

LEGEND

EXISTING

	RIGHT OF WAY
	PROPERTY LINE
	MAJOR CONTOUR (5')
	MINOR CONTOUR (1')
	BITUMINOUS
	REMOVE BITUMINOUS
	CONCRETE
	REMOVE CONCRETE
	CURB
	REMOVE CURB
	BUILDING
	GRAVEL
	CENTERLINE
	FENCE
	WATERMAIN / HYDRANT, VALVE
	WATER SERVICE / CURB STOP
	SANITARY SEWER / MH
	SANITARY SEWER SERVICE
	STORM SEWER / MH, CB, APRON
	OVERHEAD ELECTRIC / ANCHOR, POLE, LIGHT
	UNDERGROUND TELEPHONE / PEDESTAL
	GAS MAIN / VALVE
	RAILROAD TRACKS
	SIGN / POST
	GUARD POST

PROPOSED

	BITUMINOUS
	CONCRETE
	SAW CUT
	CURB
	CENTERLINE ALIGNMENT
	WATERMAIN / HYDRANT, VALVE
	WATER SERVICE / CURB STOP
	SANITARY SEWER / MH
	SANITARY SEWER SERVICE
	STORM SEWER / CB, MH
	BIOLOG
	SEEDING
	ROCK STABILIZED ENTRANCE

CITY OF DULUTH, MINNESOTA

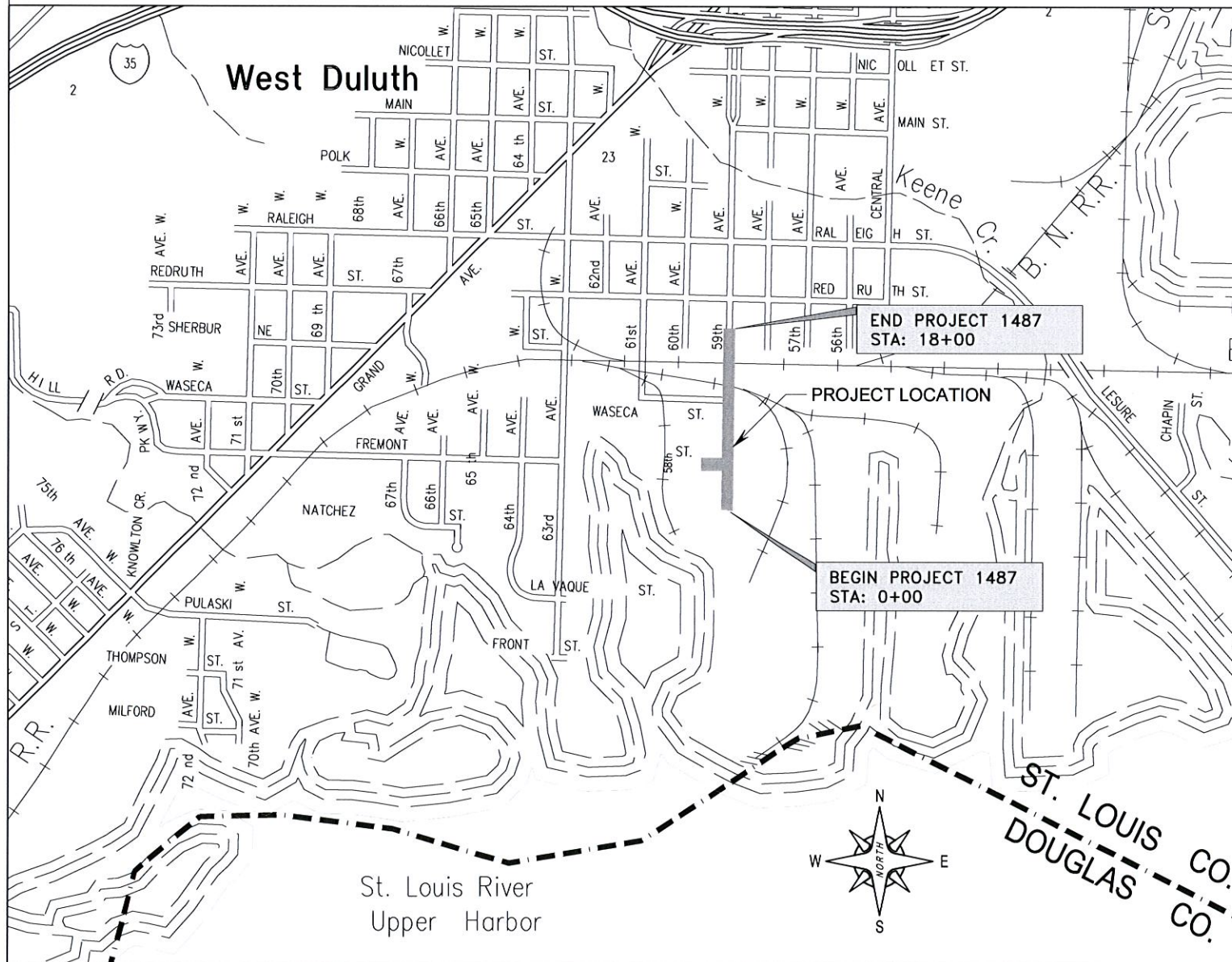
59th AVENUE WEST

CONSTRUCTION PLANS FOR: CONCRETE CURB & GUTTER BITUMINOUS SURFACING,
AGGREGATE BASE, WATER MAIN REPLACEMENT & STORM SEWER.

CITY PROJECT NO. 1487

GROSS LENGTH	2200 FEET	0.42 MILES
NET LENGTH	2200 FEET	0.42 MILES

LOCATED ON : 59th AVENUE WEST FROM WASECA STREET SOUTH TO THE HALLETT DOCKS PROPERTY ENTRANCE
& FREMONT STREET FROM 59th AVENUE WEST TO 600 FEET WEST.



INDEX MAP

BENCHMARKS

SEE LAYOUT PLAN SHEET

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY
QUALITY LEVEL "D". THIS 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.



TWIN CITY AREA 454-0002
MN. TOLL FREE 811

GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
"STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.
(AVAILABLE AT: <http://www.dot.state.mn.us/pre-letting/spec/>)

THE 2360 PLANT MIXED ASPHALT PAVEMENT SPECIFICATION
FOR 2016 CONSTRUCTION SEASON SHALL APPLY.
(AVAILABLE AT: <http://www.dot.state.mn.us/pre-letting/spec/>)

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE
CURRENT EDITION OF THE MN MUTCD, INCLUDING THE LATEST FIELD MANUAL.

THE 2015 EDITION OF THE CITY OF DULUTH STANDARD CONSTRUCTION
SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY. (AVAILABLE AT:
<http://www.duluthmn.gov/engineering/standard-construction-specifications/>)

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TYPICAL SECTION
4-7	DETAILS
8	TRAFFIC CONTROL
9-11	EXISTING CONDITIONS & REMOVALS
12-15	PLAN & PROFILE
16-18	LAYOUT
19-20	SWPPP
21-23	EROSION CONTROL
24-32	CROSS SECTIONS

THIS PLAN SET CONTAINS 32 SHEETS

SURVEY INFORMATION

COORDINATE SYSTEM: ST. LOUIS COUNTY TRANSVERSE MERCATOR 96
HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD88
GEOID MODEL: GEOID09

DESIGN DESIGNATION

SOIL FACTOR	=120
ADT (CURRENT YEAR) 2015	=1,090
ADT (FUTURE YEAR) 2035	=1,417
HCADT (CURRENT YEAR) 2015	=104
HCADT (FUTURE YEAR) 2035	=135
D (DIRECTIONAL DISTRIB.)	=50/50
T (HEAVY COMMERCIAL)	=9.5%
FUNCTIONAL CLASSIFICATION	=COLLECTOR
CURB TO CURB WIDTH	=32 (BACK TO BACK)
DESIGN LOADING	=10 TON
DESIGN SPEED	=30 MPH
BASED ON STOPPING SIGHT DISTANCE	
HEIGHT OF EYE 3.5 FEET SIGHT DISTANCE	
HEIGHT OF OBJECT 2.0 FEET	

CITY APPROVALS

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

APPROVED 26422 10/28/2015
DESIGN ENGINEER LIC. NO. DATE

APPROVED 10/28/15
CHIEF ENGINEER OF TRANSPORTATION DATE

APPROVED 10/28/15
CHIEF ENGINEER OF UTILITIES DATE

APPROVED 10/28/15
CITY ENGINEER DATE

SCALES

PLAN	0 20 40
INDEX MAP	0 1300 2600
PROFILE:	HORIZONTAL: 1"=40'
	VERTICAL: 1"=10'



PROJECT LOCATION

ST. LOUIS COUNTY
CITY OF DULUTH
W 1/2 OF SECTION 18
T 49 NORTH, R 14 WEST

CONTRACTOR TO NOTIFY 911 PERSONNEL PRIOR TO ALL ROAD CLOSURES.

DESIGNED NM	DRAWN NM
CHECKED JK	



4560 Norway Pines Place
Duluth, MN. 55811
218.727.8796
tkda.com

59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA

CITY PROJECT NO. 1487 MSA NO.

TITLE SHEET

PROJECT NO.	15896.000
RECORD NO.	
SHEET NO.	1

FIELD BOOK:
Plot Date: 10/20/2015
Drawing Name: P:\Hennepin\Office Projects\TKDA\15896.000 59th Avenue West\Main\CD\PlanSet\SEQ.dwg
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LINE NO.	NOTE NO.	SPEC. NUMBER	ITEM DESCRIPTION	UNIT OF MEASURE	TOTAL QUANTITY
1		2021.501	MOBILIZATION	Lump Sum	1
2		2104.501	REMOVE CURB AND GUTTER	Linear Foot	67
3		2104.501	REMOVE WATER MAIN	Linear Foot	100
4	1	2104.501	REMOVE RAILROAD TRACKS	Linear Foot	300
5		2104.505	REMOVE CONCRETE PAVEMENT	Square Yard	279
6		2104.505	REMOVE BITUMINOUS PAVEMENT	Square Yard	69
7		2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	Square Yard	305
8	4	2104.507	REMOVE CONTAMINATED SOIL	Lump Sum	1
9		2104.509	REMOVE GATE VALVE AND BOX	Each	18
10		2104.509	REMOVE BOLLARDS	Each	4
11		2104.509	REMOVE CATCH BASIN	Each	2
12		2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	Linear Foot	100
13		2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	Linear Foot	360
14		2104.523	SALVAGE SIGN AND SUPPORT	Each	4
15	2	2104.523	SALVAGE CASTING	Each	2
16	2	2104.523	SALVAGE HYDRANT	Each	4
17		2104.523	SALVAGE MANHOLE	Each	1
18	3	2104.603	ABANDON WATER MAIN	Linear Foot	1,811
19		2105.501	COMMON EXCAVATION	Cubic Yard	4,976
20		2105.522	SELECT GRANULAR BORROW MOD. 7% (CV)	Cubic Yard	2,067
21		2105.604	GEOTEXTILE FABRIC TYPE V	Square Yard	5,893
22		2211.503	AGGREGATE BASE (CV), CLASS 5	Cubic Yard	1,722
23		2360.501	TYPE SP 9.5 WEARING COURSE MIX (4,C)	Ton	596
24		2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (4,C)	Ton	745
25	11	2360.505	TYPE SP 9.5 BITUMINOUS MIXTURE FOR PATCHING	Ton	66
26	5	2502.521	4" PERFORATED PVC PIPE DRAIN	Linear Foot	2,772
27		2503.511	12" CP PIPE SEWER (SMOOTH)	Linear Foot	861
28	6	2503.602	REPLACE SANITARY LATERAL CONNECTION	Each	16
29		2503.602	CONNECT SEWER SERVICE	Each	16
30		2503.602	SEWER TRACER BOX	Each	16
31		2503.603	6" PVC SEWER SERVICE PIPE SDR 35	Linear Foot	647
32	7	2503.603	16" STEEL CASING PIPE-JACK BORED	Linear Foot	160

NOTES

1. REMOVE RAILROAD TRACK PAY ITEM INCLUDED FOR REMOVAL OF ABANDONED TRACKS ON 59TH AVENUE AT STATIONS 12+55, 13+20, AND 13+60. REMOVAL AND DISPOSAL OF RAIL AND TIES, REMOVAL OF EXISTING BITUMINOUS PAVEMENT, AS WELL AS PATCHING 59TH AVENUE WEST TO MATCH EXISTING SECTION SHALL BE CONSIDERED AS INCIDENTAL. SEE SPECIAL PROVISIONS AND SHEETS 9 & 10.
2. SALVAGED CASTINGS AND HYDRANTS SHALL BE DELIVERED TO THE CITY OF DULUTH YARD LOCATED ON GARFIELD AVENUE.
3. EXISTING 6-INCH CI WATER MAIN TO BE ABANDONED IN-PLACE ON 59TH AVENUE WEST AND FREMONT STREET. EXISTING WATER MAINS SHALL BE REMOVED BACK A MINIMUM OF 5 FEET FROM CONNECTIONS TO NEW WATER MAINS AND PLUGGED WITH CONCRETE IN-PLACE.
4. SOIL BORINGS WERE COMPLETED ON THE PROJECT AND NO CONTAMINATED SOILS WERE ENCOUNTERED. THE CITY OF DULUTH HAS ALLOCATED FUNDING FOR REMOVAL AND DISPOSAL OF CONTAMINATED SOILS IF THEY ARE ENCOUNTERED ON THE PROJECT.
5. ALL 4-INCH PVC PIPE DRAIN, COARSE FILTER AGGREGATE, AND GEOTEXTILE FABRIC TYPE 1 REQUIRED TO COMPLETE THE INSTALLATION OF THE PIPE DRAINS ARE INCIDENTAL TO THIS PAY ITEM.
6. ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO CONSTRUCT A COMPLETE INSTALLATION INCLUDING 4 FEET OF MAIN LINE SEWER PIPE, WYE, 2 FERNCO-TYPE CONNECTORS ON MAIN, AND ONE FERNCO-TYPE CONNECTOR AT R/W SHALL BE CONSIDERED AS INCIDENTAL TO THIS PAY ITEM.
7. ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO INSTALL THE STEEL CASING FOR PROPOSED WATER MAIN UNDER RR TRACKS SHALL BE CONSIDERED AS INCIDENTAL TO THIS PAY ITEM. STREET REMOVAL ITEMS AND CONCRETE PATCH PER DETAILS ARE INCLUDED.

LINE NO.	NOTE NO.	SPEC. NUMBER	ITEM DESCRIPTION	UNIT OF MEASURE	TOTAL QUANTITY
33		2504.601	TEMPORARY WATER SERVICE	Lump Sum	1
34		2504.602	HYDRANT	Each	6
35		2504.602	CONNECT TO EXISTING WATER MAIN	Each	3
36		2504.602	RECONNECT WATER SERVICE	Each	13
37		2504.602	1" CURB STOP AND BOX	Each	9
38		2504.602	6" GATE VALVE AND BOX	Each	9
39		2504.602	8" GATE VALVE AND BOX	Each	10
40		2504.602	WATER TRACER BOX	Each	17
41		2504.602	CONCRETE ENCASED VALVE BOX COLLAR	Each	13
42		2504.603	1" HDPE SERVICE PIPE DR 11	Linear Foot	315
43		2504.603	6" HDPE SERVICE PIPE DR 11	Linear Foot	222
44		2504.603	8" DIPS HDPE WATERMAIN HDPE DR 11	Linear Foot	300
45		2504.603	8" DIPS HDPE WATERMAIN DR 11- (HORIZONTAL DIRECTIONAL DRILL)	Linear Foot	1,595
46		2504.604	3" POLYSTYRENE INSULATION	Square Yard	14
47		2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN F	Linear Foot	31
48		2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	Linear Foot	68
49		2506.516	CASTING ASSEMBLY	Each	17
50		2506.522	CONCRETE ENCASED CASTING COLLAR	Each	7
51		2506.602	CONNECT INTO EXISTING MANHOLE OR CATCH BASIN	Each	4
52		2506.602	INSTALL MANHOLE	Each	1
53		2506.602	MANHOLE FRAME SEAL	Each	7
54	8	2531.501	CONCRETE CURB AND GUTTER DESIGN B624	Linear Foot	2,772
55	9	2563.601	TRAFFIC CONTROL	Lump Sum	1
56		2564.537	INSTALL SIGN TYPE C	Each	4
57		2573.530	STORM DRAIN INLET PROTECTION	Each	17
58		2573.533	SEDIMENT CONTROL LOG TYPE COMPOST	Linear Foot	1,300
59		2573.535	STABILIZED CONSTRUCTION EXIT	Lump Sum	1
60		2574.508	FERTILIZER, TYPE 3, 22-5-10	Pound	179
61		2574.525	COMMON TOPSOIL BORROW (LV)	Cubic Yard	137
62	10	2575.501	SEEDING	Acre	0.51
63		2575.502	SEED, MIXTURE NO. 25-151 (HIGH MAINTENANCE TURF)	Pound	61
64		2575.562	HYDRAULIC MATRIX, TYPE FIBER REINFORCED	Pound	1,980

8. CURB CUTS FOR DRIVEWAYS ON PROPOSED CUL DE SAC TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
9. DURING CONSTRUCTION, TRAFFIC CONTROL PLANS SHOW 59TH AVENUE WEST AS CLOSED TO THROUGH TRAFFIC. CONTRACTOR SHALL PERFORM WORK IN SUCH A MANNER AS TO ALLOW FOR DAILY ACCESS BY TRUCK TRAFFIC TO THOSE BUSINESSES ABUTTING THE PROJECT. DOCKS AND OTHER BUSINESSES RELY ON ABILITY TO ACCESS WAREHOUSES FOR SHIPPING ON A DAILY BASIS. CONTRACTOR TO PROVIDE 24-HOUR NOTICE TO OWNERS IN THE EVENT THAT CONSTRUCTION WORK IMPACTS ACCESS.
10. CONTRACTOR TO SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS FOR THE PROJECT.
11. TYPE SP 9.5 BITUMINOUS MIXTURE FOR PATCHING SHALL BE SPWEA440C BITUMINOUS MIXTURE, AND SHALL BE USED TO PATCH EXISTING DRIVEWAYS BEHIND THE PROPOSED CURB AND GUTTER BETWEEN STATIONS 8+65 TO 10+10 ON 59TH AVENUE WEST, AND BETWEEN STATIONS 3+10 AND 4+55 ON FREMONT STREET.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED NM	DRAWN NM
CHECKED JG	
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 JEFFREY S. GOETZMAN DATE 10/28/2015 LIC. NO. 26422	



4560 Norway Pines Place
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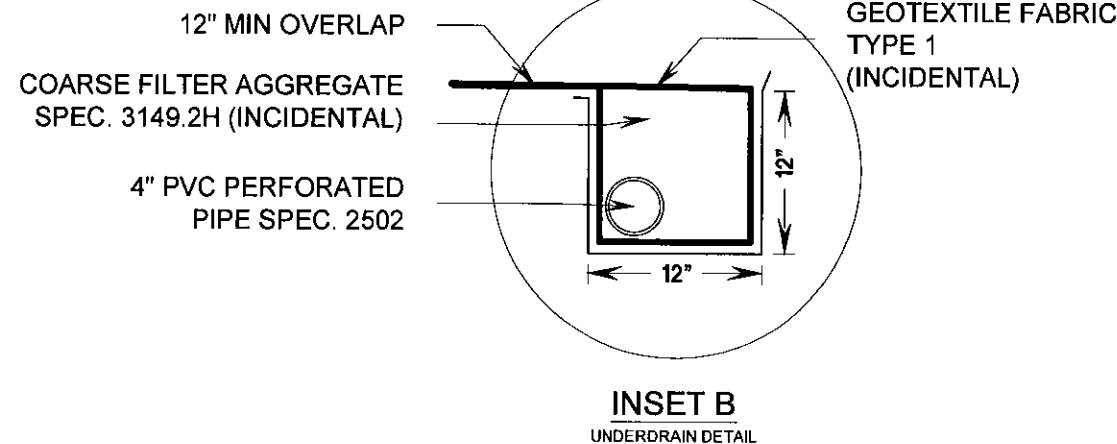
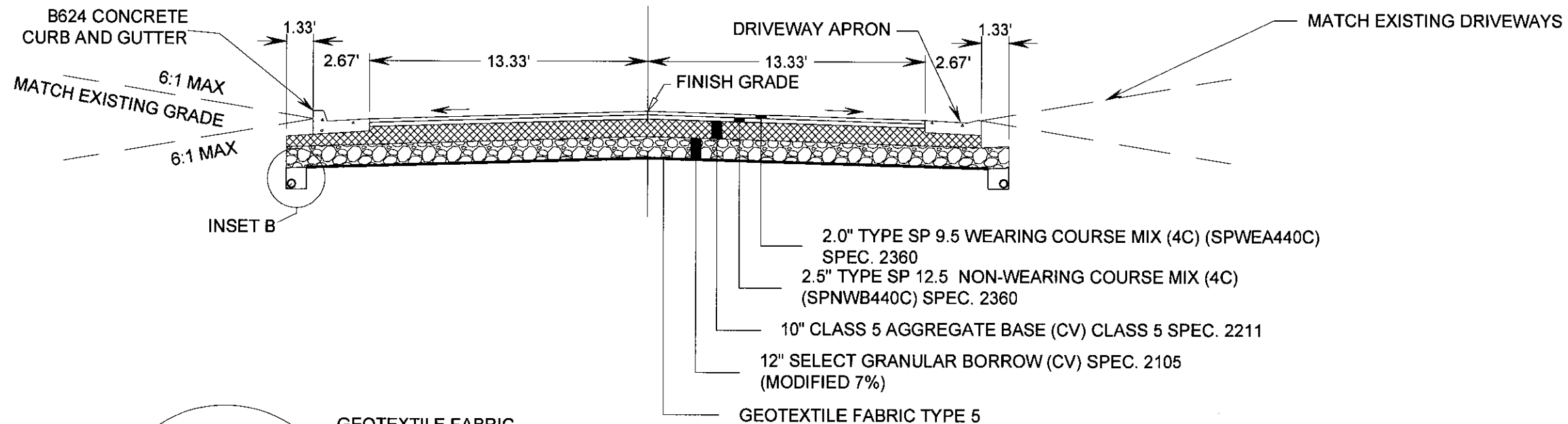
59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA
CITY PROJECT NO. 1487 MSA NO.

STATEMENT OF
ESTIMATED QUANTITIES

PROJECT NO.	15896.000
RECORD NO.	SHEET NO.
	2

R.O.W.

R.O.W.



FIELD BOOK
Plot Date: 10/28/2015
Drawing name: P:\Hennepin\Town-Office\Projects\TKDA\15896.000 59th Avenue West\municipal\CD\Plan\Typical\TYPICAL SECTION.dwg
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NO.	DATE	BY	DESCRIPTION OF REVISIONS

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DATE 10/28/2015	U.C. NO. 26422



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59th Avenue West	
Street & Utility Improvement Project	
DULUTH	MINNESOTA
CITY PROJECT NO. 1487	MSA NO.

TYPICAL SECTION

PROJECT NO. 15896.000	
RECORD NO.	SHEET NO. 3

City of Duluth Standard Details	
Detail #	Description
EX-1	Ductile Iron, PE Watermain, Pressure Sewer, & Forcemain Bedding
EX-3	PVC and Corrugated Polyethylene Sewer Pipe Bedding
SAN-2	Typical Sewer Service Detail
SAN-3A	Concrete Encased Casting Collar for Sanitary MH in Roadways, Walks, & Drives
SAN-9	Polyethylene MH Adjusting Ring - Flat
SAN-10	Polyethylene MH Adjusting Ring - Wedge
STRM-1	Storm Manhole Casting
STRM-2	Catch Basin / Curb Box Castings
STRM-3	Catch Basin / Curb Box Castings
STRM-4	Fabric Wrapped Catch Basin Casting
STRM-5	Storm Manhole Non-Paved Areas
STRM-5A	Concrete Encased Casting Collar for Storm MH in Roadway, Walks, & Drives
STRM-7	Gutter Stamp
STR-1	Perforated Pipe Detail
STR-5	Driveway & Alley Entrances
STR-8	Street Restoration over Trench
W-2	Plug Blocking for Watermain
W-3	Thrust Blocking for Watermain
W-4A	Fire Hydrant Setting Detail - HDPE
W-5A	Typical HDPE Water Service - 3/4" and 1"
W-5D	Typical HDPE Water Service - 1-1/4" and 2"
W-13	Water Service Insulation
W-17A	Water Valve Box - HDPE Main
W-18	Anode Connection
W-19	Concrete Encased Valve Box Collar in Roadway

AVAILABLE AT: <http://www.duluthmn.gov/engineering/standard-construction-specifications/>

*CONTRACTOR MUST OBTAIN A COPY OF THE 2015 EDITION OF THE CITY OF DULUTH STANDARD CONSTRUCTION SPECIFICATIONS AND STANDARD DETAILS TO REFER TO ONSITE DURING CONSTRUCTION.

"THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY"	
PLATE NO.	STANDARD PLATES
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR RC PIPE
4010H	CONCRETE SHORT CONE AND ADJUSTING RING
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4180J	MANHOLE OR CATCH BASIN STEP
8000 I	STANDARD BARRICADES
9000D	APPROACHES & ENTRANCES
9102D	TURF ESTABLISHMENT AREAS
4007C	PRECAST MECHANICAL JOINT SEWER MANHOLE

NOTE: CASTING ASSEMBLY CATCH BASIN INCLUDES FRAME CASTING 802A, GRATE 811 AND CURB BOX 822

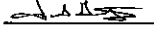
BASIS FOR PLANNED QUANTITIES	
AGGREGATE BASE	
AGGREGATE BASE (CLASS 5)	COMPACTED VOLUME IN PLACE
PLANT MIXED BITUMINOUS SURFACE	
TYPE SP 9.5 BITUMINOUS MIXTURE	120 LBS. / S.Y. / 1"
BITUM. MATERIAL FOR TACK COAT	0.05 GAL. / S.Y.
SEED MIXTURE (25-151)	120 LB / AC
FERTILIZER TYPE 3 (ANALYSIS 22-5-10)	350 LB / AC
HYDRAULIC MATRIX, TYPE FRM	3900 LB / AC

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

FIELD BOOK:
Plot Date: 10/28/2015
Drawing Name: P:\Information\Office Projects\TKDA\15986.000 59th Avenue West\main\CD\StandardDetails - City of Duluth.dwg
Xref:

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED NM	DRAWN NM
CHECKED JG	

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	
	JEFFREY S. GOETZMAN
DATE 10/28/2015	UC NO. 26422

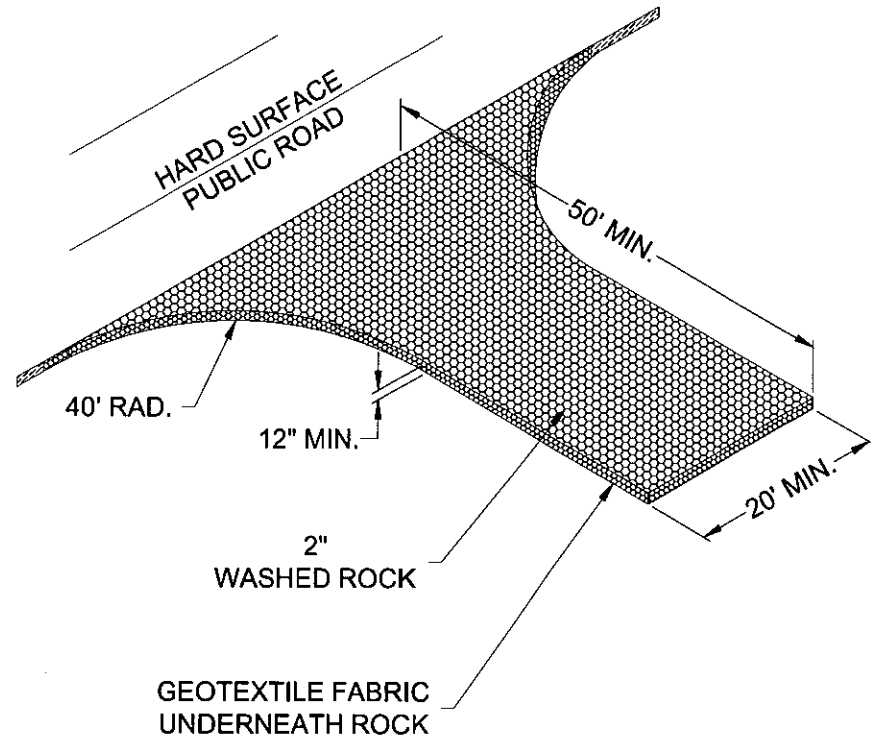


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59th Avenue West Street & Utility Improvement Project DULUTH MINNESOTA	
CITY PROJECT NO. 1487	MSA NO.

DETAILS
CITY OF DULUTH

PROJECT NO. 15896.000	SHEET NO. 4
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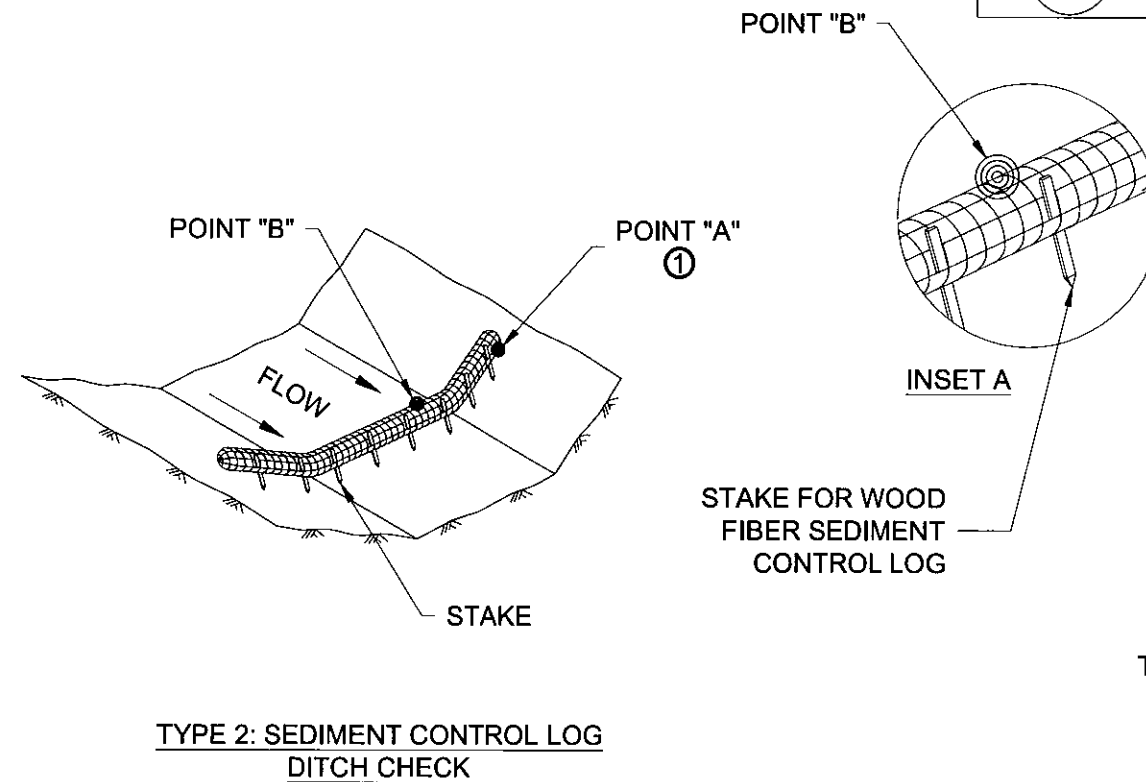
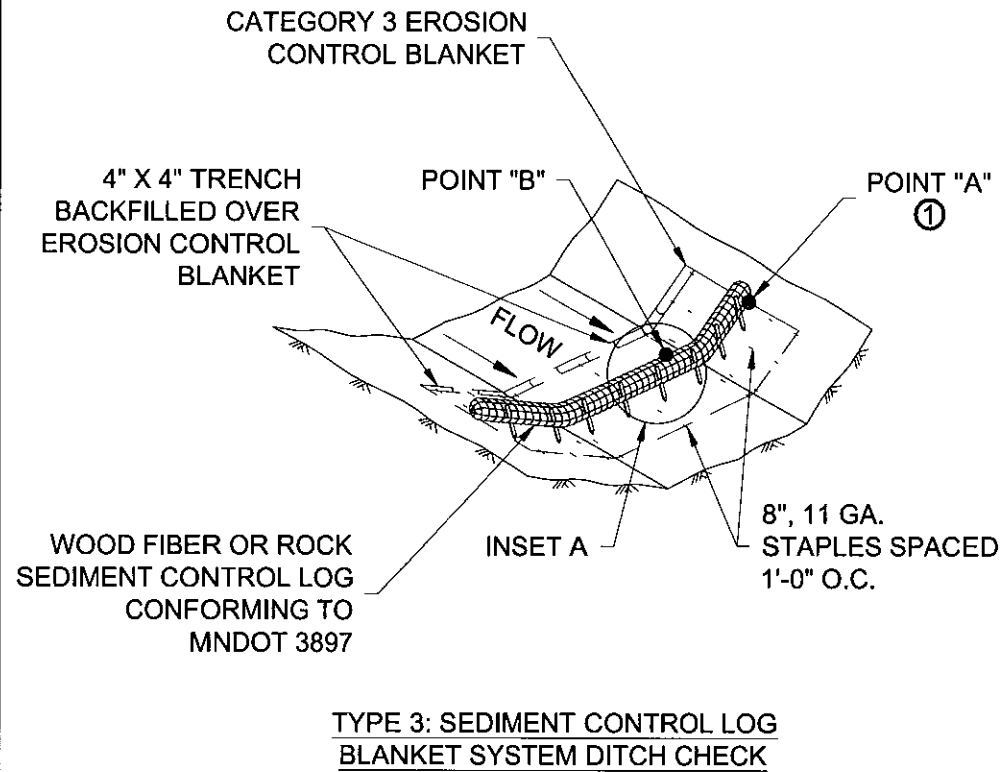
NOTES:

- MAXIMUM WIDTH OF CONSTRUCTION ENTRANCE IS 24 FEET.
- MNDOT 3733 TYPE V GEOTEXTILE FABRIC SHALL BE USED UNDER THE ROCK TO PREVENT MIGRATION OF THE UNDERLYING SOIL INTO THE STONE.
- CONSTRUCTION ENTRANCE IS REQUIRED FOR NEW STREET CONSTRUCTION.
- CONSTRUCTION ENTRANCE SHALL BE MAINTAINED TO PREVENT TRACKING OF MUD ONTO ROADWAYS THAT ADJOIN THE PROJECT. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL ROCK OR REMOVAL AND REINSTALLATION OF THE ROCK ENTRANCE.
- REMOVE MUD AND DEBRIS FROM TIRES AND VEHICLE UNDERCARRIAGE PRIOR TO LEAVING THE SITE.

1
5

ROCK CONSTRUCTION ENTRANCE

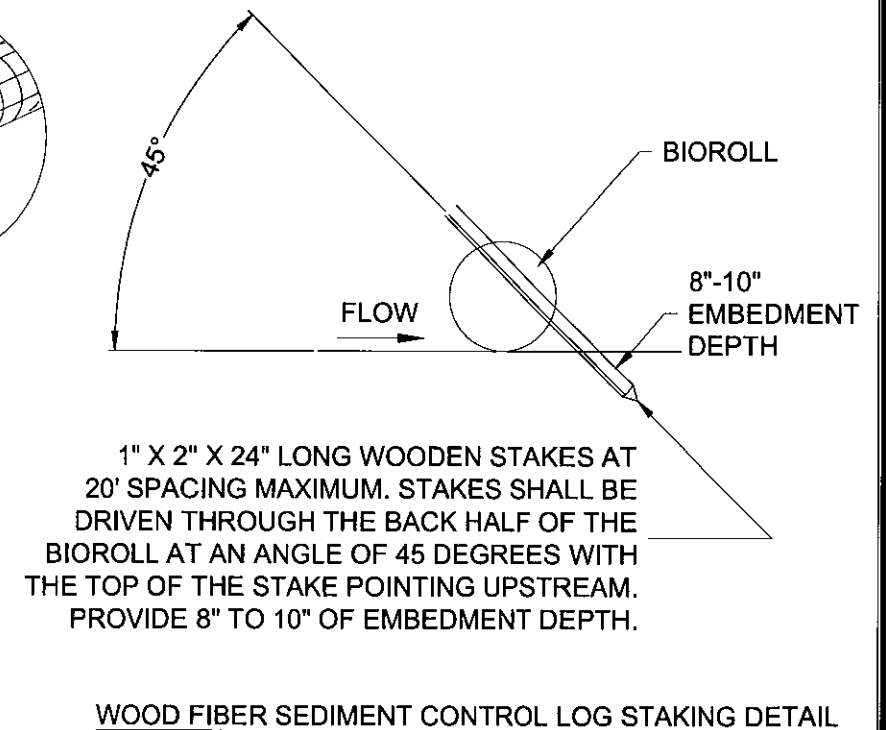
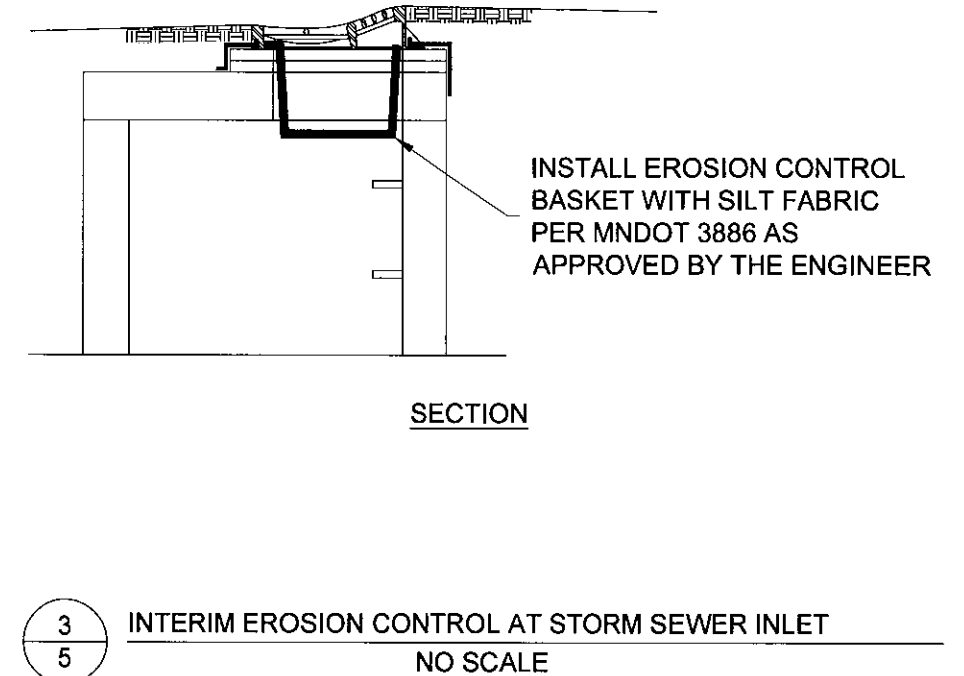
NO SCALE



2
5

SEDIMENT CONTROL LOG

NO SCALE



NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JK	DRAWN JK
CHECKED NM	

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.

JEFFREY S. GOETZMAN

DATE 10/28/2015 LIC. NO. 26422



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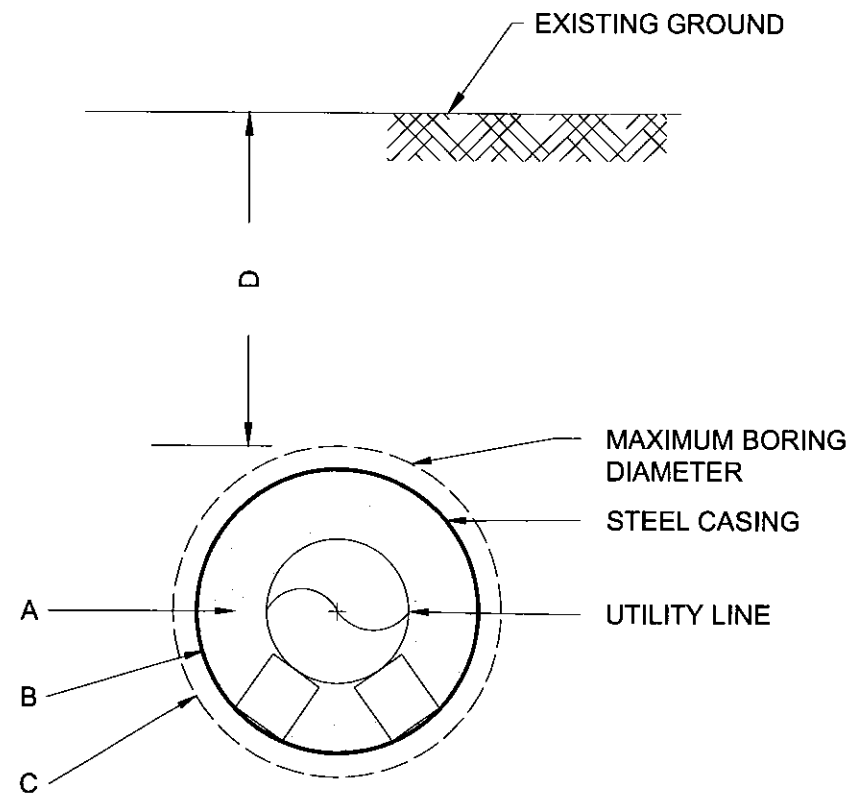
59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA

CITY PROJECT NO. 1487 MSA NO.

DETAILS
EROSION CONTROL

PROJECT NO.
15896.000

RECORD NO. SHEET NO.
5



1
7
RR CROSSING UTILITY CASING
NO SCALE

BNSF UTILITY CROSSING REQUIREMENTS:

A - OUTER PIPE DIAMETER.

B - CASING THICKNESS = 0.188" (NOMINAL CASING DIA. ≤14", COATED & NON-COATED)
= 0.281" (NOMINAL CASING DIA. = 16", NON-COATED)
= 0.312" (NOMINAL CASING DIA. = 18", NON-COATED)

C - BORING DIAMETER NOT TO EXCEED OUTER CASING DIAMETER BY 1.5" (≤12" CASING) AND 2.0" (CASING DIA. >12").
D - MINIMUM DEPTH OF COVER - 3' BELOW FLOW LINE OF DITCH OR GROUND SURFACE OR 5.5' BELOW BASE OF RAIL.

CASING SHALL BE ALIGNED TO BE PERPENDICULAR TO THE TRACKS AND EXTEND THROUGH THE RAILROAD RIGHT-OF-WAY.

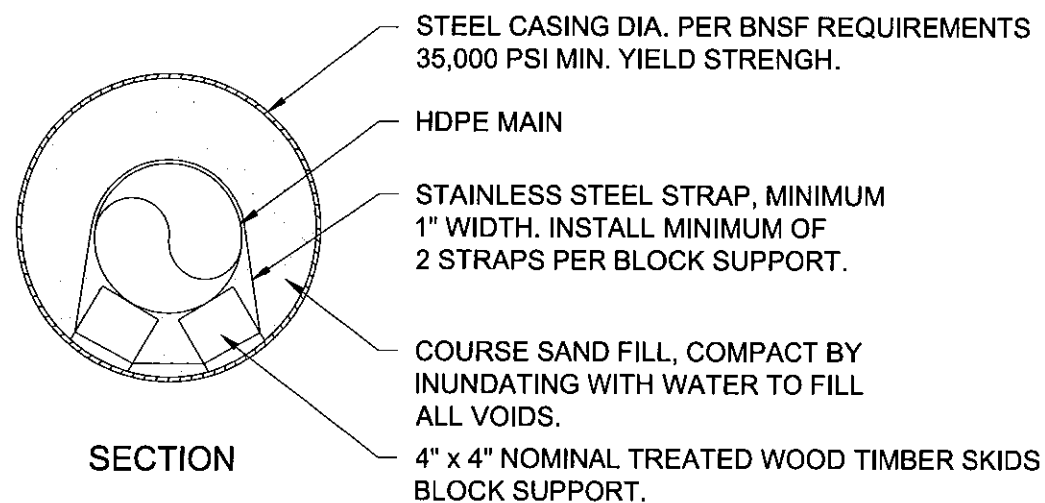
CASING SHALL CONFORM TO ANSI A21 REQUIREMENTS AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 35,000 PSI.
CASING ENDS SHALL BE SEALED IF THEY ARE BELOW THE HIGH WATER LEVEL.

BORING/ JACKING PITS ARE NOT ALLOWED WITHIN 30' OF TRACK CENTERLINE.

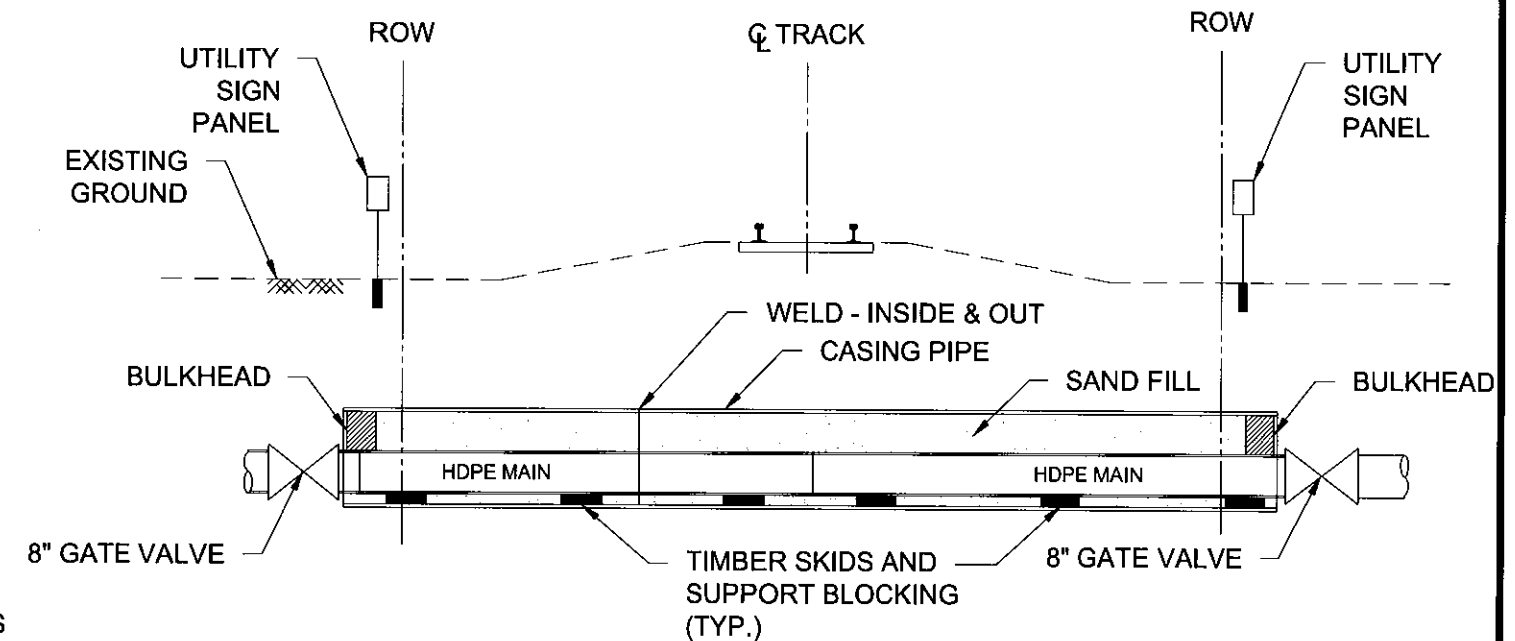
CONTRACTOR SHALL PLACE A READILY IDENTIFIABLE & SUITABLE MARKER AT EACH RAILROAD PROPERTY LINE WHERE IT IS CROSSED BY A UTILITY LINE

THE HDPE PIPE SHALL BE INSTALLED WITHIN, SUPPORTED AND INSULATED FROM THE CASING PIPE.

CONSTRUCT BRICK AND NON SHRINK GROUT BULKHEAD AT BOTH ENDS OF CASING AND PROVIDE 1" WEEP HOLE IN DOWNSTREAM BULKHEAD FOR DRAINAGE



2
7
HDPE BLOCKING IN RR CROSSING UTILITY CASING
NO SCALE



NO.	DATE	BY	DESCRIPTION OF REVISIONS

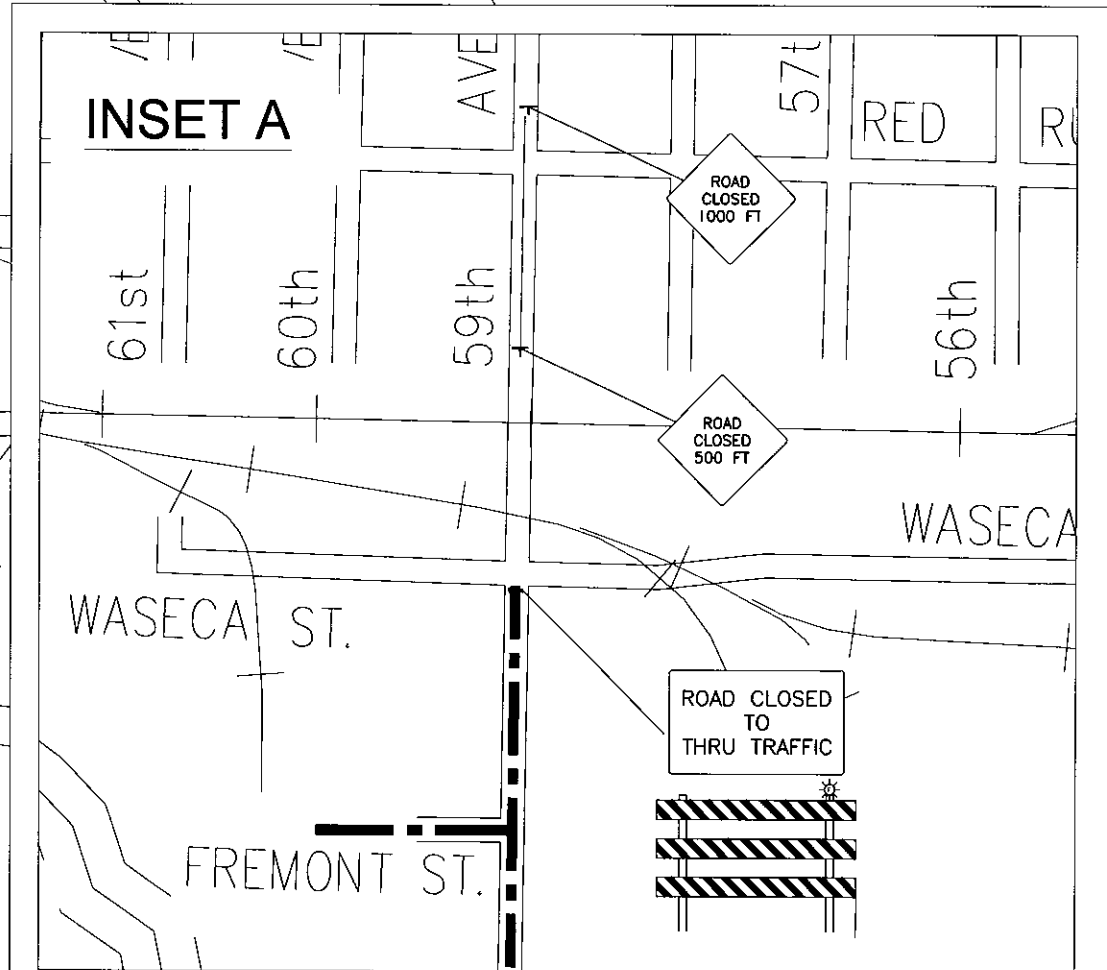
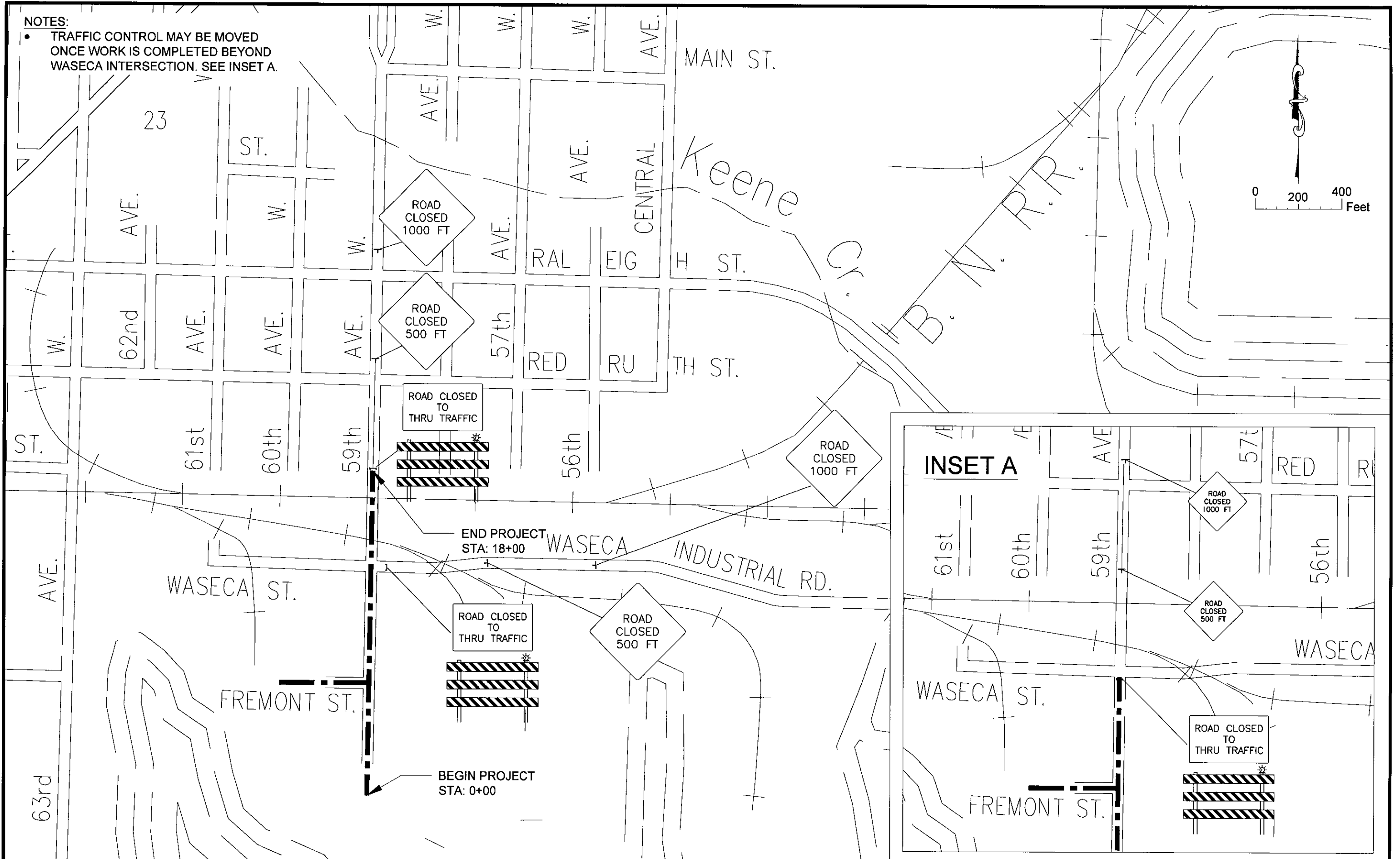
DESIGNED JK	DRAWN JK
CHECKED NM	DATE 10/28/2015
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA JEFFREY S. GOETZMAN LIC NO. 25422	

TKDA
4560 Norway Pines Place
Duluth, MN. 55811
218.727.8796
tkda.com

59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA
CITY PROJECT NO. 1487 MSA NO.

DETAILS CASING
PROJECT NO. 15896.000
RECORD NO. SHEET NO. 7

NOTES:
• TRAFFIC CONTROL MAY BE MOVED
ONCE WORK IS COMPLETED BEYOND
WASECA INTERSECTION. SEE INSET A.



FIELD BOOK:
Plot Date: 10/26/2015
Drawing Name: P:\mmin\mmin-Office\Projects\TODAY\15896.000 59th Avenue West\mmin\CSO\Plan\Traffic Control.dwg
Scale: 1/8"=1'-0"

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED NM	DRAWN NM
CHECKED JG	
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 JEFFREY S. GOETZMAN DATE 10/28/2015 LIC. NO. 26422	

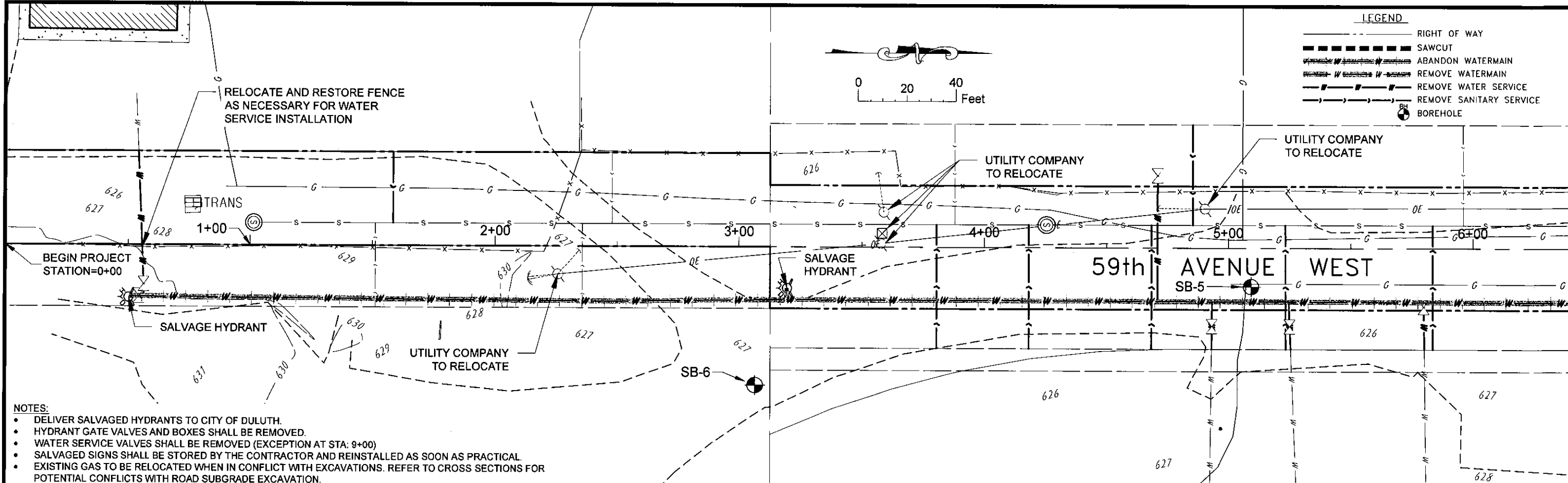


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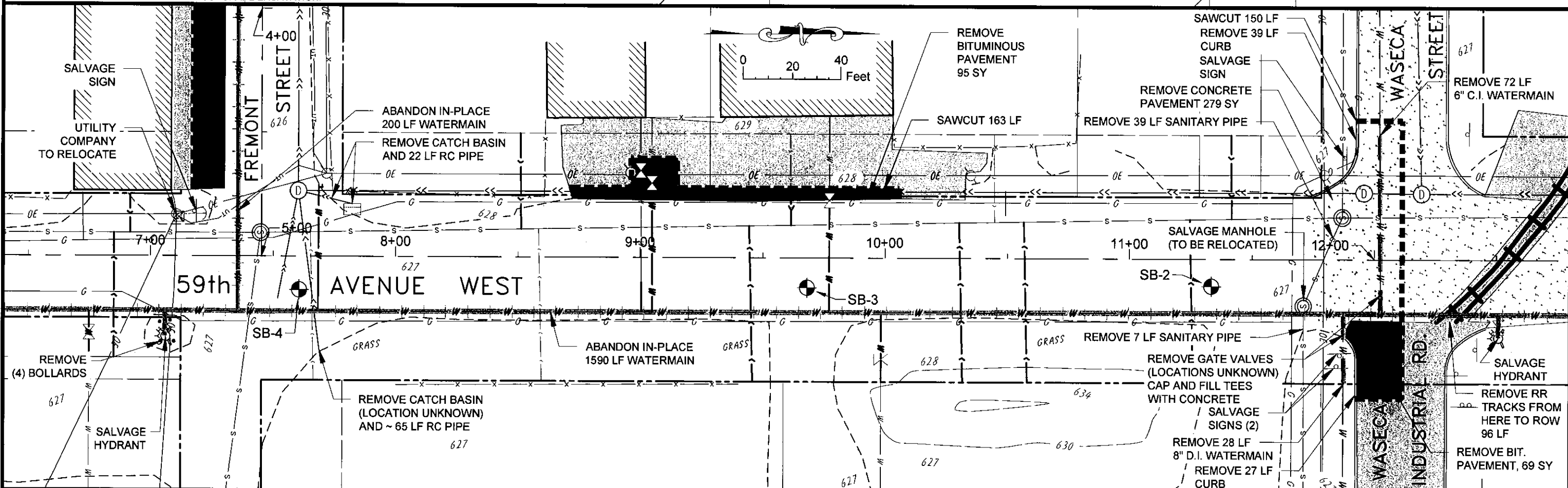
59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA
CITY PROJECT NO. 1487 MSA NO.

TRAFFIC CONTROL

PROJECT NO. 15896.000	SHEET NO. 8
RECORD NO.	



- NOTES:
- DELIVER SALVAGED HYDRANTS TO CITY OF DULUTH.
 - HYDRANT GATE VALVES AND BOXES SHALL BE REMOVED.
 - WATER SERVICE VALVES SHALL BE REMOVED (EXCEPTION AT STA: 9+00)
 - SALVAGED SIGNS SHALL BE STORED BY THE CONTRACTOR AND REINSTALLED AS SOON AS PRACTICAL.
 - EXISTING GAS TO BE RELOCATED WHEN IN CONFLICT WITH EXCAVATIONS. REFER TO CROSS SECTIONS FOR POTENTIAL CONFLICTS WITH ROAD SUBGRADE EXCAVATION.



FIELD BOOK:
Pld Date: 10/28/2015
Drawing File: P:\Information\Drawings\59th Avenue West\59th Avenue West\59th Avenue West\59th Avenue West.dwg
User: J. GOETZMAN
Title: EX COND - REMOVALS

NO.	DATE	BY	DESCRIPTION OF REVISIONS

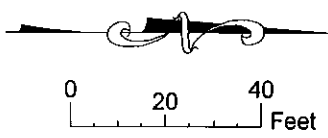
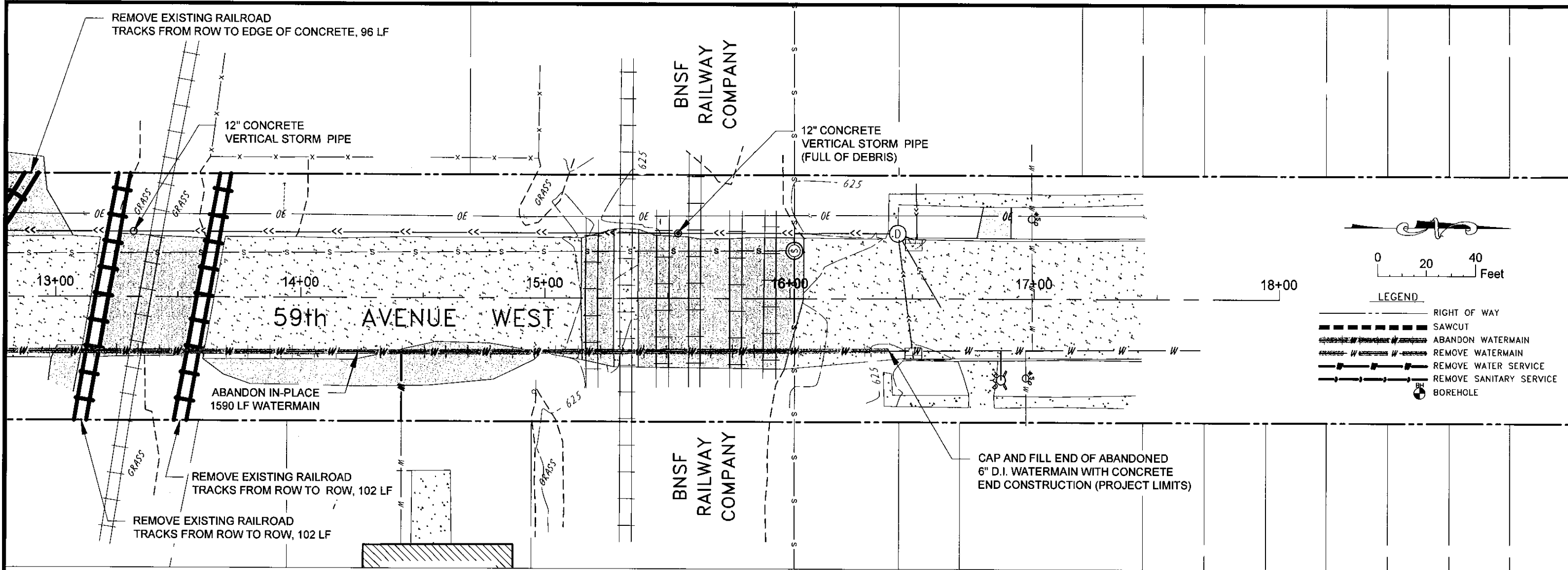
DESIGNED JK
DRAWN JK
CHECKED NM
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULUTH LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
JEFFREY S. GOETZMAN
DATE 10/28/2015 UC. NO. 26422

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tkda.com
TKDA

59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA
CITY PROJECT NO. 1487 MSA NO.

EX COND - REMOVALS
STA: 0+00 - 12+50

PROJECT NO. 15896.000
RECORD NO. SHEET NO. 9



LEGEND	
	RIGHT OF WAY
	SAWCUT
	ABANDON WATERMAIN
	REMOVE WATERMAIN
	REMOVE WATER SERVICE
	REMOVE SANITARY SERVICE
	BOREHOLE

- NOTES:
- DELIVER SALVAGED HYDRANTS TO CITY OF DULUTH.
 - HYDRANT GATE VALVES AND BOXES SHALL BE REMOVED.
 - WATER SERVICE VALVES SHALL BE REMOVED (EXCEPTION AT STA: 9+00)
 - SALVAGED SIGNS SHALL BE STORED BY THE CONTRACTOR AND REINSTALLED AS SOON AS PRACTICAL.
 - EXISTING GAS TO BE RELOCATED WHEN IN CONFLICT WITH EXCAVATIONS. REFER TO CROSS SECTIONS FOR POTENTIAL CONFLICTS WITH ROAD SUBGRADE EXCAVATION.

FIELD BOOK:
File Date: 10/28/2015
Drawing Name: P:\Information\Office\Projects\15896\59th Avenue West\15896\59th Avenue West.mxd
Xref: 15896\15896.dwg

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JK	DRAWN JK
CHECKED NM	

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JEFFREY S. GOETZMAN
DATE 10/28/2015 LIC. NO. 25422

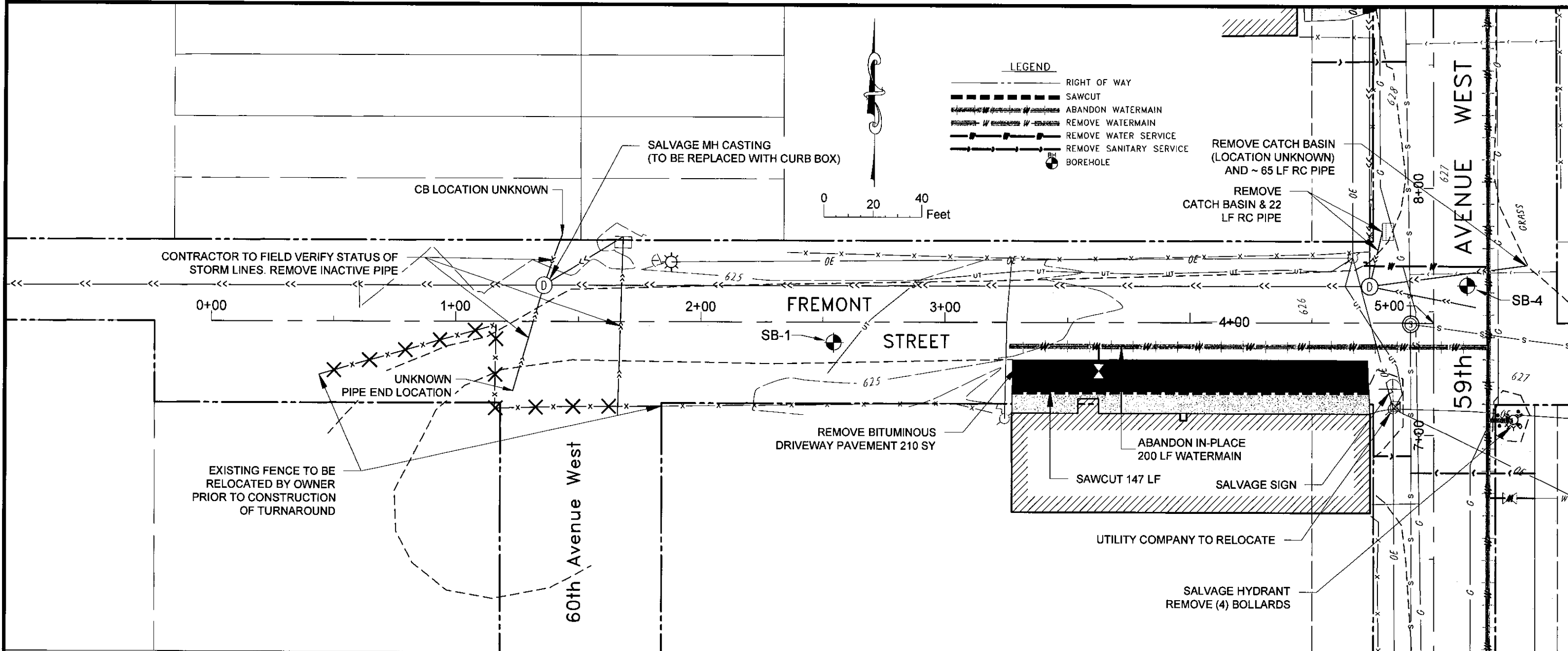
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59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA

CITY PROJECT NO. 1487 MSA NO.

EX COND - REMOVALS
STA: 12+50 - 18+00

PROJECT NO. 15896.000	SHEET NO. 10
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- NOTES:
- DELIVER SALVAGED HYDRANTS TO CITY OF DULUTH.
 - HYDRANT GATE VALVES AND BOXES SHALL BE REMOVED.
 - WATER SERVICE VALVES SHALL BE REMOVED (EXCEPTION AT STA: 9+00)
 - SALVAGED SIGNS SHALL BE STORED BY THE CONTRACTOR AND REINSTALLED AS SOON AS PRACTICAL.
 - EXISTING GAS TO BE RELOCATED WHEN IN CONFLICT WITH EXCAVATIONS. REFER TO CROSS SECTIONS FOR POTENTIAL CONFLICTS WITH ROAD SUBGRADE EXCAVATION.

FIELD BOOK:
Plot Date: 10/28/2015
Drawing Name: P:\Information\Office Projects\TKDA\15896.000 59th Avenue West\munic3D\Plan\EX COND - REMOVAL.dwg
User: JREGISTING, JK Projected

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED
JK

DRAWN
JK

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NM

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JEFFREY S. GOETZMAN
DATE 10/28/2015 LIC. NO. 25422

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59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA

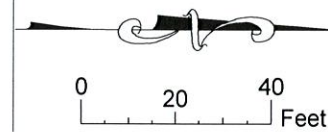
CITY PROJECT NO. 1487 MSA NO.

EX COND - REMOVALS
FREMONT STREET

PROJECT NO. 15896.000
RECORD NO. SHEET NO. 11

NOTE: WATER AND SEWER TO REMAIN IN SERVICE DURING CONSTRUCTION, WATERMAIN WILL BE IN SERVICE AT THE END OF ALL WORK DAYS. ANY TEMPORARY WATER OR SANITARY SEWER BYPASSING SHALL BE INCIDENTAL TO THE INSTALLATION OF THE NEW MAIN AND LATERALS.

NOTE: ALL UTILITY INSTALLATIONS SHALL FOLLOW THE CITY OF DULUTH STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.

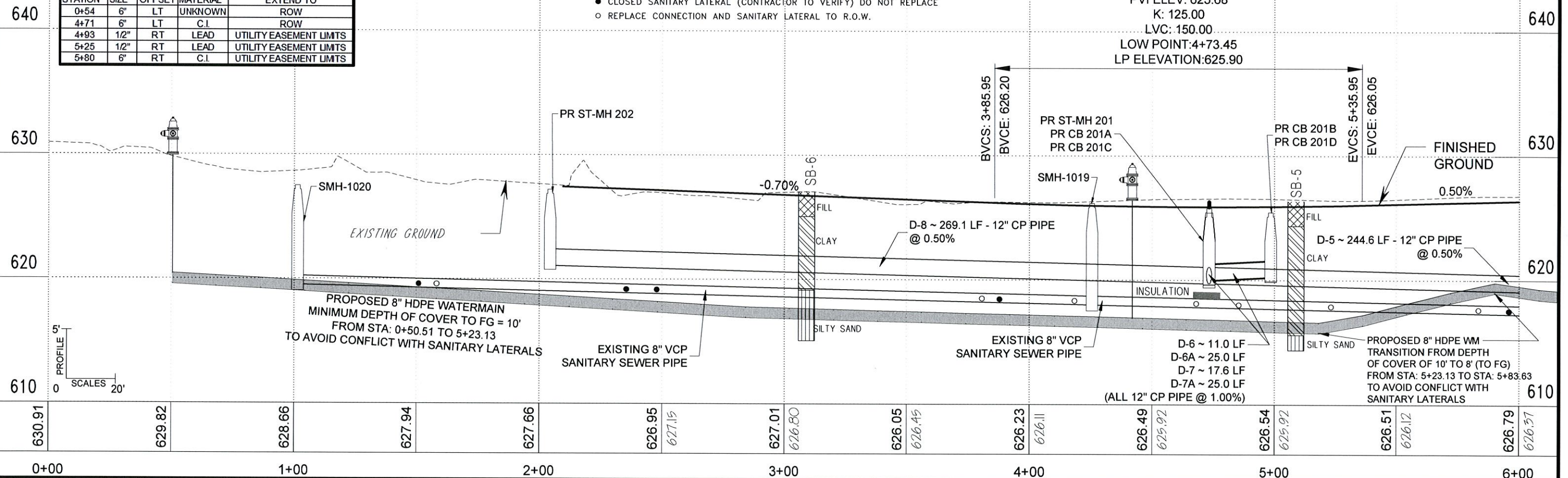


- LEGEND**
- RIGHT OF WAY
 - UTILITY EASEMENT
 - W --- PROPOSED WATERMAIN, VALVE, HYDRANT
 - PROPOSED STORM SEWER PIPE
 - REPLACE WATER SERVICE, CURB STOP
 - REPLACE SANITARY LATERAL CONNECTION AND SERVICE TO ROW (DETAIL 1/6)
 - BOREHOLE

WATER SERVICES - RECONNECT ALL TO PROPOSED WM				
STATION	SIZE	OFFSET	MATERIAL	EXTEND TO
0+54	6"	LT	UNKNOWN	ROW
4+71	6"	LT	C.I.	ROW
4+93	12"	RT	LEAD	UTILITY EASEMENT LIMITS
5+25	12"	RT	LEAD	UTILITY EASEMENT LIMITS
5+80	6"	RT	C.I.	UTILITY EASEMENT LIMITS

- LEGEND**
- CLOSED SANITARY LATERAL (CONTRACTOR TO VERIFY) DO NOT REPLACE
 - REPLACE CONNECTION AND SANITARY LATERAL TO R.O.W.

PVI STA: 4+60.95
PVI ELEV: 625.68
K: 125.00
LVC: 150.00
LOW POINT: 4+73.45
LP ELEVATION: 625.90



FIELD BOOK:
Plot Date: 10/28/2015
Drawing Name: P:\Herman\Office\Projects\15996\000 59th Avenue West\main\CD\Plan\Plan & Profile.dwg
Xref: 59th-Avenue.dwg, 59th-Profile.dwg, 59th-Plan.dwg

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JK	DRAWN JK
CHECKED NM	DATE 10/28/2015
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULUTH LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. JEFFREY S. GOETZMAN LIC. NO. 26422	



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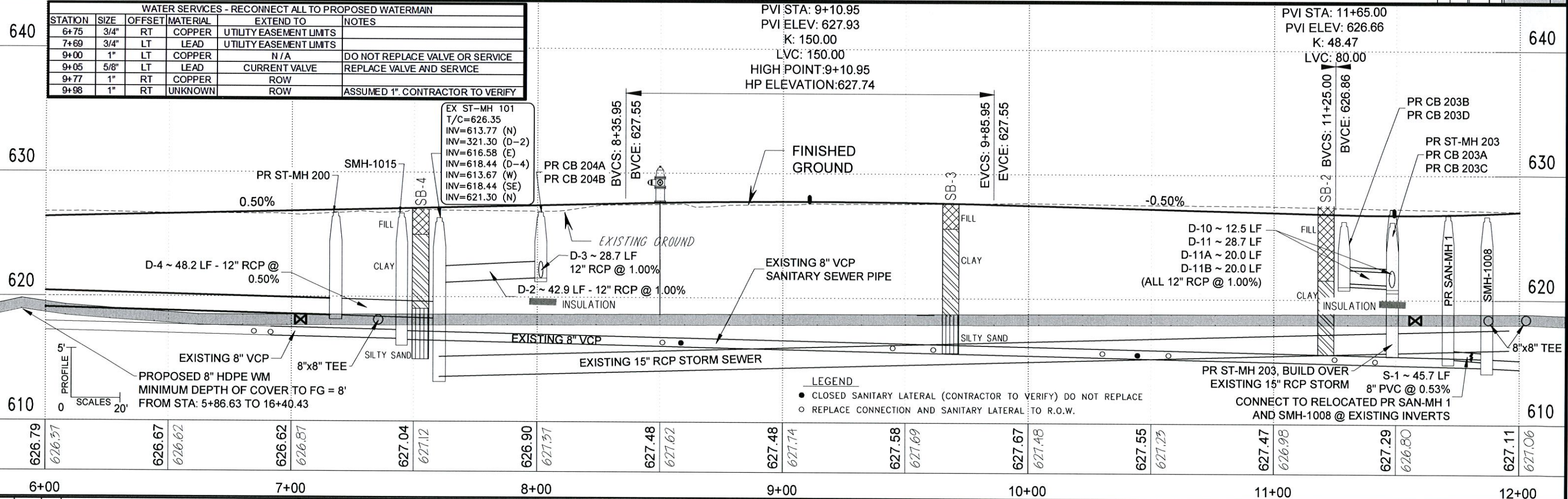
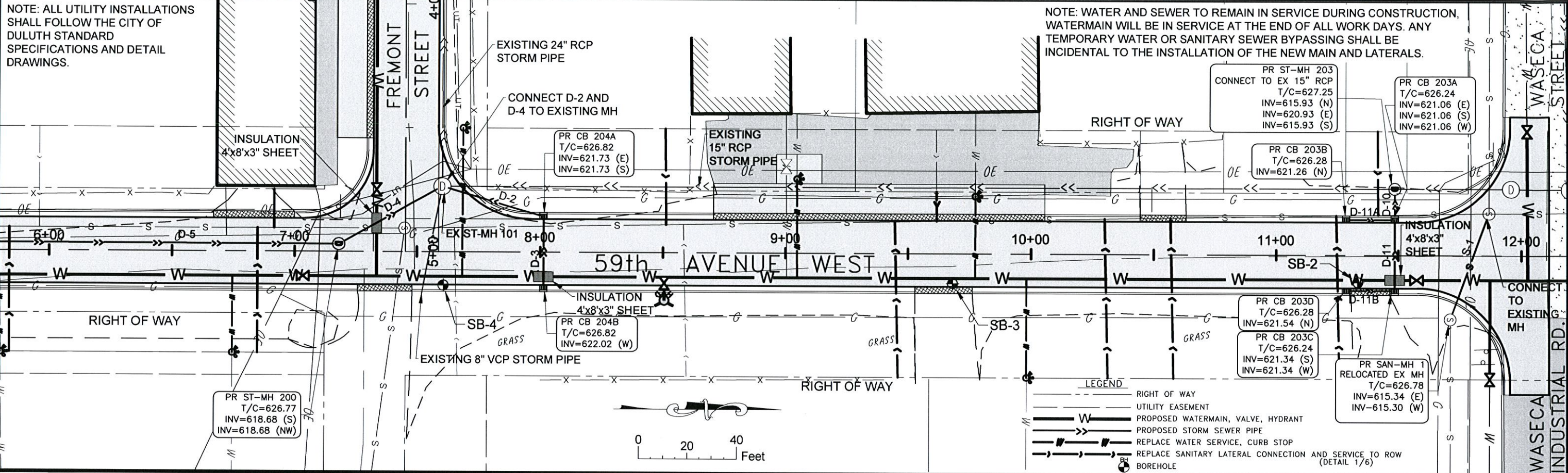
59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA
CITY PROJECT NO. 1487 MSA NO.

PLAN & PROFILE
STA: 0+00 - 6+00

PROJECT NO. 15896.000	SHEET NO. 12
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NOTE: ALL UTILITY INSTALLATIONS SHALL FOLLOW THE CITY OF DULUTH STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.

NOTE: WATER AND SEWER TO REMAIN IN SERVICE DURING CONSTRUCTION, WATERMAIN WILL BE IN SERVICE AT THE END OF ALL WORK DAYS. ANY TEMPORARY WATER OR SANITARY SEWER BYPASSING SHALL BE INCIDENTAL TO THE INSTALLATION OF THE NEW MAIN AND LATERALS.

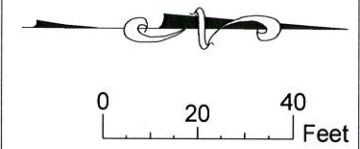
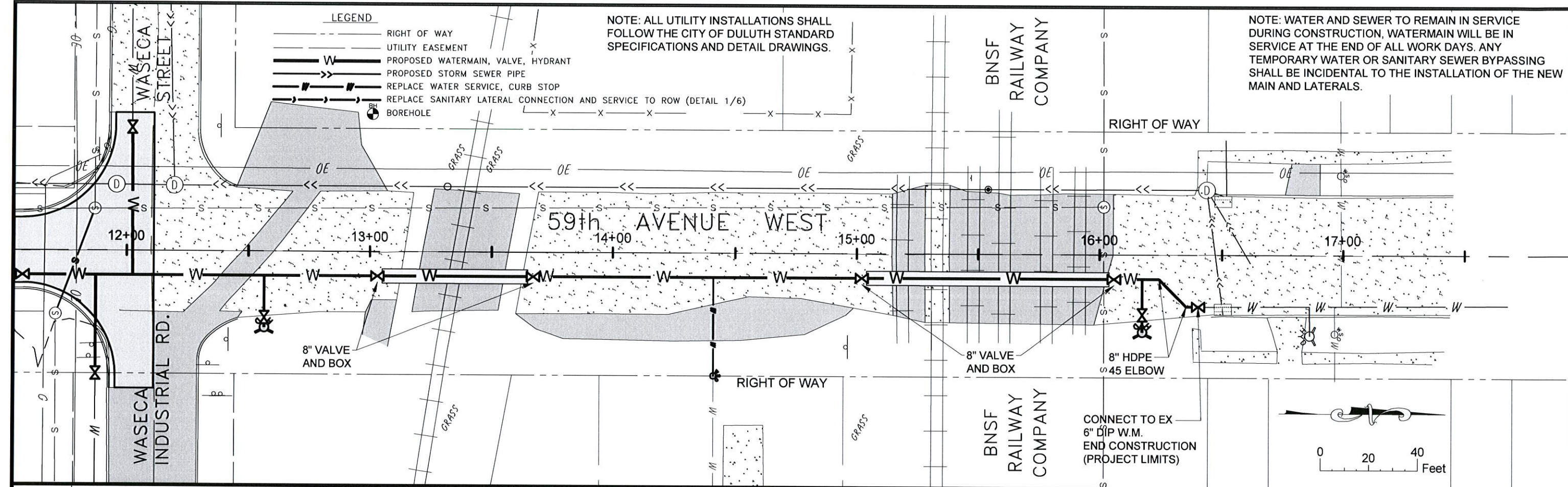


DESIGNED				DRAWN				CHECKED				DATE			
JK				JK				NM				10/28/2015			
NO.				DATE				BY				DESCRIPTION OF REVISIONS			

NOTE: ALL UTILITY INSTALLATIONS SHALL FOLLOW THE CITY OF DULUTH STANDARD SPECIFICATIONS AND DETAIL DRAWINGS.

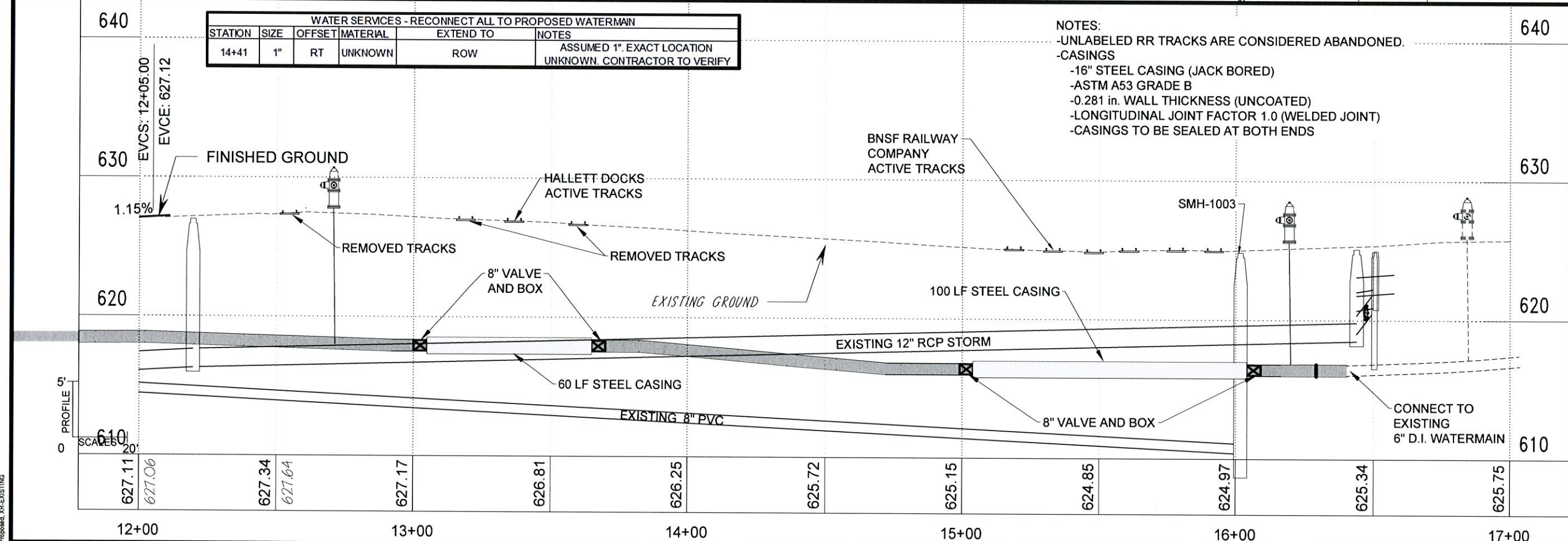
NOTE: WATER AND SEWER TO REMAIN IN SERVICE DURING CONSTRUCTION, WATERMAIN WILL BE IN SERVICE AT THE END OF ALL WORK DAYS. ANY TEMPORARY WATER OR SANITARY SEWER BYPASSING SHALL BE INCIDENTAL TO THE INSTALLATION OF THE NEW MAIN AND LATERALS.

- LEGEND
- RIGHT OF WAY
 - UTILITY EASEMENT
 - PROPOSED WATERMAIN, VALVE, HYDRANT
 - PROPOSED STORM SEWER PIPE
 - REPLACE WATER SERVICE, CURB STOP
 - REPLACE SANITARY LATERAL CONNECTION AND SERVICE TO ROW (DETAIL 1/6)
 - BOREHOLE



WATER SERVICES - RECONNECT ALL TO PROPOSED WATERMAIN					
STATION	SIZE	OFFSET	MATERIAL	EXTEND TO	NOTES
14+41	1"	RT	UNKNOWN	ROW	ASSUMED 1". EXACT LOCATION UNKNOWN. CONTRACTOR TO VERIFY

- NOTES:
- UNLABELED RR TRACKS ARE CONSIDERED ABANDONED.
 - CASINGS
 - 16" STEEL CASING (JACK BORED)
 - ASTM A53 GRADE B
 - 0.281 in. WALL THICKNESS (UNCOATED)
 - LONGITUDINAL JOINT FACTOR 1.0 (WELDED JOINT)
 - CASINGS TO BE SEALED AT BOTH ENDS



DESIGNED JK
DRAWN JK
CHECKED NM

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JEFFREY S. GOETZMAN
DATE 10/28/2015 LIC. NO. 26422



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Duluth, MN. 55811
218.727.8796
tkda.com

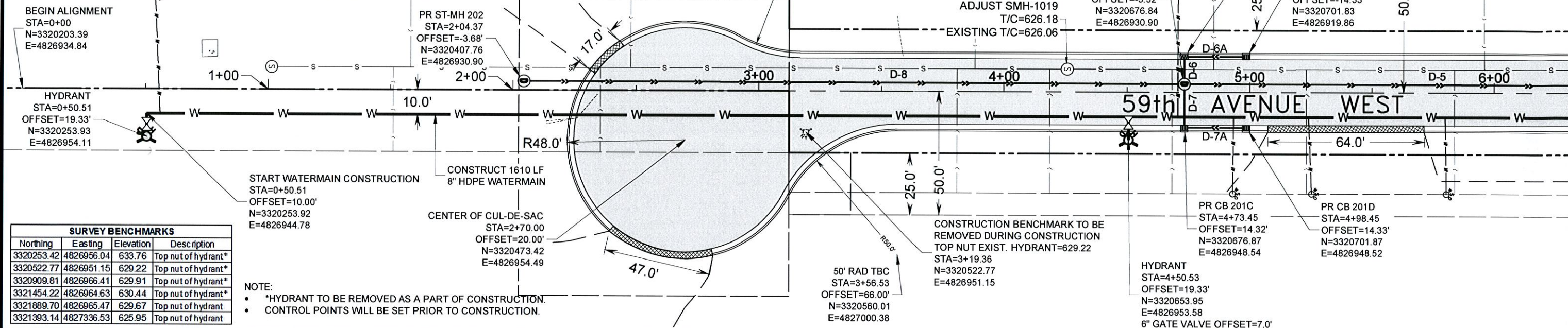
59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA
CITY PROJECT NO. 1487 MSA NO.

PLAN & PROFILE
STA: 12+00 - 18+00

PROJECT NO. 15896.000
RECORD NO. SHEET NO. 14

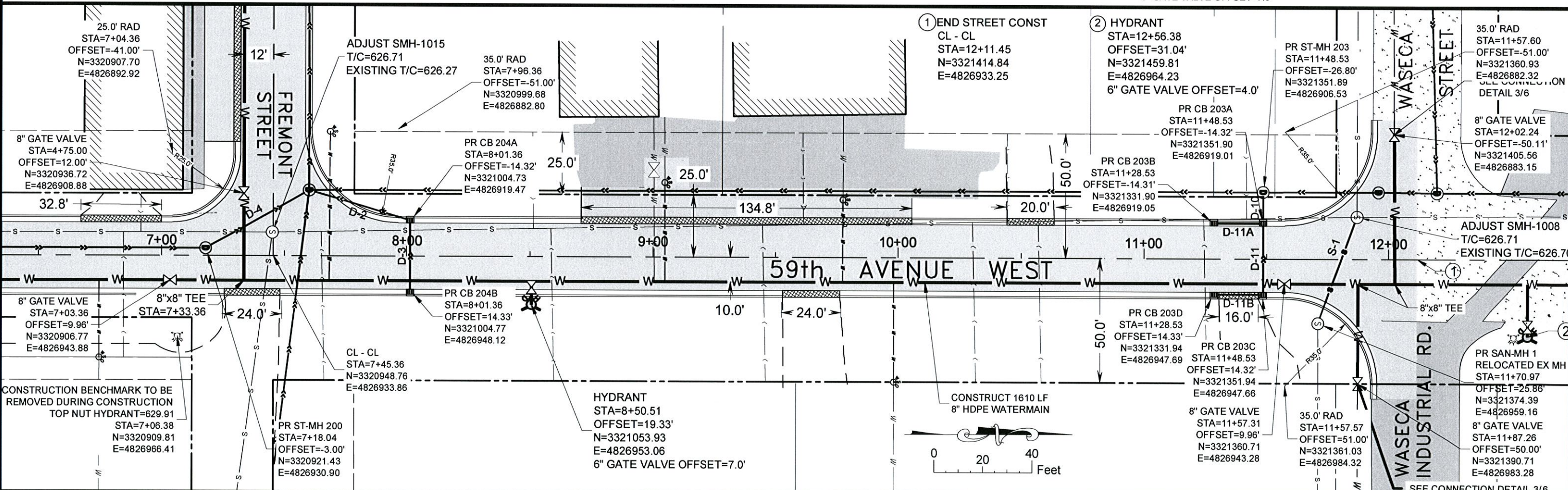
FIELD BOOK:
PLOT DATE: 10/28/2015
PROJECT: 59th Avenue West Street & Utility Improvement Project
SHEET: 14 OF 14
DATE: 10/28/2015
BY: JK

ALIGNMENTS					
59TH AVENUE WEST	Station	Offset	Northing	Easting	Azimuth
Begin Alignment	0+00.00	0.00	3320203.39	4826934.84	
CL - CL 59th Ave W, Fremont St	7+45.36	0.00	3320948.76	4826933.86	North 0.075462 West
CL - CL 59th Ave W, Waseca St / Waseca Industrial Rd	12+11.37	0.00	3321414.76	4826933.25	
End Alignment	18+00.00	0.00	3322003.39	4826932.47	
FREMONT					
Begin Alignment	0+00.00	0.00	3320948.05	4826433.86	
CL - CL Fremont St, 60th Ave W	1+51.00	0.00	3320948.26	4826584.86	North 89.918952 East
End Alignment, CL - CL Fremont St, 59th Ave W	5+00.00	0.00	3320948.76	4826933.86	



SURVEY BENCHMARKS				
Northing	Easting	Elevation	Description	
3320253.42	4826956.04	633.76	Top nut of hydrant*	
3320522.77	4826951.15	629.22	Top nut of hydrant*	
3320909.81	4826966.41	629.91	Top nut of hydrant*	
3321454.22	4826964.63	630.44	Top nut of hydrant*	
3321889.70	4826965.47	629.67	Top nut of hydrant	
3321393.14	4827336.53	625.95	Top nut of hydrant	

- NOTE:
- *HYDRANT TO BE REMOVED AS A PART OF CONSTRUCTION.
 - CONTROL POINTS WILL BE SET PRIOR TO CONSTRUCTION.



FIELD BOOK:
 Plot Date: 10/28/2015
 Drawing Name: P:\Hennepin\Office Projects\TMDA15966.000 59th Avenue West\muni\C3D\Plan\Layout.dwg
 Xref: XREFS\TMDA15966.000.dwg

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JK	DRAWN NM
CHECKED JG	

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JEFFREY S. GOETZMAN

DATE 10/28/2015 LIC. NO. 26422

4560 Norway Pines Place
 Duluth, MN. 55811
 218.727.8796
 tkda.com

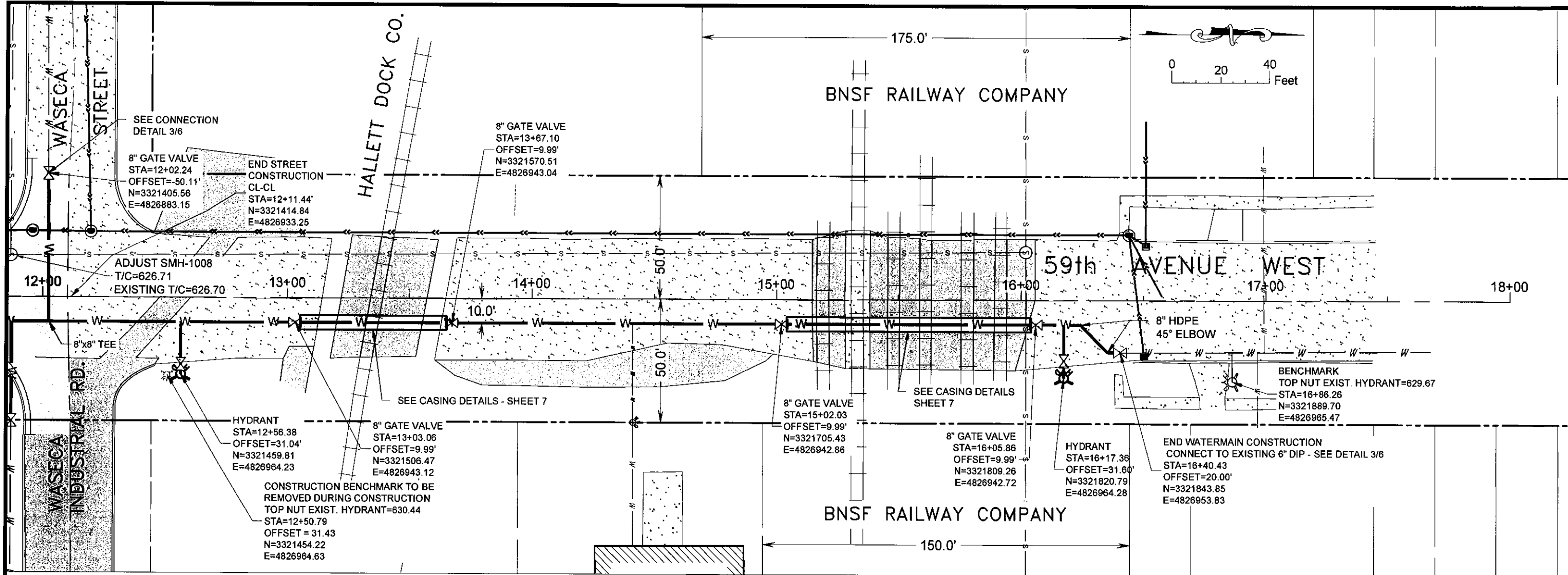
TKDA

59th Avenue West
 Street & Utility Improvement Project
 DULUTH MINNESOTA

CITY PROJECT NO. 1487 MSA NO.

LAYOUT
 STA: 0+00 - 12+00

PROJECT NO. 15896.000
 RECORD NO. SHEET NO. 16



FIELD BOOK:
Plot Date: 10/28/2015
Drawing name: P:\Hennepin\Office\Projects\TKDA\15896.000 59th Avenue West\main\3D\Plan\Layout.dwg
Xref: XREF.DWG, XREF.DWG

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JK

DRAWN
NM

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JG

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JEFFREY S. GOETZMAN
DATE 10/28/2015 LIC. NO. 26422

TKDA

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Duluth, MN. 55811
218.727.8796
tkda.com

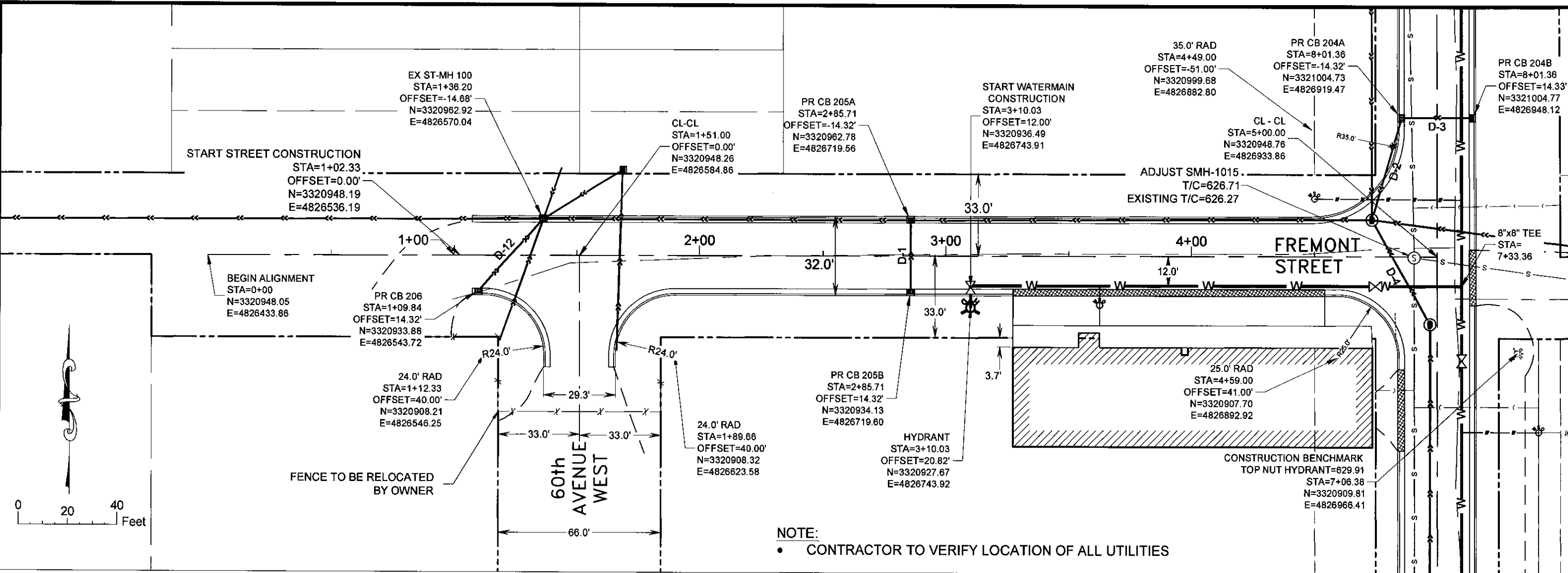
59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA

CITY PROJECT NO. 1487 MSA NO.

LAYOUT
STA: 12+00 - 18+00

PROJECT NO.
15896.000

RECORD NO. SHEET NO.
17



FIELD BOOK:
Plot Date: 10/28/2015
Drawing Name: P:\Hennepin\Office\Projects\TKDA\15896.000 59th Avenue West\municipal\CD\Planned\Layout.dwg
Xref: X15-EXISTING.XR Proposed

NO.	DATE	BY	DESCRIPTION OF REVISIONS

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JEFFREY S. GOETZMAN
DATE 10/28/2015 LIC. NO. 26422

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218.727.8796
tkda.com

59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA

CITY PROJECT NO. 1487 MSA NO.

LAYOUT
FREMONT STREET

PROJECT NO. 15896.000
RECORD NO. SHEET NO. 18

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF UTILITY IMPROVEMENTS AND ROAD RECONSTRUCTION. THE PROJECT INCLUDES APPROXIMATELY 1385 FEET OF RECONDITIONED ROADWAY. THE MAJOR CONSTRUCTION ITEMS INCLUDE HDPE WATER MAIN, SANITARY SEWER LATERAL REPLACEMENT, STORM SEWER, AGGREGATE BASE, & BITUMINOUS PAVEMENT. THE TOTAL LAND AREA ANTICIPATED TO BE DISTURBED BY THE PROJECT (EXCLUSIVE OF BORROW AND DISPOSAL AREAS) IS 1.83 ACRES.

SWPPP IMPLEMENTATION CONTACTS			
AGENCY	PERMIT	CONTACT	PHONE/ EMAIL
CITY PROJECT MANAGER	N/A	TIM SANDERS	218.730.5066 TSANDERS@DULUTHMN.GOV
CONTRACTOR'S EROSION CONTROL SUPERVISOR	N/A	T.B.D.	PHONE EMAIL
CITY OF DULUTH	EROSION CONTROL PERMIT	TOM JOHNSON	218.730.5103 TAJOHNSON@DULUTH.GOV
MPCA	NPDES	T.B.D.	PHONE EMAIL
PROJECT ENGINEER	N/A	JEFF GOETZMAN	218.727.8796 JEFF.GOETZMAN@TKDA.COM

CALCULATIONS

TOTAL DISTURBED AREA = 1.83 ACRES
POST CONSTRUCTION IMPERVIOUS AREA = 1.80 ACRES
EXISTING IMPERVIOUS AREA = 1.80 ACRES
IMPERVIOUS NET = 0.00 ACRES (NO CHANGE)

TIMING OF BMP INSTALLATION

THE EROSION AND SEDIMENTATION CONTROL BMPS SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ON SITE, AND SHALL MEET THE NPDES PERMIT PART IV CONSTRUCTION ACTIVITY REQUIREMENTS.

1. TEMPORARY PERIMETER CONTROL BMPS WILL BE INSTALLED BEFORE ANY UP GRADIENT SOIL DISTURBANCES OCCUR.
2. PERMANENT AND TEMPORARY SEDIMENT TRAPS AND BASINS (IF APPLICABLE) WILL BE CONSTRUCTED BEFORE ANY SITE DISTURBANCES ARE PERMITTED.
3. TOPSOIL, SEED, EROSION CONTROL BLANKET AND NECESSARY ADDITIONAL TEMPORARY EROSION CONTROL BMPS (IF APPLICABLE) SHALL BE PLACED WITHIN 7 DAYS OF COMPLETION OF ANY EMBANKMENT.
4. PLACEMENT OF RIPRAP SHALL BE COMPLETED WITHIN 24 HOURS OF CULVERT PLACEMENT, AND DONE IN ONE CONTINUOUS OPERATION.
5. DISTURBED AREAS IN WHICH CONSTRUCTION ACTIVIES HAVE CEASED OR WILL BE SUSPENDED FOR 7 DAYS OR MORE SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT BMPS FOR EROSION.

CONSTRUCTION NOTES

CONSTRUCTION SHALL BE GOVERNED BY THE 2016 MNDOT STANDARD SPECIFICATIONS, CITY OF DULUTH STANDARD CONSTRUCTION SPECIFICATIONS AND SPECIAL PROVISIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION AND MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL BMPS FOR THE DURATION OF THE PROJECT.

THE CONTRACTOR SHALL KEEP THE INSPECTION AND MAINTENANCE LOGS IN ACCORDANCE WITH THIS SWPPP, ALL PERMITS, ALL INSPECTION AND MAINTENANCE RECORDS AND DESIGN CALCULATIONS. THE CONTRACTOR SHALL MAINTAIN A RESPONSIBLY SIZED STOCKPILE OF EROSION CONTROL DEVICES.

IMPAIRED AND SPECIAL WATERS:

CONSTRUCTION ACTIVITIES THAT DISCHARGE STORMWATER TO A POINT ON THE PROJECT THAT IS WITHIN 1 MILE OF PORTIONS OF THE ST. LOUIS RIVER AND FLOWS TO THOSE PORTIONS OF THE ST. LOUIS RIVER MUST MEET THE TERMS AND CONDITIONS OF MINNESOTA'S NPDES GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITES INCLUDING THE BEST MANAGEMENT PRACTICES (C.1, C.2, C.3) OUTLINED IN APPENDIX A OF THE PERMIT.

CONSTRUCTION DATES ARE ESTIMATED FROM MAY, 2016 TO AUGUST, 2016
THE RECEIVING WATER FOR PRECIPITATION RUNOFF FROM THE PROJECT INCLUDES THE EXISTING STORM SEWER SYSTEM LEADING TO ST. LOUIS RIVER.
CITY OF DULUTH MAINTENANCE IS RESPONSIBLE FOR LONG TERM OPERATION AND MAINTENANCE OF THE STORMWATER SYSTEM.

CONTACTS

THE SWPP ENGINEER IS:

JEFF GOETZMAN, P.E.

TKDA - 4560 NORWAY PINES PLACE

DULUTH, MN 55811

218.727.8796

jeff.goetzman@tkda.com

THE CITY OF DULUTH PROJECT SUPERVISOR IS:

TIM SANDERS, P.E.

211 CITY HALL, 411 W. 1ST STREET

DULUTH, MN 55802-1191

218.730.5066

tsanders@duluthmn.gov

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN	
DESCRIPTION	TITLE
SUMMARY OF PERVIOUS AND IMPERVIOUS	SWPPP
RECEIVING SURFACE WATERS	SWPPP
DRAINAGE STRUCTURES	PLAN AND PROFILE
EROSION CONTROL SHEETS	EROSION CONTROL
EROSION CONTROL DETAILS	DETAILS
SEDIMENT CONTROL PRACTICES	SWPPP
FINAL STABILIZATION	EROSION CONTROL

FIELD BOOK:
Plot Date: 10/28/2015
Drawing Name: P:\Userman\Town-Office\Projects\TKDA\15986.000 59th Avenue West\municipal\SWPPP.dwg
Xref:

				DESIGNED NM	DRAWN NM	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 JEFFREY S. GOETZMAN DATE 10/28/2015 LIC. NO. 26422	 4560 Norway Pines Place Duluth, MN. 55811 218.727.8796 tkda.com	59th Avenue West Street & Utility Improvement Project DULUTH MINNESOTA		SWPPP		PROJECT NO. 15896.000
NO.	DATE	BY	DESCRIPTION OF REVISIONS	CHECKED JG				CITY PROJECT NO. 1487	MSA NO.	RECORD NO.	SHEET NO. 20	

STORM WATER POLLUTION PREVENTION PLAN

1. The current City of Duluth, Minnesota Construction Standards , shall apply.
Along with the City of Duluth, Contractor will be co-permittee for the MPCA NPDES stormwater construction permit for this project - Contractors signature on permit is required.
Submit Initial Erosion Control (EC) schedule at or before PreCon.
Submit EC schedule alterations/adjustments weekly thereafter for Engineers approval.
2. The Contractor is responsible for EC Quality Control on this project. (MnDOT 1717.2 B)
Contractor shall phase/sequence the project to minimize exposure to erosion. Contractor shall place or otherwise construct erosion control and sediment containment devices to minimize the runoff, tracking and sediment loss from disturbed areas of the project site.
3. Sediment and erosion control devices shall be functional before site is disturbed.
4. Total disturbed area is 1.83 acres. Beginning impervious is 1.80 acres. New impervious is 1.80 acres.
5. Receiving water is the St. Louis River.
6. Disturbed slopes not actively worked shall be protected from soil erosion with temporary or permanent cover within permit requirements but in no case greater than 7 days of being worked.
Use erosion control blanket with soil staples, or engineer approved equal.
7. At minimum, the following controls will be implemented at the construction site:
- * Sediment control logs shall be used in conjunction with other erosion BMPs.
 - * Rock ditch checks, or approved equal, are to be used to reduce ditch velocities and reduce erosion.
 - * Storm inlets and outlet area shall be protected with rip rap.
 - * Stabilized construction entrance shall be used to reduce sediment tracking.
 - * Storm inlets shall be continuously protected by rock filled socks, or specified inlet protection devices.
 - * Permanent vegetation will be established right after topsoil is re-spread.
 - * Control all site waste, debris, material storage, concrete washout, to prevent impacts to any drainageway.
 - * All exposed soil areas with a slope of 3:1 or steeper, that have a continuous positive slope to a special water must have temporary erosion protection or permanent cover within 3 days after the area is no longer actively being worked. All other slopes that have a continuous positive slope to a special water must have temporary erosion protection or permanent cover within 7 days after the area is no longer actively being worked.
8. All slopes and ditches shall be stabilized prior to opening new culverts into existing drainage ways.
9. If any stockpile is to remain in place for more than 3 days, sediment and erosion control devices shall be used.
10. Water pumped or otherwise discharged from the site during construction dewatering shall be directed through effective filtering device(s), and discharged to an energy dissipating device to eliminate erosion at the outlet.
11. Site dust generation must be controlled by application of water by spray trucks or similarly effective means of dust control.
12. The contractor shall take all possible precautions to prevent appreciable soil tracking onto roadways. Where sediment has been tracked-out from the site onto the surface of off-site streets, other paved areas, and sidewalks, the deposited sediment must be removed by the end of the same work day in which the trackout occurs or by the end of the next work day if track-out occurs on a non-work day. The tracked sediment must be removed by sweeping, shoveling, vacuuming, or by using other similarly effective means of sediment removal. Hosing or sweeping trackedout sediment into any stormwater conveyance (unless it is connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water is prohibited.
13. Stabilized construction entrance(s) shall be removed and area restored after grading is complete.
14. JAW MnDot 1717.2 B, the contractor QC program shall ensure that a competent individual shall inspect erosion and sediment control devices weekly and after each rain event. All nonfunctional devices shall be repaired/replaced/cleaned. Maintain NPDES Log of all weekly and rain event inspections - include the corrective actions that were taken and update the SWPPP to reflect the amended plan. Inspection logs and a current SWPPP shall be maintained on site and available upon request.
15. Where not otherwise specified; MnDot Sp Provision S-246; Rapid Stabilization Method 4 shall be used when quick stabilization is needed. Use Cat III erosion control blanket (ECB) [N. American Green S150 or approved equal]. Use with seed mixture 25-151 @ 2.5 lbs per 100 SY and fertilizer 22-5-10 @ 7 lbs per 100 SY. The fertilizer, seed, and blanket shall be placed as per Mn/DOT 2575.3. The upgrade end of each blanket strip shall be buried at least 6 inches in a vertical check slot. Staples shall be placed at seams and throughout the blanket at a maximum spacing in all directions of 2 feet. Payment allowed shall be \$3.00 per sq yard.

CONSTRUCTION PRACTICES TO MINIMIZE STORM WATER CONTAMINATION

TO PREVENT STORM WATER CONTAMINATION FROM OCCURRING, THE FOLLOWING BMPS WILL BE IMPLEMENTED:

1. All areas that are rough graded must be kept in a smooth condition to allow sheet flow of storm water wherever practical and always ready for surface application of degradable or non-degradable blankets, mulch, or other protective covers.
2. A stabilized construction entrance/exit will be constructed to reduce vehicle tracking of sediments off the project right of way.
3. All non-hazardous waste materials will be collected and stored in a securely lidded metal dumpster or other approved containment method at the end of each day. Any alternative to a metal dumpster must be submitted in writing for approval by the project engineer. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary to function as intended for debris collection. No construction materials will be buried on-site. The contractor's erosion control supervisor will instruct all personnel regarding the correct procedure for disposal.
4. A licensed sanitary waste management contractor will collect all sanitary waste from the portable units at a rate necessary to maintain design function.
5. All vehicles on site will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage.
6. Fertilizers will be stored in a covered shed and partially used bags will be transferred to a sealable bin to reduce chance of spillage.
7. Petroleum products will be stored in tightly sealed containers, which are clearly labeled.
8. Spill kits will be included with all fueling sources and maintenance activities. Secondary containment measures will be installed and maintained by the contractor.
9. Any asphalt substances used on site will be applied in accordance with manufacturers recommendations.
10. All paint containers and curing compounds will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm water system but will be properly disposed of according to manufacturer's instructions.
11. Materials and equipment necessary for spill clean up will be kept in an enclosed trailer or shed on site. Equipment will include, but not limited to, brooms, mops, dust pans, rags, gloves, absorbent (kitty litter). Oil absorbent brooms and diapers, and buckets.
12. All spills will be contained and cleaned up immediately upon discovery. Spills large enough to reach the stormwater conveyance system will be reported to the Minnesota duty officer at 1.800.422.0798.
13. Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site. Unless done in an engineered containment system. The engineered system must include site drawings for the project file and written assurance that the system will work as designed and leave no discharge of concrete or concrete residue potential to waters of the state during a minimum of a 100 year storm event.
14. Form release oil used for concrete work must be applied over a pallet containing absorbent to collect excess liquid. The absorbent material will be replaced and properly disposed of when saturated.
15. Discharges from basin dewatering operations that are turbid or sediment laden shall be discharged to temporary sediment basins constructed on the site to provide treatment prior to discharge to a water of the state.
16. Clogged or compromised filters must be replaced. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, deposited sediment shall be removed by the end of the same work day on which it is found or by the end of the following work day if removal by the same work day is not feasible.
17. Accumulated sediment shall be removed where the depth of sediment has reached half of the working height of the sediment retaining device. Sediment shall be removed by the end of the work day on which it is found or by the end of the following work day if removal by the same work day is not feasible

FIELD BOOK:
Per Date: 10/28/2015
Drawing name: P:\Hennepin\Office\Projects\1\CD\15896.000 59th Avenue West\municipal\CD\Plan\SWPPP.dwg
Xref:

NO.	DATE	BY	DESCRIPTION OF REVISIONS

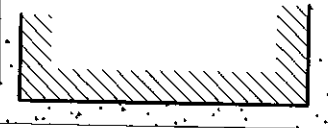
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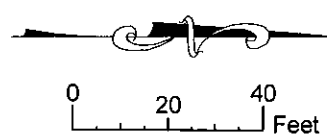
4580 Norway Pines Place
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59th Avenue West Street & Utility Improvement Project DULUTH MINNESOTA	
CITY PROJECT NO. 1487	MSA NO.

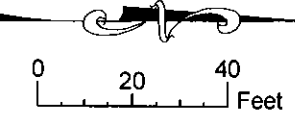
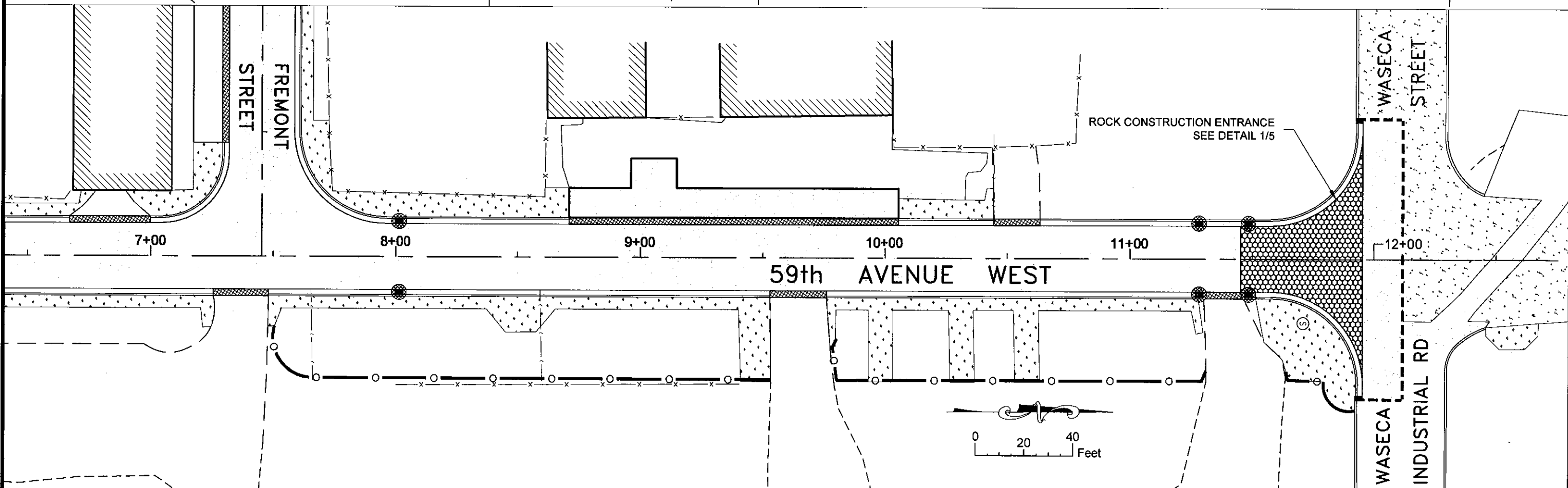
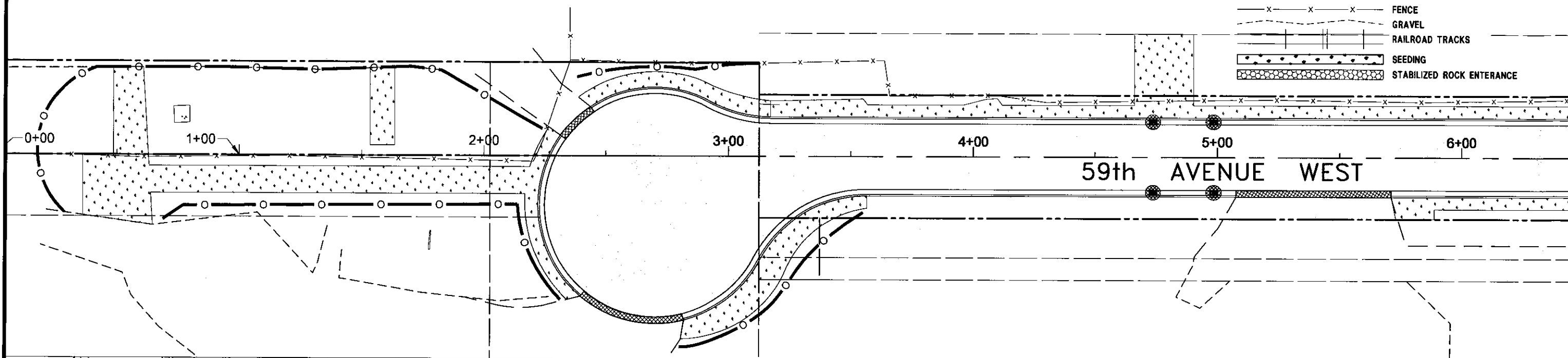
PROJECT NO. 15896.000	
RECORD NO.	SHEET NO. 21



- NOTES:
- INSTALL EROSION CONTROL PER DETAIL 2/5
 - SEED AND MULCH DISTURBED AREAS.



- LEGEND
- BIOLOG
 - BITUMINOUS
 - INLET PROTECTION
 - CENTERLINE ALIGNMENT
 - CONCRETE
 - CURB
 - FENCE
 - GRAVEL
 - RAILROAD TRACKS
 - SEEDING
 - STABILIZED ROCK ENTERANCE



FIELD BOOK:
PLOT DATE: 10/28/2015
DRAWING: 15896.000-1-1
PROJECT: 59th Avenue West Street & Utility Improvement Project
DESIGNER: TKDA
CHECKED: JK
DATE: 10/28/2015

NO.	DATE	BY	DESCRIPTION OF REVISIONS

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DRAWN NM
CHECKED JK

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JEFFREY S. GOETZMAN
DATE 10/28/2015 LIC. NO. 26422

TKDA

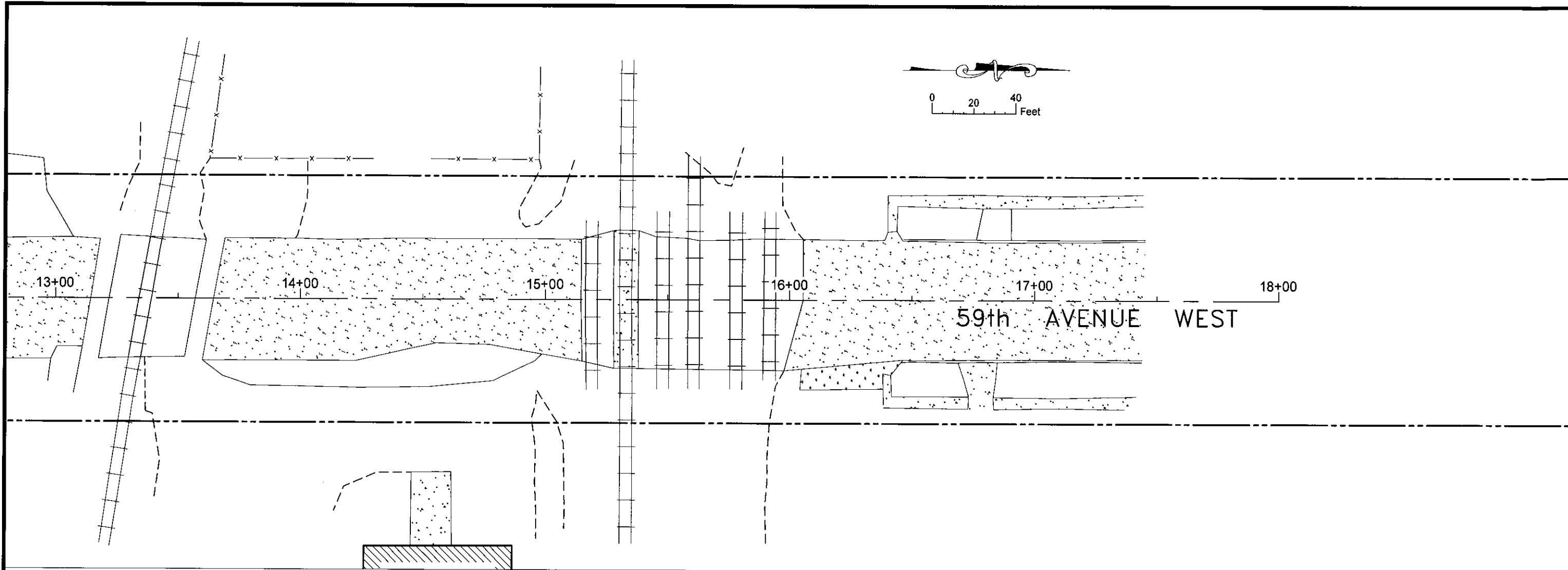
4560 Norway Pines Place
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DULUTH MINNESOTA

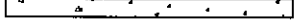
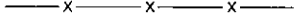
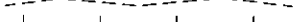
CITY PROJECT NO. 1487 MSA NO.

EROSION CONTROL
STA: 0+00 - 13+00

PROJECT NO. 15896.000
RECORD NO. SHEET NO. 22



LEGEND

-  **BIOLOG**
-  **BITUMINOUS**
-  **INLET PROTECTION**
-  **CENTERLINE ALIGNMENT**
-  **CONCRETE**
-  **CURB**
-  **FENCE**
-  **GRAVEL**
-  **RAILROAD TRACKS**
-  **SEEDING**

FIELD BOOK:
PLOT DATE: 10/28/2015
DRAWN BY: J. S. GOETZMAN
CHECKED BY: J. S. GOETZMAN
PROJECT NO: 15896.000
SHEET NO: 23

NO	DATE	BY	DESCRIPTION OF REVISIONS

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CHECKED JK	
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JEFFREY S. GOETZMAN	
DATE 10/28/2015	LIC. NO. 26422

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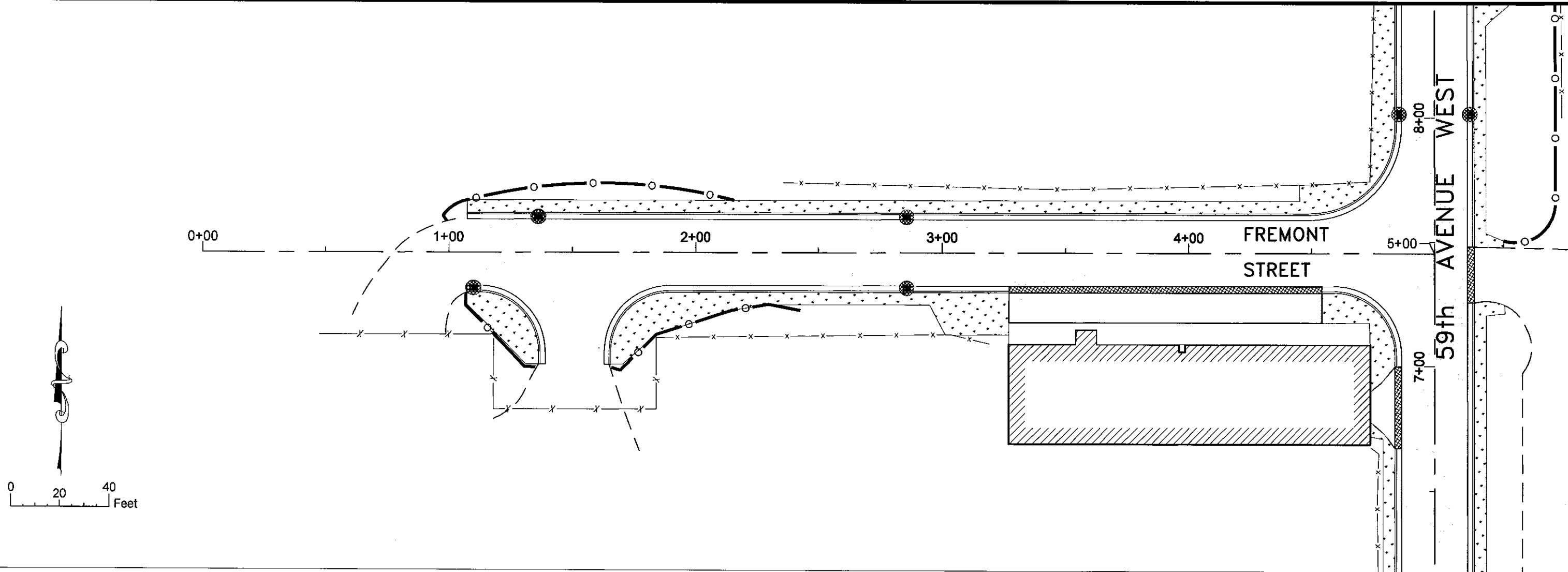
4560 Norway Pines Place
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DULUTH MINNESOTA

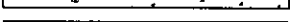
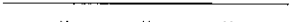
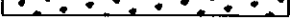
CITY PROJECT NO. 1487MSA NO.

EROSION CONTROL
STA: 13+00 - 18+00

PROJECT NO. 15896.000
RECORD NO. SHEET NO. 23



LEGEND

-  **BIOLOG**
-  **BITUMINOUS**
-  **INLET PROTECTION**
-  **CENTERLINE ALIGNMENT**
-  **CONCRETE**
-  **CURB**
-  **FENCE**
-  **GRAVEL**
-  **RAILROAD TRACKS**
-  **SEEDING**

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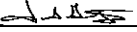
NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED
NM

DRAWN
NM

CHECKED
JK

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 **JEFFREY S. GOETZMAN**

DATE 10/28/2015 UC NO. 26422



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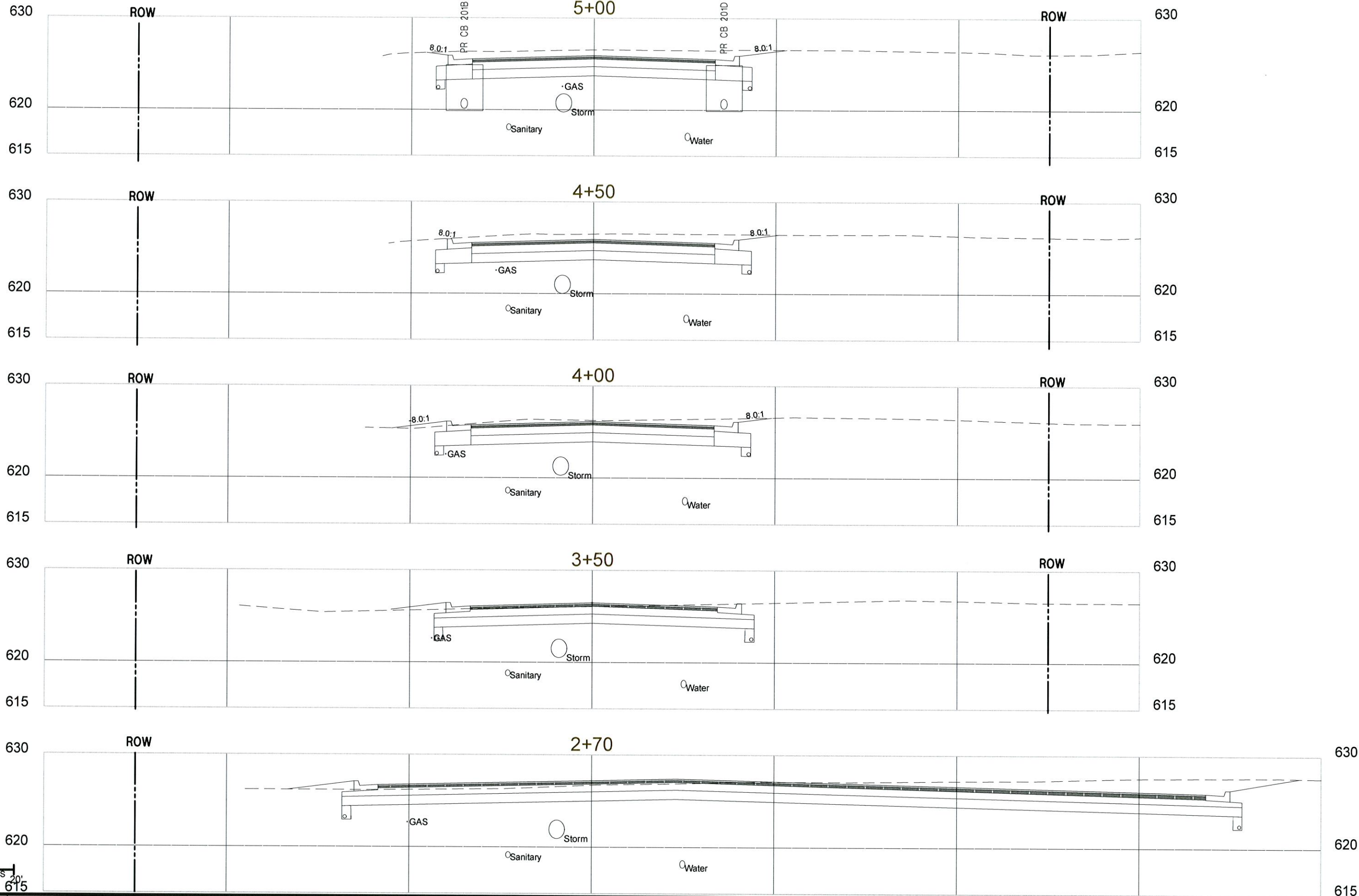
59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA

CITY PROJECT NO. 1487 MSA NO.

EROSION CONTROL
FREMONT STREET

PROJECT NO.
15896.000

RECORD NO. SHEET NO.
24



5' PROFILE
0 SCALES 20'

FIELD BOOK
Plot Date: 10/28/2015
Drawn By: J.K.
Checked By: N.M.
Project: 15896.000
Sheet: 25
Xref: 15896.000-59th Avenue West.mxd
Xref: 15896.000-59th Avenue West.mxd
Xref: 15896.000-59th Avenue West.mxd

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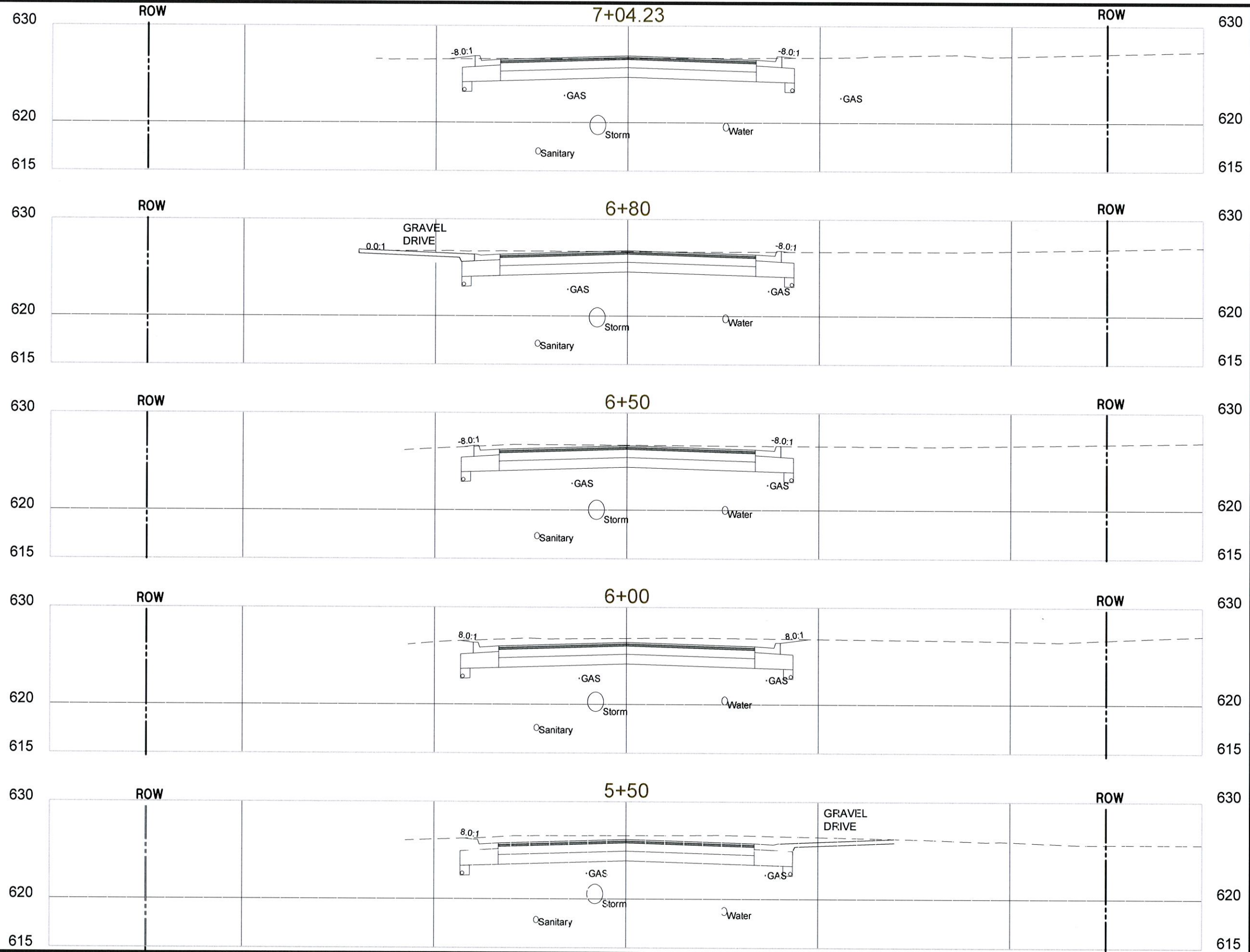
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JEFFREY S. GOETZMAN
DATE 10/28/2015 UC NO. 26422

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tkda.com

59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA
CITY PROJECT NO. 1487 MSA NO.

CROSS SECTIONS
STA: 3+12.37 - 5+00
59TH AVENUE WEST

PROJECT NO. 15896.000
RECORD NO. SHEET NO. 25



FIELD BOOK
Per Date: 10/28/2015
Project: 15896.000 59th Avenue West
Drawing: 59th-Road-Design.dwg
Xref: XR Proposed, XR EXISTING

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JK	DRAWN JK
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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. JEFFREY S. GOETZMAN	
DATE 10/28/2015	LIC. NO. 26422

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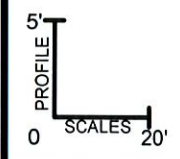
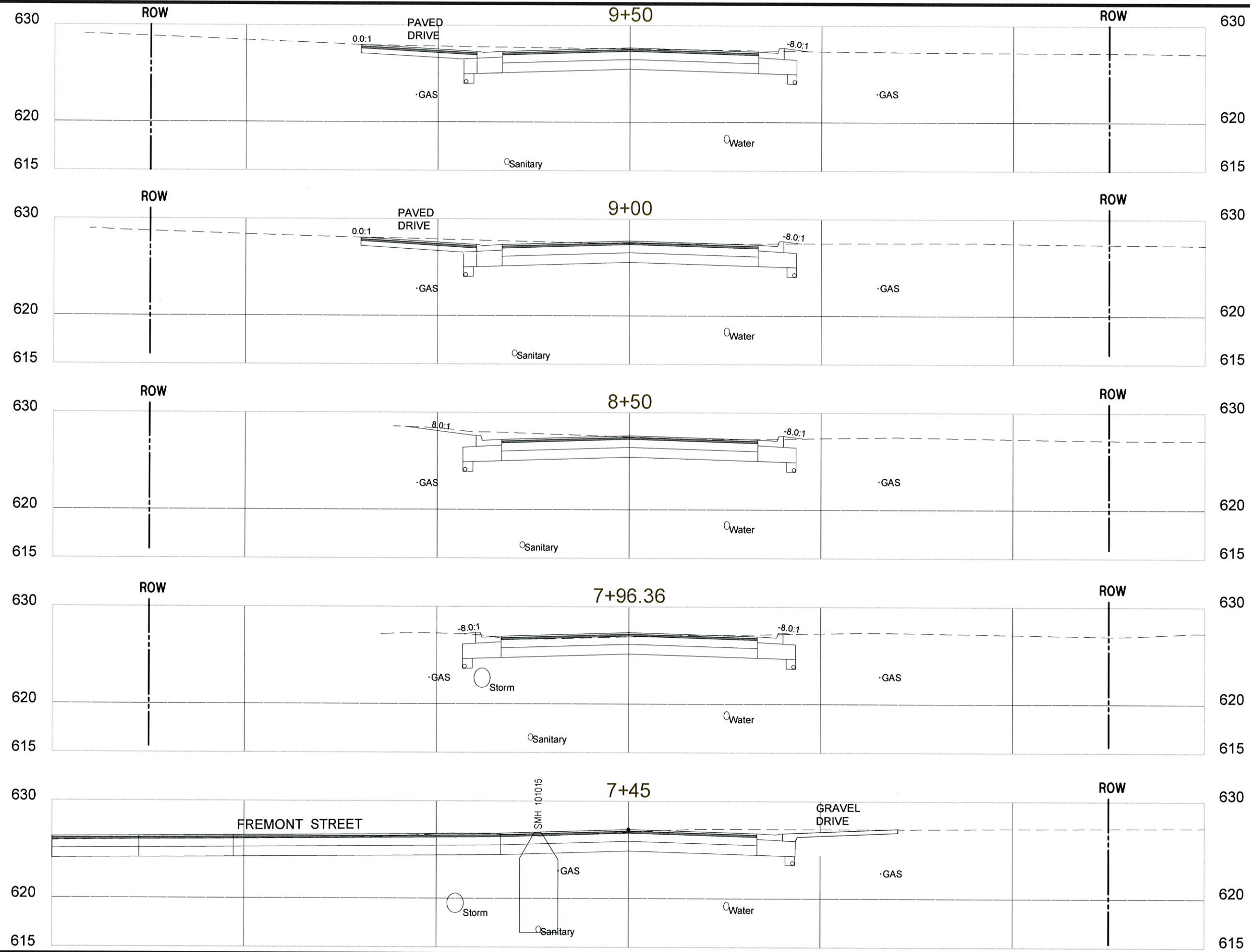
59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA

CITY PROJECT NO. 1487MSA NO.

CROSS SECTIONS
STA: 5+50 - 7+04.23
59TH AVENUE WEST

PROJECT NO.
15896.000

RECORD NO. SHEET NO.
26



FIELD BOOK
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Xrefs: Xref Proposed, Xref Existing

NO.	DATE	BY	DESCRIPTION OF REVISIONS

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DATE 10/28/2015	LIC. NO. 26422

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59th Avenue West
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DULUTH MINNESOTA

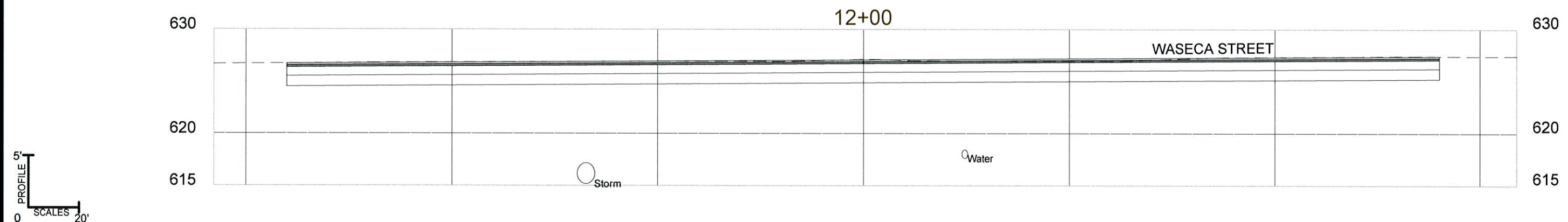
CITY PROJECT NO. 1487MSA NO.

CROSS SECTIONS
STA: 7+50 -
59TH AVENUE WEST

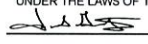
PROJECT NO.
15896.000

RECORD NO.
SHEET NO.
27

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User: JLT
Title: 59th Avenue West



NO.	DATE	BY	DESCRIPTION OF REVISIONS

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 JEFFREY S. GOETZMAN	
DATE 10/28/2015	LIC. NO. 26422

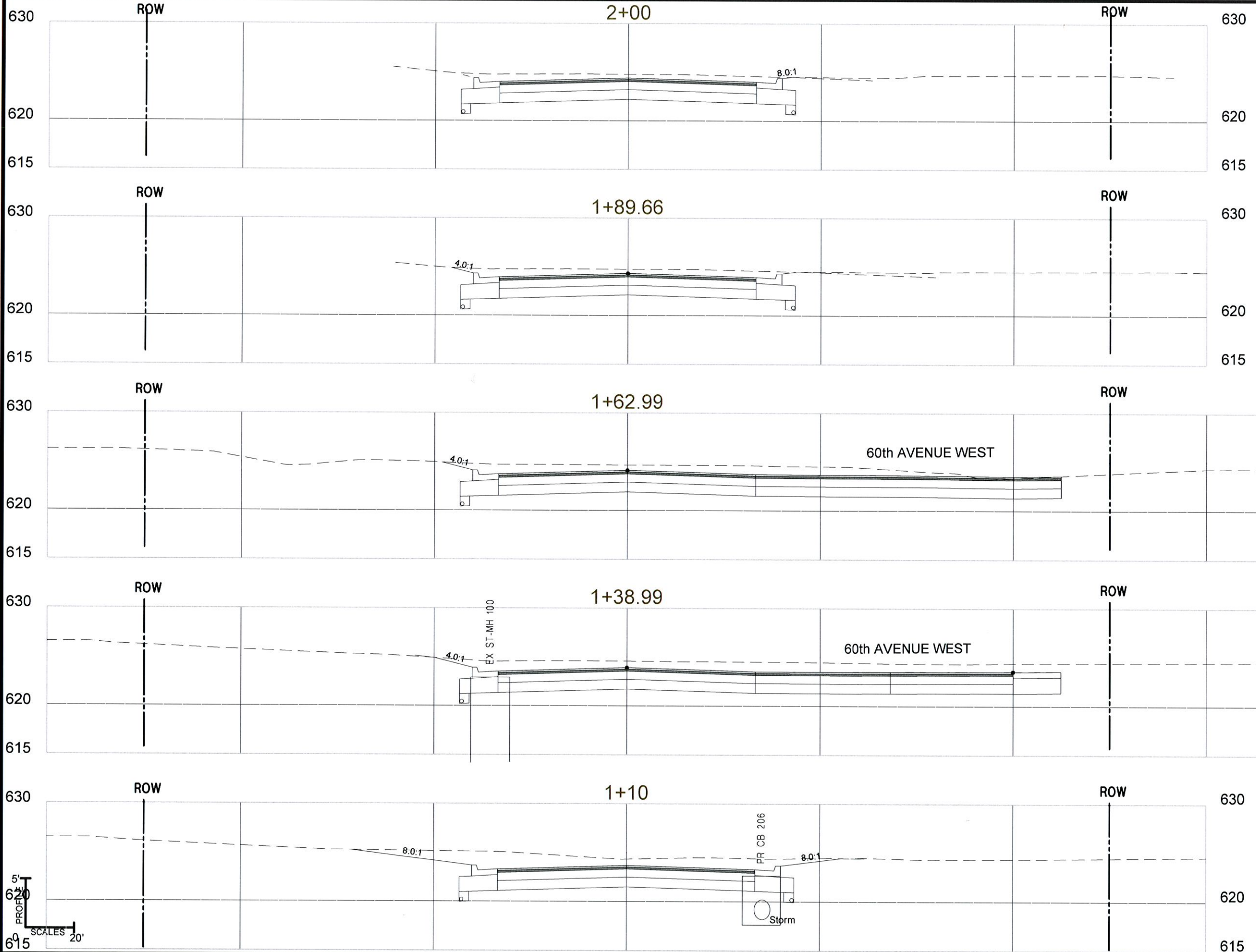


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59th Avenue West Street & Utility Improvement Project DULUTH MINNESOTA	
CITY PROJECT NO. 1487	MSA NO.

CROSS SECTIONS
STA: 11+96
59TH AVENUE WEST

PROJECT NO.	15896.000
RECORD NO.	SHEET NO.
	29



FIELD BOOK:
Plot Date: 10/28/2015
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NO.	DATE	BY	DESCRIPTION OF REVISIONS

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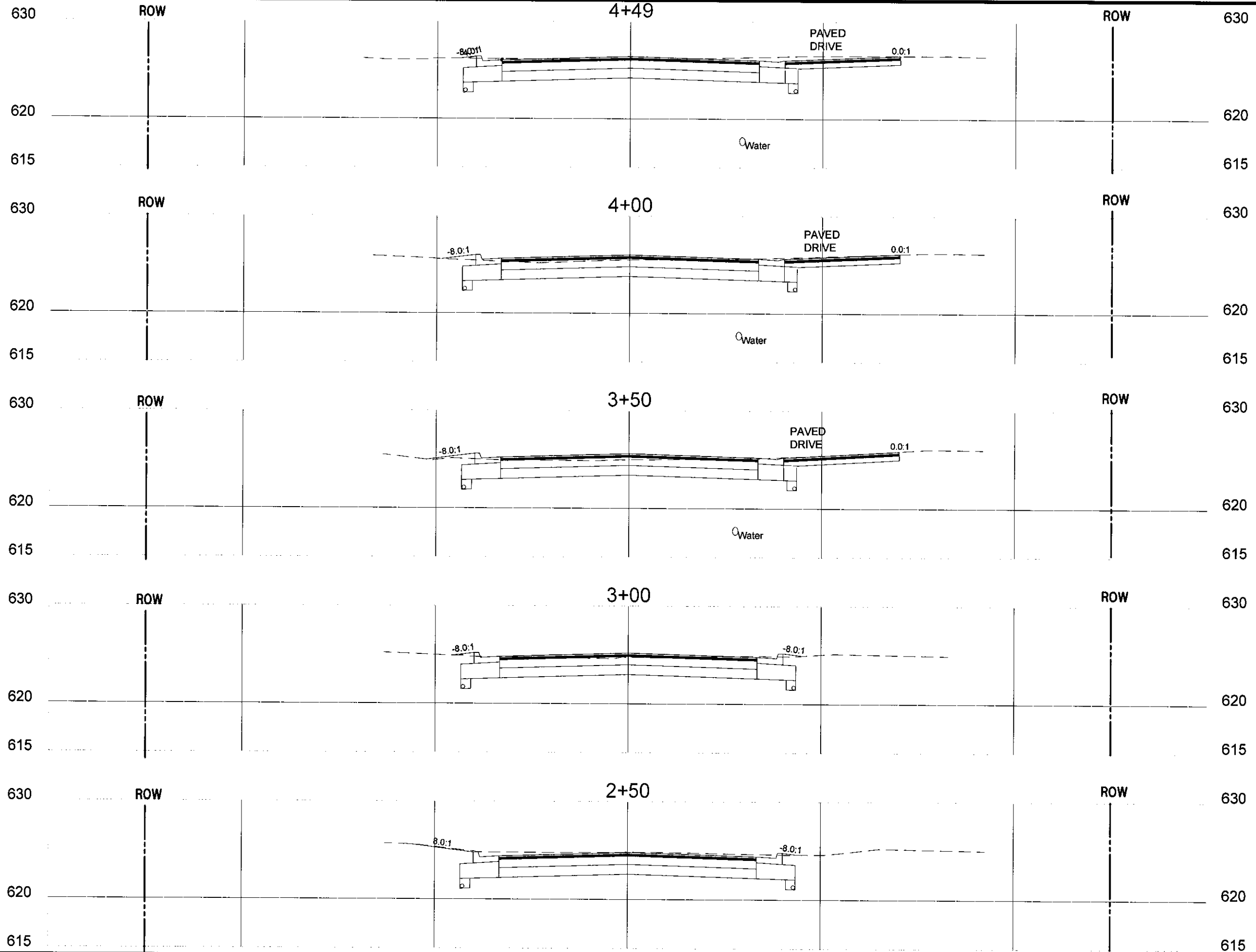
JEFFREY S. GOETZMAN
DATE 10/28/2015 LIC. NO. 26422

4560 Norway Pines Place
Duluth, MN. 55811
218.727.8796
tkda.com

59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA
CITY PROJECT NO. 1487 MSA NO.

CROSS SECTIONS
STA: 1+10 - 2+00
FREMONT STREET

PROJECT NO.
15896.000
RECORD NO.
SHEET NO.
30



5' PROFILE
0 SCALES 20'

FIELD BOOK
PLOT DATE: 10/28/2015
PROJECT: 15896.000
SHEET: 31
DRAWN BY: JK
CHECKED BY: NM
DATE: 10/28/2015
LIC. NO.: 26422

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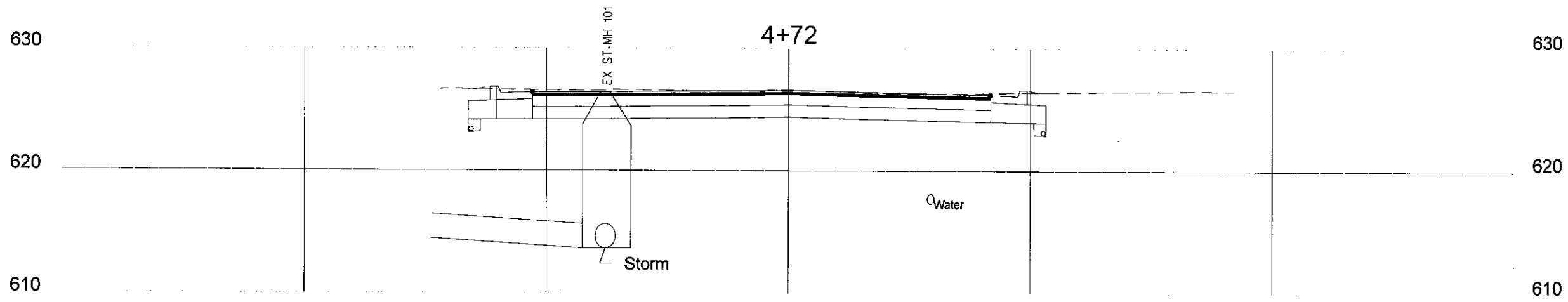
DESIGNED JK
DRAWN JK
CHECKED NM
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
JEFFREY S. GOETZMAN
DATE 10/28/2015 LIC. NO. 26422

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TKDA

59th Avenue West
Street & Utility Improvement Project
DULUTH MINNESOTA
CITY PROJECT NO. 1487 MSA NO.

CROSS SECTIONS
STA: 2+50 - 4+49
FREMONT STREET

PROJECT NO. 15896.000
RECORD NO. SHEET NO. 31



5'
PROFILE
0 20'
SCALES

NO.	DATE	BY	DESCRIPTION OF REVISIONS

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59th Avenue West Street & Utility Improvement Project	
DULUTH	MINNESOTA
CITY PROJECT NO. 1487	MSA NO.

CROSS SECTIONS	
STA: 4+72	
FREMONT STREET	
PROJECT NO. 15896.000	RECORD NO. SHEET NO. 32

FIELD BOOK
Rel Date: 10/28/2015
Project: 59th Avenue West
Scale: 1" = 20'
Xref: AR Proposed, AR EXISTING