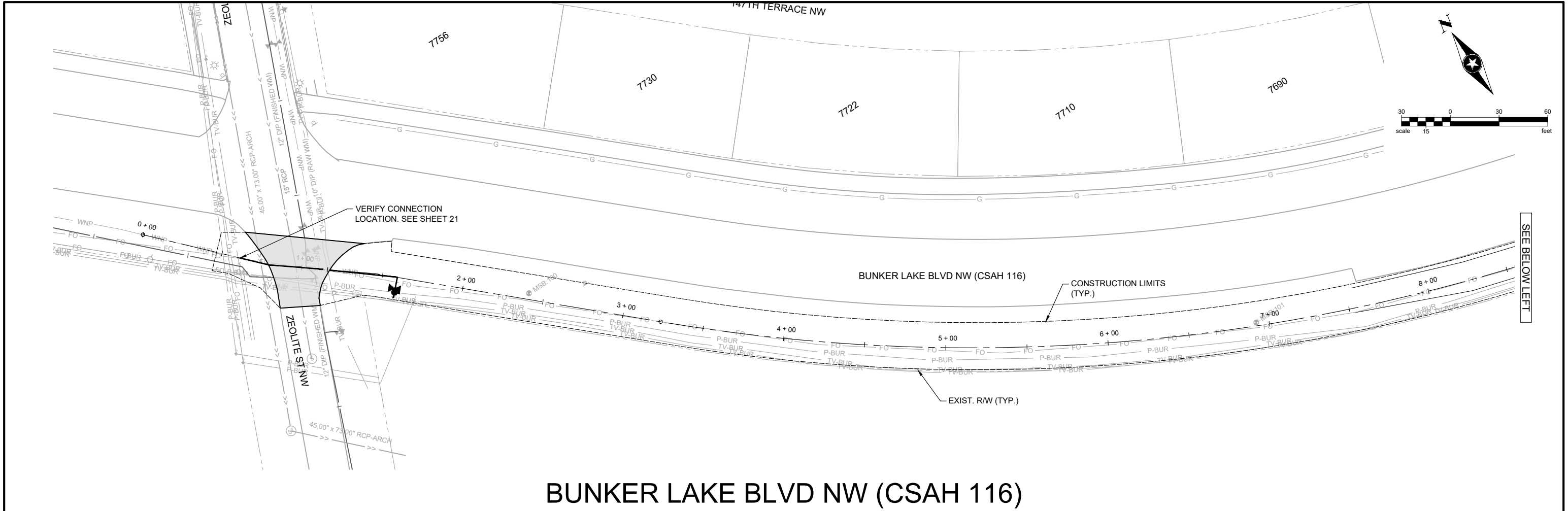
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David E. Hutton
LICENSE NO. 19133

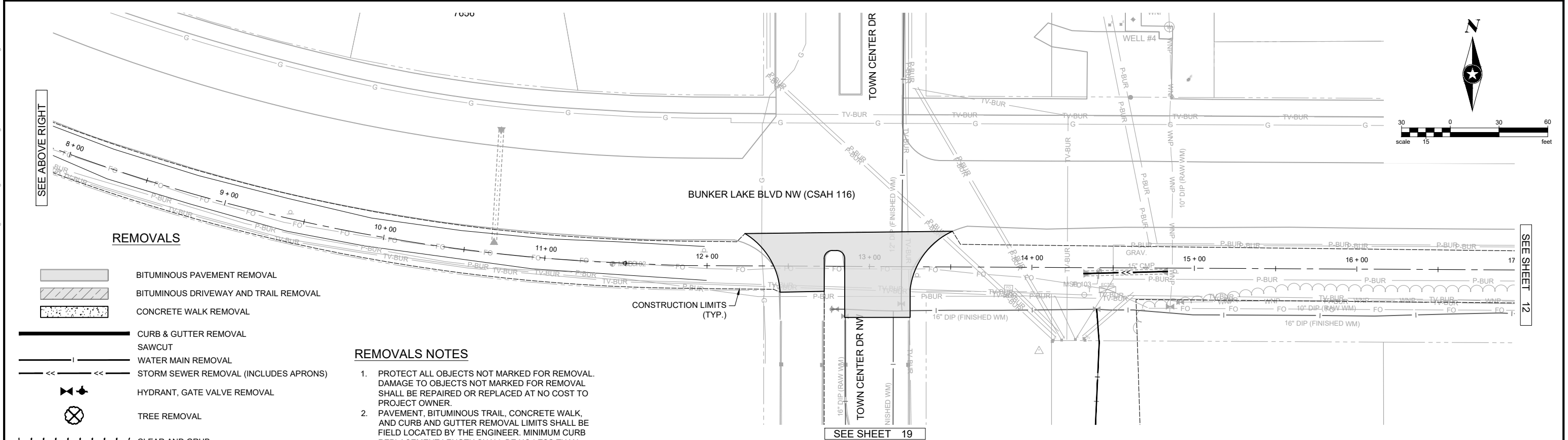
**WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS**

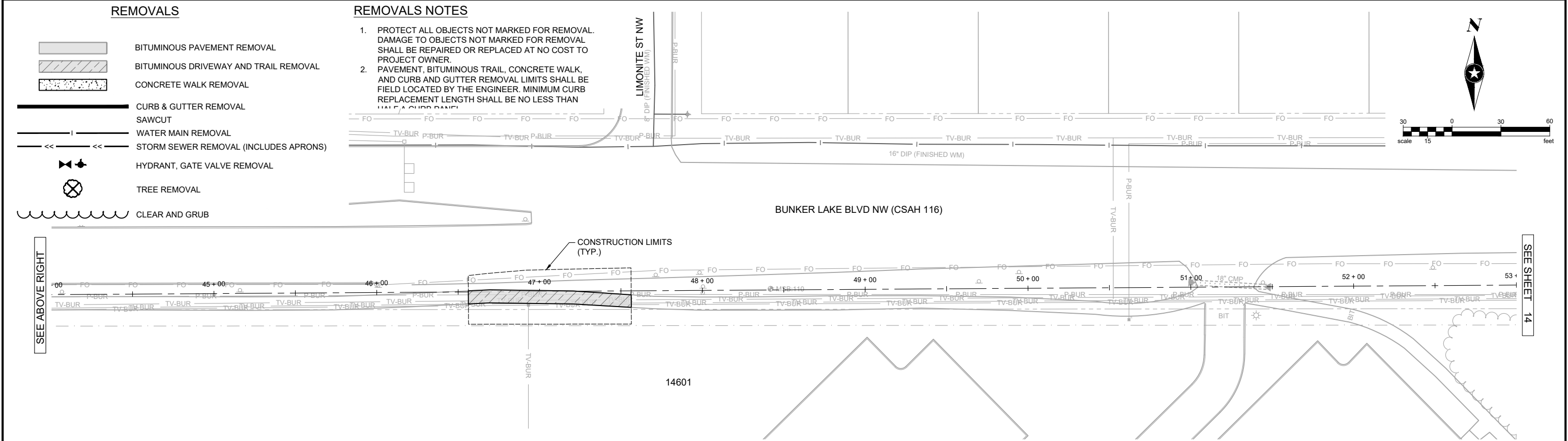
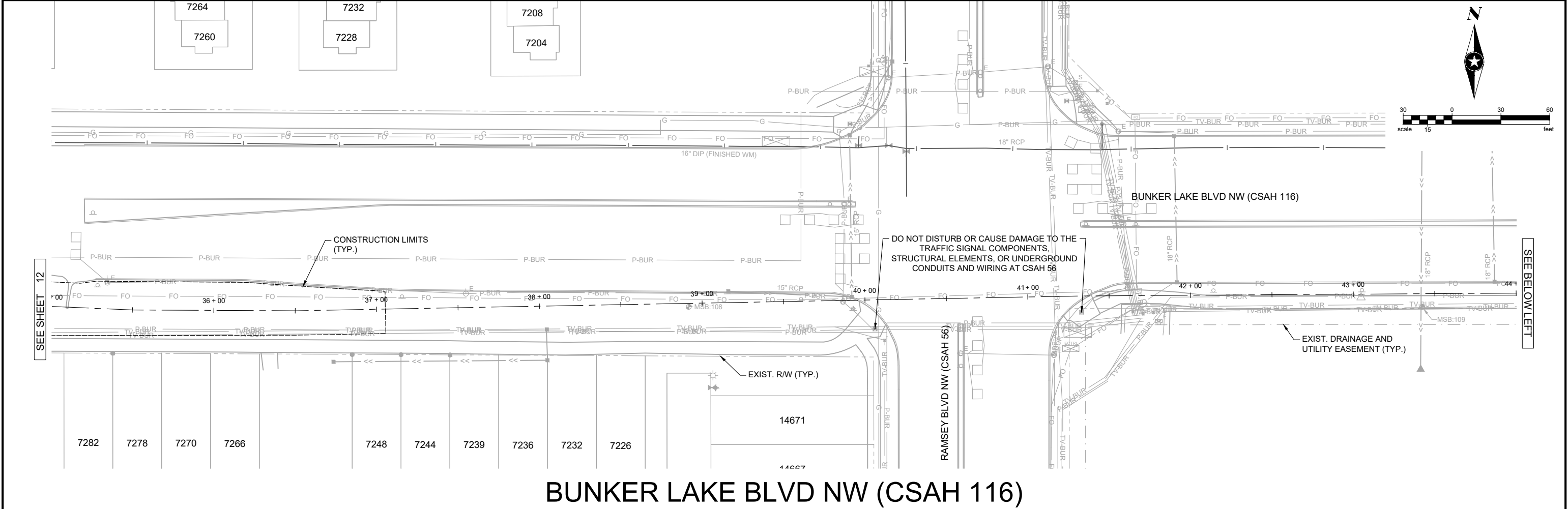
Ramsey, Minnesota

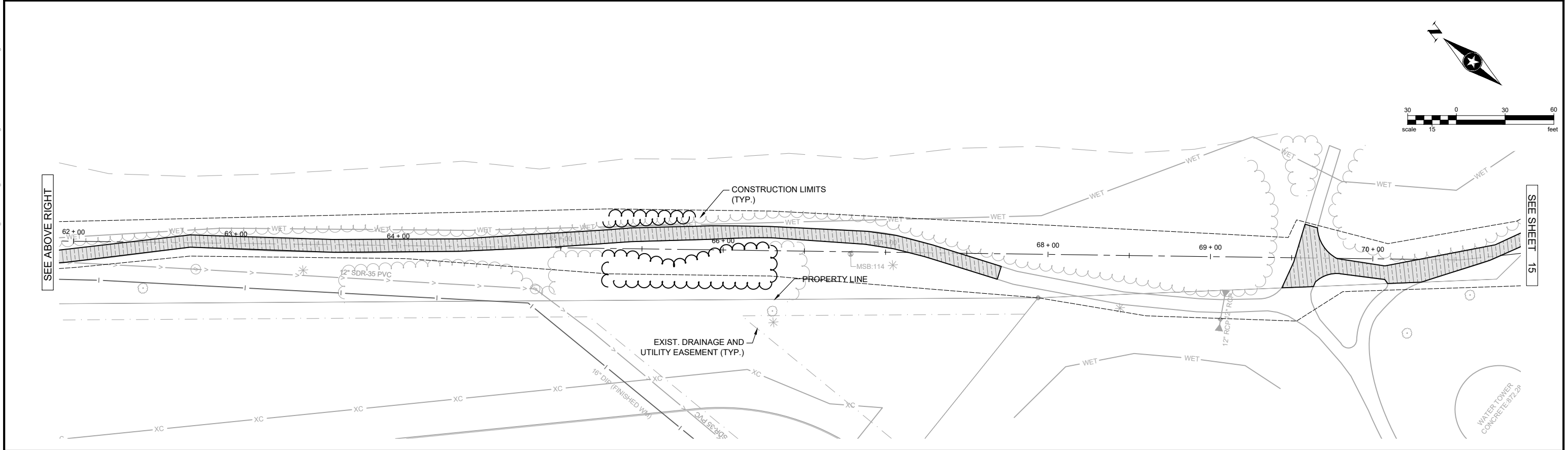
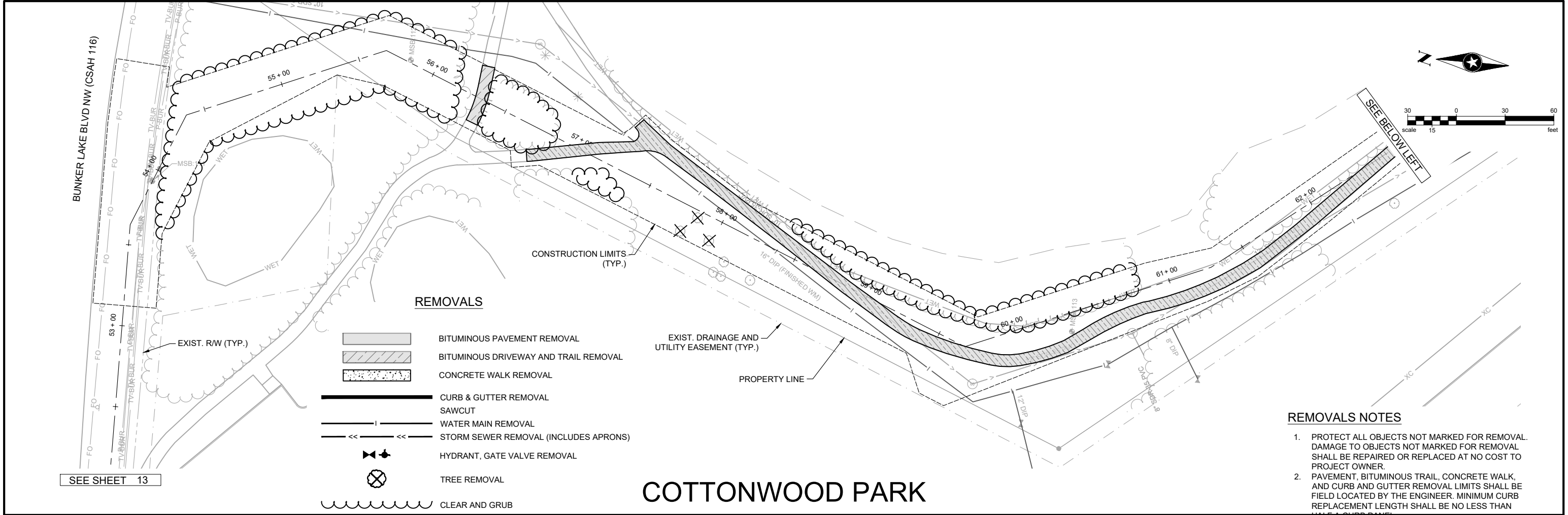
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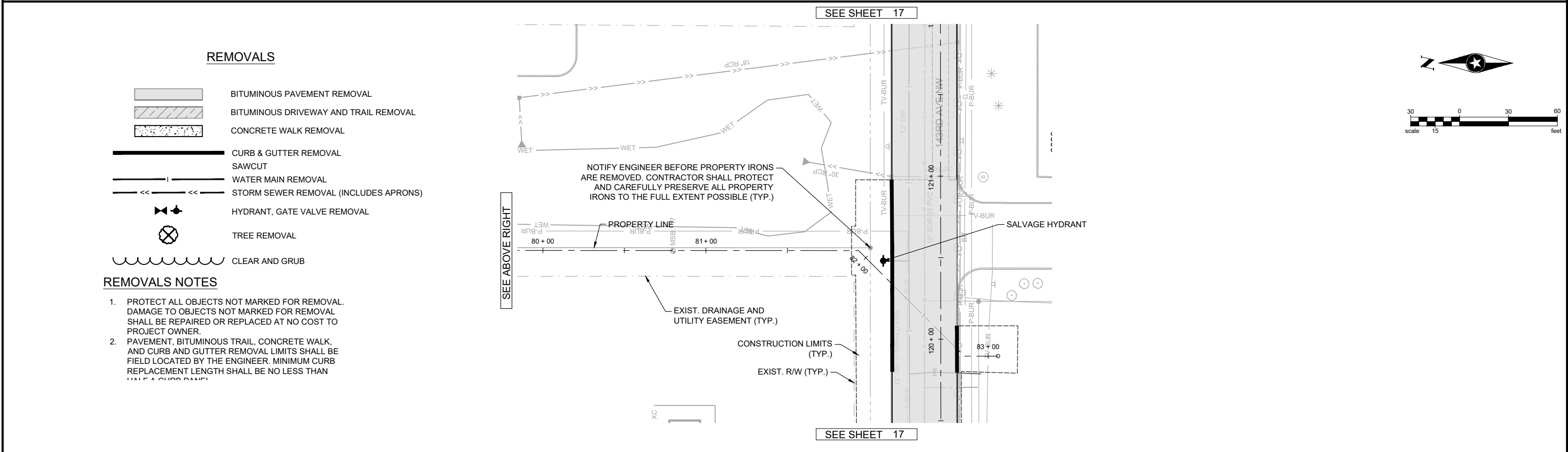
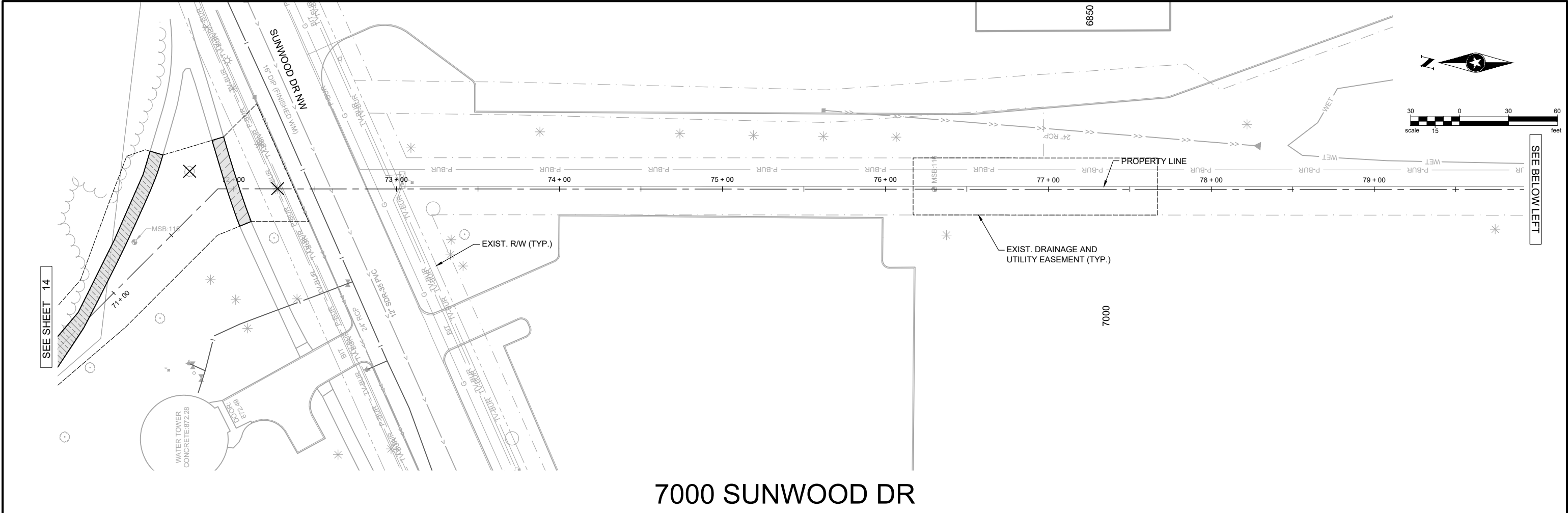


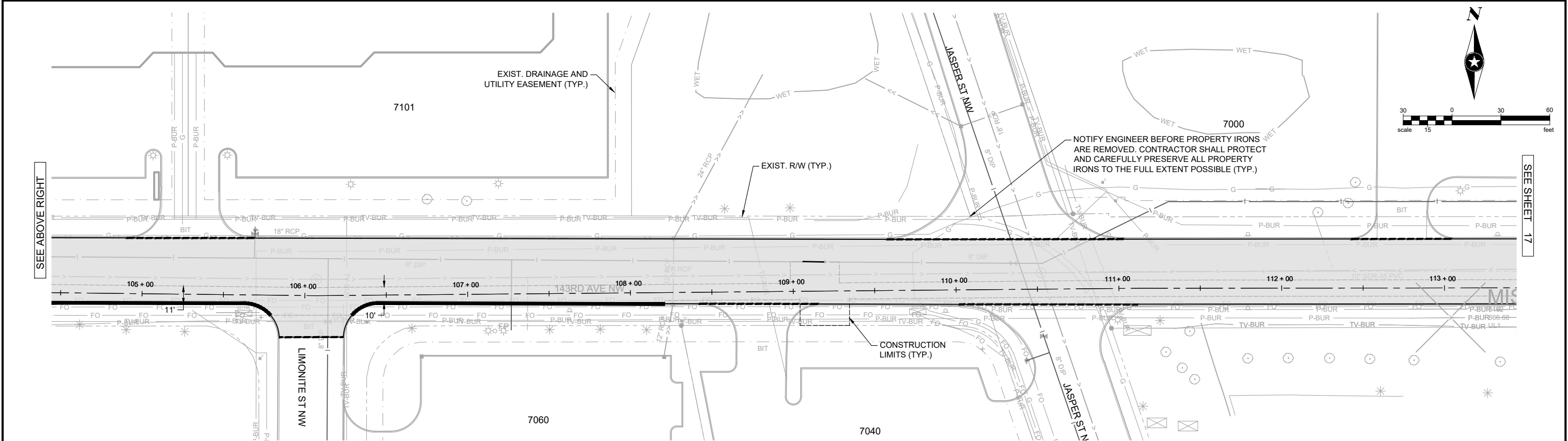
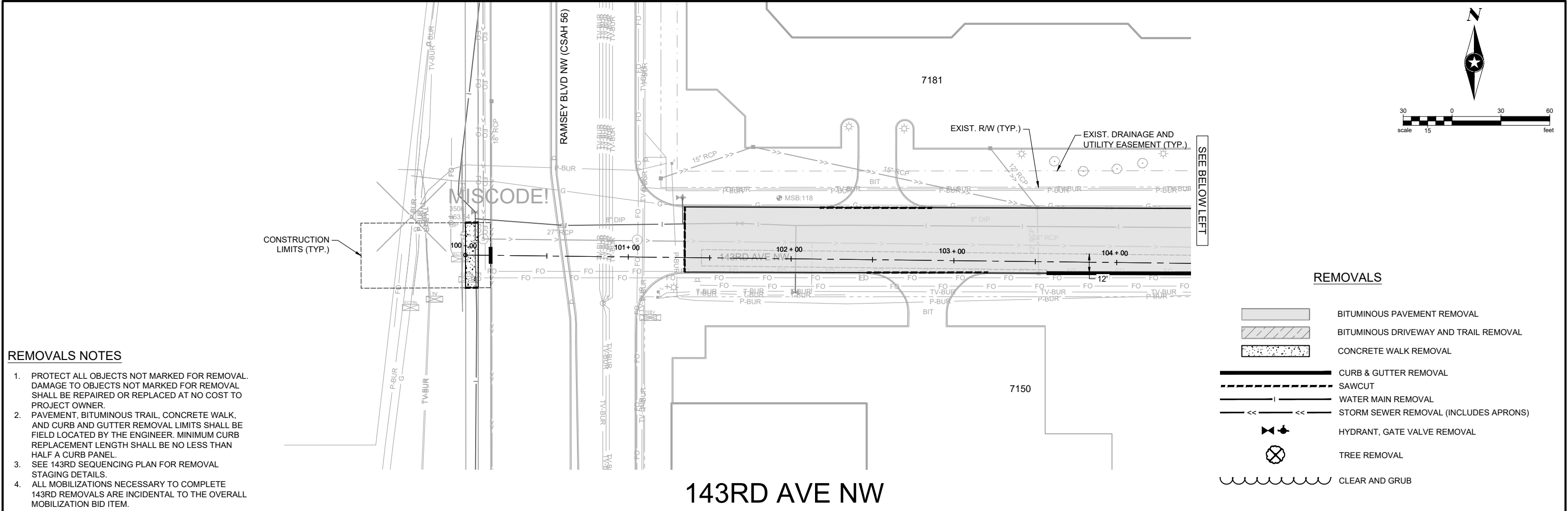
BUNKER LAKE BLVD NW (CSAH 116)

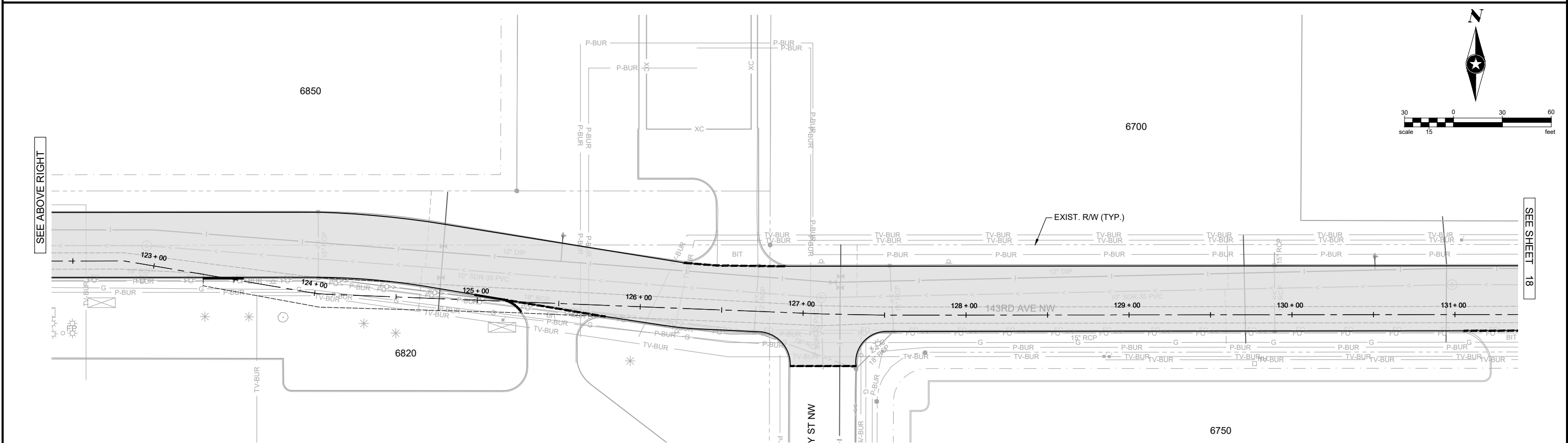
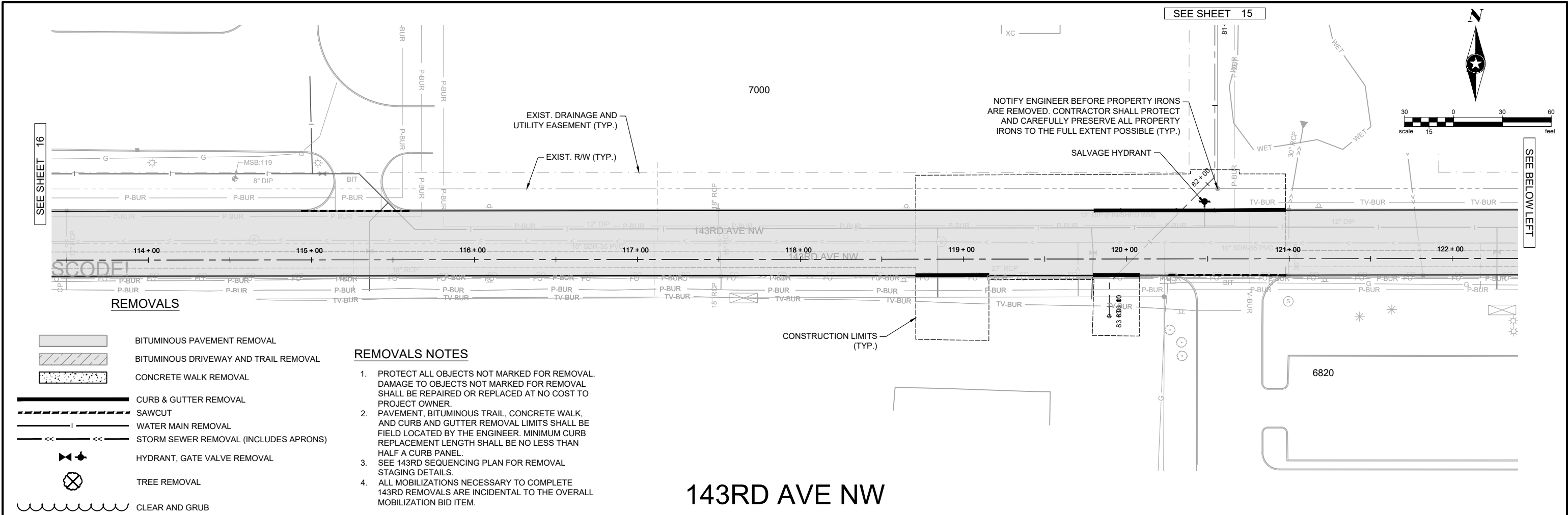


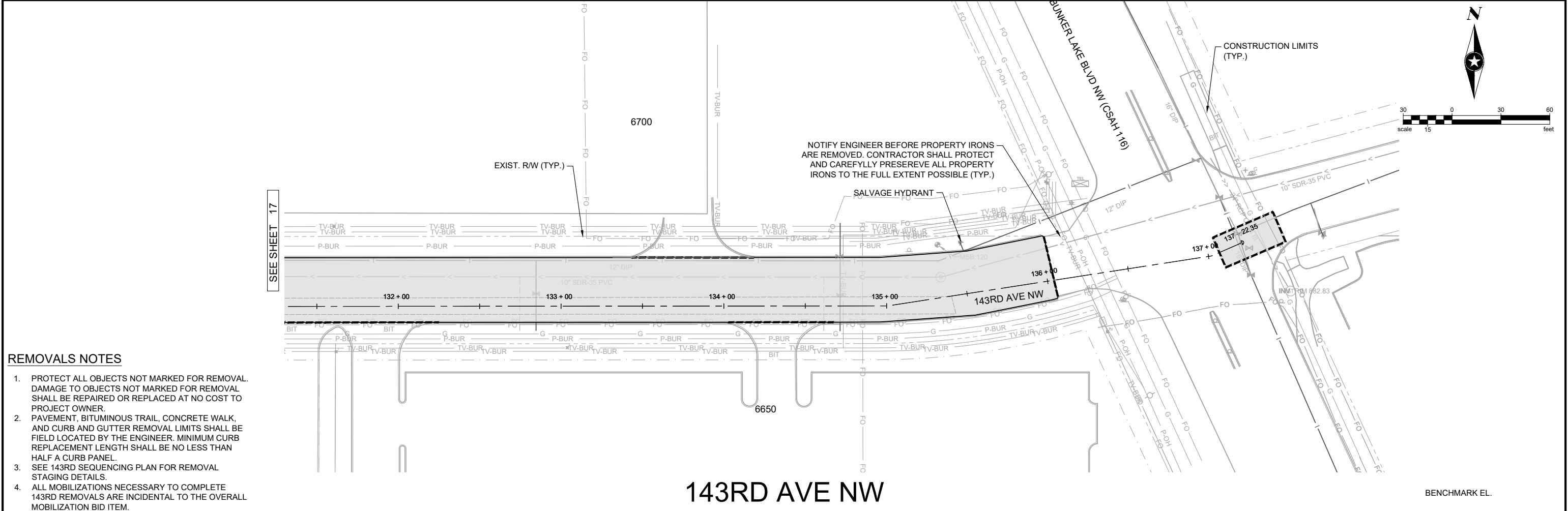










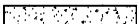











REMOVALS NOTES

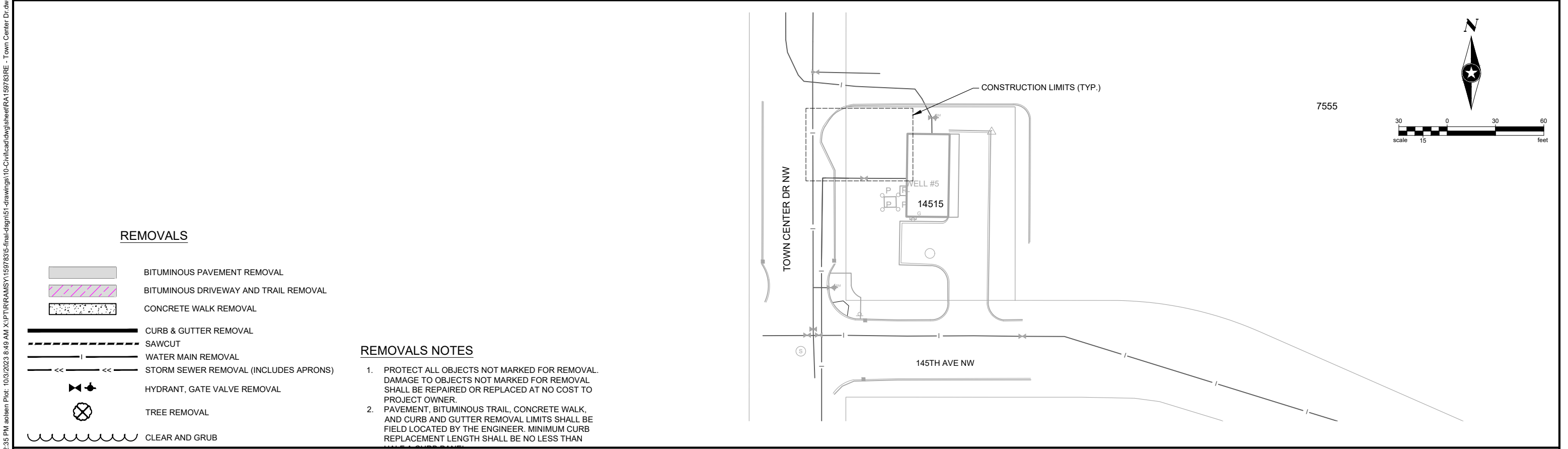
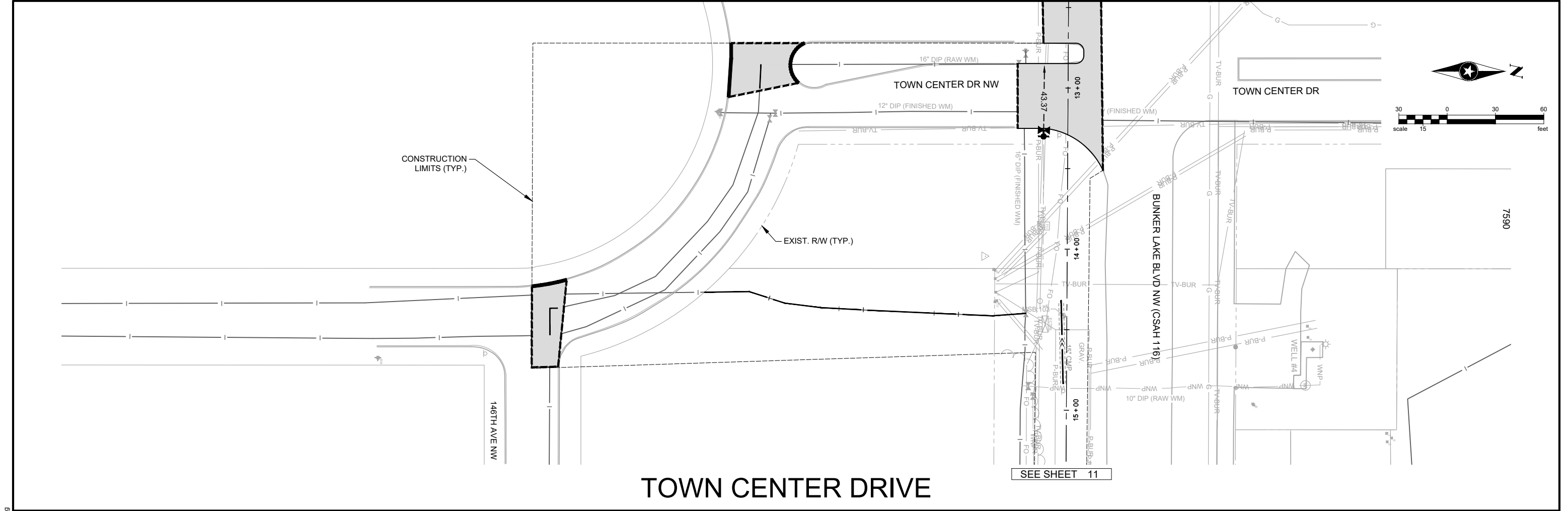
1. PROTECT ALL OBJECTS NOT MARKED FOR REMOVAL. DAMAGE TO OBJECTS NOT MARKED FOR REMOVAL SHALL BE REPAIRED OR REPLACED AT NO COST TO PROJECT OWNER.
2. PAVEMENT, BITUMINOUS TRAIL, CONCRETE WALK, AND CURB AND GUTTER REMOVAL LIMITS SHALL BE FIELD LOCATED BY THE ENGINEER. MINIMUM CURB REPLACEMENT LENGTH SHALL BE NO LESS THAN HALF A CURB PANEL.
3. SEE 143RD SEQUENCING PLAN FOR REMOVAL STAGING DETAILS.
4. ALL MOBILIZATIONS NECESSARY TO COMPLETE 143RD REMOVALS ARE INCIDENTAL TO THE OVERALL MOBILIZATION BID ITEM.

REMOVALS

-  BITUMINOUS PAVEMENT REMOVAL
-  BITUMINOUS DRIVEWAY AND TRAIL REMOVAL
-  CONCRETE WALK REMOVAL
-  CURB & GUTTER REMOVAL
-  SAWCUT
-  WATER MAIN REMOVAL
-  STORM SEWER REMOVAL (INCLUDES APRONS)
-  HYDRANT, GATE VALVE REMOVAL
-  TREE REMOVAL
-  CLEAR AND GRUB

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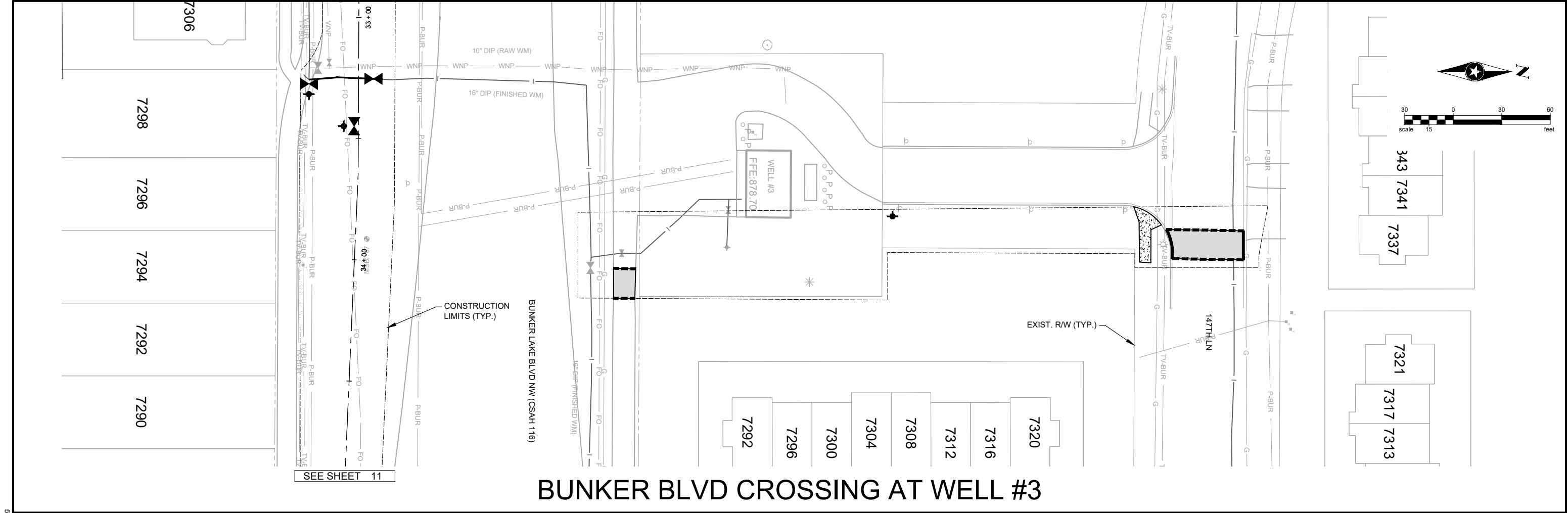


REMOVALS

- BITUMINOUS PAVEMENT REMOVAL
- BITUMINOUS DRIVEWAY AND TRAIL REMOVAL
- CONCRETE WALK REMOVAL
- CURB & GUTTER REMOVAL
- SAWCUT
- WATER MAIN REMOVAL
- STORM SEWER REMOVAL (INCLUDES APRONS)
- HYDRANT, GATE VALVE REMOVAL
- TREE REMOVAL
- CLEAR AND GRUB

REMOVALS NOTES

- PROTECT ALL OBJECTS NOT MARKED FOR REMOVAL. DAMAGE TO OBJECTS NOT MARKED FOR REMOVAL SHALL BE REPAIRED OR REPLACED AT NO COST TO PROJECT OWNER.
- PAVEMENT, BITUMINOUS TRAIL, CONCRETE WALK, AND CURB AND GUTTER REMOVAL LIMITS SHALL BE FIELD LOCATED BY THE ENGINEER. MINIMUM CURB REPLACEMENT LENGTH SHALL BE NO LESS THAN 10 FEET.



BUNKER BLVD CROSSING AT WELL #3

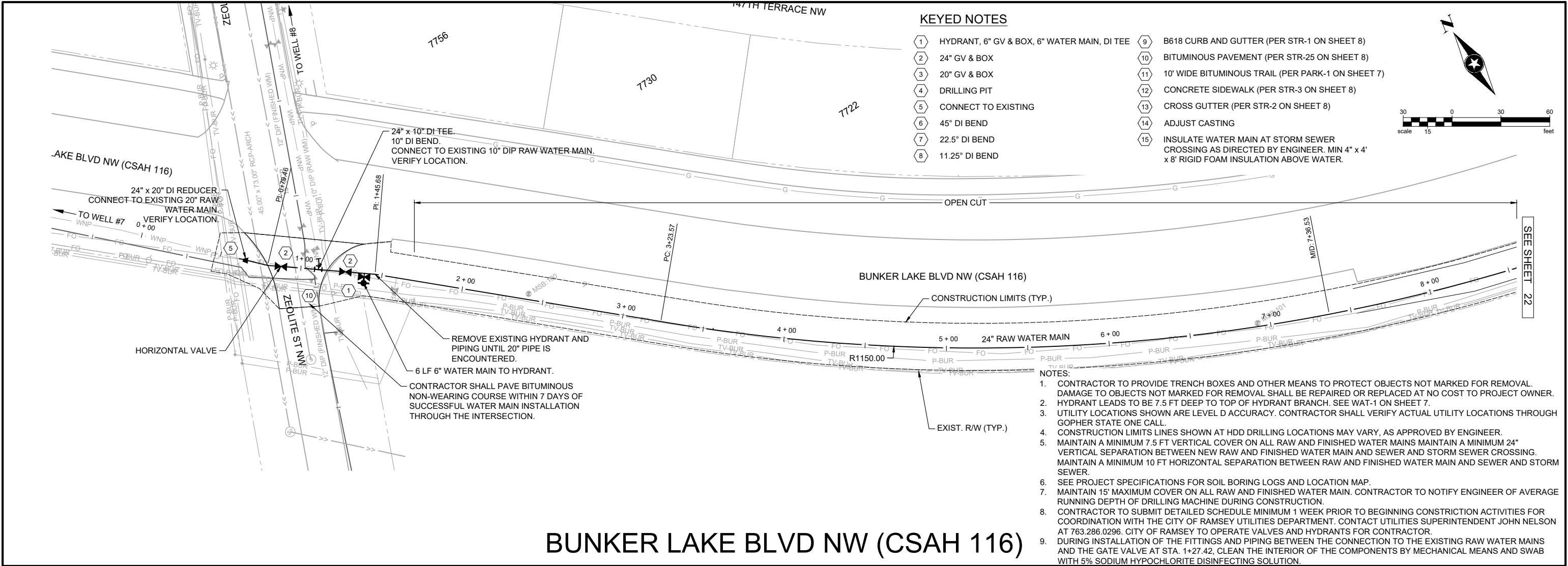
REMOVALS

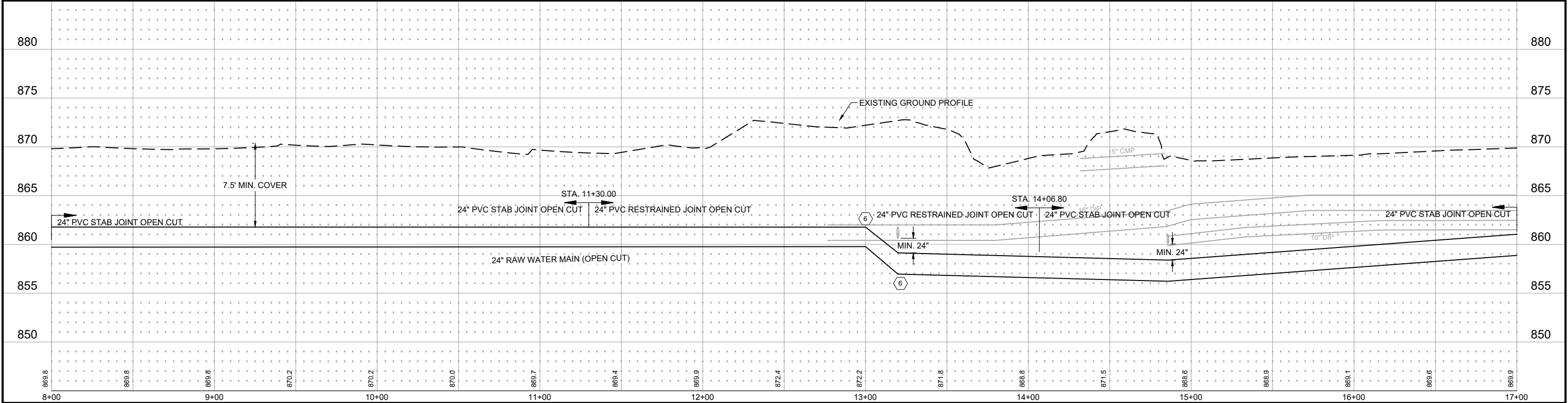
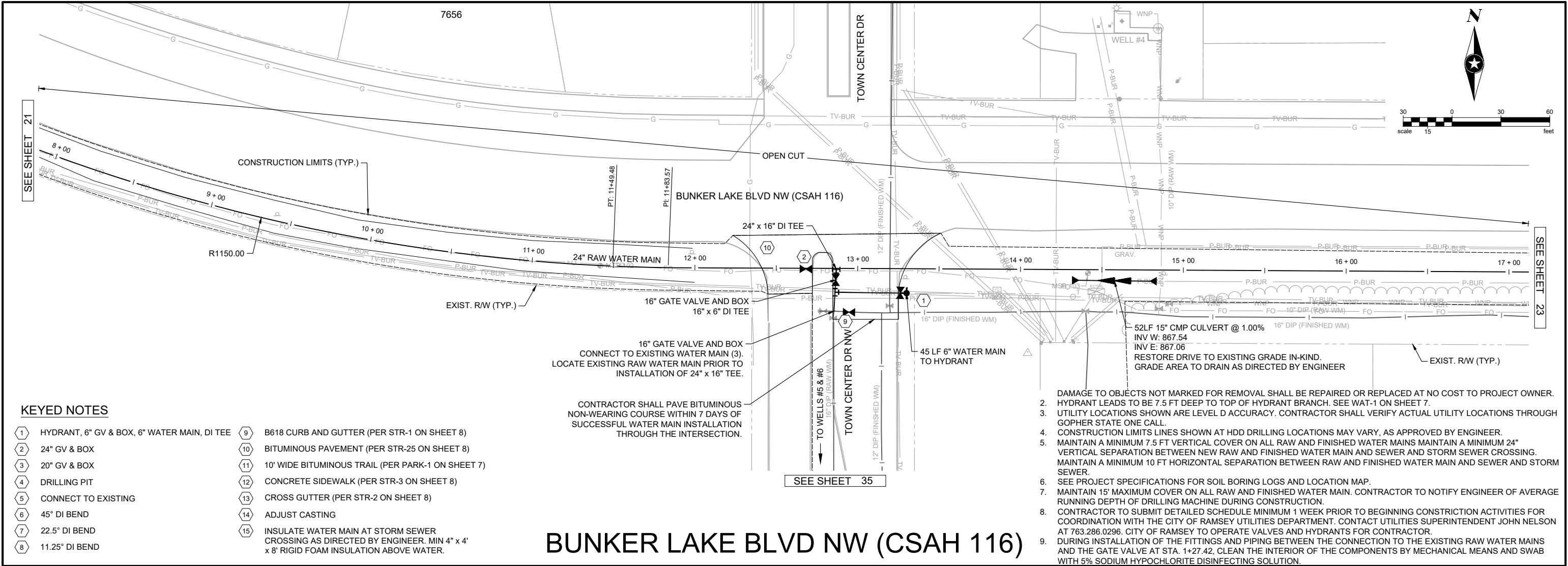
- BITUMINOUS PAVEMENT REMOVAL
- BITUMINOUS DRIVEWAY AND TRAIL REMOVAL
- CONCRETE WALK REMOVAL
- CURB & GUTTER REMOVAL
- SAWCUT
- WATER MAIN REMOVAL
- STORM SEWER REMOVAL (INCLUDES APRONS)
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- TREE REMOVAL
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- PROTECT ALL OBJECTS NOT MARKED FOR REMOVAL. DAMAGE TO OBJECTS NOT MARKED FOR REMOVAL SHALL BE REPAIRED OR REPLACED AT NO COST TO PROJECT OWNER.
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KEYED NOTES

- 1

HYDRANT, 6" GV & BOX, 6" WATER MAIN, DI TEE
- 2

24" GV & BOX
- 3

20" GV & BOX
- 4

DRILLING PIT
- 5

CONNECT TO EXISTING
- 6

45° DI BEND
- 7

22.5° DI BEND
- 8

11.25° DI BEND
- 9

B618 CURB AND GUTTER (PER STR-1 ON SHEET 8)
- 10

BITUMINOUS PAVEMENT (PER STR-25 ON SHEET 8)
- 11

10' WIDE BITUMINOUS TRAIL (PER PARK-1 ON SHEET 7)
- 12

CONCRETE SIDEWALK (PER STR-3 ON SHEET 8)
- 13

CROSS GUTTER (PER STR-2 ON SHEET 8)
- 14

ADJUST CASTING
- 15

INSULATE WATER MAIN AT STORM SEWER CROSSING AS DIRECTED BY ENGINEER. MIN 4" x 4' x 8' RIGID FOAM INSULATION ABOVE WATER.

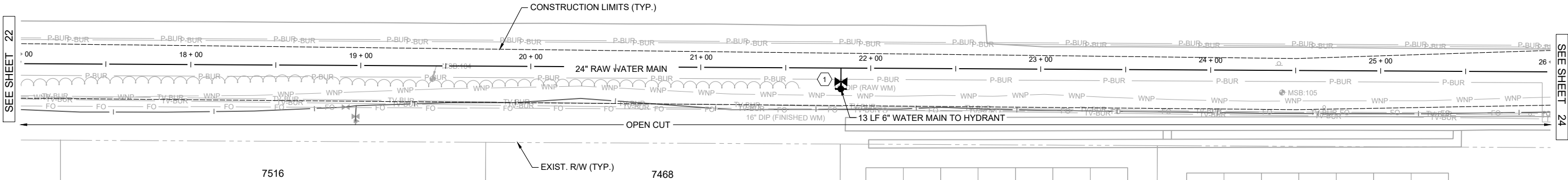
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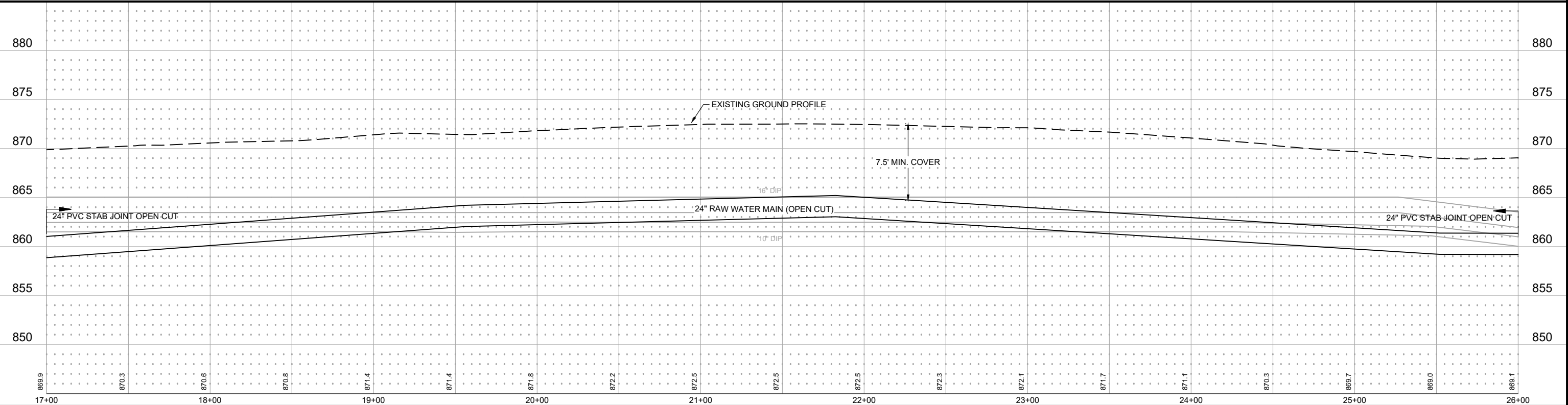


BUNKER LAKE BLVD NW (CSAH 116)



- DAMAGE TO OBJECTS NOT MARKED FOR REMOVAL SHALL BE REPAIRED OR REPLACED AT NO COST TO PROJECT OWNER.
- HYDRANT LEADS TO BE 7.5 FT DEEP TO TOP OF HYDRANT BRANCH. SEE WAT-1 ON SHEET 7.
 - UTILITY LOCATIONS SHOWN ARE LEVEL D ACCURACY. CONTRACTOR SHALL VERIFY ACTUAL UTILITY LOCATIONS THROUGH GOPHER STATE ONE CALL.
 - CONSTRUCTION LIMITS LINES SHOWN AT HDD DRILLING LOCATIONS MAY VARY, AS APPROVED BY ENGINEER.
 - MAINTAIN A MINIMUM 7.5 FT VERTICAL COVER ON ALL RAW AND FINISHED WATER MAINS MAINTAIN A MINIMUM 24" VERTICAL SEPARATION BETWEEN NEW RAW AND FINISHED WATER MAIN AND SEWER AND STORM SEWER CROSSING. MAINTAIN A MINIMUM 10 FT HORIZONTAL SEPARATION BETWEEN RAW AND FINISHED WATER MAIN AND SEWER AND STORM SEWER.
 - SEE PROJECT SPECIFICATIONS FOR SOIL BORING LOGS AND LOCATION MAP.
 - MAINTAIN 15' MAXIMUM COVER ON ALL RAW AND FINISHED WATER MAIN. CONTRACTOR TO NOTIFY ENGINEER OF AVERAGE RUNNING DEPTH OF DRILLING MACHINE DURING CONSTRUCTION.
 - CONTRACTOR TO SUBMIT DETAILED SCHEDULE MINIMUM 1 WEEK PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES FOR COORDINATION WITH THE CITY OF RAMSEY UTILITIES DEPARTMENT. CONTACT UTILITIES SUPERINTENDENT JOHN NELSON AT 763.286.0296. CITY OF RAMSEY TO OPERATE VALVES AND HYDRANTS FOR CONTRACTOR.
 - DURING INSTALLATION OF THE FITTINGS AND PIPING BETWEEN THE CONNECTION TO THE EXISTING RAW WATER MAINS AND THE GATE VALVE AT STA. 1+27.42, CLEAN THE INTERIOR OF THE COMPONENTS BY MECHANICAL MEANS AND SWAB WITH 5% SODIUM HYPOCHLORITE DISINFECTING SOLUTION.

BUNKER LAKE BLVD NW (CSAH 116)



SEH Project	RAMSY174498	Rev. #	Revision Issue Description	Date	Rev. #	Revision Issue Description	Date	<div><div>SEH</div><div>I HEREBY CERTIFY THAT THIS PLAN 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 MN.</div><div>DATE <u>09-29-2023</u></div></div>	<div><div>WATER TREATMENT PLANT</div><div>TRUNK WATER MAIN IMPROVEMENTS</div><div>Ramsey, Minnesota</div></div>	<div><div>UTILITY PLAN & PROFILE</div><div>BUNKER LAKE BLVD NW (CSAH 116)</div></div>	<div>23</div> <div>of 58</div>
Drawn By	JRB, SRP	David E. Hutton	LICENSE NO. <u>19133</u>				
Designed By	KLK						
Checked By	CES						

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KEYED NOTES

- 1

HYDRANT, 6" GV & BOX, 6" WATER MAIN, DI TEE
- 2

24" GV & BOX
- 3

20" GV & BOX
- 4

DRILLING PIT
- 5

CONNECT TO EXISTING
- 6

45° DI BEND
- 7

22.5° DI BEND
- 8

11.25° DI BEND
- 9

B618 CURB AND GUTTER (PER STR-1 ON SHEET 8)
- 10

BITUMINOUS PAVEMENT (PER STR-25 ON SHEET 8)
- 11

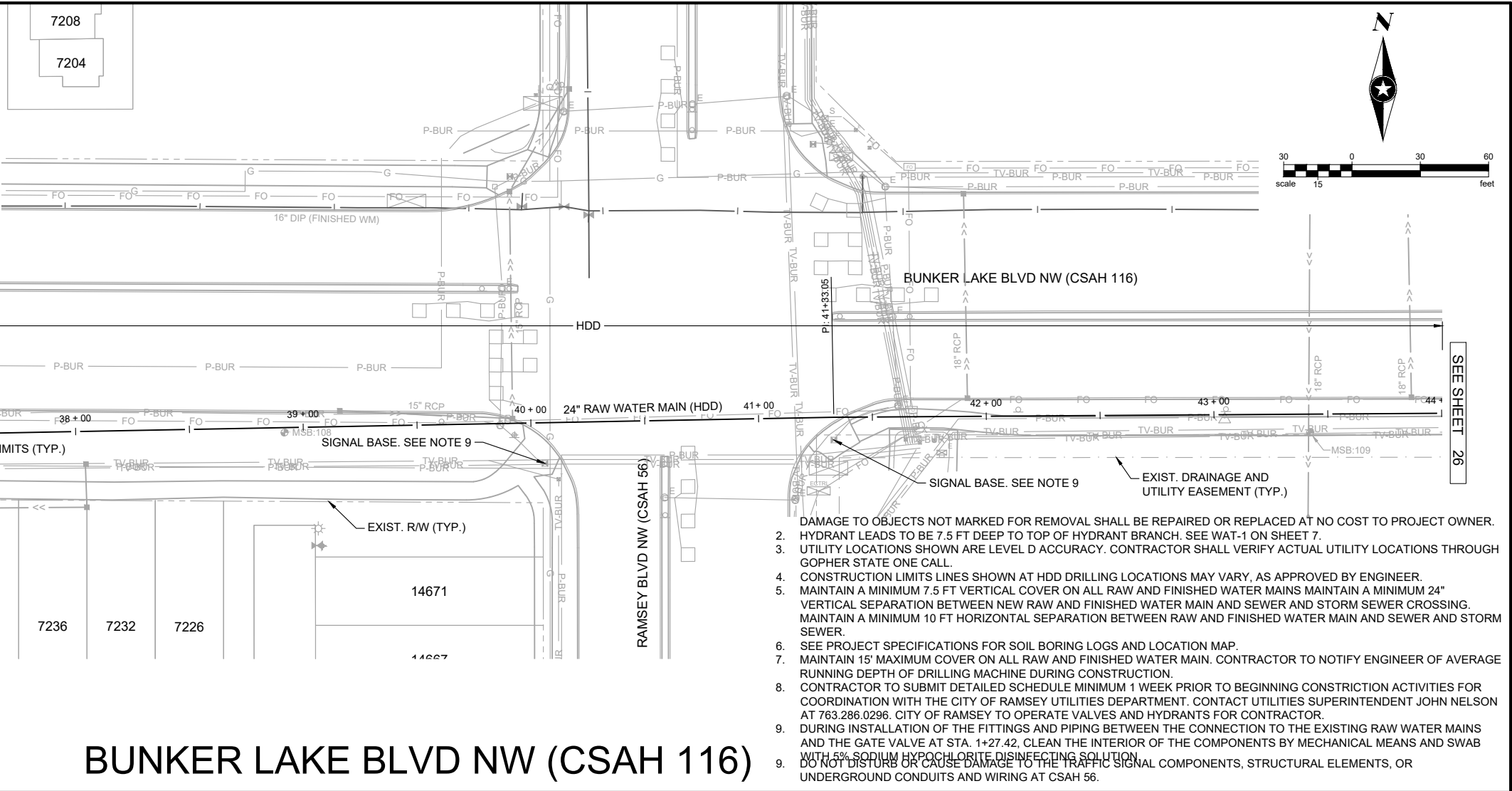
10' WIDE BITUMINOUS TRAIL (PER PARK-1 ON SHEET 7)
- 12

CONCRETE SIDEWALK (PER STR-3 ON SHEET 8)
- 13

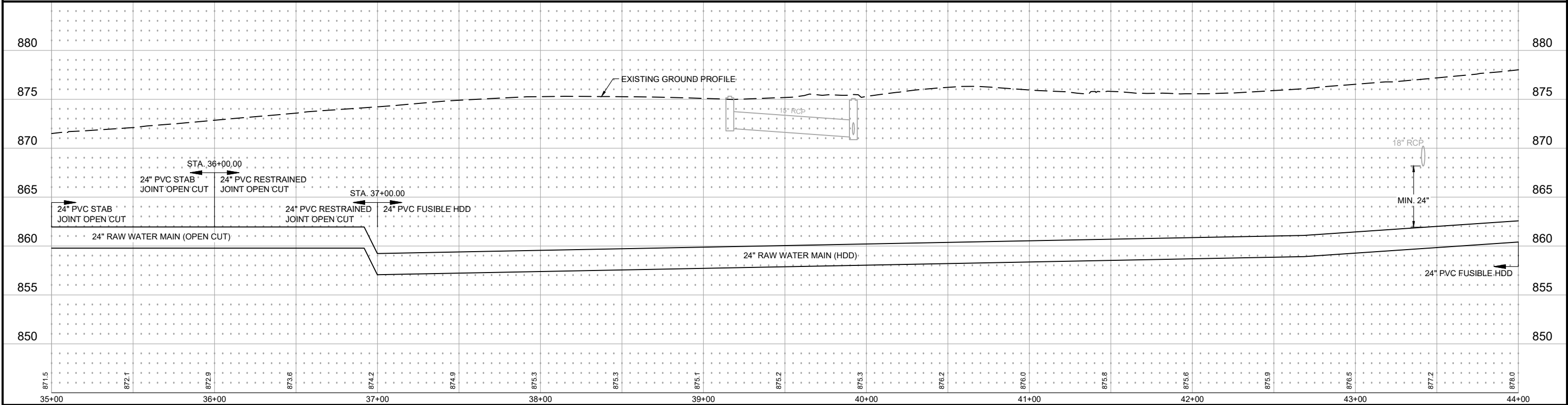
CROSS GUTTER (PER STR-2 ON SHEET 8)
- 14

ADJUST CASTING
- 15

INSULATE WATER MAIN AT STORM SEWER CROSSING AS DIRECTED BY ENGINEER. MIN 4" x 4" x 8' RIGID FOAM INSULATION ABOVE WATER.



BUNKER LAKE BLVD NW (CSAH 116)



SEH Project	RAMSY174498	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JRB, SRP	.			.		
Designed By	KLK	.			.		
Checked By	CES	.			.		

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David E. Hutton
LICENSE NO. 19133

WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS

Ramsey, Minnesota

UTILITY PLAN & PROFILE
BUNKER LAKE BLVD NW (CSAH 116)

25
of 58

KEYED NOTES

- 1

HYDRANT, 6" GV & BOX, 6" WATER MAIN, DI TEE
- 2

24" GV & BOX
- 3

20" GV & BOX
- 4

DRILLING PIT
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CONNECT TO EXISTING
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- 9

B618 CURB AND GUTTER (PER STR-1 ON SHEET 8)
- 10

BITUMINOUS PAVEMENT (PER STR-25 ON SHEET 8)
- 11

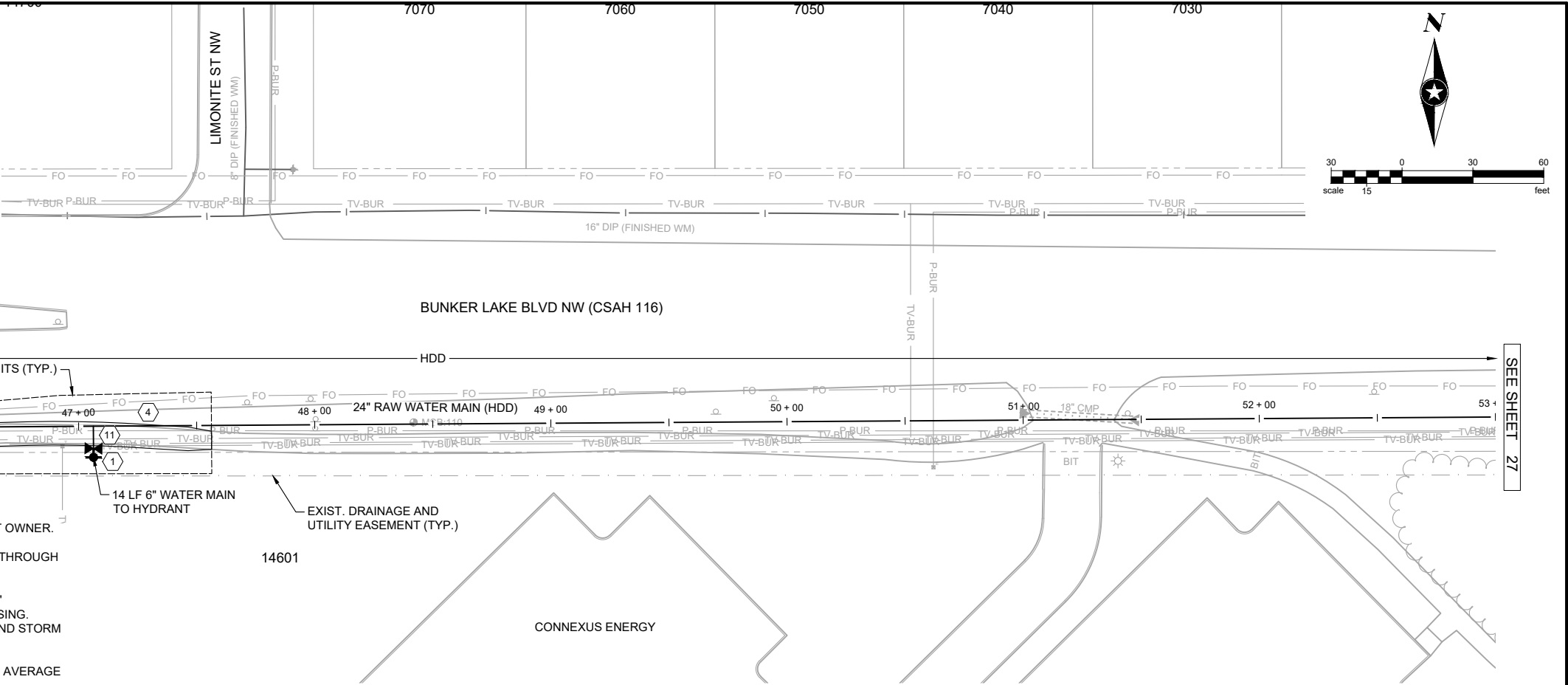
10' WIDE BITUMINOUS TRAIL (PER PARK-1 ON SHEET 7)
- 12

CONCRETE SIDEWALK (PER STR-3 ON SHEET 8)
- 13

CROSS GUTTER (PER STR-2 ON SHEET 8)
- 14

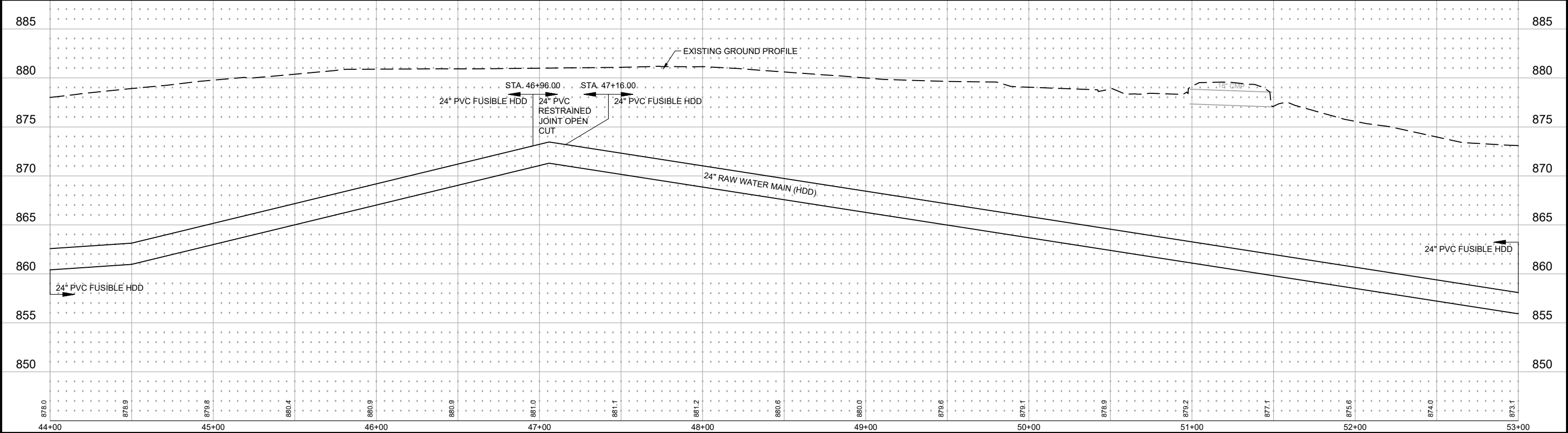
ADJUST CASTING
- 15

INSULATE WATER MAIN AT STORM SEWER CROSSING AS DIRECTED BY ENGINEER. MIN 4" x 4" x 8' RIGID FOAM INSULATION ABOVE WATER.



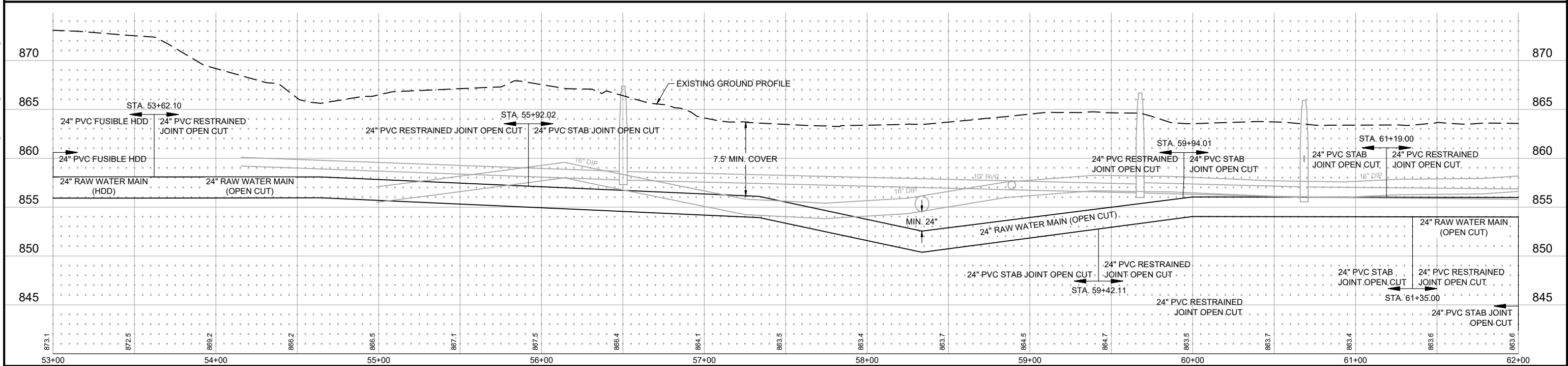
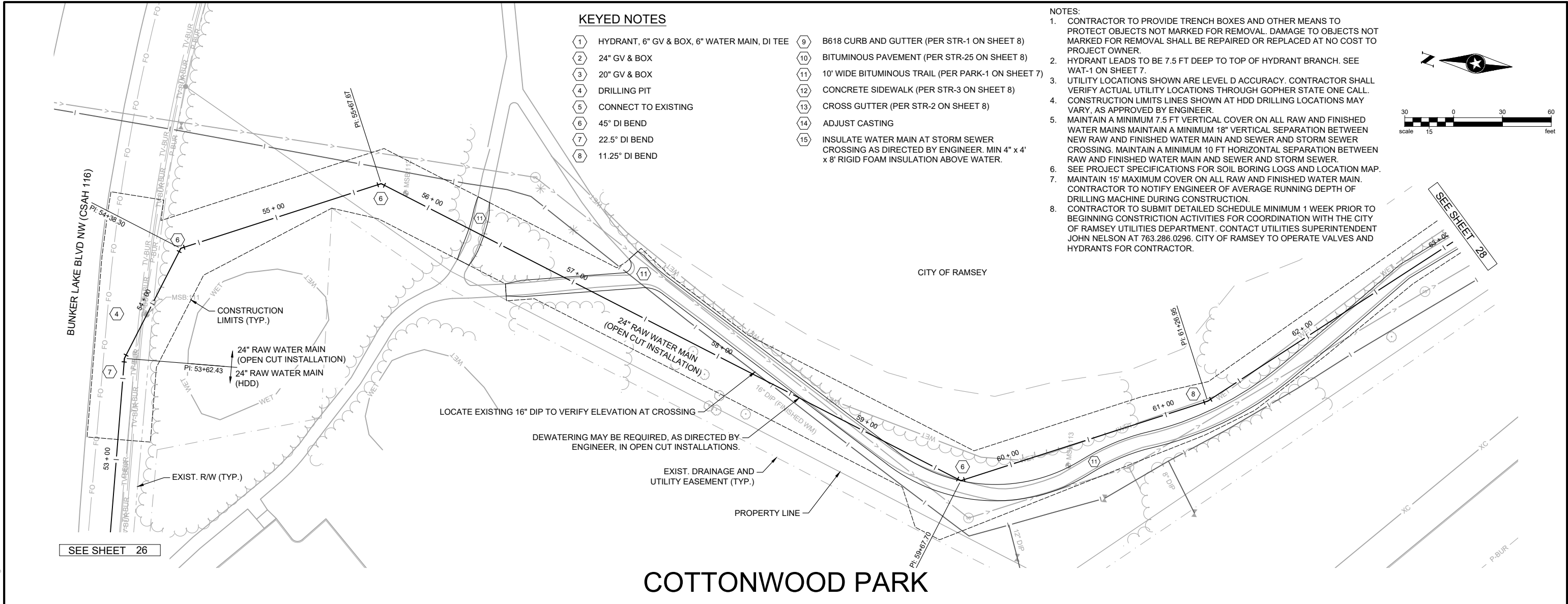
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BUNKER LAKE BLVD NW (CSAH 116)



SEH Project		RAMSY174498	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date	<div><div>SEH</div><div>I HEREBY CERTIFY THAT THIS PLAN 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 MN.</div><div>DATE <u>09-29-2023</u></div><div>David E. Hutton LICENSE NO. <u>19133</u></div></div>	<div><div>WATER TREATMENT PLANT</div><div>TRUNK WATER MAIN IMPROVEMENTS</div><div>Ramsey, Minnesota</div></div>	<div><div>UTILITY PLAN & PROFILE</div><div>BUNKER LAKE BLVD NW (CSAH 116)</div></div>	26 of 58
Drawn By		JRB, SRP						
Designed By		KLK						
Checked By		CES						

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KEYED NOTES

- 1

HYDRANT, 6" GV & BOX, 6" WATER MAIN, DI TEE
- 2

24" GV & BOX
- 3

20" GV & BOX
- 4

DRILLING PIT
- 5

CONNECT TO EXISTING
- 6

45° DI BEND
- 7

22.5° DI BEND
- 8

11.25° DI BEND
- 9

B618 CURB AND GUTTER (PER STR-1 ON SHEET 8)
- 10

BITUMINOUS PAVEMENT (PER STR-25 ON SHEET 8)
- 11

10' WIDE BITUMINOUS TRAIL (PER PARK-1 ON SHEET 7)
- 12

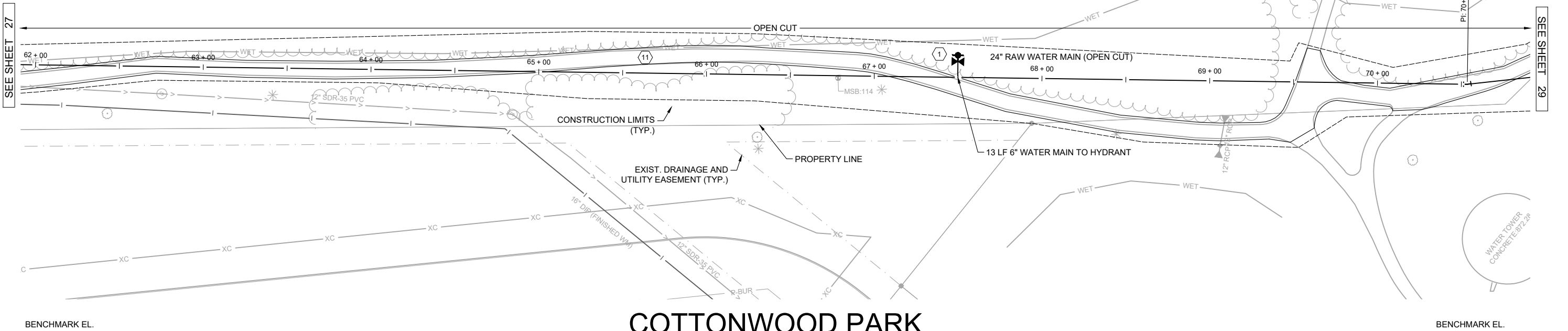
CONCRETE SIDEWALK (PER STR-3 ON SHEET 8)
- 13

CROSS GUTTER (PER STR-2 ON SHEET 8)
- 14

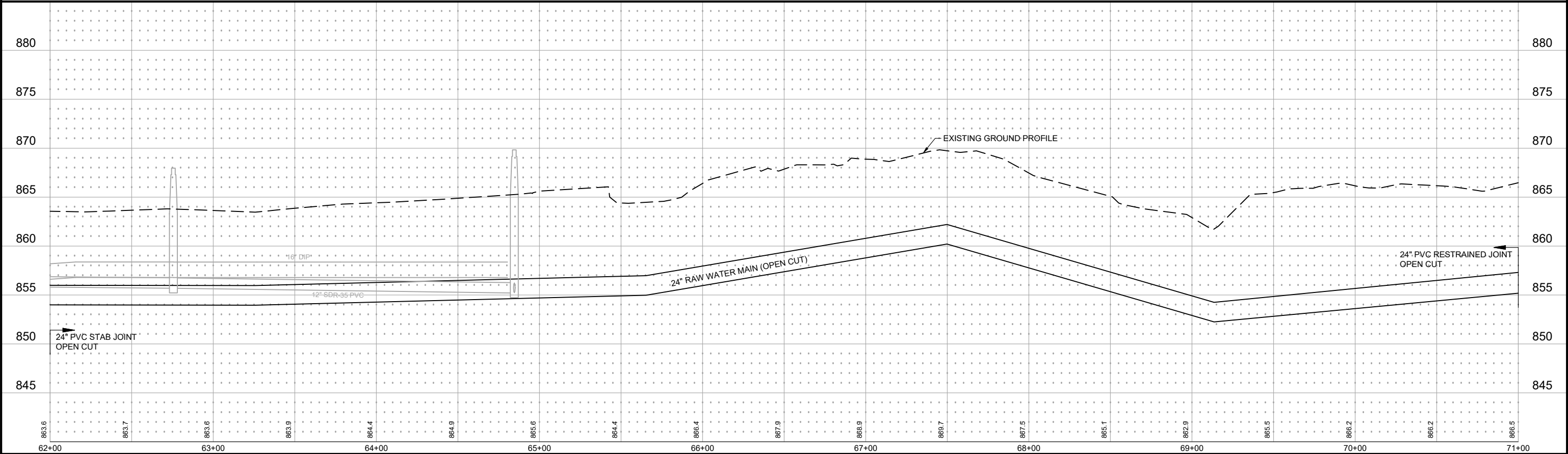
ADJUST CASTING
- 15

INSULATE WATER MAIN AT STORM SEWER CROSSING AS DIRECTED BY ENGINEER. MIN 4" x 4' x 8' RIGID FOAM INSULATION ABOVE WATER.

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COTTONWOOD PARK

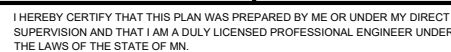


(1)	HYDRANT, 6" GV & BOX, 6" WATER MAIN, DI TEE	(9)	B618 CURB AND GUTTER (PER STR-1 ON SHEET 8)
(2)	24" GV & BOX	(10)	BITUMINOUS PAVEMENT (PER STR-25 ON SHEET 8)
(3)	20" GV & BOX	(11)	10' WIDE BITUMINOUS TRAIL (PER PARK-1 ON SHEET 8)
(4)	DRILLING PIT	(12)	CONCRETE SIDEWALK (PER STR-3 ON SHEET 8)
(5)	CONNECT TO EXISTING	(13)	CROSS GUTTER (PER STR-2 ON SHEET 8)
(6)	45° DI BEND	(14)	ADJUST CASTING
(7)	22.5° DI BEND	(15)	INSULATE WATER MAIN AT STORM SEWER CROSSING AS DIRECTED BY ENGINEER. MIN 4" x 4" x 8' RIGID FOAM INSULATION ABOVE WATER.
(8)	11.25° DI BEND		

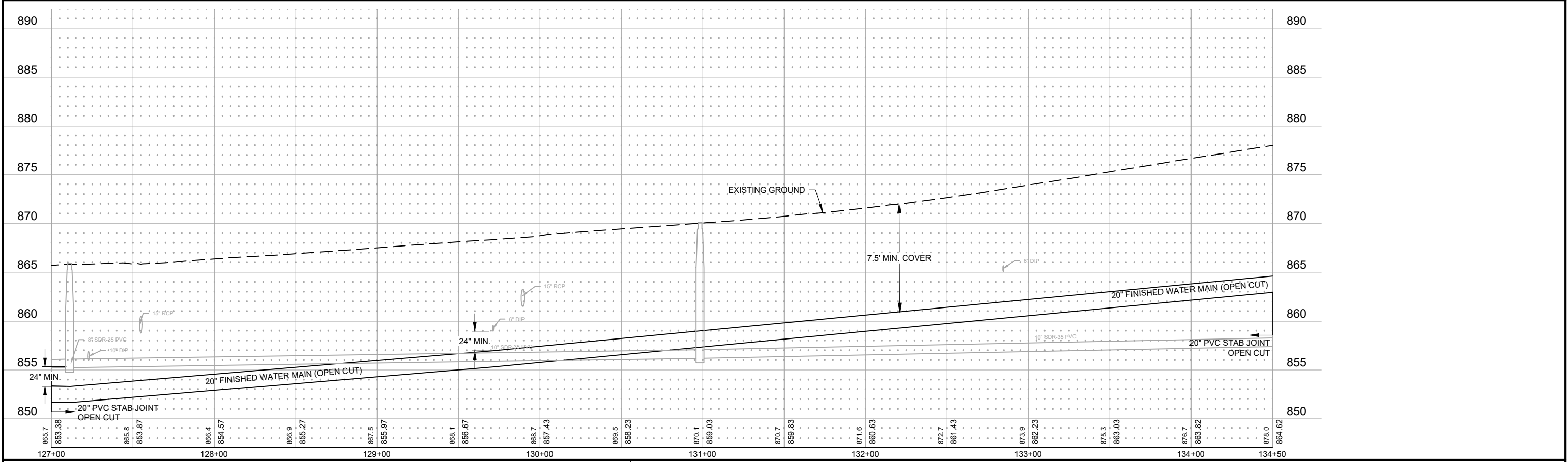
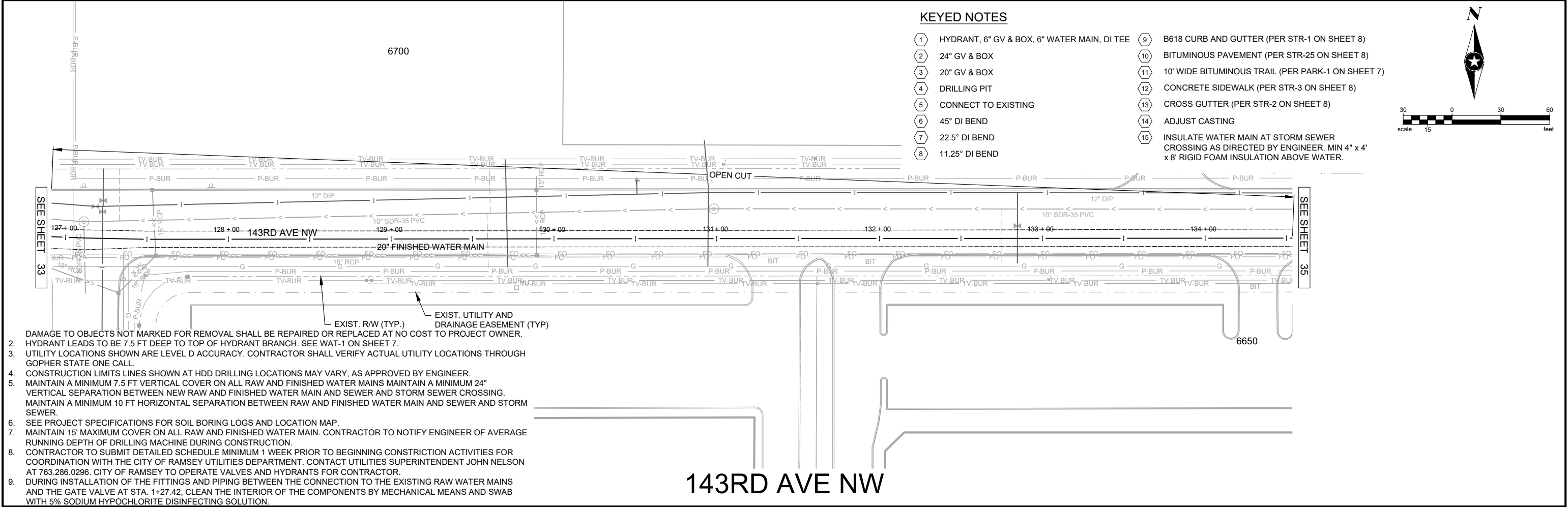


-
- SEE SHEET 33
- 143RD AVE NW
- 20" FINISHED WATER MAIN
- 8" FINISHED WATER MAIN
- 20" x 20" DI TEE
- 10 LF 6" WATER MAIN TO HYDRANT
- 20" x 12" DI TEE
- 12" 90° DI BEND
- 12" GATE VALVE AND BOX
- 12" x 12" DI TEE
- 12" SOLID DI SLEEVE
- CONNECT TO EXISTING 12" DIP WATER MAIN
- CONSTRUCTION LIMITS (TYP.)
- FUTURE WATER TREATMENT PLANT SITE
- CITY OF RAMSEY
- EXIST. R/W (TYP.)
- 18" RCP
- 12"
- P-BUR
- TV-BUR
- FIBER
- 200 + 00
- 15
- 3
- 5
- 6
- 1
- 2
- 3
- XC
- SEE SHEET 33

FUTURE WTP



30
f 58



KEYED NOTES

- 1

HYDRANT, 6" GV & BOX, 6" WATER MAIN, DI TEE
- 2

24" GV & BOX
- 3

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DRILLING PIT
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B618 CURB AND GUTTER (PER STR-1 ON SHEET 8)
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BITUMINOUS PAVEMENT (PER STR-25 ON SHEET 8)
- 11

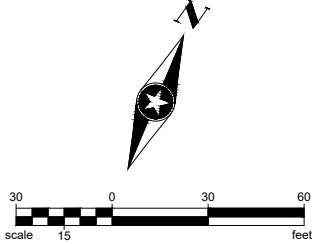
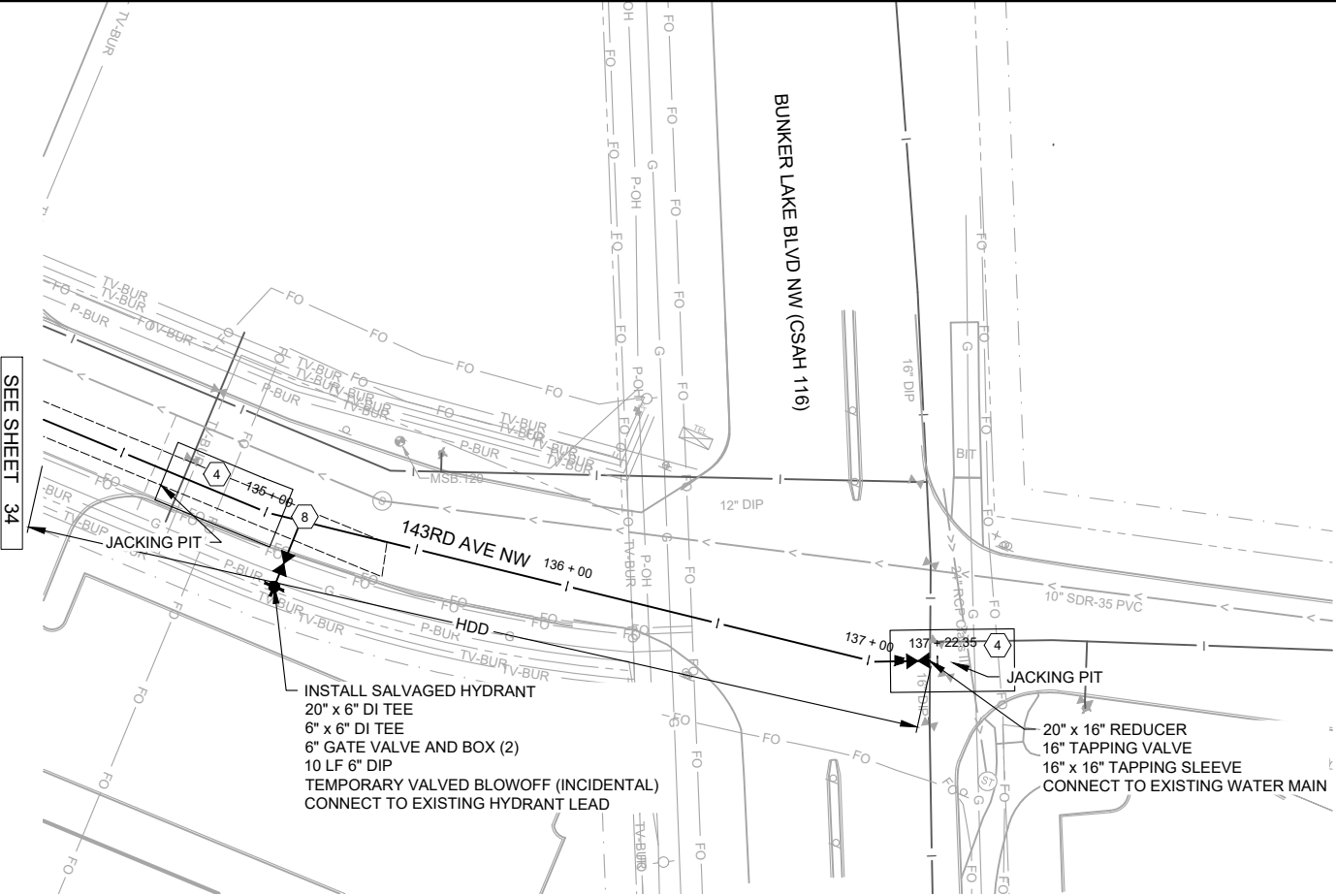
10' WIDE BITUMINOUS TRAIL (PER PARK-1 ON SHEET 7)
- 12

CONCRETE SIDEWALK (PER STR-3 ON SHEET 8)
- 13

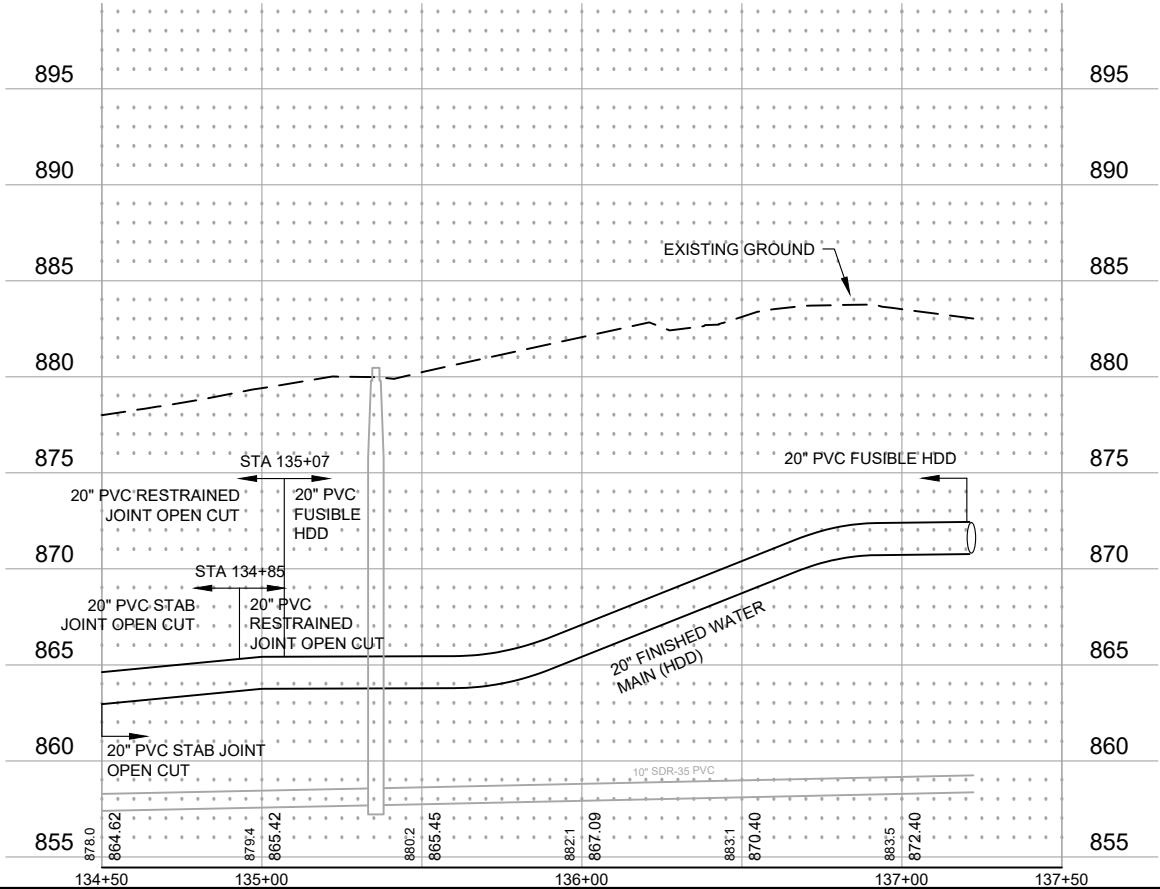
CROSS GUTTER (PER STR-2 ON SHEET 8)
- 14

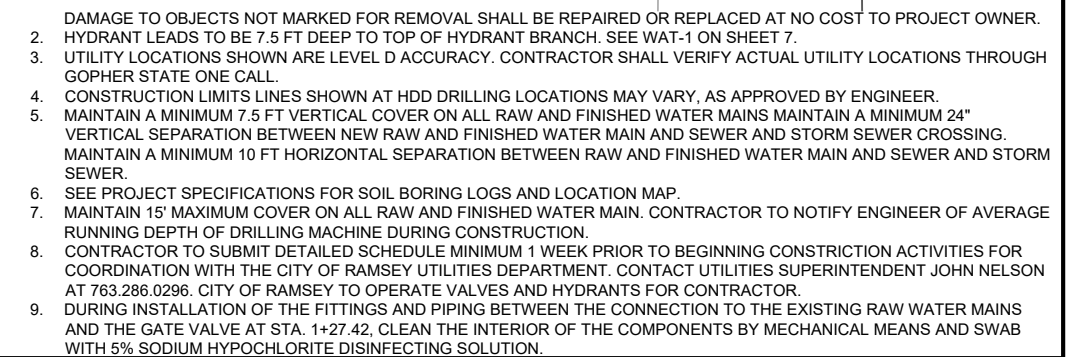
ADJUST CASTING
- 15

INSULATE WATER MAIN AT STORM SEWER CROSSING AS DIRECTED BY ENGINEER. MIN 4" x 4' x 8' RIGID FOAM INSULATION ABOVE WATER.

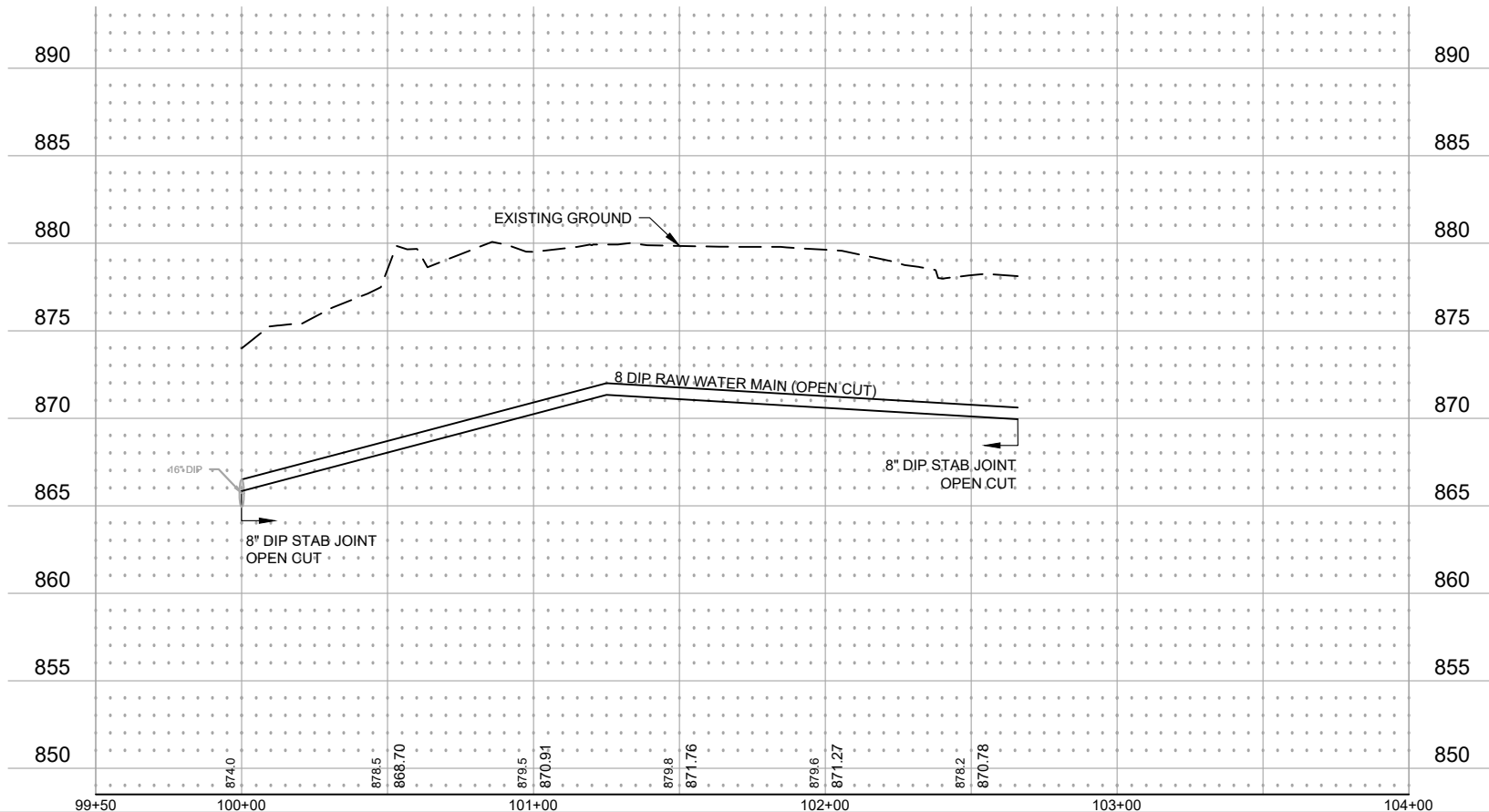
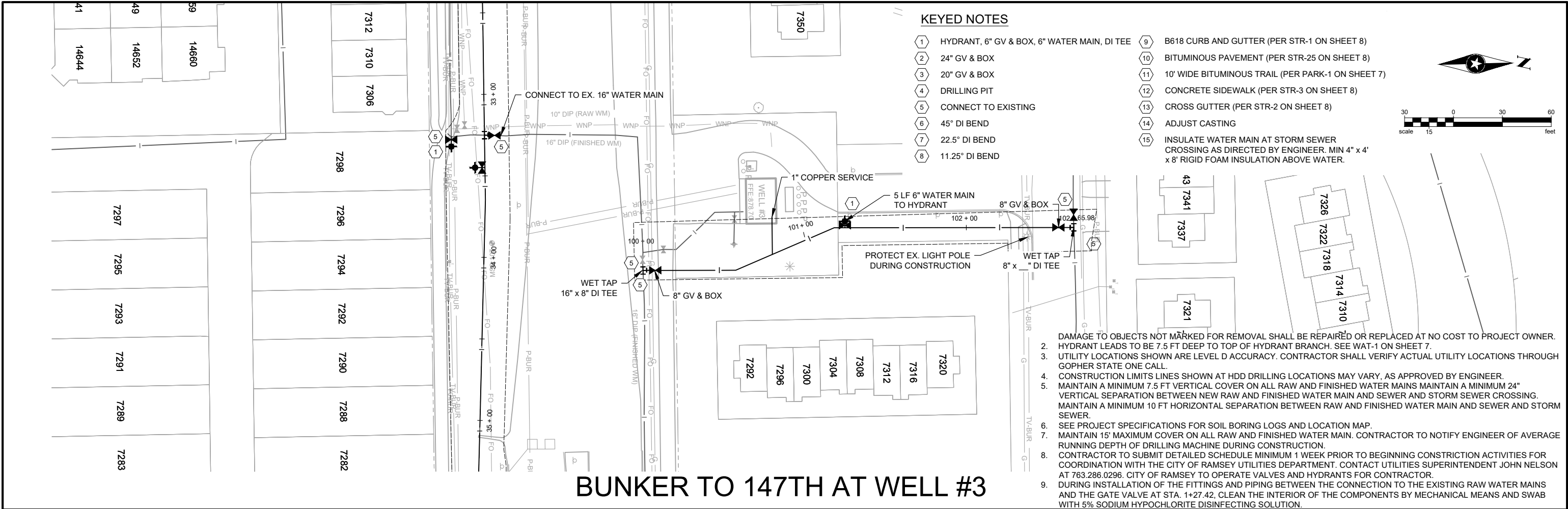


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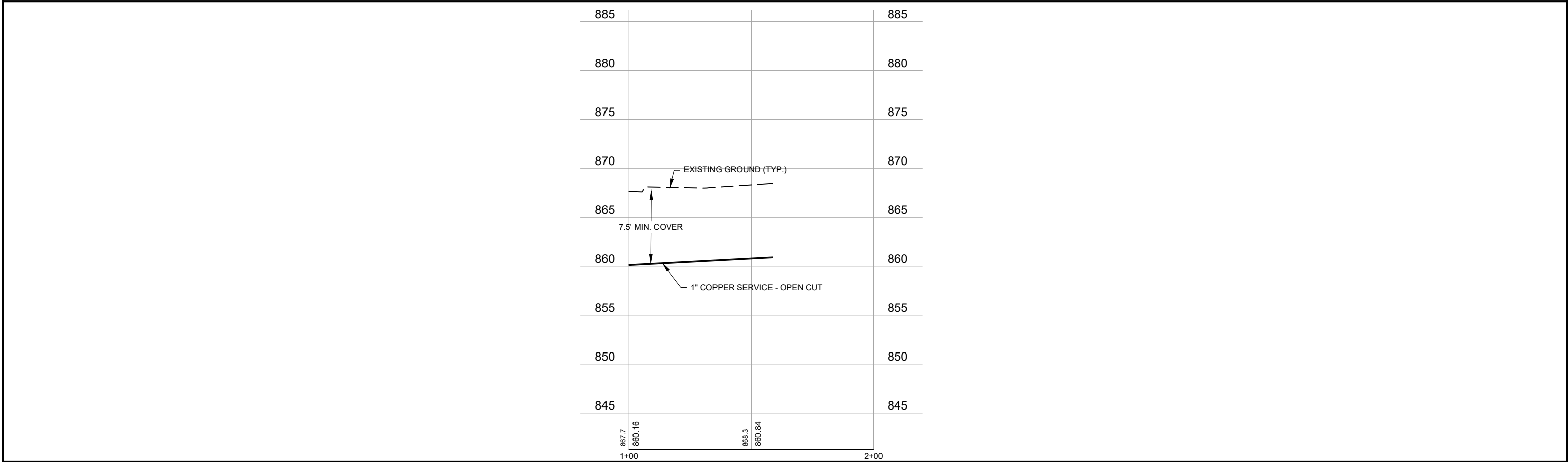
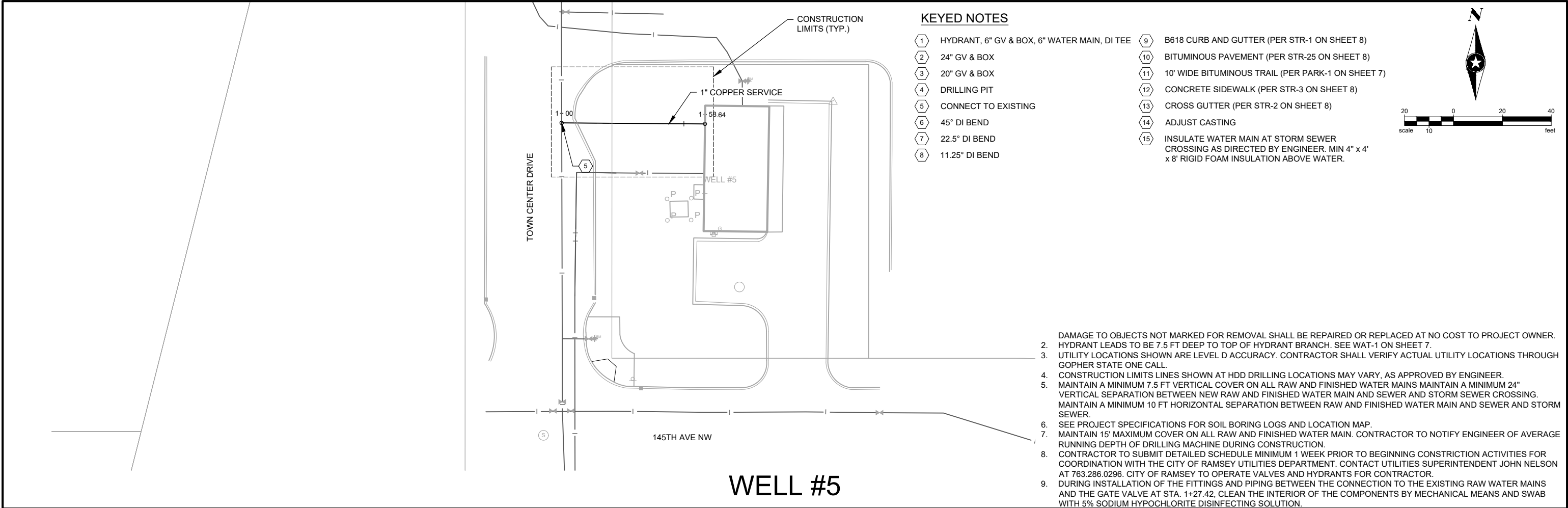


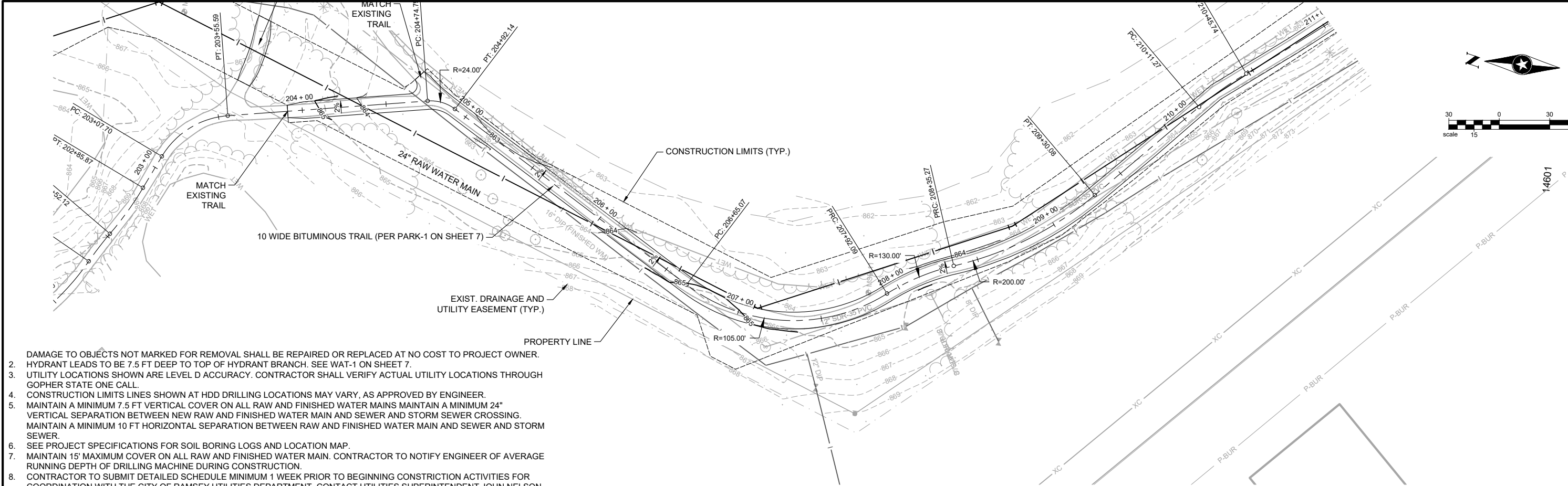


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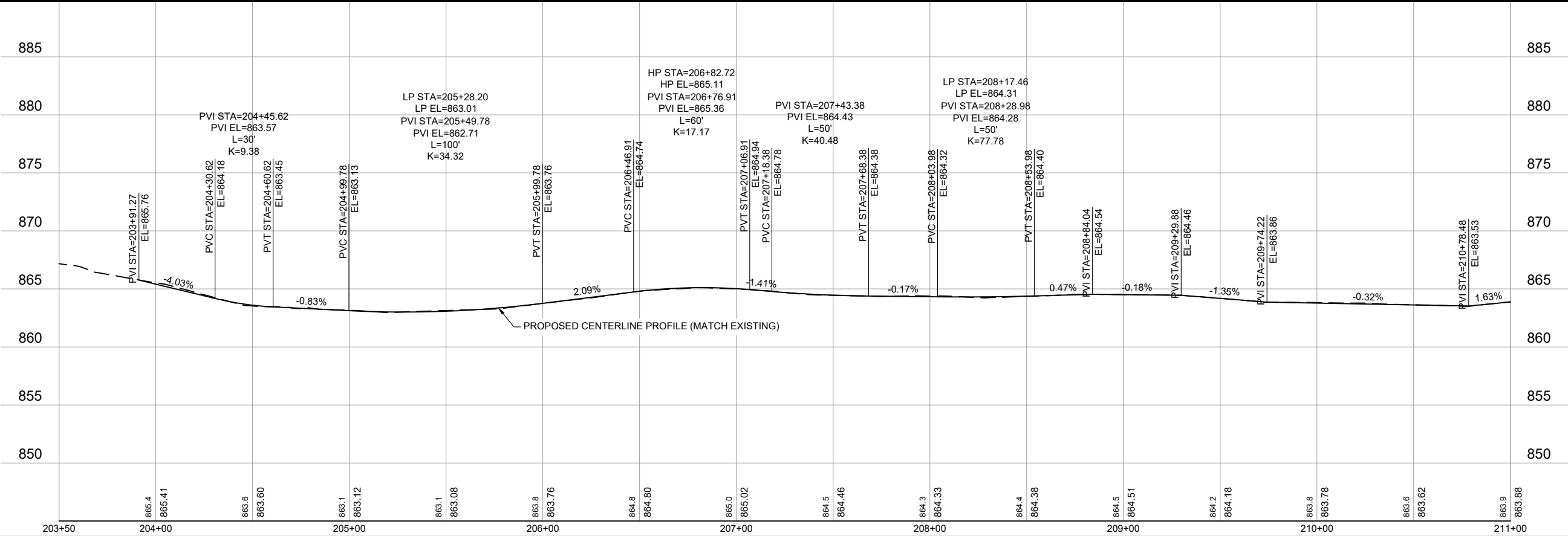
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- DAMAGE TO OBJECTS NOT MARKED FOR REMOVAL SHALL BE REPAIRED OR REPLACED AT NO COST TO PROJECT OWNER.
- HYDRANT LEADS TO BE 7.5 FT DEEP TO TOP OF HYDRANT BRANCH. SEE WAT-1 ON SHEET 7.
 - UTILITY LOCATIONS SHOWN ARE LEVEL D ACCURACY. CONTRACTOR SHALL VERIFY ACTUAL UTILITY LOCATIONS THROUGH GOPHER STATE ONE CALL.
 - CONSTRUCTION LIMITS LINES SHOWN AT HDD DRILLING LOCATIONS MAY VARY, AS APPROVED BY ENGINEER.
 - MAINTAIN A MINIMUM 7.5 FT VERTICAL COVER ON ALL RAW AND FINISHED WATER MAINS MAINTAIN A MINIMUM 24" VERTICAL SEPARATION BETWEEN NEW RAW AND FINISHED WATER MAIN AND SEWER AND STORM SEWER CROSSING. MAINTAIN A MINIMUM 10 FT HORIZONTAL SEPARATION BETWEEN RAW AND FINISHED WATER MAIN AND SEWER AND STORM SEWER.
 - SEE PROJECT SPECIFICATIONS FOR SOIL BORING LOGS AND LOCATION MAP.
 - MAINTAIN 15' MAXIMUM COVER ON ALL RAW AND FINISHED WATER MAIN. CONTRACTOR TO NOTIFY ENGINEER OF AVERAGE RUNNING DEPTH OF DRILLING MACHINE DURING CONSTRUCTION.
 - CONTRACTOR TO SUBMIT DETAILED SCHEDULE MINIMUM 1 WEEK PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES FOR COORDINATION WITH THE CITY OF RAMSEY UTILITIES DEPARTMENT. CONTACT UTILITIES SUPERINTENDENT JOHN NELSON AT 763.286.0296. CITY OF RAMSEY TO OPERATE VALVES AND HYDRANTS FOR CONTRACTOR.
 - DURING INSTALLATION OF THE FITTINGS AND PIPING BETWEEN THE CONNECTION TO THE EXISTING RAW WATER MAINS AND THE GATE VALVE AT STA. 1+27.42, CLEAN THE INTERIOR OF THE COMPONENTS BY MECHANICAL MEANS AND SWAB WITH 5% SODIUM HYPOCHLORITE DISINFECTING SOLUTION.

COTTONWOOD PARK TRAIL





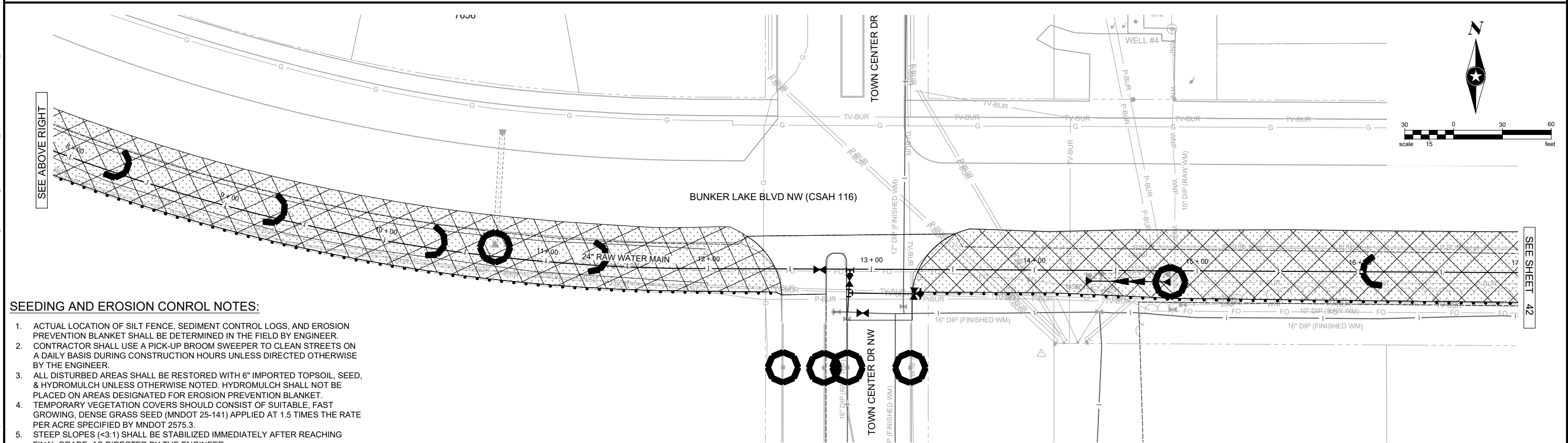
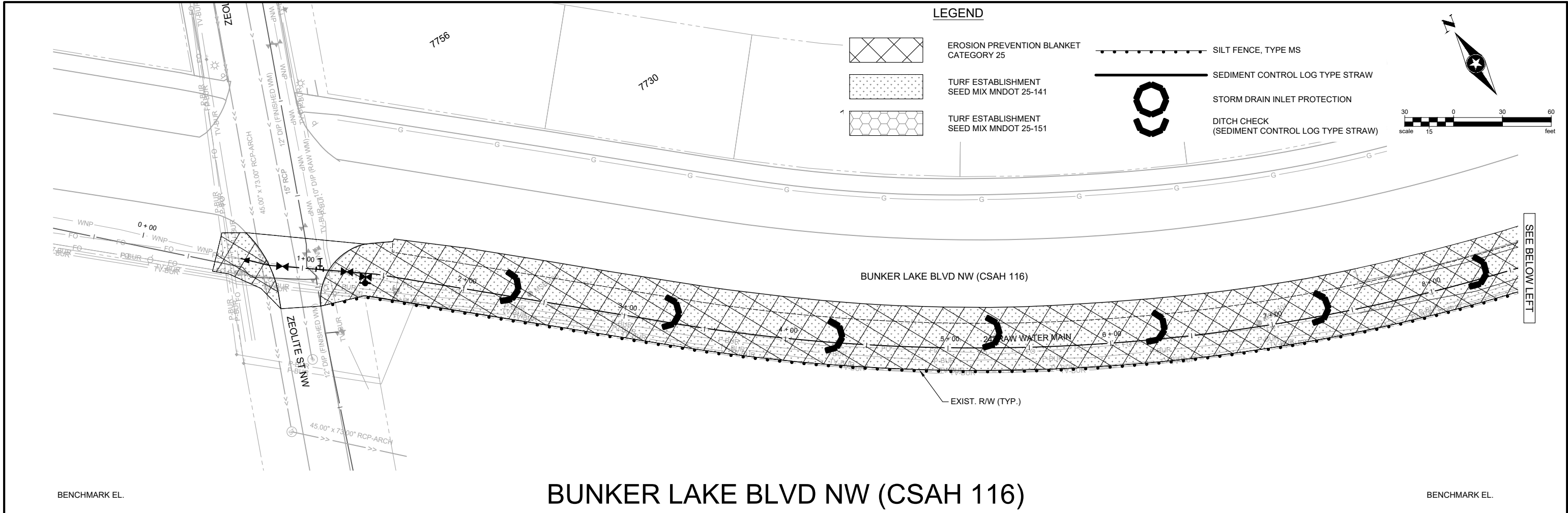
David E. Hutton
LICENSE NO. 19133

Ramsey, Minnesota

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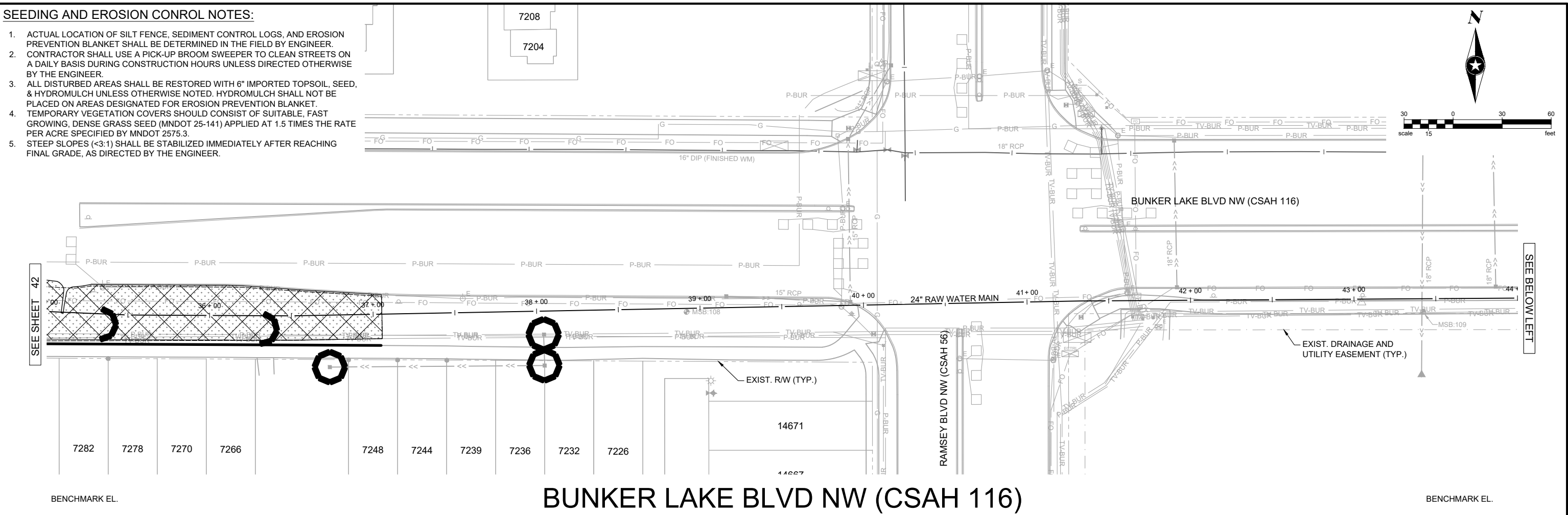
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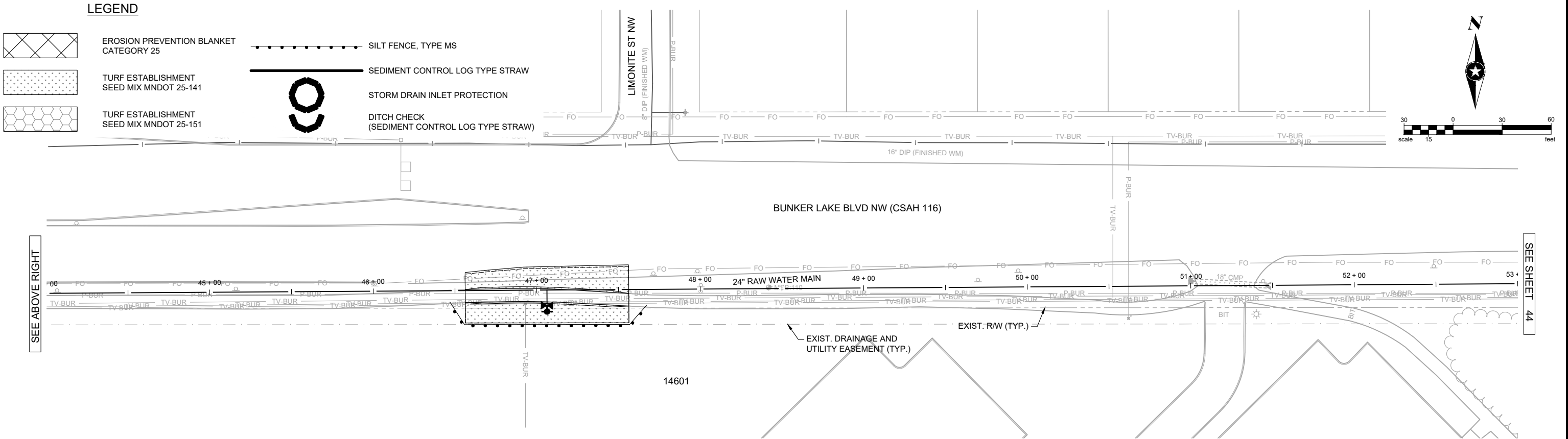
SEEDING AND EROSION CONROL NOTES:

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3. ALL DISTURBED AREAS SHALL BE RESTORED WITH 6" IMPORTED TOPSOIL, SEED, & HYDROMULCH UNLESS OTHERWISE NOTED. HYDROMULCH SHALL NOT BE PLACED ON AREAS DESIGNATED FOR EROSION PREVENTION BLANKET.
4. TEMPORARY VEGETATION COVERS SHOULD CONSIST OF SUITABLE, FAST GROWING, DENSE GRASS SEED (MNDOT 25-141) APPLIED AT 1.5 TIMES THE RATE PER ACRE SPECIFIED BY MNDOT 2575.3.
5. STEEP SLOPES (<3:1) SHALL BE STABILIZED IMMEDIATELY AFTER REACHING FINAL GRADE, AS DIRECTED BY THE ENGINEER.



LEGEND

- | | | | |
|--|--|--|---|
| | EROSION PREVENTION BLANKET CATEGORY 25 | | SILT FENCE, TYPE MS |
| | TURF ESTABLISHMENT SEED MIX MNDOT 25-141 | | SEDIMENT CONTROL LOG TYPE STRAW |
| | TURF ESTABLISHMENT SEED MIX MNDOT 25-151 | | STORM DRAIN INLET PROTECTION |
| | | | DITCH CHECK (SEDIMENT CONTROL LOG TYPE STRAW) |



SEH Project
Drawn By
Designed By
Checked By

RAMSY174498
JRB, SRP
KLK
CES

Rev.#

Date

Rev.#

Date

Revision Issue Description

Revision Issue Description



I HEREBY CERTIFY THAT THIS PLAN 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 MN.

DATE 09-29-2023

David E. Hutton
LICENSE NO. 19133

WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

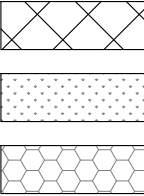
EROSION CONTROL AND TURF
ESTABLISHMENT PLAN
BUNKER LAKE BLVD NW (CSAH 116)

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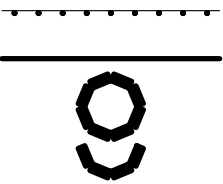
LEGEND



EROSION PREVENTION BLANKET
CATEGORY 25

TURF ESTABLISHMENT
SEED MIX MNDOT 25-141

TURF ESTABLISHMENT
SEED MIX MNDOT 25-151

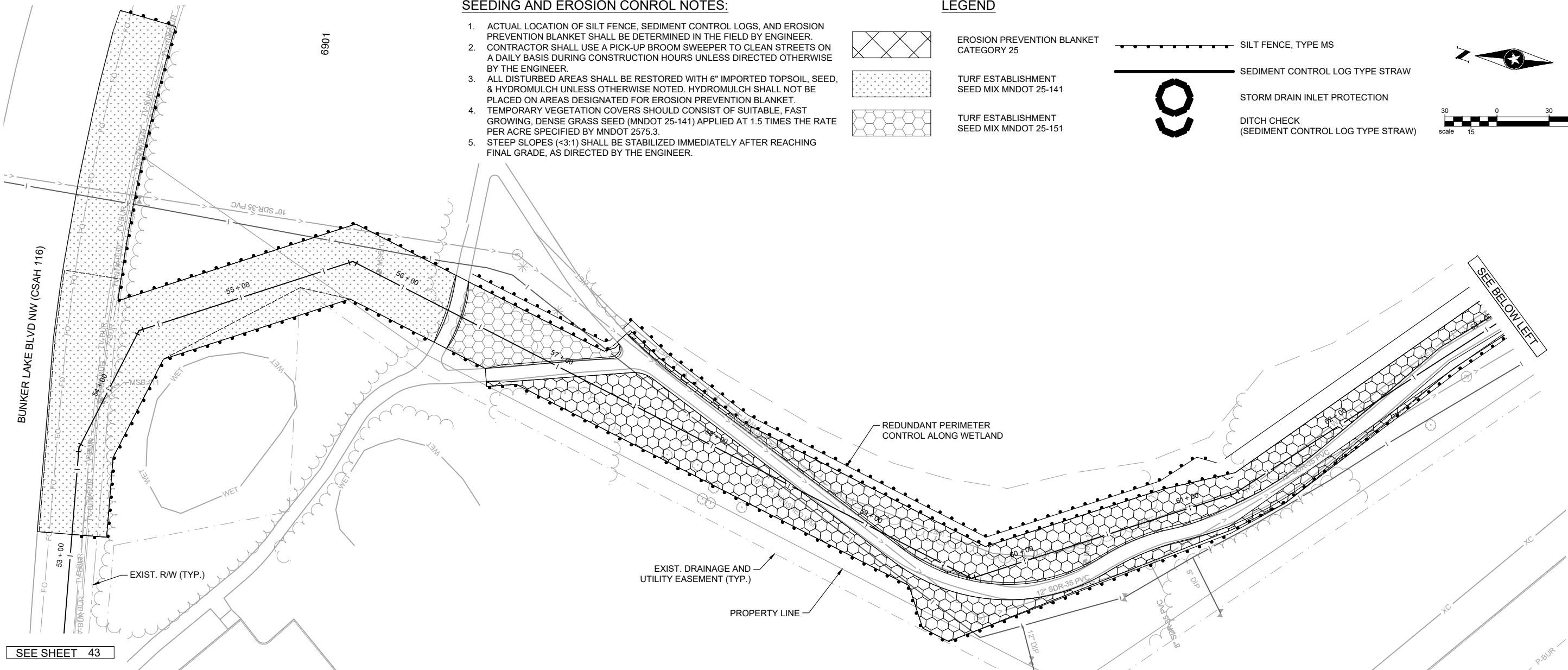


SILT FENCE, TYPE MS

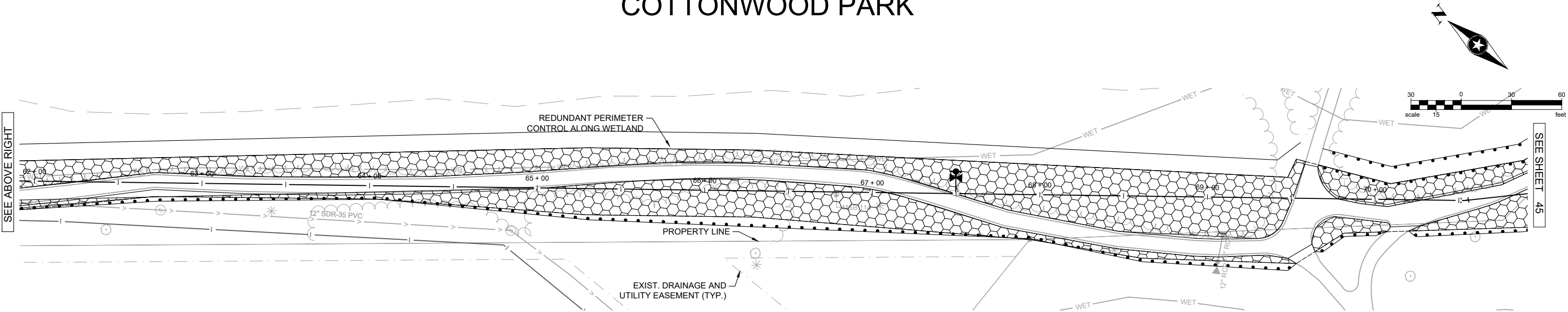
SEDIMENT CONTROL LOG TYPE STRAW

STORM DRAIN INLET PROTECTION

DITCH CHECK
(SEDIMENT CONTROL LOG TYPE STRAW)



COTTONWOOD PARK



SEH Project	RAMSY174498	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JRB, SRP	.			.		
Designed By	KLK	.			.		
Checked By	CES	.			.		



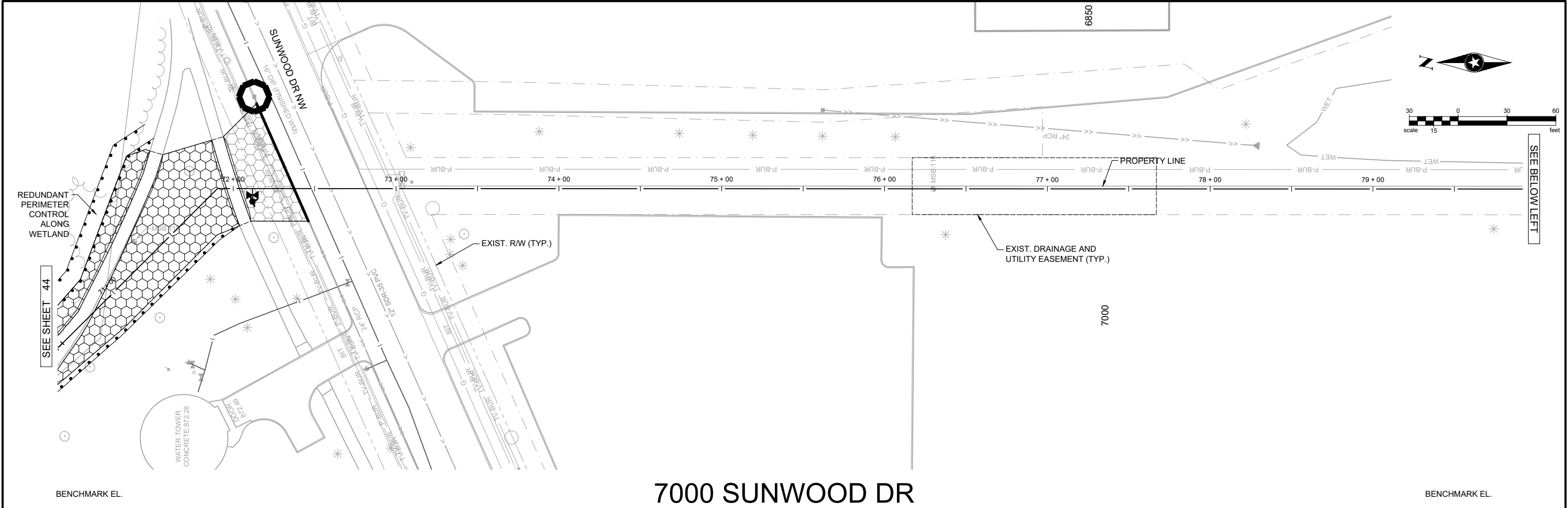
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WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

EROSION CONTROL AND TURF
ESTABLISHMENT PLAN
COTTONWOOD PARK

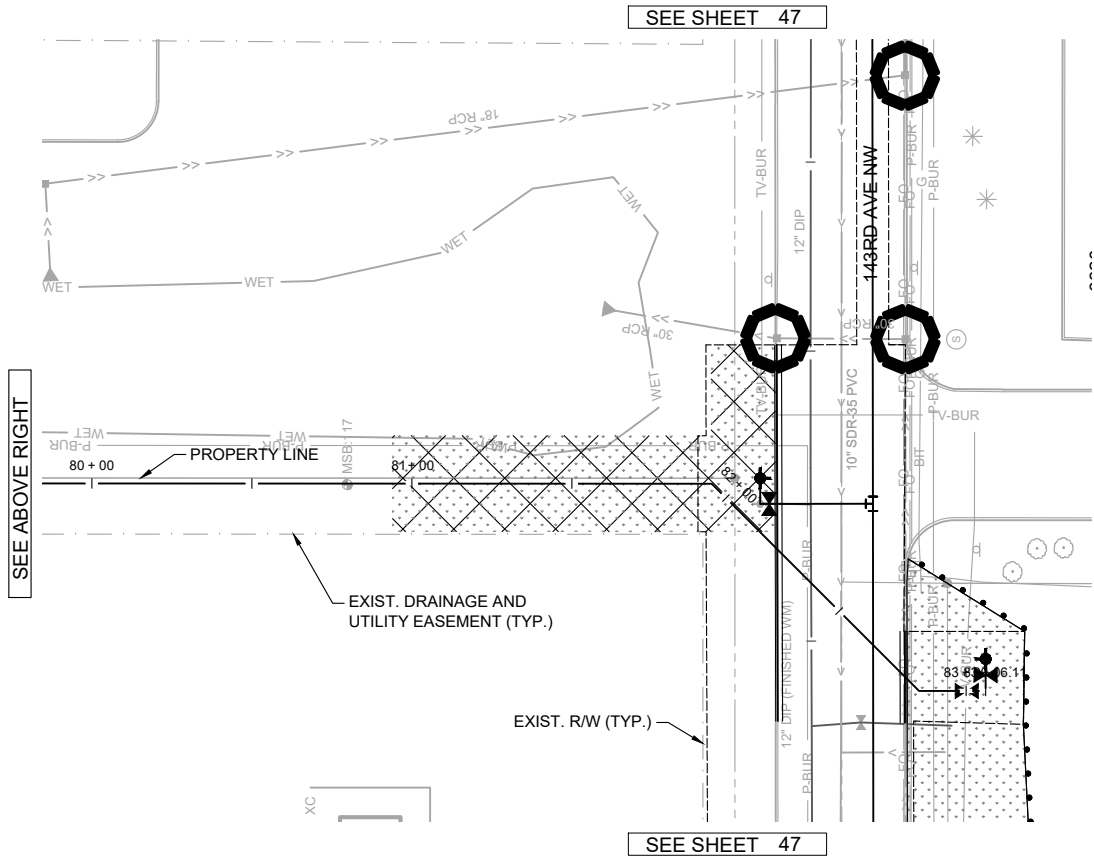


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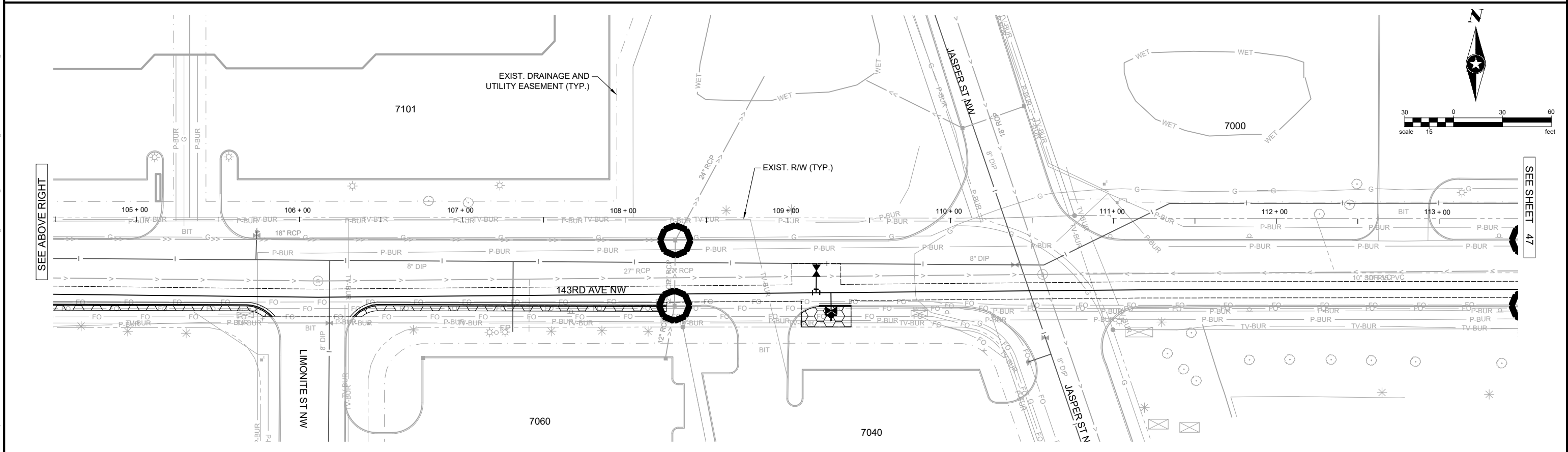
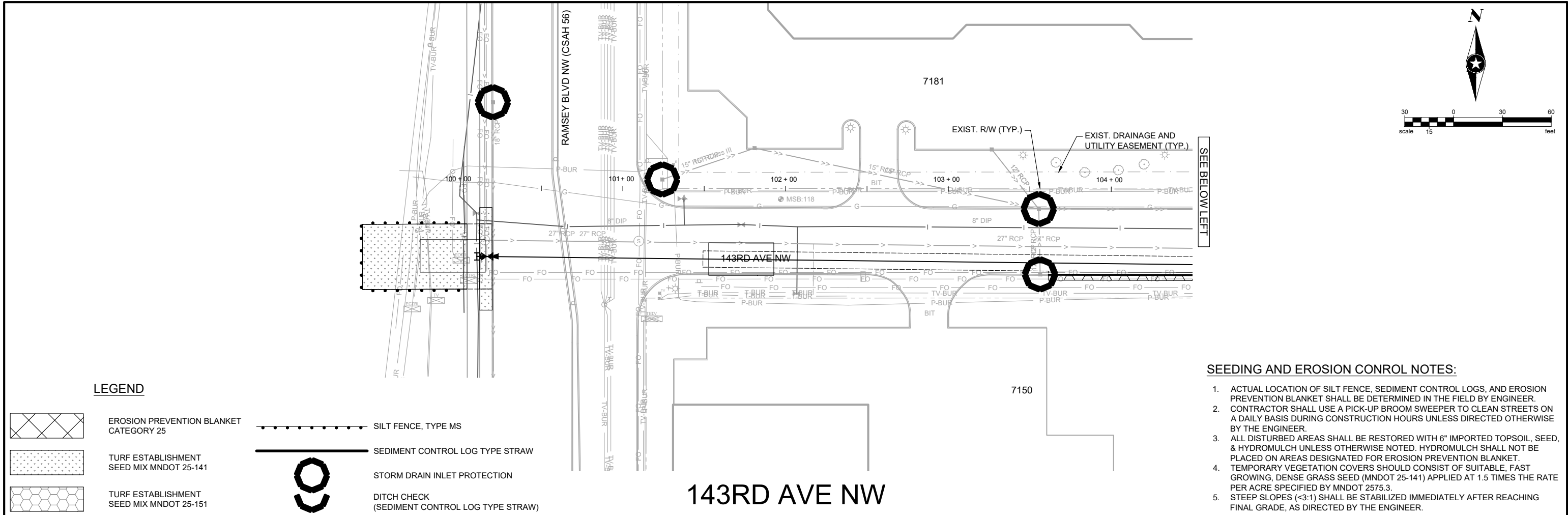
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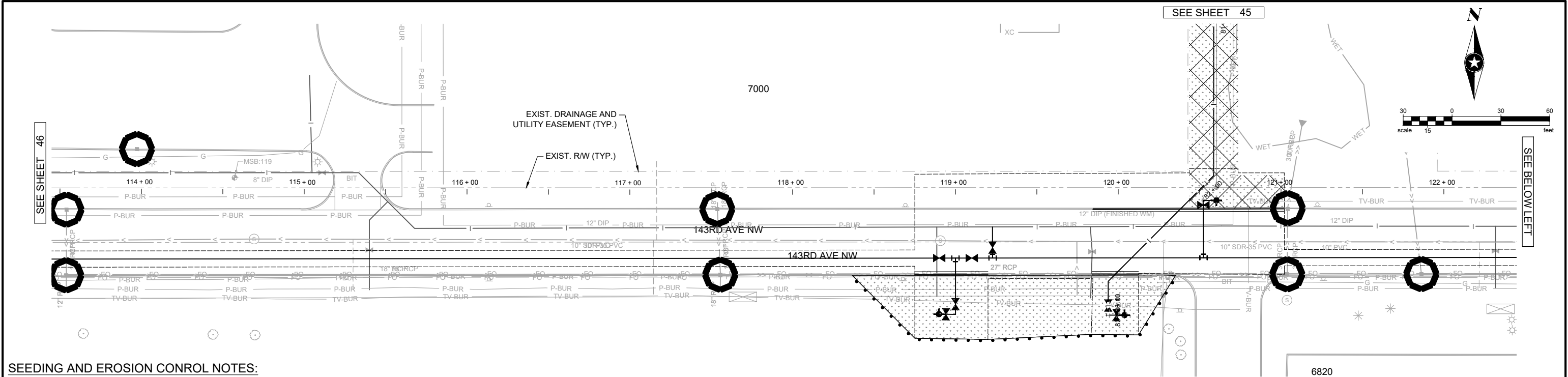
LEGEND

	EROSION PREVENTION BLANKET CATEGORY 25		SILT FENCE, TYPE MS
	TURF ESTABLISHMENT SEED MIX MNDOT 25-141		SEDIMENT CONTROL LOG TYPE STRAW
	TURF ESTABLISHMENT SEED MIX MNDOT 25-151		STORM DRAIN INLET PROTECTION
			DITCH CHECK (SEDIMENT CONTROL LOG TYPE STRAW)



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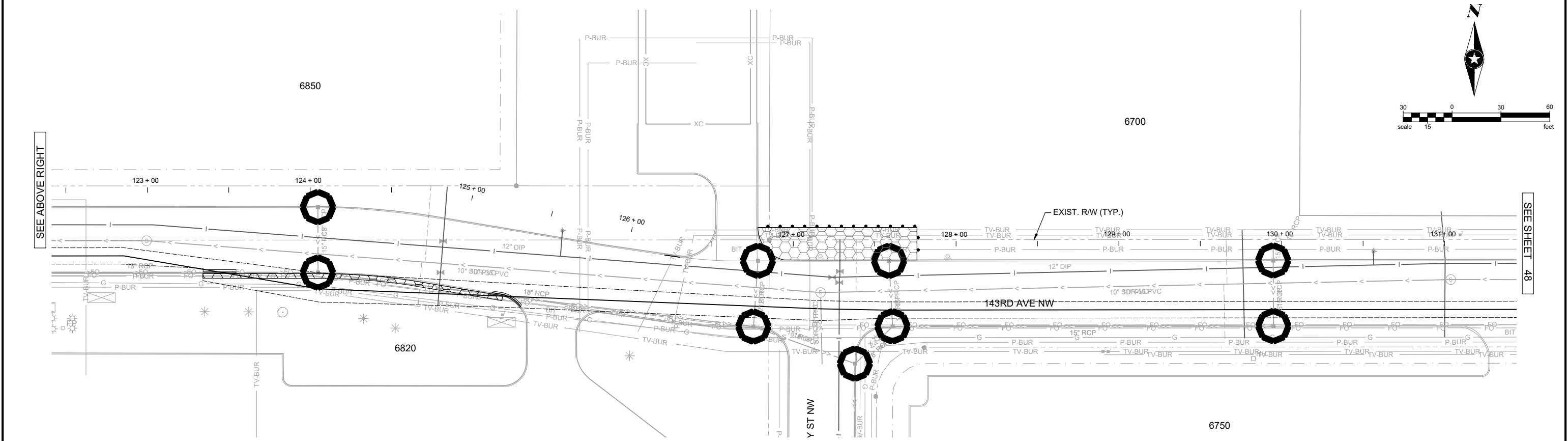
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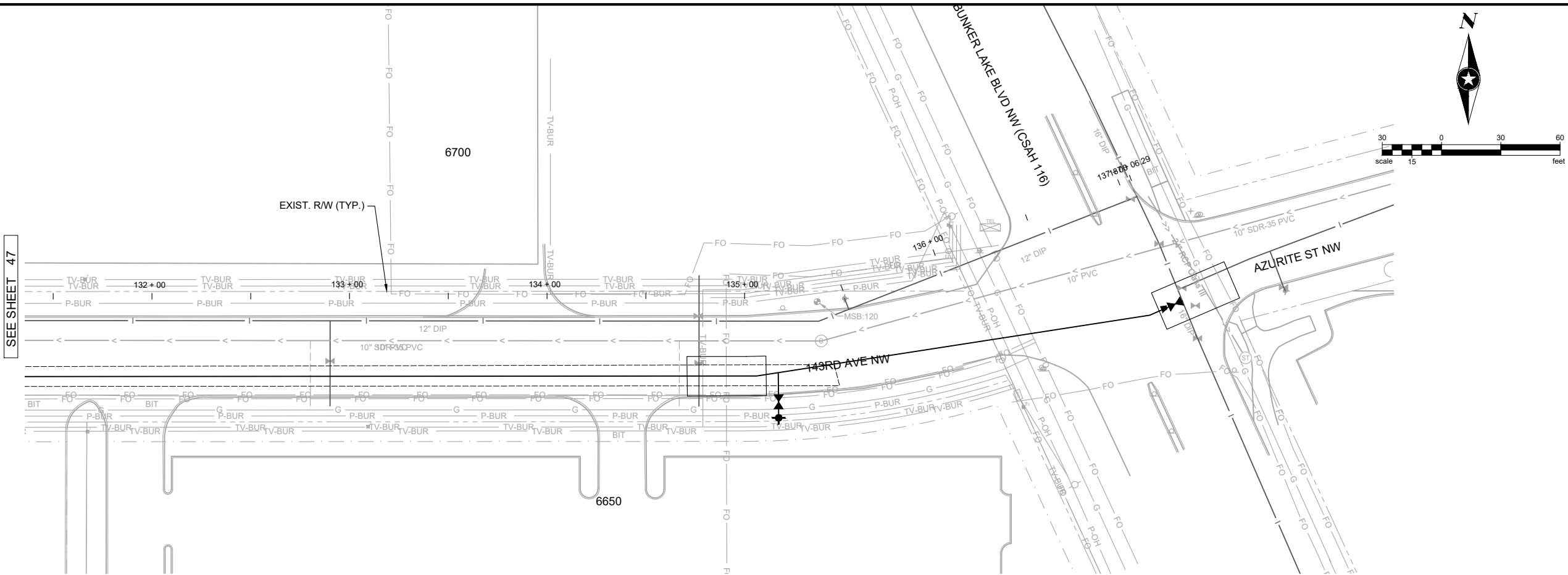
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143RD AVE NW

LEGEND

- | | | | |
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143RD AVE NW


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LEGEND




EROSION PREVENTION BLANKET
CATEGORY 25




TURF ESTABLISHMENT
SEED MIX MNDOT 25-141




TURF ESTABLISHMENT
SEED MIX MNDOT 25-151




SILT FENCE, TYPE MS



SEDIMENT CONTROL LOG TYPE STRAW



STORM DRAIN INLET PROTECTION



DITCH CHECK
(SEDIMENT CONTROL LOG TYPE STRAW)

SWPPP SUMMARY/OVERVIEW:
THIS STORM WATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN DEVELOPED TO ADDRESS THE REQUIREMENTS OF NPDES PERMIT MN R100001. THIS SWPPP INCLUDES A COMBINATION OF NARRATIVE AND PLAN SHEETS THAT DESCRIBE THE TEMPORARY AND PERMANENT STORM WATER MANAGEMENT PLAN FOR THE PROJECT.

PROJECT INFORMATION:

LOCATION:	CITY OF RAMSEY, MINNESOTA
LATITUDE/LONGITUDE:	45.237184N, 93.449348W
PROJECT DESCRIPTION:	NEW WATER MAIN FOR FUTURE WATER TREATMENT PLANT
SOIL DISTURBING ACTIVITIES:	TRENCH EXCAVATION AND HDD FOR WATER MAIN

CONTACTS:

OWNER:	CITY OF RAMSEY
CONTACT:	BRUCE WESTBY, CITY ENGINEER
ADDRESS:	7550 SUNWOOD DRIVE NW, RAMSEY, MN 55303
PHONE:	763.433.9825
EMAIL:	bwestby@cityoframsey.com

ENGINEER:	SHORT ELLIOTT HENDRICKSON INC. (SEH)
CONTACT:	ANDREW OLSEN
PHONE:	641.590.3198
EMAIL:	aolsen@sehinc.com
PROJECT NO.:	RAMSY 174498

KNOWLEDGEABLE PERSON/CHAIN OF RESPONSIBILITY
THE CONTRACTOR SHALL IDENTIFY A PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPs WHO WILL COORDINATE WITH ALL CONTRACTORS, SUBCONTRACTORS, AND OPERATORS ON-SITE TO OVERSEE THE IMPLEMENTATION OF THE SWPPP.

CONTRACTOR	TBD
CONTACT	TBD
PHONE	TBD
EMAIL	TBD

THE CONTRACTOR SHALL ESTABLISH A CHAIN OF RESPONSIBILITY FOR ALL CONTRACTORS AND SUB-CONTRACTORS ON SITE TO ENSURE THE SWPPP IS BEING PROPERLY IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL PROVIDE THE CHAIN OF RESPONSIBILITY TO THE OWNER AND ATTACH TO THE SWPPP PRIOR TO ANY CONSTRUCTION ACTIVITY.

GENERAL SWPPP RESPONSIBILITIES:

THE CONTRACTOR SHALL KEEP THE SWPPP, INCLUDING ALL AMENDMENTS AND INSPECTION AND MAINTENANCE RECORDS ON SITE DURING CONSTRUCTION.

THE SWPPP WILL BE AMENDED AS NEEDED AND/OR AS REQUIRED BY PROVISIONS OF THE PERMIT. PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPs AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS HAVING A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER. AMENDMENTS WILL BE APPROVED BY BOTH THE OWNER AND CONTRACTOR AND WILL BE ATTACHED OR OTHERWISE INCLUDED WITH THE SWPPP DOCUMENTS. THE SWPPP AMENDMENTS SHALL BE INITIATED, FACILITATED, AND PROCESSED BY THE CONTRACTOR.

ALL SWPPP CHANGES MUST BE DONE BY AN INDIVIDUAL TRAINED IN ACCORDANCE WITH SECTION 21.4 OR 21.5. CHANGES INVOLVING THE USE OF A LESS STRINGENT BMP MUST INCLUDE A JUSTIFICATION DESCRIBING HOW THE REPLACEMENT BMP IS EFFECTIVE FOR THE SITE CHARACTERISTICS.

BOTH THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER TERMINATION AND/OR TRANSFER OF THE PERMIT.

LONG TERM OPERATION AND MAINTENANCE

THE OWNER WILL BE RESPONSIBLE OR WILL OTHERWISE IDENTIFY WHO WILL BE RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM(S).

THE OWNER WILL PREPARE AND IMPLEMENT A PERMANENT STORMWATER TREATMENT SYSTEM(S) MAINTENANCE PLAN.

PROJECT LOCATION MAP, INCLUDING ALL RECEIVING WATERS WITHIN ONE MILE OF PROJECT SITE AND ARROWS SHOWING OVERLAND FLOW.



TRAINING DOCUMENTATION:

PREPARER/DESIGNER OF SWPPP:	STEVE PRALL, PE
EMPLOYER:	SEH
DATE OBTAINED / REFRESHED	2/6/2020
INSTRUCTOR(S)/ENTITY PROVIDING TRAINING:	UNIVERSITY OF MINNESOTA

CONTENT OF TRAINING AVAILABLE UPON REQUEST.

THE CONTRACTOR (OPERATOR) SHALL ADD TO THE SWPPP TRAINING RECORDS FOR THE FOLLOWING PERSONNEL:

-INDIVIDUALS OVERSEEING THE IMPLEMENTATION OF, REVISING, AND AMENDING THE SWPPP
-INDIVIDUALS PERFORMING INSPECTIONS
-INDIVIDUALS PERFORMING OR SUPERVISING THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPs

TRAINING MUST RELATE TO THE INDIVIDUAL'S JOB DUTIES AND RESPONSIBILITIES AND SHALL INCLUDE:

- 1) DATES OF TRAINING
- 2) NAME OF INSTRUCTORS
- 3) CONTENT AND ENTITY PROVIDING TRAINING

THE CONTRACTOR SHALL ENSURE THAT THE INDIVIDUALS ARE TRAINED BY LOCAL, STATE, FEDERAL AGENCIES, PROFESSIONAL ORGANIZATIONS, OR OTHER ENTITIES WITH EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL, PERMANENT STORMWATER MANAGEMENT AND THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER PERMIT.

PROJECT SUMMARY:

TOTAL DISTURBED AREA:	7.0 AC
PRE-CONSTRUCTION IMPERVIOUS AREA:	0.5 AC
POST-CONSTRUCTION IMPERVIOUS AREA:	0.5 AC
IMPERVIOUS AREA ADDED:	0 AC

RECEIVING WATER(S) WITHIN ONE MILE FROM PROJECT BOUNDARIES:
(<http://pca-gis02.pca.state.mn.us/CSW/index.html>)

ID	NAME	TYPE	SPECIAL WATER?	IMPAIRED WATER?	CONSTRUCTION RELATED IMPAIRMENT OR SPECIAL WATER CLASSIFICATION	TMDL
02-0117-00	UNNAMED	LAKE	NO	NO	N/A	N/A
07010206-805	MISSISSIPPI	RIVER	YES	YES	SCENIC AND RECREATIONAL RIVER IMPAIRED FOR NUTRIENTS	Hg-F
ADDITIONAL BMPs AND/OR ACTIONS REQUIRED: SECTION 23.9 (IMMEDIATELY INITIATE STABILIZATION OF EXPOSED SOIL AREAS AND COMPLETE STABILIZATION WITHIN 7 CALENDAR DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE TEMPORARILY OR PERMANENTLY CEASES)						
SEE SECTION 23 OF THE PERMIT AND APPLICABLE TMDL WLA'S						

WATERBODY	NO WORK DURING	SEE DNR PERMIT FOR MORE INFORMATION
LAKES	APRIL 1 - JUNE 30	
NON-TROUT STREAMS	MARCH 15 - JUNE 15	
TROUT STREAMS	SEPTEMBER 1 - APRIL 1	

SITE SOIL INFORMATION: (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>)
(SOIL INFORMATION PROVIDED IS FOR NPDES PERMIT INFORMATION ONLY. SOIL INFORMATION WAS OBTAINED FROM THE USGS WEBSITE. THE CONTRACTOR SHALL NOT RELY ON THIS SOIL INFORMATION FOR CONSTRUCTION PURPOSES.)

SOIL NAME:	HYDROLOGIC CLASSIFICATION:
HUBBARD LOAMY SAND	A
DUELM LOAMY SAND	A
MARSH	A/D
ANTICIPATED RANGE OF PARTICLE SIZES	LOAMY SAND

RELATED REVIEWS & PERMITS:
ENVIRONMENTAL, WETLAND, ENDANGERED OR THREATENED SPECIES, ARCHEOLOGICAL, LOCAL, STATE, AND/OF FEDERAL REVIEWS/PERMITS:

AGENCY:	TYPE OF PERMIT:
LOWER RUM RIVER WMO	WCA PERMIT
MDH	WATER MAIN PERMIT

IMPLEMENTATION SEQUENCE:
THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING SEQUENCE.
THE ENGINEER MAY APPROVE ADJUSTMENTS TO THE SEQUENCE AS NEEDED.

2.	INSTALL PERIMETER CONTROL AND STABILIZE DOWN GRADIENT BOUNDARIES
3.	INSTALL INLET PROTECTION ON EXISTING CATCH BASINS
5.	INSTALL UTILITIES, STORM SEWER, INLET PROTECTION, CURB & GUTTER, PAVING
6.	COMPLETE FINAL GRADING AND STABILIZE DISTURBED AREAS
7.	AFTER CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ACCUMULATED SEDIMENT, REMOVE BMPs, AND RE-STABILIZE ANY AREAS DISTURBED BY THEIR REMOVAL.

THE FOLLOWING DOCUMENTS ARE CONSIDERED PART OF THE SWPPP:

PLAN AND PROFILE PLAN SHEETS:
EROSION AND SEDIMENT CONTROL PLAN SHEETS:
TURF ESTABLISHMENT PLAN SHEETS:
GRADING PLAN SHEETS:
DETAIL PLAN SHEETS:
SWPPP NOTE AND DETAIL SHEETS:
PROJECT SPECIFICATIONS:
PROJECT BID FORM:

TEMPORARY BMP DESIGN FACTORS:
EROSION PREVENTION AND SEDIMENT CONTROL BMP'S MUST BE DESIGNED TO ACCOUNT FOR:

THE EXPECTED AMOUNT, FREQUENCY, INTENSITY, AND DURATION OF PRECIPITATION

THE NATURE OF STORMWATER RUNOFF AND RON-ON AT THE SITE, INCLUDING FACTORS SUCH AS EXPECTED FLOW FROM IMPERVIOUS SURFACES, SLOPES, AND SITE DRAINAGE FEATURES

THE STORMWATER VOLUME, VELOCITY, AND PEAK FLOW RATES TO MINIMIZE DISCHARGE OF POLLUTANTS IN STORMWATER AND TO MINIMIZE CHANNEL AND STREAMBANK EROSION AND SCOUR IN THE IMMEDIATE VICINITY OF DISCHARGE POINTS

THE RANGE OF SOIL PARTICLE SIZES EXPECTED TO BE PRESENT.

TEMPORARY SEDIMENT BASINS:

THE CONTRACTOR SHALL INSTALL TEMPORARY SEDIMENT BASIN(S) INDICATED ON PLANS AND REQUIRED BY THE NPDES CONSTRUCTION PERMIT.

THE TEMPORARY BASIN MUST PROVIDE LIVE STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A TWO (2)-YEAR, 24-HOUR STORM FROM EACH ACRE DRAINED TO THE BASIN OR 1,800 CUBIC FEET OF LIVE STORAGE PER ACRE DRAINED, WHICHEVER IS GREATER.

TEMPORARY SEDIMENT BASIN OUTLETS SHALL BE CONSTRUCTED TO PREVENT SHORT-CIRCUITING AND PREVENT THE DISCHARGE OF FLOATING DEBRIS.

OUTLET STRUCTURES MUST BE DESIGNED TO WITHDRAW WATER FROM THE SURFACE TO MINIMIZE THE DISCHARGE OF POLLUTANTS.

BASINS MUST INCLUDE A STABILIZED EMERGENCY OVERFLOW, WITHDRAW WATER FROM THE SURFACE, AND PROVIDE ENERGY DISSIPATION AT THE OUTLET.

TEMPORARY SEDIMENT BASINS SHALL BE PROVIDED WITH ENERGY DISSIPATION AT ANY BASIN OUTLET TO PREVENT SOIL EROSION.

SEDIMENT BASINS MUST BE SITUATED OUTSIDE OF SURFACE WATERS AND ANY BUFFER ZONES, AND MUST BE DESIGNED TO AVOID THE DRAINING WATER FROM WETLANDS.

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SEH Project	RAMSY174498	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
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Designed By	KLK	.			.		
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DATE 09-29-2023
David E. Hutton
LICENSE NO. 19133

WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

STORM WATER POLLUTION
PREVENTION PLAN

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EROSION PREVENTION MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL EROSION PREVENTION MEASURES FOR THE PROJECT.

EROSION PREVENTION MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL EROSION PREVENTION MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL PLAN AND IMPLEMENT APPROPRIATE CONSTRUCTION PRACTICES AND CONSTRUCTION PHASING TO MINIMIZE EROSION AND RETAIN VEGETATION WHENEVER POSSIBLE.

THE PERMITTEE SHALL DELINEATE AREAS NOT TO BE DISTURBED. PERMITTEE(S) MUST MINIMIZE THE NEED FOR DISTURBANCE OF PORTIONS OF THE PROJECT WITH STEEP SLOPES. WHEN STEEP SLOPES MUST BE DISTURBED, PERMITTEES MUST USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES.

THE CONTRACTOR SHALL STABILIZE OF ALL EXPOSED SOILS IMMEDIATELY TO LIMIT SOIL EROSION. IN NO CASE SHALL ANY EXPOSED AREAS, INCLUDING STOCK PILES, HAVE EXPOSED SOILS FOR MORE THAN 7 DAYS WITHOUT PROVIDING TEMPORARY OR PERMANENT STABILIZATION. STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY HAS CEASED. TEMPORARY STOCKPILES WITHOUT SIGNIFICANT CLAY, SILT, OR ORGANIC COMPONENTS DO NOT REQUIRE STABILIZATION.

DRAINAGE PATHS, DITCHES, AND/OR SWALES SHALL HAVE TEMPORARY OR PERMANENT STABILIZATION WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER OR 24 HOURS AFTER CONSTRUCTION ACTIVITY IN THE DITCH/SWALE HAS TEMPORARILY OR PERMANENTLY CEASED.

THE CONTRACTOR SHALL COMPLETE THE STABILIZATION OF ALL EXPOSED SOILS WITHIN 24 HOURS THAT LIE WITHIN 200 FEET OF PUBLIC WATERS PROMULGATED "WORK IN WATER RESTRICTIONS" BY THE MN DNR DURING SPECIFIED FISH SPAWNING TIMES.

THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL BMPS AND VELOCITY DISSIPATION DEVICES ALONG CONSTRUCTED STORMWATER CONVEYANCE CHANNELS AND OUTLETS.

THE CONTRACTOR SHALL STABILIZE TEMPORARY AND/OR PERMANENT DRAINAGE DITCHES OR SWALES WITHIN 200 LINEAL FEET FROM PROPERTY EDGE, OR DISCHARGE POINT(S) WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE.

TEMPORARY OR PERMANENT DITCHES OR SWALES USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM.

THE CONTRACTOR SHALL NOT UTILIZE HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES AS A FORM OF STABILIZATION FOR TEMPORARY OR PERMANENT DRAINAGE DITCHES OR SWALE SECTION WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT.

THE CONTRACTOR SHALL ENSURE PIPE OUTLETS HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITH IN 24 HOURS OF CONNECTION TO A SURFACE WATER.

THE CONTRACTOR SHALL DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE STORMWATER INFILTRATION. VELOCITY DISSIPATION DEVICES MUST BE USED TO PREVENT EROSION WHEN DIRECTING STORMWATER TO VEGETATED AREAS.

SEDIMENT CONTROL MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL SEDIMENT CONTROL MEASURES FOR THE PROJECT.

SEDIMENT CONTROL MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL SEDIMENT CONTROL MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL MEASURES ARE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE MEASURES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED.

A FLOATING SILT CURTAIN PLACED IN THE WATER IS NOT A SEDIMENT CONTROL BMP EXCEPT WHEN WORKING ON A SHORELINE OR BELOW THE WATERLINE. IMMEDIATELY AFTER THE SHORT TERM CONSTRUCTION ACTIVITY IS COMPLETE, PERMITTEE(S) MUST INSTALL AN UPLAND PERIMETER CONTROL PRACTICE IF EXPOSED SOILS STILL DRAIN TO A SURFACE WATER.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL PRACTICES REMOVED OR ADJUSTED FOR SHORT-TERM ACTIVITIES BE RE-INSTALLED IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY HAS BEEN COMPLETED. SEDIMENT CONTROL PRACTICES MUST BE REINSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.

THE CONTRACTOR SHALL ENSURE STORM DRAIN INLETS ARE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED.

THE CONTRACTOR SHALL PROVIDE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROL AT THE BASE OF THE STOCKPILES.

THE CONTRACTOR SHALL INSTALL PERIMETER CONTROL AROUND ALL STAGING AREAS, BORROW PITS, AND AREAS CONSIDERED ENVIRONMENTALLY SENSITIVE.

THE CONTRACTOR SHALL ENSURE VEHICLE TRACKING BE MINIMIZED WITH EFFECTIVE BMPS. WHERE THE BMPS FAIL TO PREVENT SEDIMENT FROM TRACKING ONTO STREETS THE CONTRACTOR SHALL CONDUCT STREET SWEEPING TO REMOVE ALL TRACKED SEDIMENT.

THE CONTRACTOR SHALL IMPLEMENT CONSTRUCTION PRACTICES TO MINIMIZE SOIL COMPACTION.

THE CONTRACTOR SHALL ENSURE ALL CONSTRUCTION ACTIVITY REMAIN WITHIN PROJECT LIMITS AND THAT ALL IDENTIFIED RECEIVING WATER BUFFERS ARE MAINTAINED.

RECEIVING WATER	NATURAL BUFFER	IS THE BUFFER BEING ENCROACHED ON?	REASON FOR BUFFER ENCROACHMENT
UNNAMED LAKE	0 FT	YES	WATER MAIN ALIGNMENT CONSTRAINED TO LOCATION DUE EASEMENTS AND REQUIRED SEPARATION FROM SANITARY SEWER

A 50 FOOT NATURAL BUFFER MUST BE PRESERVED OR PROVIDE REDUNDANT (DOUBLE) PERIMETER SEDIMENT CONTROLS IF NATURAL BUFFER IS INFEASIBLE.

THE CONTRACTOR SHALL NOT UTILIZE SEDIMENT CONTROL CHEMICALS ON SITE.

INSPECTION AND MAINTENANCE:
ALL INSPECTIONS, MAINTENANCE, REPAIRS, REPLACEMENTS, AND REMOVAL OF BMPS IS TO BE CONSIDERED INCIDENTAL TO THE BMP BID ITEMS.

THE PERMITTEE(S) IS RESPONSIBLE FOR COMPLETING SITE INSPECTIONS, AND BMP MAINTENANCE TO ENSURE COMPLIANCE WITH THE PERMIT REQUIREMENTS.

THE PERMITTEE(S) SHALL INSPECT THE CONSTRUCTION SITE ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

THE PERMITTEE(S) SHALL DOCUMENT A WRITTEN SUMMARY OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES CONDUCTED WITHIN 24 HOURS OF OCCURRENCE. RECORDS OF EACH ACTIVITY SHALL INCLUDE THE FOLLOWING:

-DATE AND TIME OF INSPECTIONS;
-NAME OF PERSON(S) CONDUCTING INSPECTION;
-FINDINGS AND RECOMMENDATIONS FOR CORRECTIVE ACTIONS IF NECESSARY;
-CORRECTIVE ACTIONS TAKEN;
-DATE AND AMOUNT OF RAINFALL EVENTS;
-POINTS OF DISCHARGE OBSERVED DURING INSPECTION AND DESCRIPTION OF THE DISCHARGE
-AMENDMENTS MADE TO THE SWPPP.

THE PERMITTEE(S) SHALL SUBMIT A COPY OF THE WRITTEN INSPECTIONS TO THE ENGINEER AND OWNER ON A MONTHLY BASIS. IF MONTHLY INSPECTION REPORTS ARE NOT SUBMITTED, MONTHLY PAYMENTS MAY BE HELD.

THE CONTRACTOR SHALL DOCUMENT AMENDMENTS TO THE SWPPP AS A RESULT OF INSPECTION(S) WITHIN 7 DAYS.

THE CONTRACTOR SHALL KEEP THE SWPPP, ALL INSPECTION REPORTS, AND AMENDMENTS ONSITE. THE CONTRACTOR SHALL DESIGNATE A SPECIFIC ONSITE LOCATION TO KEEP THE RECORDS

THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY BMP'S, AS WELL AS EROSION AND SEDIMENT CONTROL BMP'S.

THE CONTRACTOR SHALL INSPECT EROSION PREVENTION AND SEDIMENTATION CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NONFUNCTIONAL BMPS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS WITHIN 24 HOURS OF FINDING. THE CONTRACTOR SHALL INVESTIGATE AND COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS:

PERIMETER CONTROL DEVICES, INCLUDING SILT FENCE SHALL BE REPAIRED, OR REPLACED, WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE DEVICE HEIGHT. THESE REPAIRS SHALL BE MADE WITHIN 24 HOURS OF DISCOVERY.

TEMPORARY AND PERMANENT SEDIMENT BASINS SHALL BE DRAINED AND THE SEDIMENT REMOVED WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/2 THE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY.

SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE CONTRACTOR SHALL REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS, INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. THE CONTRACTOR SHALL RE-STABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN 7 DAYS OF DISCOVERY, UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL CONSTRAINTS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND OBTAIN ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK IN SURFACE WATERS.

CONSTRUCTION SITE VEHICLE EXIT LOCATIONS SHALL BE INSPECTED DAILY FOR EVIDENCE OF SEDIMENT TRACKING ONTO PAVED SURFACES. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.

IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANOR AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.

EROSION PREVENTION BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEET AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF EROSION PREVENTION BMPS.

SEDIMENT CONTROL BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEETS AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF SEDIMENT CONTROL BMPS.

DEWATERING AND BASIN DRAINING ACTIVITIES:
THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL DEWATERING AND SURFACE DRAINAGE REGULATIONS.

WATER FROM DEWATERING ACTIVITIES SHALL DISCHARGE TO A TEMPORARY AND/OR PERMANENT SEDIMENT BASIN.

IF WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN, IT SHALL BE TREATED WITH OTHER APPROPRIATE BMPS, TO EFFECTIVELY REMOVE SEDIMENT.

DISCHARGE THAT CONTAINS OIL OR GREASE MUST BE TREATED WITH AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE PRIOR TO DISCHARGE.

WATER FROM DEWATERING SHALL BE DISCHARGED IN A MANNER THAN DOES NOT CAUSE NUISANCE CONDITIONS, EROSION, OR INUNDATION OF WETLANDS.

BACKWASH WATER USED FOR FILTERING SHALL BE HAULED AWAY FOR DISPOSAL, RETURNED TO THE BEGINNING OF TREATMENT PROCESS, OR INCORPORATED INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE CONTRACTOR SHALL REPLACE AND CLEAN FILTER MEDIAS USED IN DEWATERING DEVICES WHEN REQUIRED TO MAINTAIN ADEQUATE FUNCTION.

POLLUTION PREVENTION MANAGEMENT MEASURES:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POLLUTION PREVENTION MANAGEMENT MEASURES.

ALL POLLUTION PREVENTION MEASURES ARE CONSIDERED INCIDENTAL TO THE MOBILIZATION BID ITEM, UNLESS OTHERWISE NOTED.

THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL, IN COMPLIANCE WITH MPCA DISPOSAL REQUIREMENTS, OF ALL HAZARDOUS MATERIALS, SOLID WASTE, AND PRODUCTS ON-SITE.

THE CONTRACTOR SHALL ENSURE BUILDING PRODUCTS THAT HAVE THE POTENTIAL TO LEAK POLLUTANTS ARE KEPT UNDER COVER TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS ARE COVERED TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE HAZARDOUS MATERIALS AND TOXIC WASTE IS PROPERLY STORED IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. STORAGE AND DISPOSAL OF HAZARDOUS WASTE OR HAZARDOUS MATERIALS MUST BE IN COMPLIANCE WITH MINN. R. CH. 7045 INCLUDING SECONDARY CONTAINMENT AS APPLICABLE.

THE CONTRACTOR SHALL ENSURE ASPHALT SUBSTANCES USED ON-SITE SHALL ARE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

THE CONTRACTOR SHALL ENSURE PAINT CONTAINERS AND CURING COMPOUNDS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT AND/OR CURING COMPOUNDS SHALL NOT BE DISCHARGED INTO THE STORM SEWER SYSTEM AND SHALL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURE'S INSTRUCTION.

THE CONTRACTOR SHALL ENSURE SOLID WASTE BE STORED, COLLECTED AND DISPOSED OF PROPERLY IN COMPLIANCE WITH MINN. R. CH. 7035.

THE CONTRACTOR SHALL ENSURE POTABLE TOILETS ARE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MINN. R, CH. 7041.

THE CONTRACTOR SHALL MONITOR ALL VEHICLES ON-SITE FOR LEAKS AND RECEIVE REGULAR PREVENTION MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE.

THE CONTRACTOR SHALL ENSURE WASHOUT WASTE MUST CONTACT THE GROUND AND BE PROPERLY DISPOSED OF IN COMPLIANCE WITH MPCA RULES.

THE CONTRACTOR SHALL INCLUDE SPILL KITS WITH ALL FUELING SOURCES AND MAINTENANCE ACTIVITIES. SECONDARY CONTAINMENT MEASURES SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.

THE CONTRACTOR SHALL ENSURE SPILLS ARE CONTAINED AND CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM WATER CONVEYANCE SYSTEM SHALL BE REPORTED TO THE MINNESOTA DUTY OFFICER AT 1.800.422.0798.

SEH Project	RAMSY174498	Rev. #	Revision Issue Description	Date	Rev. #	Revision Issue Description	Date
Drawn By	JRB, SRP	.			.		
Designed By	KLK	.			.		
Checked By	CES	.			.		



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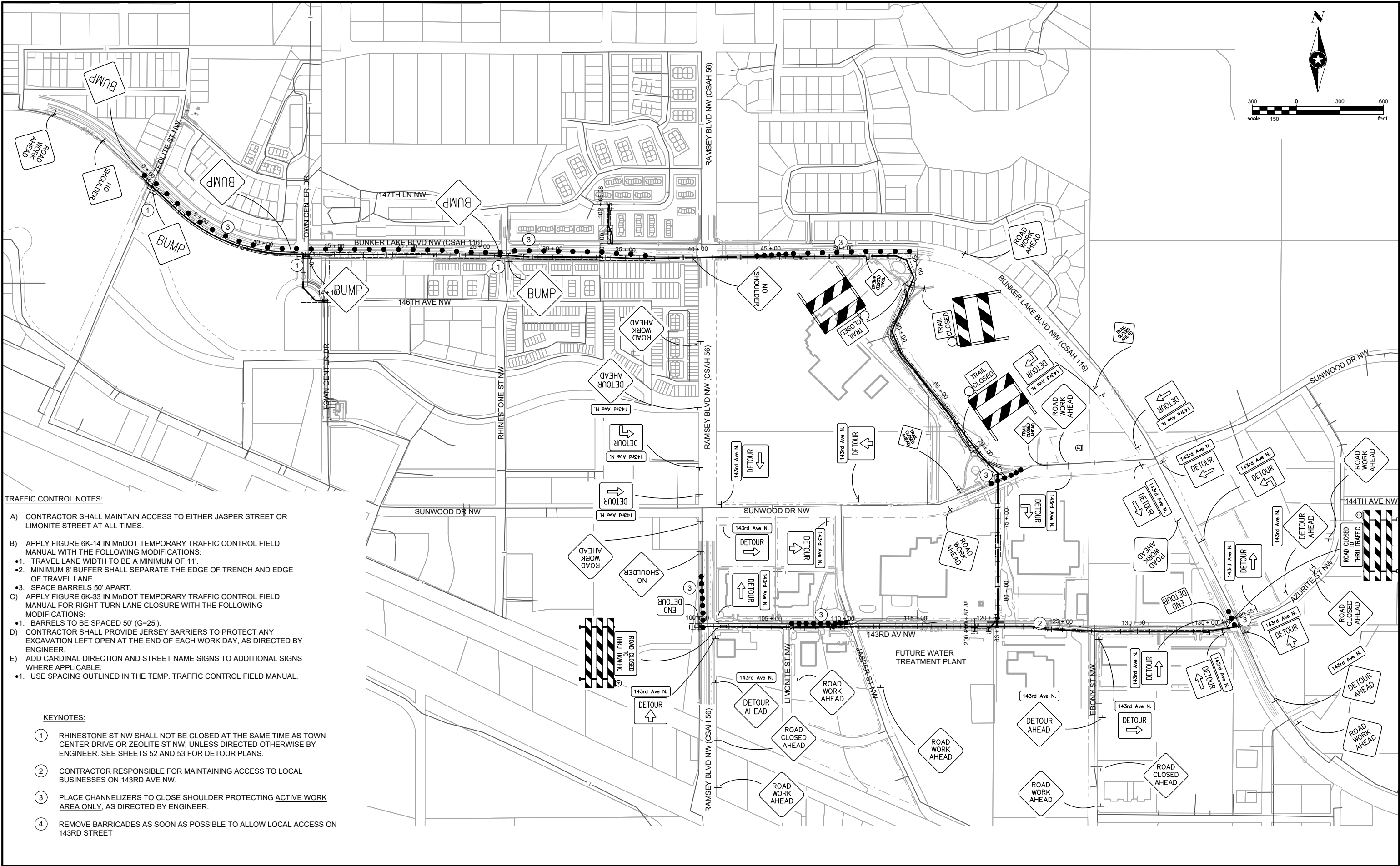
DATE 09-29-2023

David E. Hutton
LICENSE NO. 19133

WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

STORM WATER POLLUTION
PREVENTION PLAN

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TRAFFIC CONTROL NOTES:

- CONTRACTOR SHALL MAINTAIN ACCESS TO EITHER JASPER STREET OR LIMONITE STREET AT ALL TIMES.
- APPLY FIGURE 6K-14 IN MnDOT TEMPORARY TRAFFIC CONTROL FIELD MANUAL WITH THE FOLLOWING MODIFICATIONS:
 - TRAVEL LANE WIDTH TO BE A MINIMUM OF 11'.
 - MINIMUM 8' BUFFER SHALL SEPARATE THE EDGE OF TRENCH AND EDGE OF TRAVEL LANE.
 - SPACE BARRELS 50' APART.
- APPLY FIGURE 6K-33 IN MnDOT TEMPORARY TRAFFIC CONTROL FIELD MANUAL FOR RIGHT TURN LANE CLOSURE WITH THE FOLLOWING MODIFICATIONS:
 - BARRELS TO BE SPACED 50' (G=25').
- CONTRACTOR SHALL PROVIDE JERSEY BARRIERS TO PROTECT ANY EXCAVATION LEFT OPEN AT THE END OF EACH WORK DAY, AS DIRECTED BY ENGINEER.
- ADD CARDINAL DIRECTION AND STREET NAME SIGNS TO ADDITIONAL SIGNS WHERE APPLICABLE.
 - USE SPACING OUTLINED IN THE TEMP. TRAFFIC CONTROL FIELD MANUAL.

KEYNOTES:

- RHINESTONE ST NW SHALL NOT BE CLOSED AT THE SAME TIME AS TOWN CENTER DRIVE OR ZEOLITE ST NW, UNLESS DIRECTED OTHERWISE BY ENGINEER. SEE SHEETS 52 AND 53 FOR DETOUR PLANS.
- CONTRACTOR RESPONSIBLE FOR MAINTAINING ACCESS TO LOCAL BUSINESSES ON 143RD AVE NW.
- PLACE CHANNELIZERS TO CLOSE SHOULDER PROTECTING ACTIVE WORK AREA ONLY, AS DIRECTED BY ENGINEER.
- REMOVE BARRICADES AS SOON AS POSSIBLE TO ALLOW LOCAL ACCESS ON 143RD STREET

SEH Project	RAMSY174498	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
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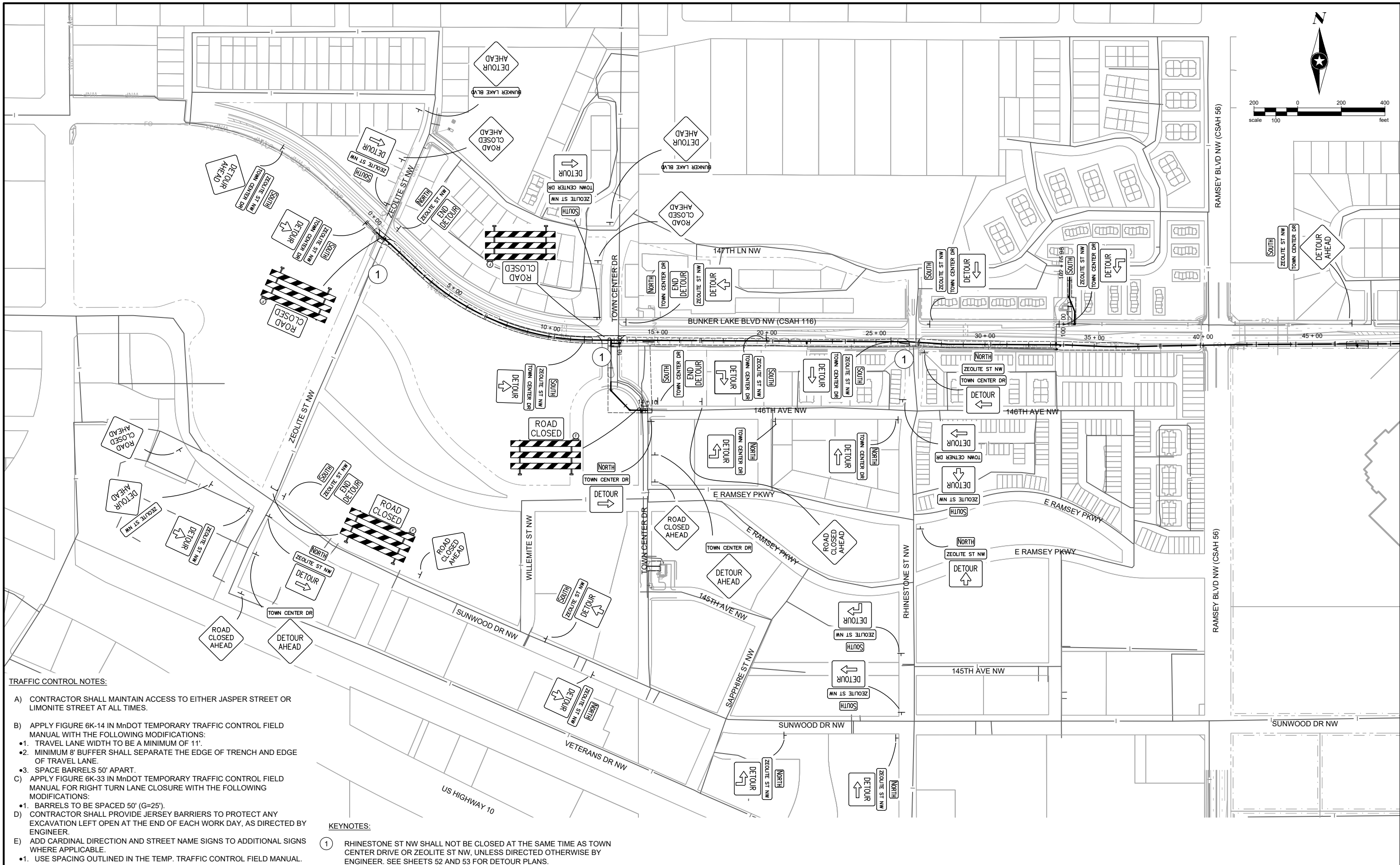


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David E. Hutton
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WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

TRAFFIC CONTROL PLAN

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TRAFFIC CONTROL NOTES:

- A) CONTRACTOR SHALL MAINTAIN ACCESS TO EITHER JASPER STREET OR LIMONITE STREET AT ALL TIMES.
- B) APPLY FIGURE 6K-14 IN MnDOT TEMPORARY TRAFFIC CONTROL FIELD MANUAL WITH THE FOLLOWING MODIFICATIONS:
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 - 2. MINIMUM 8' BUFFER SHALL SEPARATE THE EDGE OF TRENCH AND EDGE OF TRAVEL LANE.
 - 3. SPACE BARRELS 50' APART.
- C) APPLY FIGURE 6K-33 IN MnDOT TEMPORARY TRAFFIC CONTROL FIELD MANUAL FOR RIGHT TURN LANE CLOSURE WITH THE FOLLOWING MODIFICATIONS:
- 1. BARRELS TO BE SPACED 50' (G=25').
- D) CONTRACTOR SHALL PROVIDE JERSEY BARRIERS TO PROTECT ANY EXCAVATION LEFT OPEN AT THE END OF EACH WORK DAY, AS DIRECTED BY ENGINEER.
- E) ADD CARDINAL DIRECTION AND STREET NAME SIGNS TO ADDITIONAL SIGNS WHERE APPLICABLE.
- 1. USE SPACING OUTLINED IN THE TEMP. TRAFFIC CONTROL FIELD MANUAL.

KEYNOTES:

- 1 RHINESTONE ST NW SHALL NOT BE CLOSED AT THE SAME TIME AS TOWN CENTER DRIVE OR ZEOLITE ST NW, UNLESS DIRECTED OTHERWISE BY ENGINEER. SEE SHEETS 52 AND 53 FOR DETOUR PLANS.

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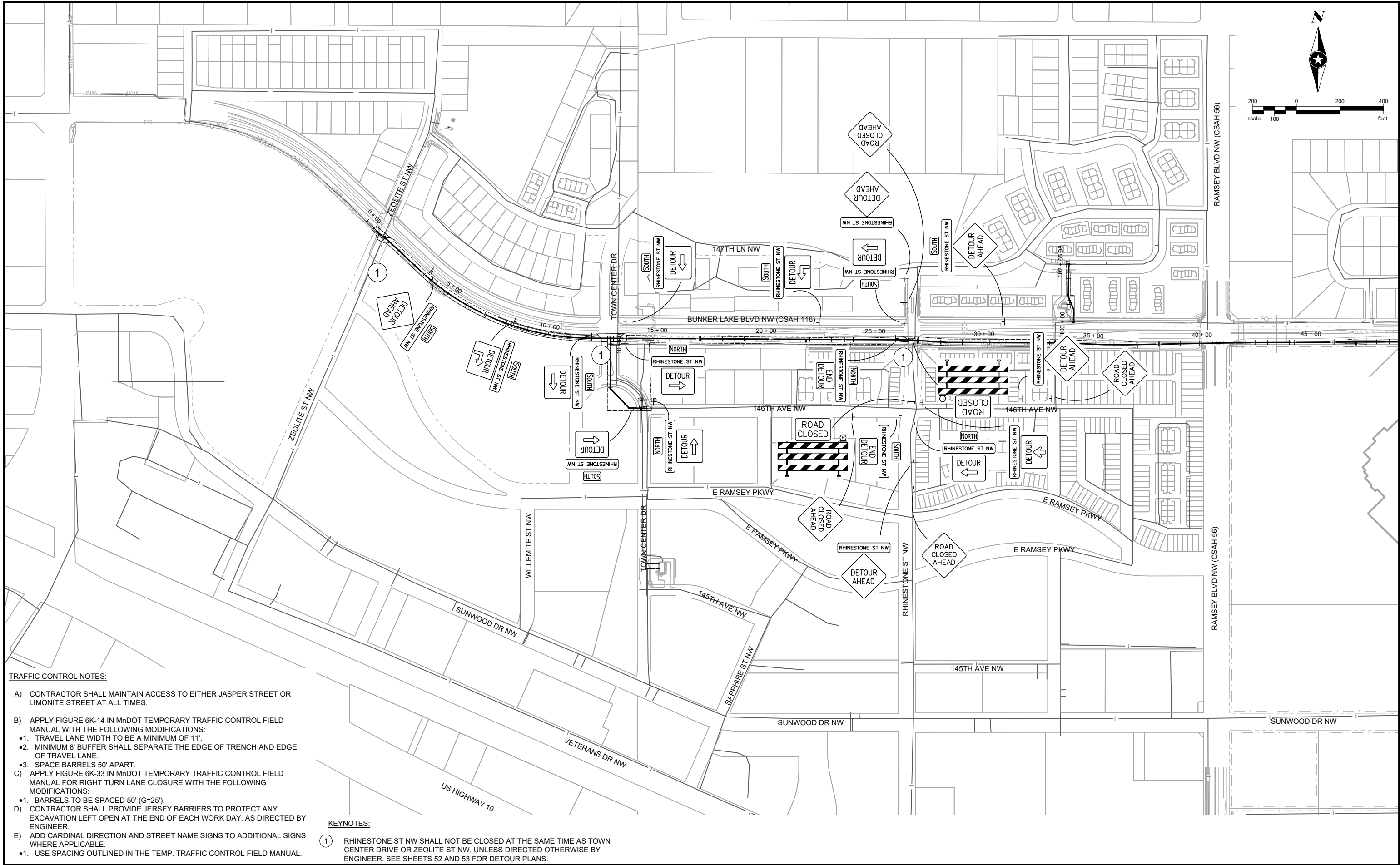
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David E. Hutton
LICENSE NO. 19133

WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

DETOUR PLAN
ZEOLITE ST NW AND TOWN CENTER DR
NW

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TRAFFIC CONTROL NOTES:

- A) CONTRACTOR SHALL MAINTAIN ACCESS TO EITHER JASPER STREET OR LIMONITE STREET AT ALL TIMES.
- B) APPLY FIGURE 6K-14 IN MnDOT TEMPORARY TRAFFIC CONTROL FIELD MANUAL WITH THE FOLLOWING MODIFICATIONS:
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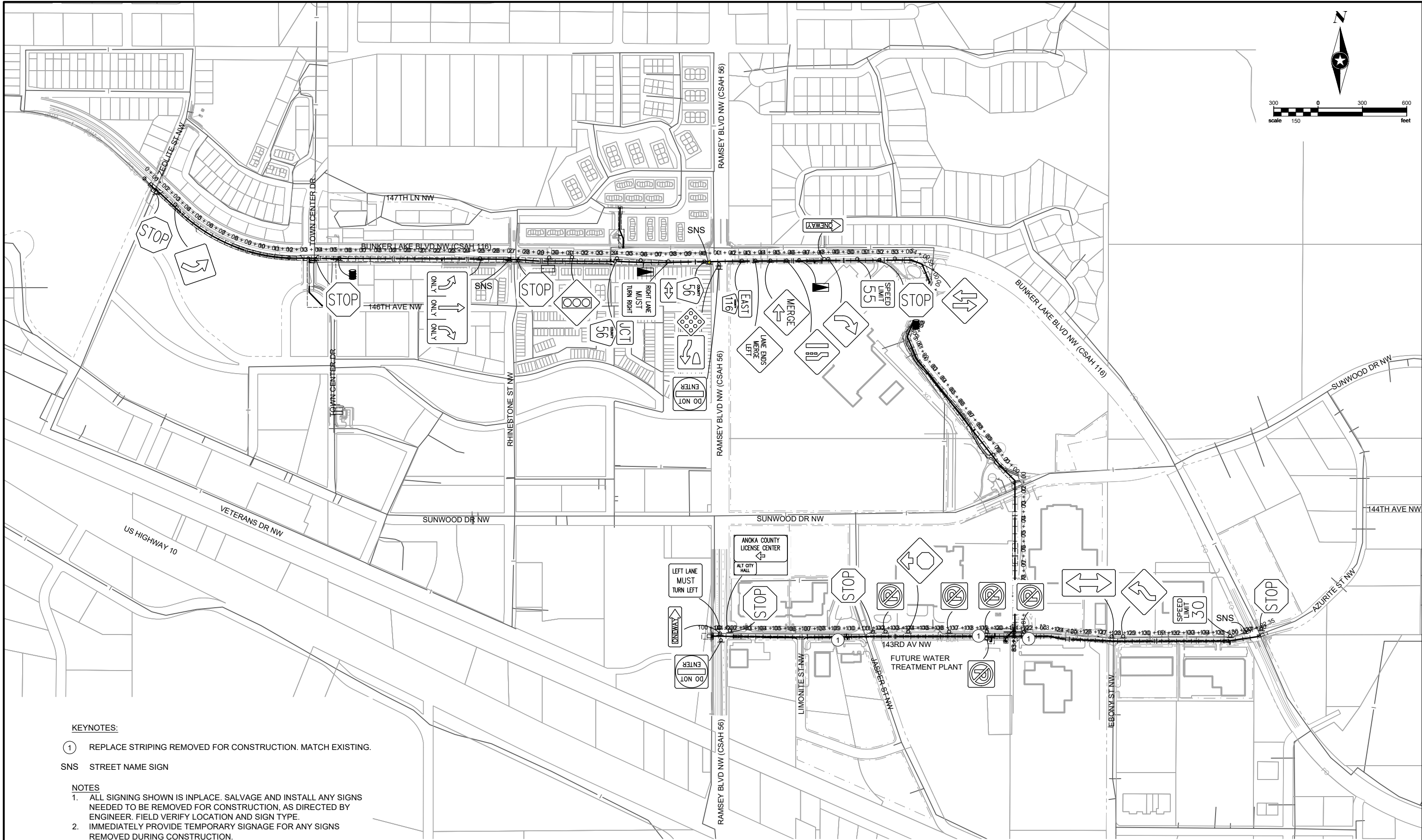
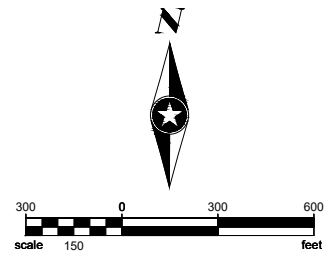
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DATE 09-29-2023

David E. Hutton
LICENSE NO. 19133

WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

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KEYNOTES:

- ① REPLACE STRIPING REMOVED FOR CONSTRUCTION. MATCH EXISTING.

SNS STREET NAME SIGN

NOTES

1. ALL SIGNING SHOWN IS INPLACE. SALVAGE AND INSTALL ANY SIGNS NEEDED TO BE REMOVED FOR CONSTRUCTION, AS DIRECTED BY ENGINEER. FIELD VERIFY LOCATION AND SIGN TYPE.
2. IMMEDIATELY PROVIDE TEMPORARY SIGNAGE FOR ANY SIGNS REMOVED DURING CONSTRUCTION.

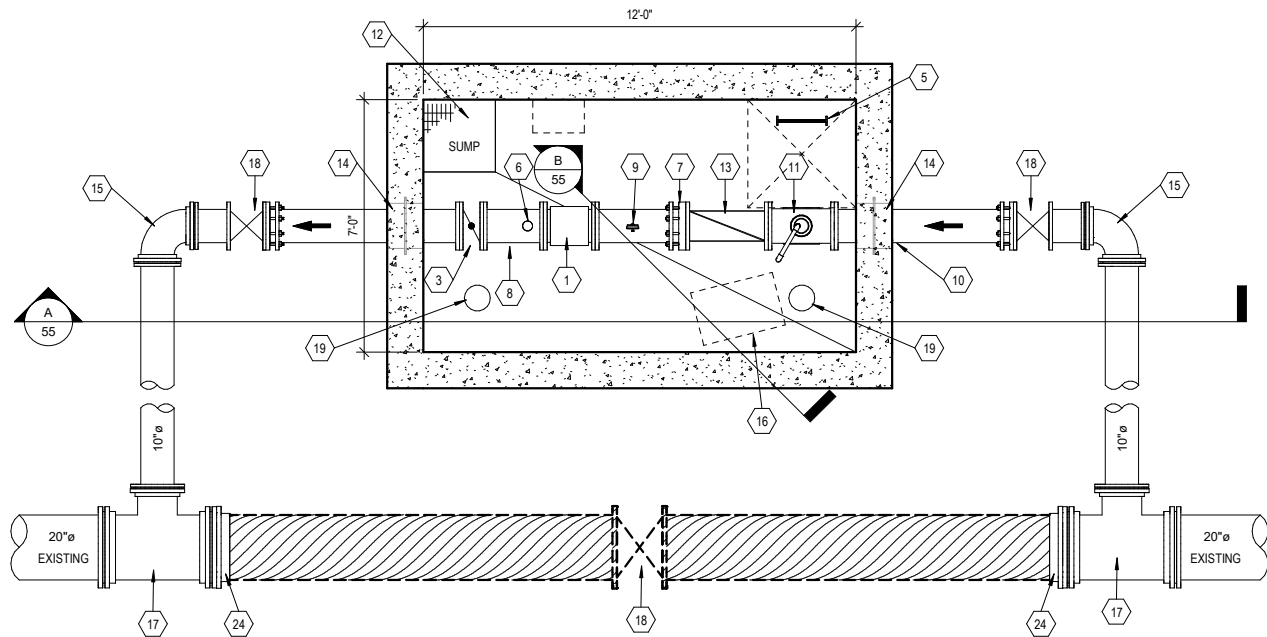
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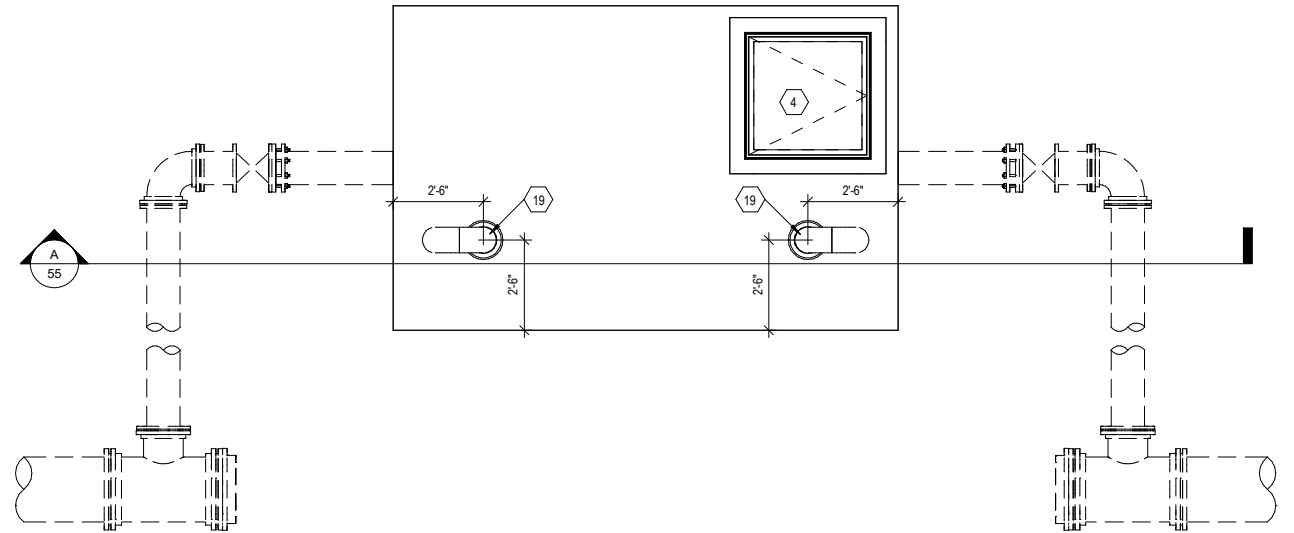
WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

PAVEMENT MARKING AND SIGNING
PLAN



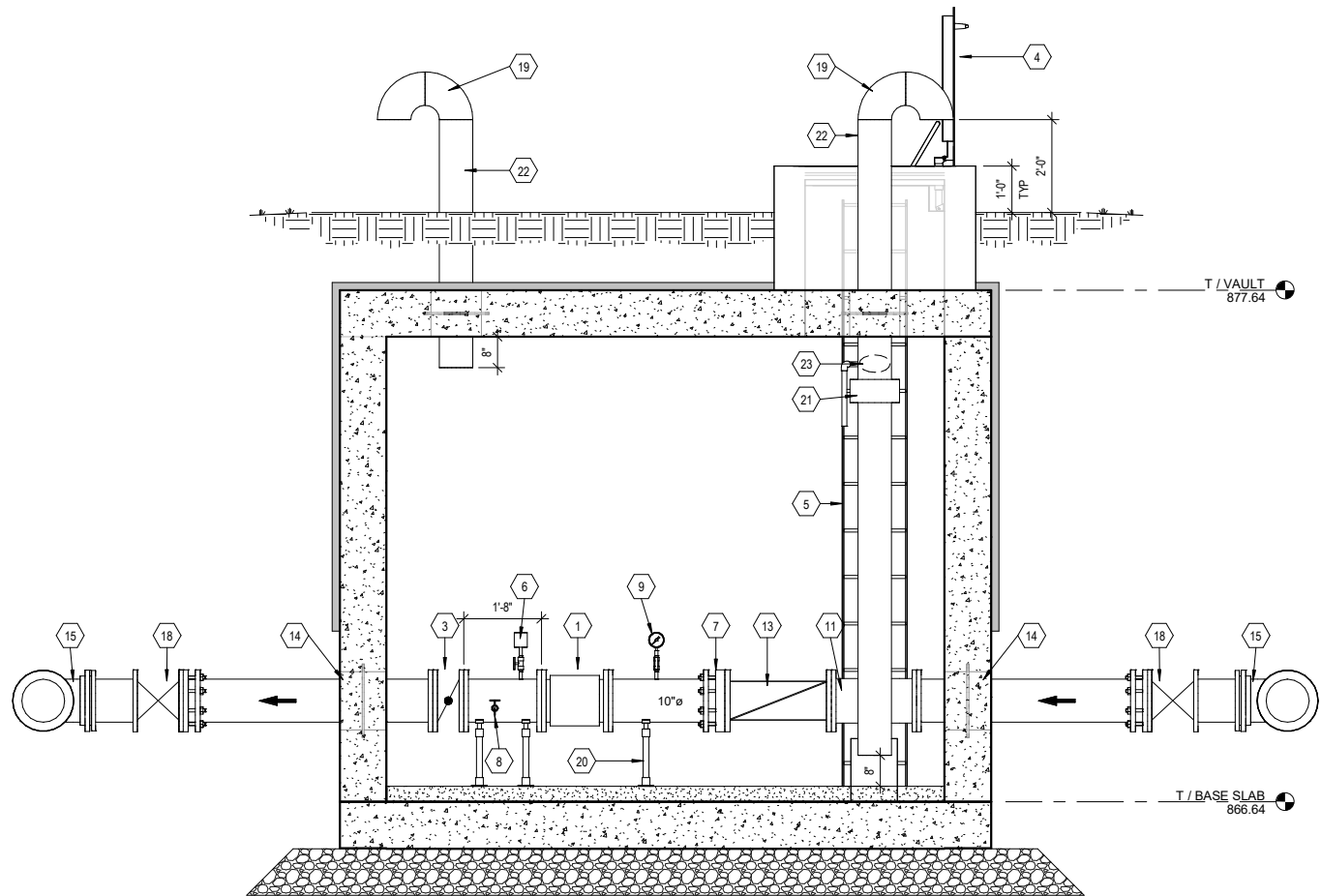
1
55
3/8" = 1'-0"
PROJECT
NORTH

VAULT PLAN VIEW



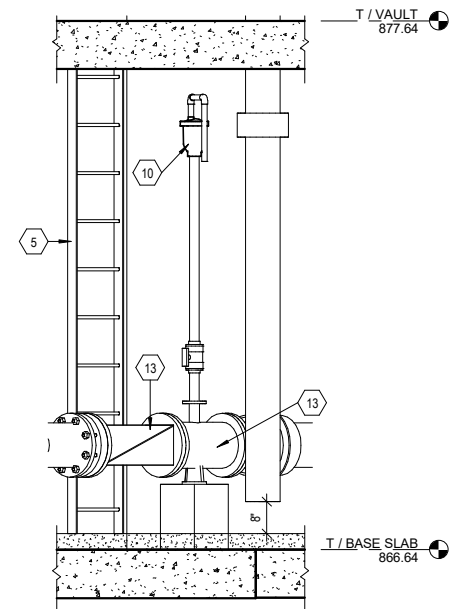
2
55
3/8" = 1'-0"
PROJECT
NORTH

MAIN LEVEL PLAN



A
55
1/2" = 1'-0"

SECTION



B
55
1/2" = 1'-0"

SECTION

KEYNOTES

- 1 10" FLOW METER
- 2 2" RIGID POLYSTYRENE BOARD INSULATION TYPE X (ASTM C578) FASTENED TO CONCRETE WITH COMPATIBLE ADHESIVE
- 3 10" BUTTERFLY VALVE
- 4 36" x 36" CLEAR OPENING. WATER TIGHT, ALUMINUM ACCESS HATCH WITH FALL THROUGH PROTECTION.
- 5 ALUMINUM LADDER W/ EXTENSION. SEE G/54
- 6 AIR RELIEF VALVE
- 7 10" FLANGE COUPLING ADAPTER
- 8 SAMPLE TAP. SEE F/54
- 9 TAP FOR 4-1/2" PRESSURE GAUGE 3/4" TAP, 3/4" SS BALL VALVE, SS NIPPLES AND SS CAP (QTY OF 2). SEE C/54.
- 10 2" AIR/VACUUM VALVE
- 11 10" x 4" FLANGED TEE, REDUCING
- 12 SUMP PUMP
- 13 10" CHECK VALVE
- 14 WALL SLEEVE. SEE DETAIL B/54.
- 15 10" MJ 90° ELBOW (TYP 2)
- 16 ELECTRIC HEATER MOUNTED TO CEILING
- 17 20"x10" MJ TEE
- 18 REMOVE EXISTING 20" GATE VALVE
- 19 8" STEEL RETURN AIR VENT WITH INSECT SCREEN. SEE E/54
- 20 STEEL PIPE SUPPORT. SEE A/54
- 21 8" INLINE FAN
- 22 8" FRP VENT PIPE
- 23 GRAVITY EXHAUST DAMPER
- 24 20" MJ CAP

NOTES:

1. ALL UNDERGROUND PIPING SHALL BE LAID ON GRADE BETWEEN THE ELEVATION POINTS SHOWN. NO LOW OR HIGH POINTS WILL BE ALLOWED EXCEPT AS SHOWN.
2. ALL MECHANICAL JOINTS SHALL BE RESTRAINED
3. SIZE OF FITTINGS AND VALVES SHALL CORRESPOND TO THE SIZE OF ADJACENT PIPING. ALL BOLTS AND TIES SHALL BE OF STAINLESS STEEL
4. ALL LINES SHALL BE ADEQUATELY ANCHORED AND SUPPORTED TO PREVENT EXCESSIVE MOVEMENT DURING OPERATION AND TESTING.
5. PIPELINE, INCLUDING VALVES, FITTINGS, AND APPURTENANCES OUTSIDE OF VAULT SHALL BE FULLY ENCASED IN POLYETHYLENE FILM CONFORMING TO THE REQUIREMENTS OF AWWA C-105 FOR TUBE TYPE INSTALLATIONS AND 8 MIL NOMINAL THICKNESS.
7. PIPING WITHIN THE VALVE VAULT SHALL BE FLANGED.
8. ALL FASTENERS SHALL BE STAINLESS STEEL.

SEH Project	RAMSY 174498	Rev. #	Revision Issue Description	Date	Rev. #	Revision Issue Description	Date
Drawn By:	KAK						
Designed By:	KAK						
Checked By:	MBJ						



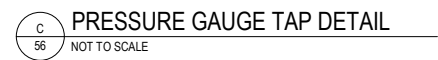
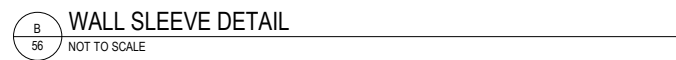
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

MILES B. JENSEN
DATE 9/29/2023 LICENSE NO. 19869

WATER TREATMENT PLANT TRUNK WATER MAIN IMPROVEMENTS

Ramsey, Minnesota

METER VAULT PLAN & SECTION

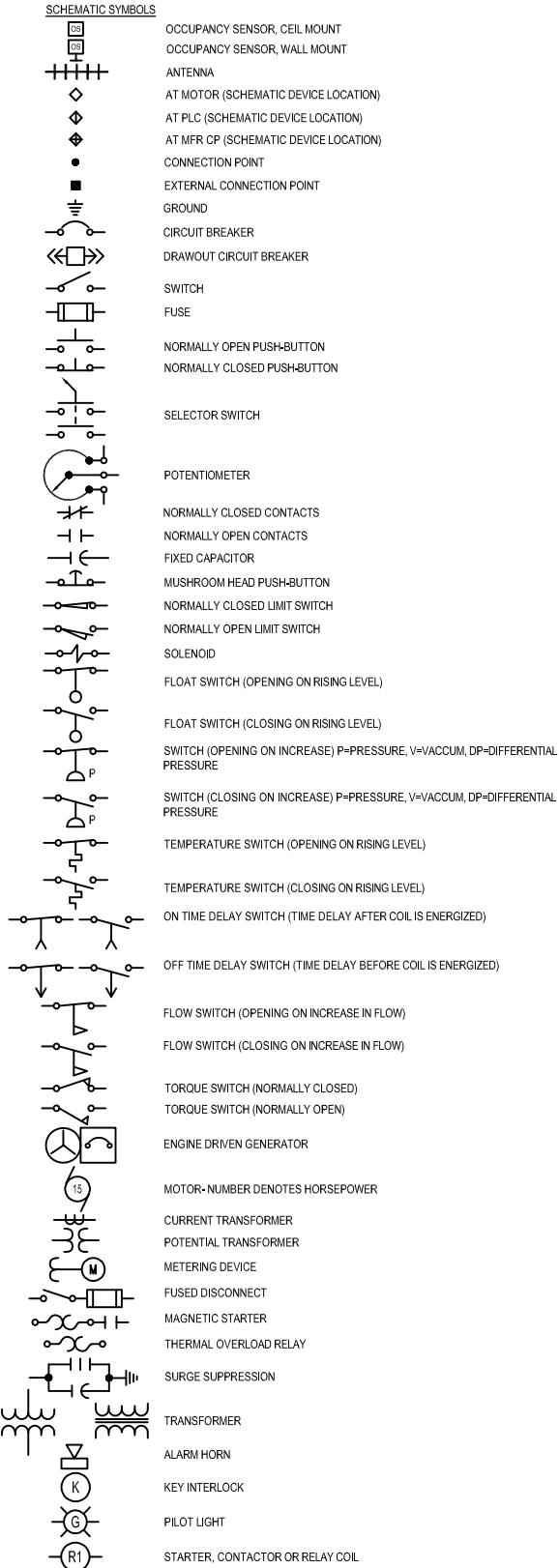


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POWER & LIGHTING SYMBOLS



SCHEMATIC SYMBOLS



MISC. SYSTEM COMPONENT, SEE ABBREVIATIONS FOR LETTER DESIGNATIONS NOT LISTED BELOW.

LE = LEVEL ELEMENT
LIT = LEVEL INDICATING TRANSMITTER
FE = FLOW ELEMENT
FIT = FLOW INDICATING TRANSMITTER
FS = FLOW SWITCH
HS = HAND SWITCH
PB = PULLBOX
PT= PRESSURE TRANSDUCER
SS = SOFT STARTER
TS = TAMPER SWITCH
ATS = AUTOMATIC TRANSFER SWITCH
HOA = HAND OFF AUTO SELECTOR SWITCH
TIT = TEMPERATURE INDICATING TRANSMITTER
TSH = TEMPERATURE SWITCH HIGH
TVSS = TRANSIENT VOLTAGE SURGE SUPPRESSER
VFD = VARIABLE FREQUENCY DRIVE
SV = SOLENOID VALVE
XS = MOISTURE SWITCH
XSH = MOISTURE SWITCH HIGH
ZS = POSITION SWITCH

ELECTRICAL ABBREVIATIONS

A	AMBER, AMPERE, ALARM	LIT	LEVEL INDICATING TRANSMITTER
AC	ALTERNATING CURRENT	LP	LIGHTING PANEL
AF	ABOVE FINISHED FLOOR	LS	LIMIT OR LEVEL SWITCH
AFG	ABOVE FINISHED GRADE	LTG	LIGHTING
AM	AMMETER	LWCO	LOW WATER CUTOFF
ANN	ANNUNCIATOR	M	MAGNETIC MOTOR STARTER
AR	ALARM RELAY	MA	MILLIAMPERE
AS	AMMETER SWITCH	MCB	MAIN CIRCUIT BREAKER
ATS	AUTOMATIC TRANSFER SWITCH	MCC	MOTOR CONTROL CENTER
AWG	AMERICAN WIRE GAUGE	MD	MOISTURE DETECTOR
BC	BATTERY CHARGER	MFR	MANUFACTURER
BLDG	BUILDING	MH	MANHOLE OR MOUNTING HEIGHT
C	CLOSE, COUNTER OR CONTACTOR	MOV	MOTOR OPERATED VALVE
CAP	CAPACITOR	MS	MANUAL MOTOR STARTER
CB	CIRCUIT BREAKER	MSH	MOTOR SPACE HEATER
CD	CONTROL DAMPER	MTR	MOTOR
CGD	COMBUSTIBLE GAS DETECTOR	MTS	MANUAL TRANSFER SWITCH
CKT	CIRCUIT	MV	MILLIVOLT, MEDIUM VOLTAGE
CL2	CHLORINE	MVA	MEGA VOLT AMPERE
CP	CONTROL PANEL	N	NEUTRAL
CPT	CONTROL POWER TRANSFORMER	NC	NORMALLY CLOSED
CR	CURRENT OR CONTROL RELAY	NMC	NON-METALLIC CONDUIT
CS	CONTROL STATION	NO	NORMALLY OPEN
CT	CYCLE TIMER OR CURRENT TRANSFORMER	O	OPEN
CV	CONTROL VALVE	OL	OVERLOAD
2/C	2 CONDUCTOR	OOA	ON-OFF-AUTO
4"C	4" CONDUIT	OOR	ON-OFF-REMOTE
DC	DIRECT CURRENT	OH	OVERHEAD
DI	DOOR INTERLOCK	P	PRIMARY
DM	DAMPER MOTOR OR DEMAND METER	PB	PUSHBUTTON OR PULL BOX
DPDT	DOUBLE POLE DOUBLE THROW	PLC	PROGRAMMABLE LOGIC CONTROLLER
DPST	DOUBLE POLE SINGLE THROW	PF	POWER FACTOR
DP	DIFFERENTIAL PRESSURE	PFCC	POWER FACTOR CORRECTION CAPACITOR
DPS	DIFFERENTIAL PRESSURE SWITCH	PH	PHASE, CHEMICAL TERM
DS.DISC	DISCONNECT SWITCH	PRS	PROXIMITY SWITCH
DWG	DRAWING	PRV	POWER ROOF VENTILATOR
E	EMERGENCY OR DAMPER OPERATOR	PS	PRESSURE SWITCH OR PUMP STATION
EC	EMPTY CONDUIT	PT	POTENTIAL TRANSFORMER OR PROGRAM TIMER
ECP	EQUIPMENT CONTROL PANEL	PVC	POLYVINYL CONDUIT
EG	ENGINE GENERATOR	2P	2 POLE
EL	ELEVATION OR EMERGENCY LIGHT	R	RED, RAISE RELAY OR REVERSE
EMH	ELECTRICAL MANHOLE	RECP	RECEPTACLE
ES	END SWITCH	RGS	RIGID GALVANIZED STEEL
ETM	ELAPSED TIME METER	RMC	RIGID METALLIC CONDUIT
EUH	ELECTRICAL UNIT HEATER	RTD	RESISTANCE TYPE TEMP DETECTOR
EVS	EMERGENCY VENTILATION SHUTOFF	RTU	REMOTE TERMINAL UNIT
EXIST	EXISTING	SA	SURGE SUPPRESSOR
F	FORWARD	SCC	SHORT CIRCUIT CURRENT
FA	FIRE ALARM	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
FACP	FIRE ALARM CONTROL PANEL	S2	SIZE 2 STARTER
FDR	FEEDER	SP	SINGLE POLE
FE	FLOW ELEMENT	SPD	SURGE PROTECTOR
FIT	FLOW INDICATING TRANSMITTER	SPDT	SINGLE POLE DOUBLE THROW
FO	FIBER OPTIC	SPST	SINGLE POLE SINGLE THROW
FS	FLOW SWITCH	SS	SELECTOR SWITCH OR SOFT STARTER
FPSP	FIRE PROTECTION SIGNALING PANEL	S.S., SST	STAINLESS STEEL
FVNR	FULL VOLTAGE NON-REVERSING	SSRV	SOLID STATE REDUCED VOLTAGE STARTER
G	GREEN OR GROUND OR GENERATOR	STR	STARTER
GD	GROUND DETECTOR OR GAS DETECTOR	SV	SOLENOID VALVE
GEN	GENERATOR	SWBD	SWITCHBOARD
GFI	GROUND FAULT INTERRUPTER	SWGR	SWITCHGEAR
GFCI	GROUND FAULT CKT INTERRUPTER	T	THERMOSTAT, TIMER OR TOTALIZER
GND	GROUND	TB	TERMINAL BLOCK
GUH	GAS UNIT HEATER	TCP	TEMPERATURE CONTROL PANEL
H	HIGH OR HUMIDISTAT	TD	TIME DELAY RELAY
HH	HANDHOLE	TEMP	TEMPERATURE
HOA	HAND-OFF-AUTO	TQ	TORQUE
HP	HORSEPOWER	TTB	TELEPHONE TERMINAL BOX
HTR	HEATER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
HVMH	HIGH VOLTAGE ELECTRIC MANHOLE	UG	UNDERGROUND
HZ	HERTZ (CYLES PER SECOND)	UPS	UNINTERRUPTIBLE POWER SUPPLY
I/O	INPUT/OUTPUT	UV	UNDER VOLTAGE OR ULTRAVIOLET
INST	INSTANTANEOUS	V	VOLTS
IS	INTRINSICALLY SAFE	VA	VOLT AMPERE
ISO	ISOLATION	VAR	VOLTAMPERE REACTIVE
J	JUNCTION BOX	VFD	VARIABLE FREQUENCY DRIVE
K	KEY INTERLOCK	VM	VOLTMETER
KAIC	KILOAMPERE	VS	VOLTMETER SWITCH
KCMIL	THOUSAND CIRCULAR MILS	W	WHITE OR WATTS
KV	KILVOLT	WE	WEIGHT ELEMENT
KVA	KILVOLT AMPERE	WIT	WEIGHT INDICATING TRANSMITTER
KVAR	KILOVAR	WP	WEATHERPROOF
KW	KILOWATT	WPI	WEATHERPROOF IN-USE RECEPTACLE COVER
KWH	KILOWATT HOUR	XFMR	TRANSFORMER
L	LOW, LEVEL	XP	EXPLOSION-PROOF
LA	LIGHTNING ARRESTER		
LAN	LOCAL AREA NETWORK		
LC	LIGHTING CONTACTOR		
LE	LEVEL ELEMENT		

NOTES

GENERAL WIRING METHODS:

- USE NO. 10 AWG CONDUCTOR FOR 20 AMPERE, 120V-VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 75 FEET; AND FOR 20 AMPERE, 277V-VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 150 FEET.

CONTACT INFORMATION:

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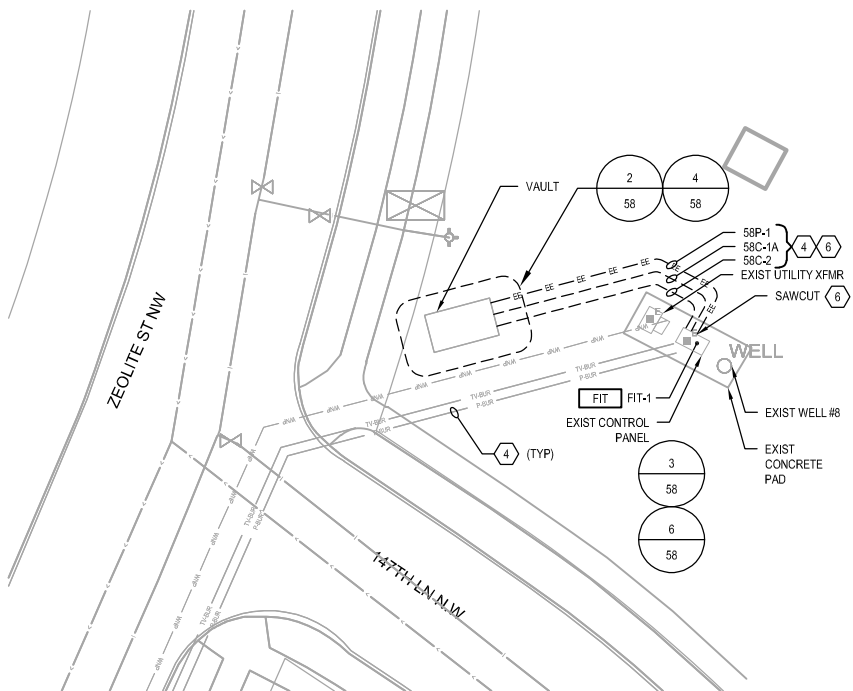
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John P. Carlson
JOHN P. CARLSON, P.E.
DATE 09-29-2023 LICENSE NO. 24001

WATER TREATMENT PLANT
TRUNK WATER MAIN IMPROVEMENTS
Ramsey, Minnesota

ELECTRICAL - SYMBOLS,
ABBREVIATIONS AND NOTES
BUNKER LAKE BLVD NW (CSAH 116)

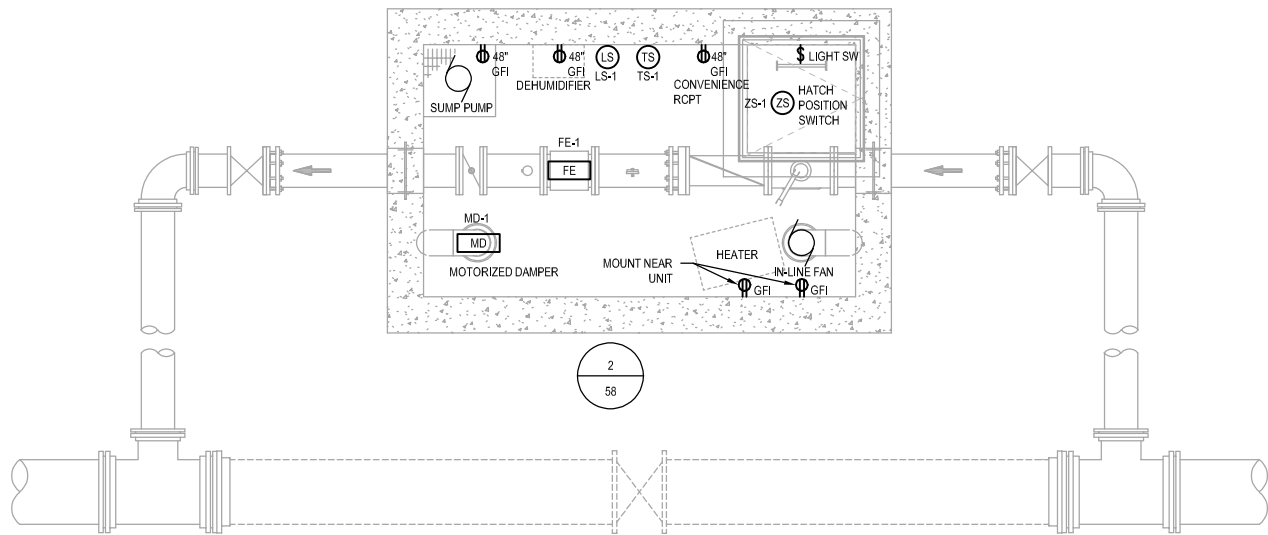
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ELECTRICAL - SITE PLAN

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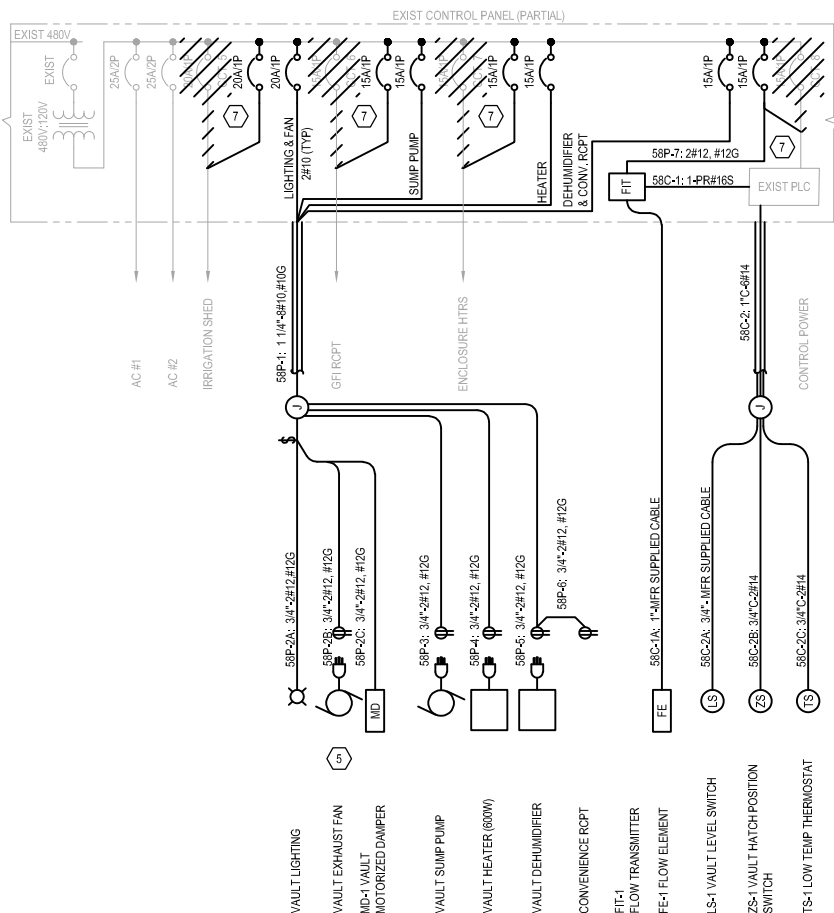
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ELECTRICAL - PLAN

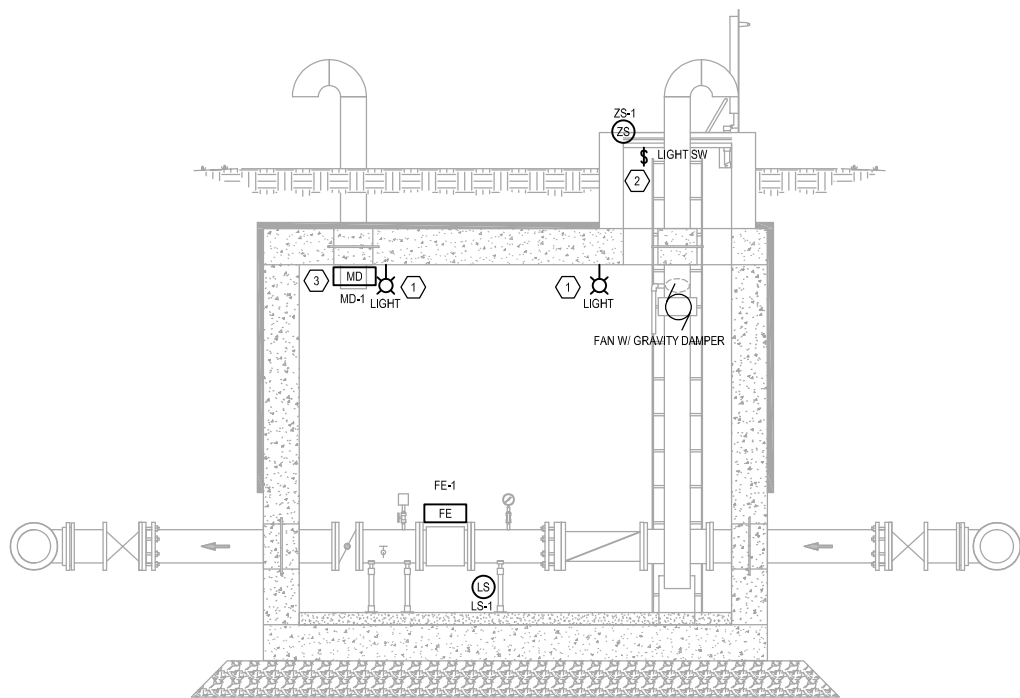
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SCALE: 3/8"=1'-0"



ELECTRICAL - SITE PLAN

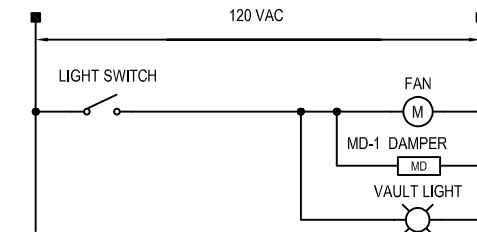
SCALE: NONE



ELECTRICAL - ELEVATION

SCALE: 3/8"=1'-0"

SCALE: 3/8"=1'-0"



120V FAN SCHEMATIC

SCALE: NONE



REPLACE 20A, 1-POLE WITH 20A, 1-POLE TANDEM

REPLACE 15A, 1-POLE WITH 15A, 1-POLE TANDEM

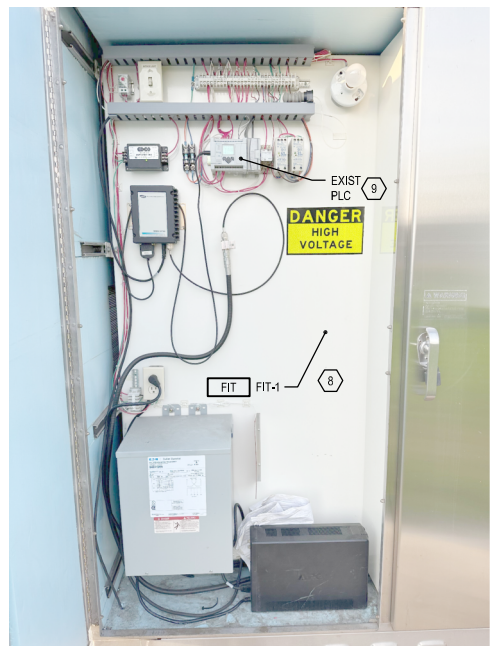
EXIST LOADCENTER ELEVATION

SCALE: NONE



EXIST CONTROL PANEL ELEVATIONS

SCALE: NONE



GENERAL NOTES:

- COORDINATE ELECTRICAL REQUIREMENTS WITH OTHER TRADES.
- ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST ADDITION OF THE NATIONAL ELECTRICAL CODE, STATE, COUNTY, MUNICIPAL, AND FEDERAL LAWS OR ORDINANCES GOVERNING THE PROJECT. IF THE PLANS AND SPECIFICATIONS ARE IN CONFLICT WITH SUCH CODES, LAWS OR ORDINANCES, NOTIFY THE ENGINEER FOR RESOLUTION PRIOR TO MAKING CHANGES. WORK SHALL BE PERFORMED UNDER A LICENSED MASTER ELECTRICIAN.
- PROVIDE LABOR, MATERIALS, EQUIPMENT AND NECESSARY OPERATIONS REQUIRED TO PROVIDE COMPLETE AND OPERATIONAL ELECTRICAL INSTALLATION IN ACCORDANCE WITH ACCOMPANYING PLANS AND SPECIFICATIONS.
- MATERIAL SHALL BE NEW, UL LISTED AND APPROVED FOR THE PURPOSE AND INSTALLATION PER CODE IN A WORKMANSHIP MANNER.
- SECURE AND PAY FOR PERMITS, LICENSES AND INSPECTION FEES, AND COORDINATE WITH UTILITIES AND AUTHORITIES HAVING JURISDICTION.
- EXPOSED CONDUIT SHALL BE RIGID METAL CONDUIT (RMC). BELOW GRADE CONDUIT SHALL BE SCHEDULE 40 PVC.
- 600V CONDUCTORS SHALL BE XHHW OR THWN/THHN STRANDED COPPER AS SPECIFIED.
- PROVIDE GROUNDING OF SERVICE PER LATEST ADDITION OF NATIONAL ELECTRICAL CODE.

KEYNOTES:

- PROVIDE RAB LIGHTING FIXTURE #XLED13NDG.
- LIGHT SWITCH SHALL CONTROL LIGHT, FAN AND MOTORIZED DAMPER. SEE SCHEMATIC 5/58.
- MOTORIZED DAMPER TURNS ON WITH LIGHT SWITCH AND FAN.
- APPROXIMATE LOCATION OF BURIED CIRCUITRY, VERIFY ROUTING WITH UTILITY, OTHER TRADES AND CIVIL PLANS.
- PROVIDE MATCHING CORD AND PLUG.
- SAWCUT CONCRETE FOR COMPLETELY CONCEALED CONDUIT ENTRY.
- REPLACE EXIST 1-POLE LOADCENTER BREAKER WITH TANDEM 1-POLE BREAKER OF SAME AMPERAGE.
- INSTALL FIT-1 IN EXIST CONTROL PANEL.
- REARRANGE DEVICES TO ADD ANALOG AND DIGITAL INPUT CARDS TO EXIST PLC.

SEH Project	Ramsy174498	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JRB
Designed By	JRB
Checked By	JPC



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