

CITY OF RAMSEY, MINNESOTA

CIVIL CONSTRUCTION PLANS FOR

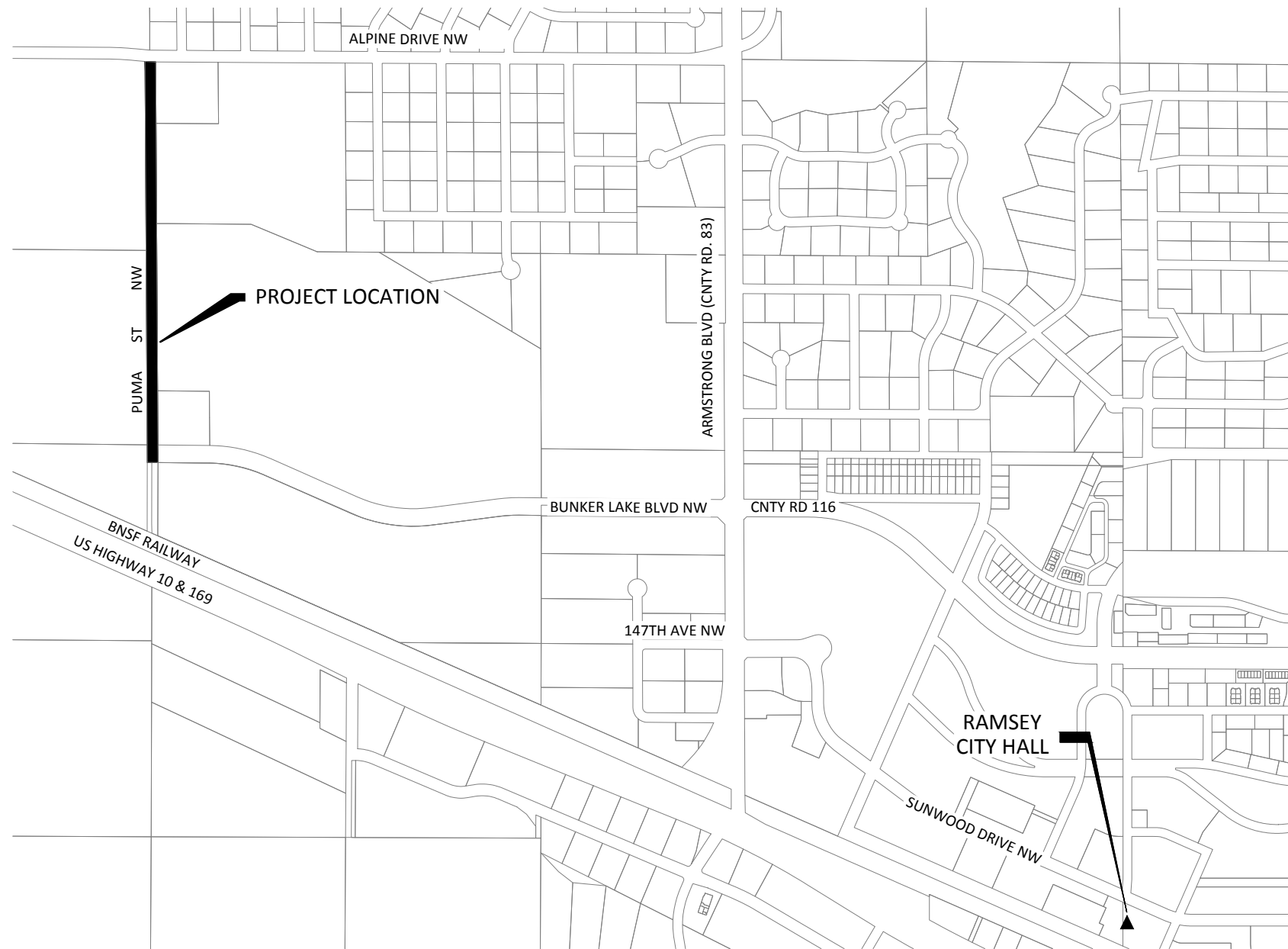
2017 PUMA STREET UTILITY IMPROVEMENTS

RAMSEY, MINNESOTA

GRADING, AGGREGATE BASE, SANITARY SEWER & WATERMAIN

SEPTEMBER, 2017

--- GOVERNING SPECIFICATIONS ---
 THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATION FOR CONSTRUCTION" SHALL GOVERN.
 ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE LATEST ADDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TRAFFIC CONTROL ZONE LAYOUTS.



SHEET INDEX

SHEET NO.	GENERAL TITLE
G0.01	TITLE
G0.02	TABULATIONS
EXISTING CONDITIONS & REMOVALS	
C0.01	EXISTING CONDITIONS & REMOVALS REMOVALS
TYPICAL SECTIONS & DETAILS	
C1.01	TYPICAL SECTIONS
C1.02 - C1.03	DETAILS
EROSION CONTROL	
C2.01 - C2.03	STORMWATER POLLUTION PREVENTION PLAN
C2.04	EROSION CONTROL DETAILS
C2.05	EROSION CONTROL PLAN
SANITARY AND WATER	
C4.01 - C4.03	PUMA ST SANITARY SEWER AND WATERMAIN PLAN
C4.04 - C4.05	LIFT STATION PLANS
ELECTRICAL	
E1.01 - E1.02	LIFT STATION ELECTRICAL PLAN

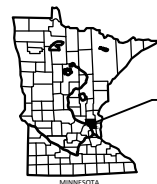
THIS PLAN SET CONTAINS 18 SHEETS.



MAP OF THE CITY OF RAMSEY ANOKA COUNTY, MN

SCALES

PLAN	0'	20'
PROFILE	0'	20'
	HORIZ.	
	0'	5'
	VERT.	
INDEX MAP	0'	500'



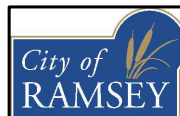
PROJECT LOCATION ANOKA COUNTY, MN

NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 612-454-0002.

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

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

Kevin P. Kiehl REG. NO. 23211 DATE: 09/20/2017
 KEVIN P. KIELB



PROJECT DATUM:
 HORIZONTAL: Anoka County Coordinates (1996 Adjustment) NGVD 29
 VERTICAL: NGVD 29

DESIGNED	KFB
DRAWN	EKD
CHECKED	JWC



7533 SUNWOOD DR NW, SUITE 206
 RAMSEY, MINNESOTA 55303
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 Email: Ramsey@bolton-menk.com
 www.bolton-menk.com

REV.	BY	DATE	RECORD DRAWING INFORMATION

RAMSEY, MINNESOTA		SHEET
2017 PUMA STREET UTILITY IMPROVEMENTS		G0.01
TITLE SHEET		

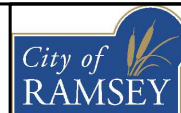
(A) STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	MN/DOT SPEC NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY
1	2021.501	MOBILIZATION	LUMP SUM	1
2	2101.511	CLEARING AND GRUBBING	TREE	6
3	2104.501	REMOVE PIPE CULVERTS	LIN FT	112
4	2104.503	REMOVE BITUMINOUS PAVEMENT	SQ YD	220
5	2104.503	REMOVE CONCRETE PAVEMENT	SQ YD	20
6	2104.602	SALVAGE & REINSTALL SIGN	EACH	5
7	2105.601	DEWATERING	LUMP SUM	1
8	2105.607	SALVAGE AGGREGATE TO STOCKPILE (LV)	CU YD	765
9	2105.607	SALVAGED AGGREGATE FROM STOCKPILE (CV)	CU YD	540
10	2118.501	AGGREGATE SURFACING CLASS 5	CU YD	55
11	2215.501	FULL DEPTH RECLAMATION (4")	SQ YD	4,850
12	2501.511	15" RC PIPE CULVERT DES 3006 (CL V)	LIN FT	102
13	2501.515	15" RC PIPE APRON	EACH	2
14	2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	1
15	2503.602	12" X 4" WYE	EACH	1
16	2503.603	8" PVC SANITARY SEWER PIPE SDR 26	LIN FT	45
17	2503.603	10" PVC SANITARY SEWER PIPE SDR 26	LIN FT	160
18	2503.603	12" PVC SANITARY SEWER PIPE SDR 26	LIN FT	1,056
19	2503.603	6" ID FORCEMAIN CL 53 DIP	LIN FT	1,070
20	2503.603	4" SANITARY SERVICE PIPE	LIN FT	40
21	2503.603	CASTING ASSEMBLY (SANITARY)	EACH	4
22	2503.618	MANHOLE COATING	SQ FT	360
23	2504.602	CONNECT TO EXISTING WATERMAIN	EACH	1
24	2504.602	LOWER WATERMAIN	EACH	1
25	2504.602	6" GATE VALVE & BOX	EACH	6
26	2504.602	8" GATE VALVE & BOX	EACH	1
27	2504.602	16" GATE VALVE & BOX	EACH	3
28	2504.602	HYDRANT	EACH	6
29	2504.602	1" CORPORATION STOP	EACH	1
30	2504.602	1" CURB STOP & BOX	EACH	1
31	2504.603	1" TYPE K COPPER PIPE	LIN FT	24
32	2504.604	6" CL 53 DIP WATERMAIN	LIN FT	111
33	2504.604	8" CL 52 DIP WATERMAIN	LIN FT	91
34	2504.604	16" CL 52 DIP WATERMAIN	LIN FT	1,705
35	2506.601	CONSTRUCT LIFT STATION	LUMP SUM	1
36	2506.603	CONSTRUCT SANITARY MANHOLE, DES. 4007	LIN FT	80.3
37	2506.608	PIPE FITTINGS	POUND	1,850
38	2511.502	RANDOM RIP RAP CL III	TON	18
39	2521.501	6" CONCRETE PAVEMENT	SQ YD	80
40	2563.601	TRAFFIC CONTROL	LUMP SUM	1
41	2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	3,750
42	2573.530	STORM DRAIN INLET PROTECTION	EACH	2
43	2573.533	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	150
44	2573.535	STABILIZED CONSTRUCTION ENTRANCE	LUMP SUM	2
45	2575.605	SEEDING (MIX 25-121, FERT TYPE 3 (22-5-10), MULCH TYPE 1)	ACRE	1.6

(B) CONSTRUCT SANITARY SEWER

LINE	STRUCTURE ID	STREET	STATION	OFFSET	PROPOSED TOP OF CASTING ELEV.	INVERT OUT ELEV.	FLOWS TO STRUCT	INVERT IN ELEV.	PIPE GRADE (%)	CASTING (EACH)	CONSTRUCT SAN MANHOLE DES 4007 (LIN FT)	6" ID FORCEMAIN CL 53 DIP (LIN FT)	8" PVC SDR 26 (LIN FT)	10" PVC SDR 26 (LIN FT)	12" PVC SDR 26 (LIN FT)	INTERIOR EPOXY COATING (SQ FT)	CONNECT TO EXISTING SANITARY (EACH)	FUTURE TOP OF CASTING ELEV.	ADDITIONAL RING BUILD HEIGHT (LIN FT)	BASE SLAB THICKNESS (INCHES)	NOTES	
																						TOTAL
1	B	PUMA ST	3+48.59	CL	883.38	864.90	EX A	864.25	0.22	1	18.5				296	180	1	882.78	0.6	8	(2) (3) (5)	
2	C	PUMA ST	6+74.59	CL	877.56	865.65	B	865.00	0.22	1	11.9			40	296	180		876.64	0.9	6	(1) (3) (5)	
3	D	PUMA ST	17+36.56	CL	869.97	844.40	LIFT STATION	844.26	0.22	1	25.6			80	64			869.97		10	(1) (4)	
4	E	PUMA ST	13+36.51	CL	869.73	845.38	D	844.50	0.22	1	24.4		45	40	400			869.13	0.6	10	(1) (4) (5)	
5	LIFT STATION	PUMA ST	17+36.70	63.5' LT	870.20	860.60	B	865.75				1,070						870.20				
											TOTAL	4	80.3	1,070	45	160	1,056	360	1	870.20		

- NOTES:
 (1) STUB FOR FUTURE EXPANSION, CAP END
 (2) FIELD VERIFY EXISTING INVERT ELEVATION OF STRUCTURE "EX A"
 (3) EPOXY COATED STRUCTURE
 (4) REINFORCE BASE SLAB WITH NO. 5 REBAR, 12" ON CENTER FROM CENTER OF STRUCTURE MINIMUM
 (5) DESIGN STRUCTURE HEIGHT TO BE CONSTRUCTED TO FUTURE TOP OF CASTING ELEVATION, ADDITIONAL HEIGHT TO PROPOSED TOP OF CASTING ELEVATION IS TO BE CONSTRUCTED WITH ADDITIONAL CONCRETE ADJUSTING RINGS



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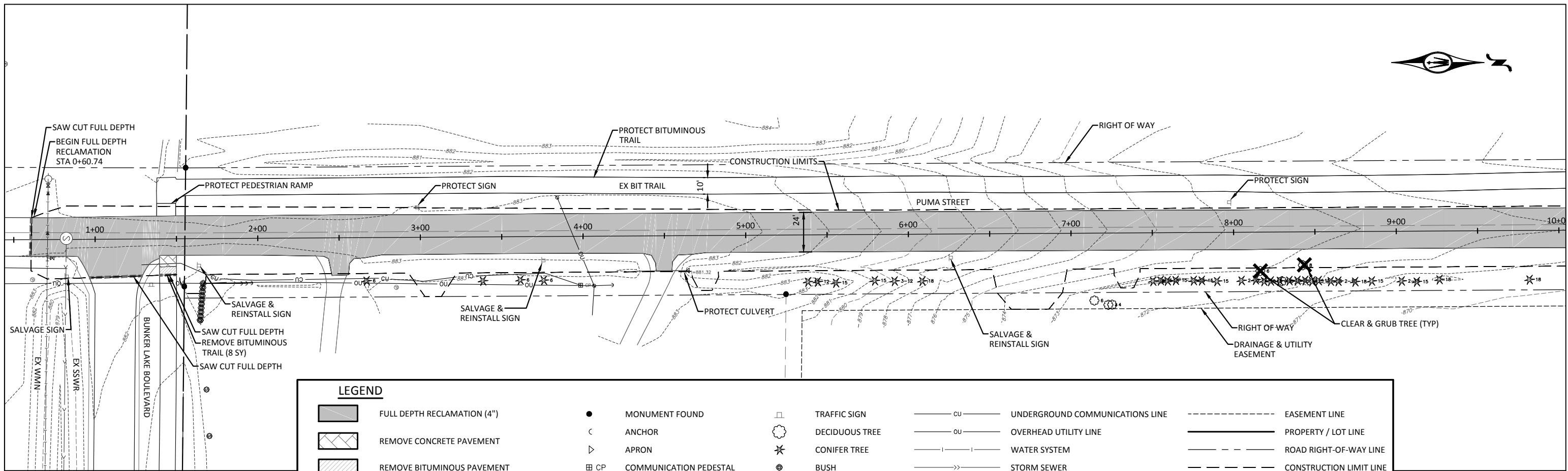
REV	ISSUED FOR	DATE

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

 KEVIN P. KIELB
 LIC. NO. 23211 DATE 09/20/2017

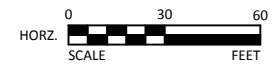
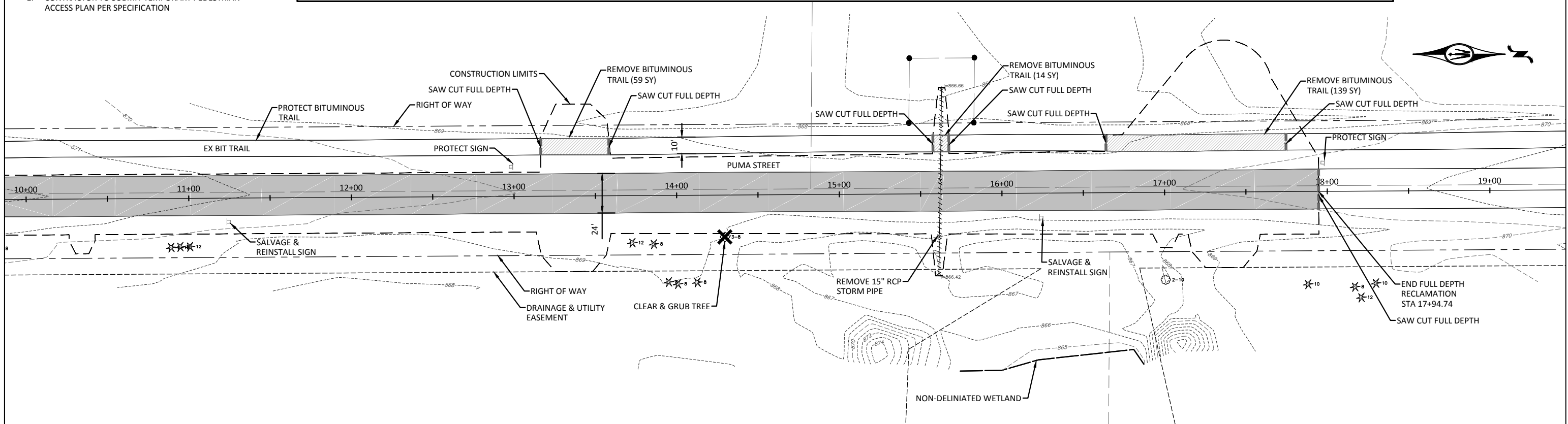
DESIGNED
JWC
 DRAWN
EKD
 CHECKED
KPK

RAMSEY, MINNESOTA
 2017 PUMA STREET UTILITY IMPROVEMENTS
 TABULATIONS



LEGEND			
	FULL DEPTH RECLAMATION (4")	●	MONUMENT FOUND
	REMOVE CONCRETE PAVEMENT	⊂	ANCHOR
	REMOVE BITUMINOUS PAVEMENT	▷	APRON
	SAWCUT BITUMINOUS PAVEMENT (INCIDENTAL)	⊞ CP	COMMUNICATION PEDESTAL
	REMOVE STORM PIPE	⊙	HYDRANT
	CLEAR & GRUB TREE	⊕	POST
		⊙	SANITARY MANHOLE
		⊞	TRAFFIC SIGN
		⊗	DECIDUOUS TREE
		⊗*	CONIFER TREE
		⊗	BUSH
		⊗	TREE STUMP
		⊗	UTILITY POLE
		⊗	WATER VALVE
		— CU —	UNDERGROUND COMMUNICATIONS LINE
		— OU —	OVERHEAD UTILITY LINE
		— W —	WATER SYSTEM
		— S —	STORM SEWER
		— SS —	SANITARY SEWER
		---	INTERMEDIATE CONTOURS
		---	INDEX CONTOURS
		---	EASEMENT LINE
		---	PROPERTY / LOT LINE
		---	ROAD RIGHT-OF-WAY LINE
		---	CONSTRUCTION LIMIT LINE

NOTES:
 1. CONTRACTOR TO SUBMIT TEMPORARY PEDESTRIAN ACCESS PLAN PER SPECIFICATION



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REV	ISSUED FOR	DATE

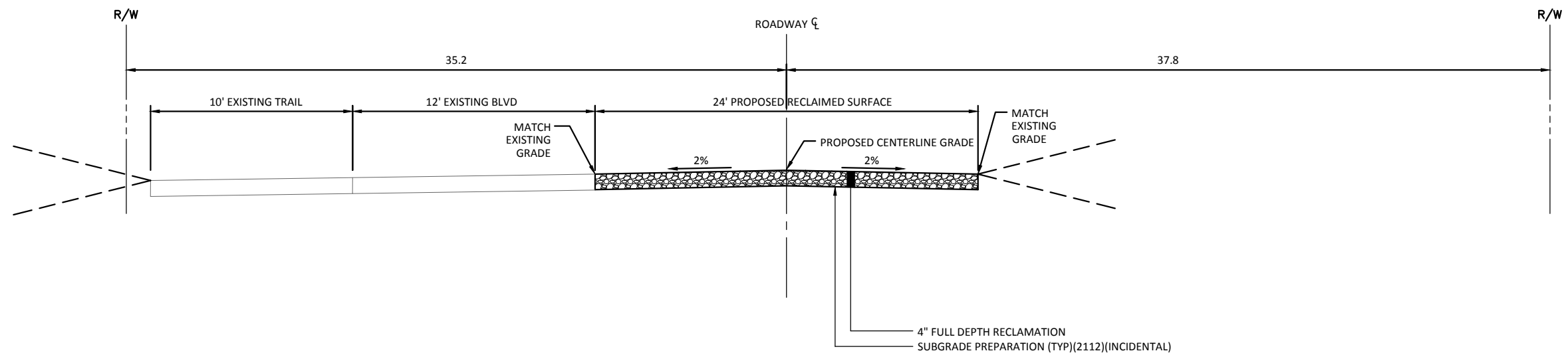
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Kevin P. Kielb
 KEVIN P. KIELB
 LIC. NO. 23211 DATE 09/20/2017

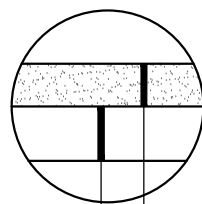
DESIGNED: JWC
 DRAWN: EKD
 CHECKED: KPK

RAMSEY, MINNESOTA
 2017 PUMA STREET UTILITY IMPROVEMENTS
 PUMA STREET - EXISTING CONDITIONS & REMOVALS

SHEET
 C0.01

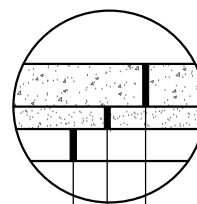


STREET TYPICAL SECTION - PUMA STREET NW
NOT TO SCALE



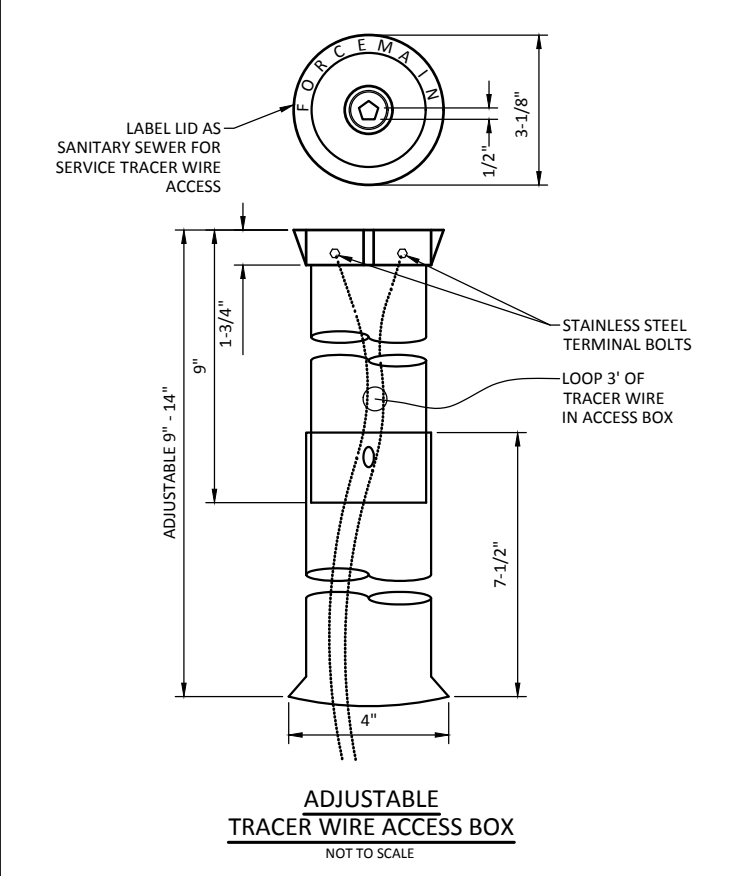
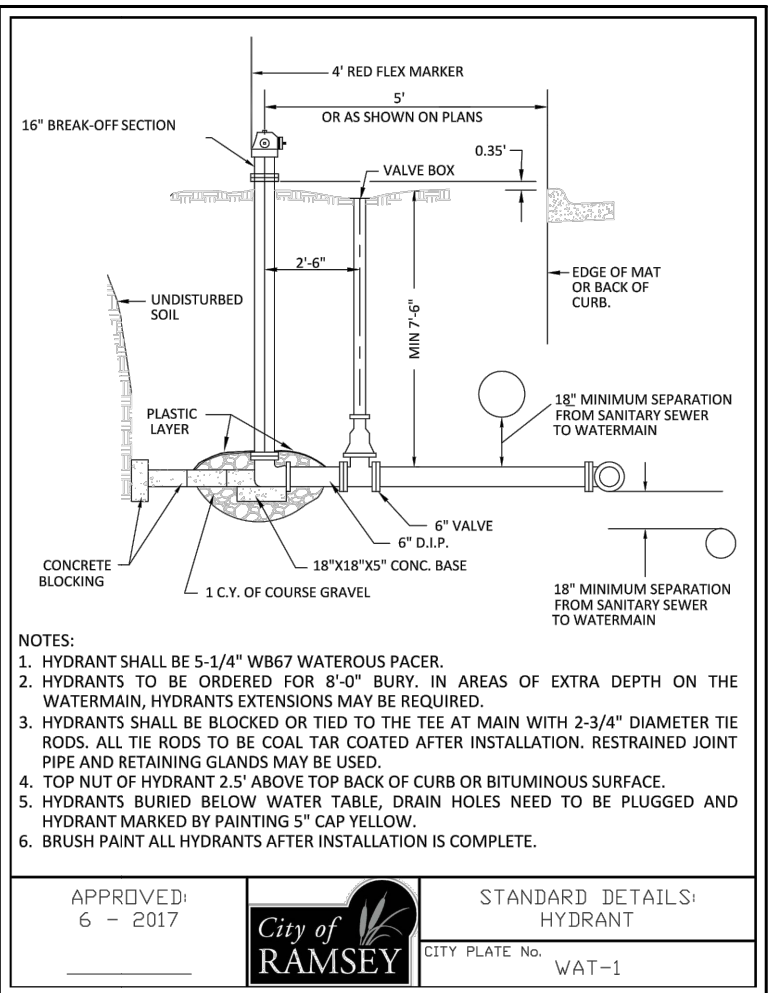
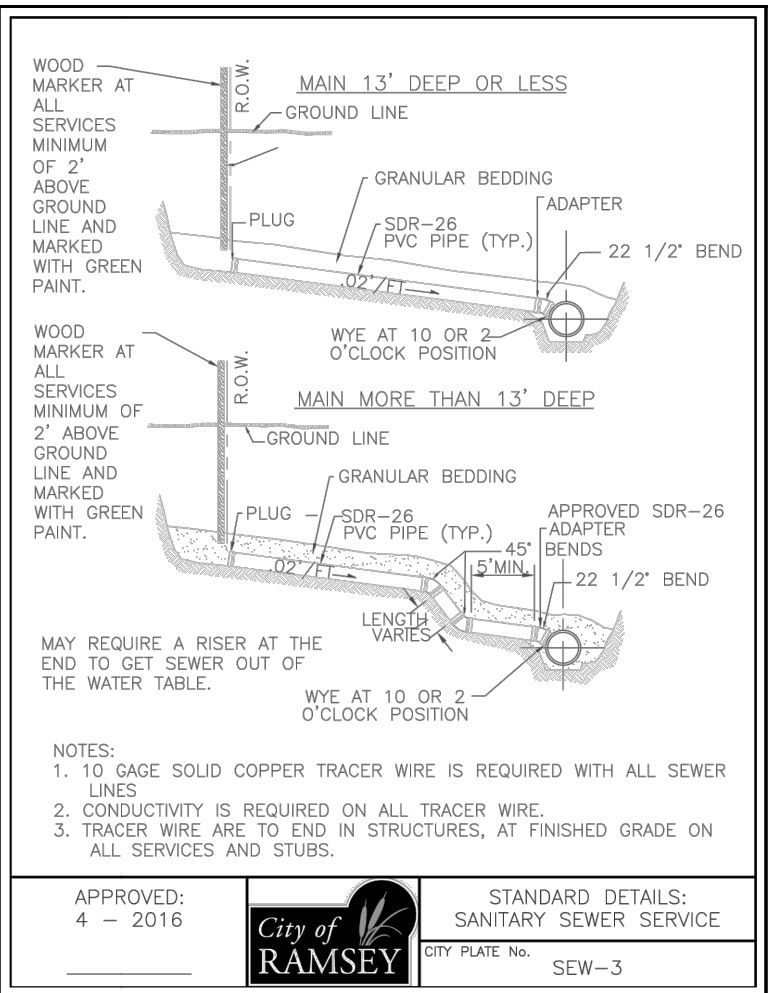
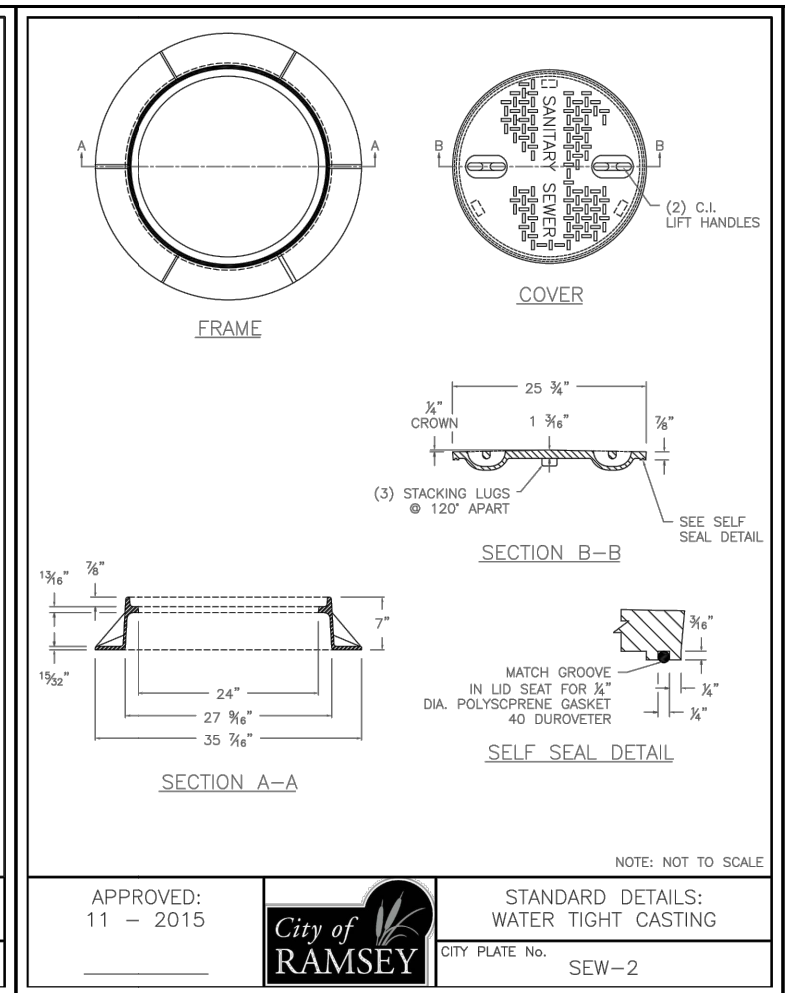
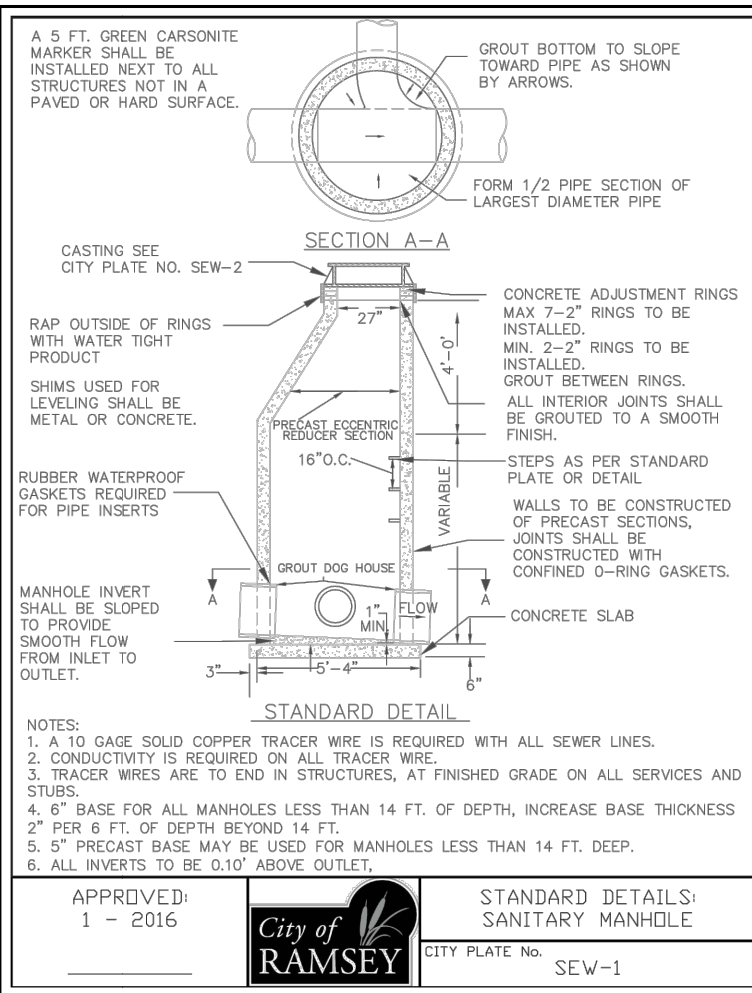
8" AGGREGATE SURFACING CLASS 5 (2118)
SUBGRADE PREPARATION (2112) (INCIDENTAL)

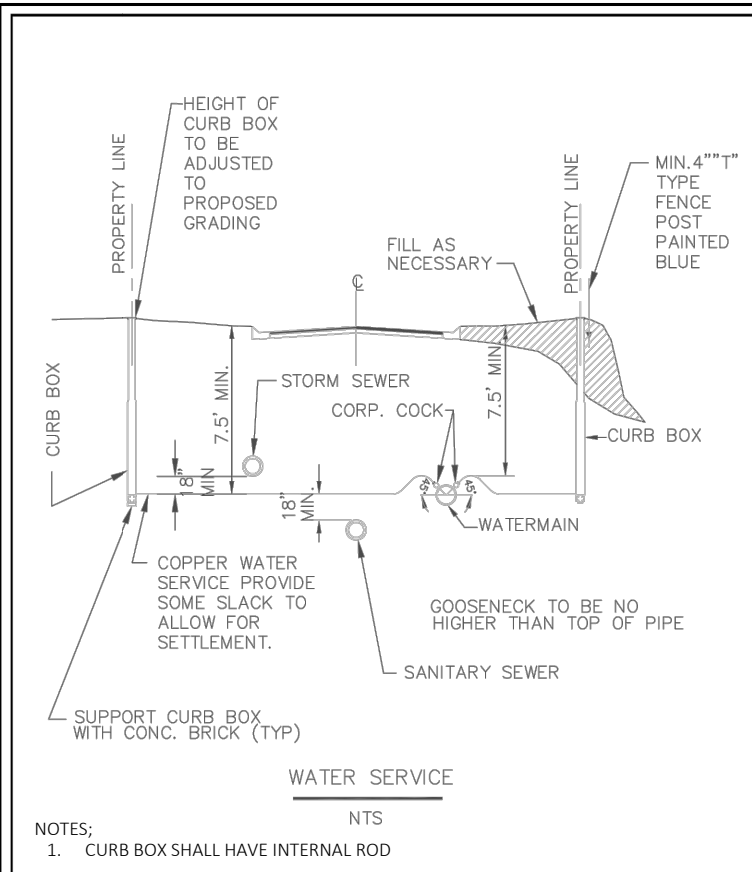
AGGREGATE SURFACING CLASS 5
NOT TO SCALE




6" CONCRETE PAVEMENT (2531) (INCIDENTAL)
4" AGGREGATE BASE, CL 5 MOD (2211) (INCIDENTAL)
SUBGRADE PREPARATION (2112) (INCIDENTAL)

CONCRETE PAVEMENT (LIFT STATION)
NOT TO SCALE



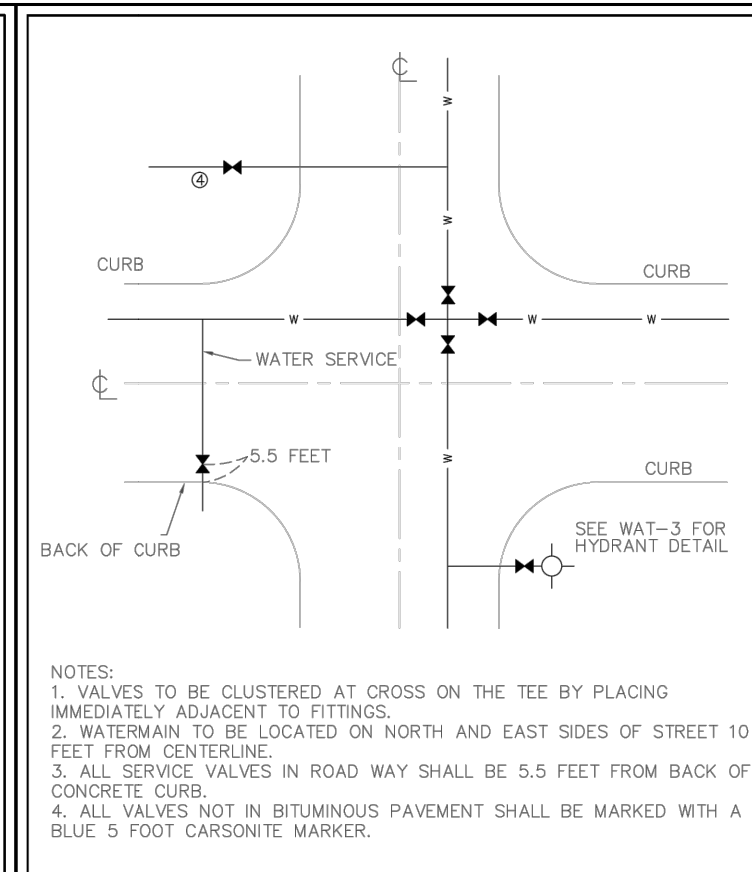


APPROVED: 4 - 2016




STANDARD DETAILS: WATER SERVICE

CITY PLATE No. WAT-2

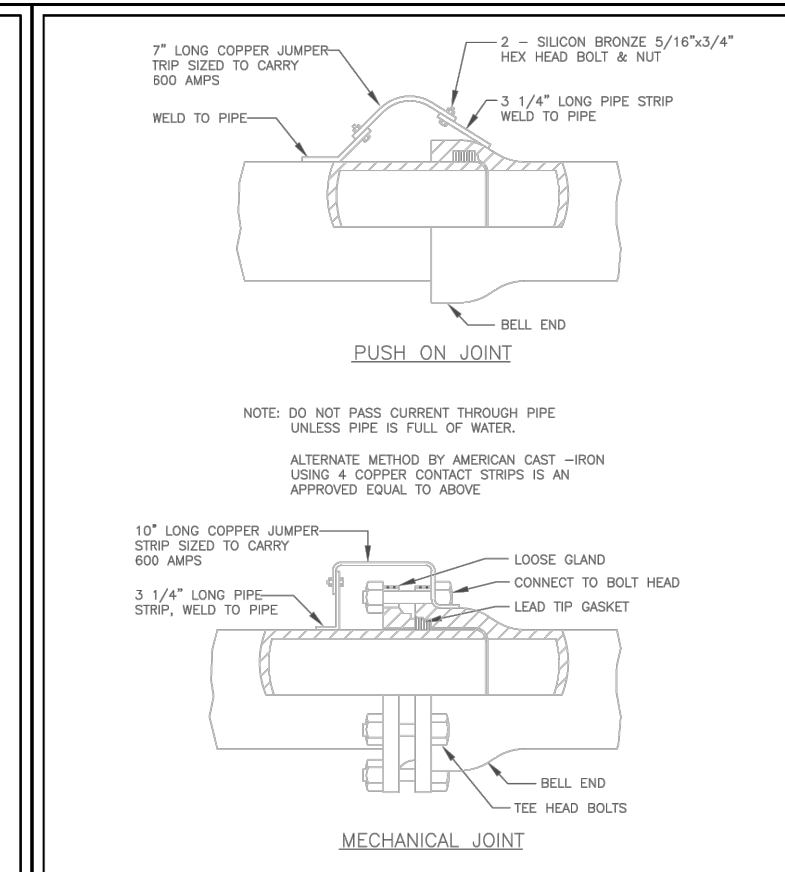


APPROVED: 4 - 2016




STANDARD DETAILS: WATERMAIN VALVE LOCATION

CITY PLATE No. WAT-3

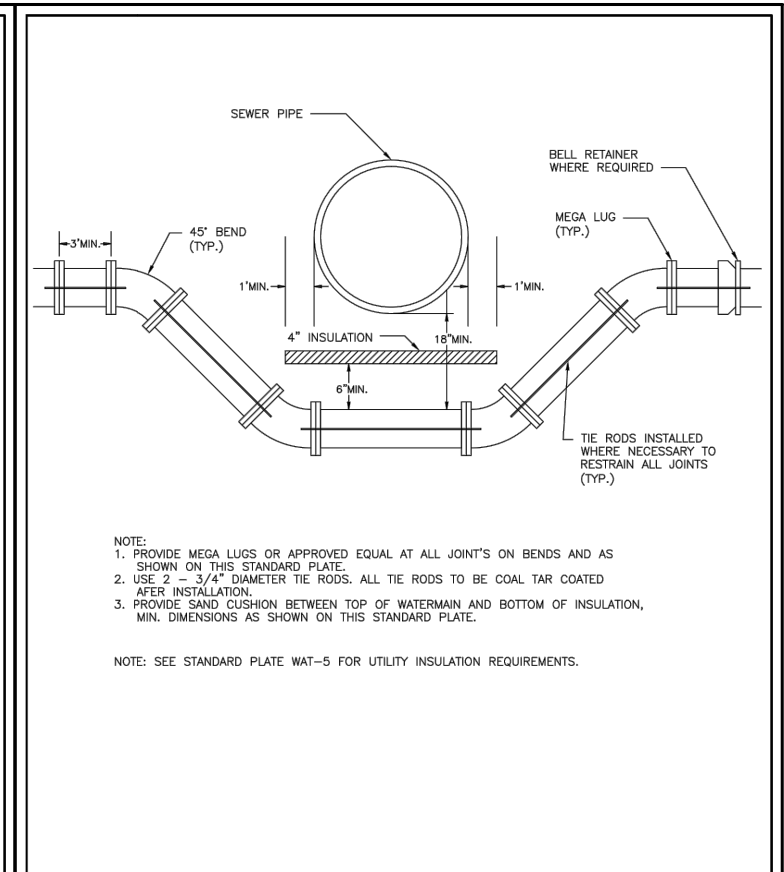


APPROVED: 1 - 2016




STANDARD DETAILS: JOINT CONNECTION

CITY PLATE No. WAT-4



APPROVED: 6 - 2015



STANDARD DETAILS: WATERMAIN LOWERING

CITY PLATE No. WAT-7

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

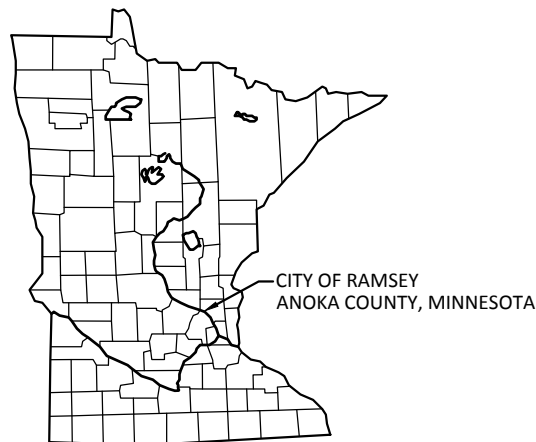
2017 PUMA STREET TRUNK UTILITY IMPROVEMENTS

CITY OF RAMSEY
ANOKA COUNTY, MINNESOTA

UNIVERSITY OF MINNESOTA

JASON COOK

Design of Construction SWPPP (May 31, 2020)



LEGEND	
	PROJECT BOUNDARY
	IMPAIRED, SPECIAL OR PROTECTED WATERS
	PROJECT LOCATION

PROJECT AREAS:

Total Project Size (disturbed area) =	1.9	ACRES
Existing area of impervious surface =	1	ACRES
Post construction area of impervious surface =	1	ACRES
Total new impervious surface area created =	0	ACRES

Planned Construction Start Date:	09/18/2017
Estimated Construction Completion Date:	11/30/2018

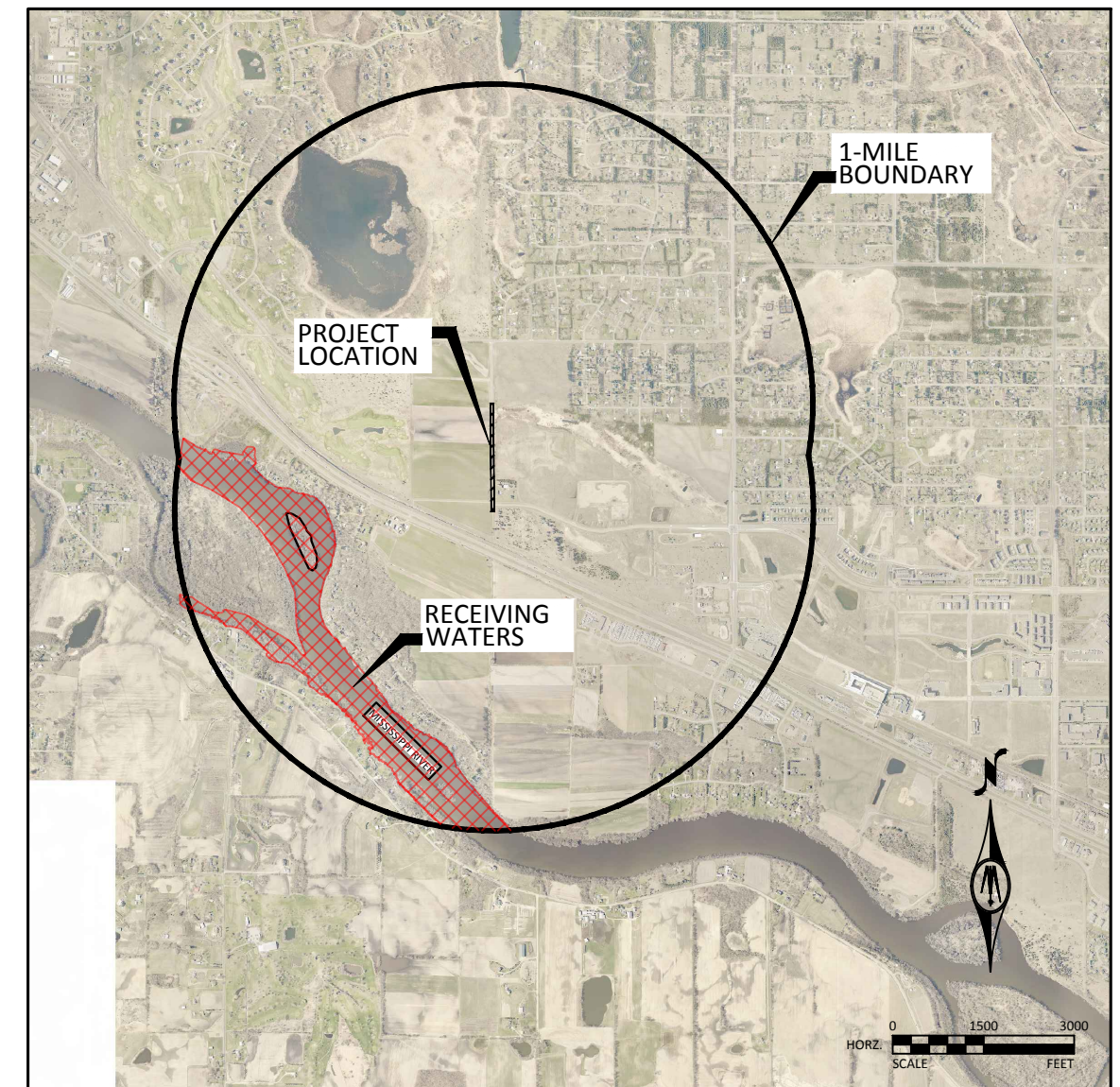
PERMANENT STORMWATER MANAGEMENT SYSTEM:
Type of storm water management used if more than 1 acre of new impervious surface is created:

<input type="checkbox"/>	Wet Sedimentation Basin
<input type="checkbox"/>	Infiltration/Filtration
<input type="checkbox"/>	Regional Pond
<input checked="" type="checkbox"/>	Permanent Storm Water Management Not Required

PROJECT LOCATION:

COUNTY	TOWNSHIP	RANGE	SECTION	LATITUDE	LONGITUDE
ANOKA	T32N	R25W	S29	45.2335620	-93.4804244

BMP SUMMARY	QUANTITY	UNIT
SEDIMENT CONTROL: SILT FENCE	3750	LIN FT
SEDIMENT CONTROL LOG	150	LIN FT
STABILIZED CONSTRUCTION EXIT	2	LUMP SUM
SEEDING (MIX 25-121, FERT TYPE 3 (22-5-10), STRAW MULCH TYPE 1)	1.6	ACRE



RESPONSIBLE PARTIES:

The Contractor and Owner must apply for coverage under the MPCA's General Storm Water Permit for Construction Activity as required by the National Pollutant Discharge Elimination System (NPDES) Phase II program. Coverage under the permit will begin automatically 7 calendar days after the electronic submittal date or after the postmarked date of a complete application. [Longer time frames apply to sites that disturb areas greater than 50 acres.]

The Contractor shall provide one or more trained Construction SWPPP Manager(s) knowledgeable and experienced in the application of erosion prevention and sediment control BMPs that will oversee the implementation of the SWPPP, and the installation, inspection and maintenance of the erosion prevention and sediment control BMPs. A Construction SWPPP Manager must be available for an on-site inspection within 72 hours upon request by the MPCA.

The Contractor shall provide one or more trained BMP Installer(s). The BMP Installer will perform and/or supervise the installation, maintenance and repair of BMPs. At least one individual on project must be trained in these job duties.

	COMPANY	CONTACT PERSON	PHONE
OWNER:	City of Ramsey	Bruce Westby	763-433-9825
SWPPP DESIGNER:	Bolton & Menk, Inc.	Jason Cook, P.E.	763-433-2851
CONTRACTOR:	TBD		
CONSTRUCTION SWPPP MANAGER:	TBD		
PARTY RESPONSIBLE FOR LONG TERM O&M:	City of Ramsey	Bruce Westby	763-433-9825

The SWPPP Designer and Construction SWPPP Manager must have appropriate training. Documentation showing training commensurate with the job duties and responsibilities is required to be included in the SWPPP prior to any work beginning on the site. Training documentation for the SWPPP Designer is included on this sheet. The Contractor shall attach training documentation to this SWPPP for the Construction SWPPP Manager prior to the start of construction. This information shall be kept up to date until the project NOT is filed.

ADDITIONAL COMPENSATION

Payment for all work associated with Erosion and Sediment Control shall be as described in the Project Manual. Unless otherwise authorized by the Owner no additional payment shall be made for any work required to administer and maintain the site erosion and sediment control in compliance with the Minnesota Pollution Control Agency (MPCA) - General Storm Water Permit for Construction Activity (MN R100001) including but not limited to inspection, maintenance, and removal of BMPs or addition of BMPs to accommodate Contractor phasing.

SPECIAL ENVIRONMENTAL CONSIDERATIONS:

1)	Was an environmental review required for this project or any part of a common plan of development or sale that includes all or any portion of this project?	NO
2)	Does any portion of the site have the potential to affect threatened or endangered species or their critical habitat?	NO
3)	Does any portion of this site discharge to a Calcareous fen.	NO
4)	Will any portion of the site potentially affect properties listed on the National Register of Historic Places or a known or discovered archeological site?	NO
5)	Have any Karst features have been identified in the project vicinity?	NO
6)	Is compliance with temporary or permanent stormwater management design requirements infeasible for this project?	NO
7)	Has the MN DNR promulgated "work in water restrictions" for any Public Water this site discharges to during fish spawning?	NO

GENERAL STORMWATER DISCHARGE REQUIREMENTS

All requirements listed in Part III of the Permit for the design of the permanent stormwater management system and discharge have been included in the preparation of this SWPPP. These include but are not limited to:

- The expected amount, frequency, intensity, and duration of precipitation.
- The nature of stormwater runoff and run-on at the site
- Peak flow rates and stormwater volumes to minimize erosion at outlets and downstream channel and stream bank erosion.
- The range of soil particle sizes expected to be present on the site.

DESCRIPTION OF CONSTRUCTION ACTIVITIES AND STORMWATER MANAGEMENT:

Construction activities include: Sanitary and Water installation, Temporary erosion and sediment control.

Trunk Watermain and Trunk Sanitary Sewer networks are being added to the Puma Street corridor. The roadway is to be restored to a gravel surface in preparation of a future project where the roadway will be reconstructed entirely.

Existing drainage patterns and discharges are proposed to remain in pre-construction conditions. All modifications to this SWPPP shall be approved by the Engineer and remain on-site during construction.

DOCUMENT RETENTION

The following documentation will be retained for a period of not less than 3-years from the date of submittal of the NOT in compliance with Part III.E of the Permit.

- The final SWPPP
- Copies of all stormwater related permits required for the project
- Records of all inspection and maintenance conducted during construction
- Copies of all permanent operation and maintenance agreements; including all right-of-way, contracts, covenants and other binding requirements regarding perpetual maintenance, and
- All required calculations for design of the temporary and permanent BMPs.

RECEIVING WATERS:

Receiving waters, including surface water, wetlands, Public Waters, and stormwater ponds, are identified on the USGS 7.5 min quad map within one mile of the project boundary. Receiving waters that are impaired, the impairment, and WLA are listed as follows. All specific BMPs relative to construction activities listed in this permit for special and impaired waters have been incorporated into this plan. All specific BMPs listed in approved TMDLs and those BMPs listed for construction related waste load allocations have also been incorporated.

NAME OF WATER BODY	TYPE (ditch, pond, wetland, lake, etc.)	Appendix A Special Water?	Flows to Impaired Water Within 1 Mile?	USEPA Approved TMDL?
MISSISSIPPI RIVER	RIVER	YES	YES, NOT FOR CONST	YES, NOT FOR CONST
Impairments: MERCURY				

IMPLEMENTATION SCHEDULE AND PHASING:

- Submit SWPPP Updates to Engineer. Submittal shall include any requested changes to the SWPPP, including but not limited to: Trained Personnel, Locations for Stockpiles, Types and Locations of Erosion & Sediment Control. Failure to submit updates shall be considered acceptance of the SWPPP as designed with no changes.
- Install perimeter sediment control, inlet protection, and construction exit.
- Add additional temporary BMPs as necessary during construction based on inspection reports and construction activities.
- Stabilize site.
- Ensure final stabilization measures are complete.
- Submit Notice of Termination (NOT) to MPCA within 30 days of final stabilization. The City must be contacted and grant approval prior to filing the Notice of Termination.

Information contained in this SWPPP narrative sheet summarizes requirements of the GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM PROGRAM - Permit No: MN R100001 as they apply to this project. All provisions of the permit including those not specifically cited herein shall apply to this project. The Contractor is responsible to be familiar with and comply with all conditions of the permit. The full text of the permit is available at: <http://www.pca.state.mn.us/index.php/water/water-types-and-programs/stormwater/construction-stormwater/mpca-to-re-issue-construction-stormwater-general-permit.html>

SWPPP AMENDMENTS

Permittee must amend SWPPP as necessary to include additional requirements to correct problems identified or address the following situations.

1. There is a change in design, construction, operation, maintenance, weather or seasonal conditions.
2. Inspections or investigations by site owner or operators, USEPA or MPCA officials determine the SWPPP is not minimizing discharge of pollutants to surface waters or underground waters or discharges are causing water quality standard exceedances.
3. The SWPPP is not achieving the objectives of minimizing pollutants in stormwater discharges associated with construction activity, or the SWPPP is not consistent with the terms and conditions of the permit.
4. The MPCA determines that the project's stormwater discharges may cause, have reasonable potential to cause, or contribute to non-attainment of any applicable water quality standard, or the SWPPP does not incorporate the applicable requirements of the permit.

EROSION PREVENTION PRACTICES

The location of areas not to be disturbed must be delineated on the project before site work begins.

Disturbance on steep slopes (>33.3%) shall be minimized. Where required, techniques such as phasing and stabilizing practices designed for steep slopes shall be used.

All exposed soils must be stabilized as soon as possible, but in no case later than 7 days after the construction activity has temporarily or permanently ceased.

For public waters that have been promulgated "work in water restrictions" during fish spawning time frames, all exposed soil areas that are within 200 feet of the water's edge, and drain to these waters must complete stabilization within 24-hours during the time period.

Stormwater conveyance channels shall be routed around unstabilized areas. Erosion controls and velocity dissipation devices shall be used at outlets within and along the length of any constructed conveyance channel.

The normal wetted perimeter of all ditches or swales, including storm water management pond slopes, that drain waters from the site must be stabilized within 200' of any property edge or discharge point, including storm sewer inlets, within 24 hours of connection.

Stabilization of the remaining portions of any temporary or permanent ditches or swales within 7 calendar days after connecting to a surface water or property edge and construction in that portion of the ditch has temporary or permanently ceased.

Temporary or permanent ditches or swales used as sediment containment during construction do not need to be stabilized during temporary period of use and shall be stabilized within 24 hours after no longer used as sediment containment.

Mulch, hydromulch, tackifier, or similar practice shall not be used in any portion of a temporary or permanent drainage ditch. Refer to erosion and sediment control plan for temporary and permanent stabilization measures for ditches and swales.

Stormwater discharges shall be directed to vegetated areas where feasible. Velocity dissipation devices shall be used at discharge point.

Phased construction will be used to extent practical or as indicated in the plans to minimize exposed soils.

Rapid stabilization shall be of type and quantity indicated in the project specifications. Additional rapid stabilization may be necessary to minimize erosion throughout the duration of the project. Type and quantity shall be determined by the engineer or inspector prior to installation. In extreme cases, the contractor shall use any available rapid stabilization to immediately mitigate erosion, then further remedy the situation with approval by owner or engineer.

SEDIMENT CONTROL PRACTICES

Practices must be established on all down gradient perimeters and be located up gradient of any buffer zones. Perimeter controls must be in place before up gradient land- disturbing activities begin and shall remain in place until final stabilization.

All sediment controls practices shall be re-installed if they have been adjusted or removed to accommodate short-term activities and replaced immediately after the short term activity has ceased. Short term activities shall be performed as quickly as possible. Sediment control practices shall be re-installed even before the next precipitation event if the activity is not complete.

All storm drains must be protected by appropriate BMPs during construction until all sources to the inlet have been stabilized. Inlet protection may be removed for specific safety concerns identified by the Permittee or jurisdictional

authority. The removal shall be documented in the SWPPP and retained on site. Temporary stockpiles must have silt fence or other effective sediment controls and shall not be placed in surface waters or natural buffers.

Vehicle tracking BMPs shall be installed to minimize track out of sediment from the construction site. Method shall be approved by engineer prior to commencement of construction activities. Street sweeping shall be used if vehicle tracking BMPs are not adequate to prevent sediment from being tracked onto the street.

Soil compaction shall be minimized and topsoil shall be preserved, unless infeasible or if construction activities dictate soil compaction or topsoil stripping.

A 50 foot natural buffer, or redundant BMPs (where a buffer is infeasible) must be maintained when a surface water is located within 50 feet of disturbance activities and site runoff flows to the surface water.

If polymers, flocculants, or other sedimentation treatment chemicals are used on site, 1) conventional erosion and sediment controls shall be sowed prior to chemical placement, 2) chemicals shall be chosen based on soil types, and expected turbidity, pH, and flow rate of stormwater flowing into the treatment system, and 3) chemicals shall be used with accepted engineering practices and dosing specifications.

TEMPORARY SEDIMENTATION BASINS

The temporary sedimentation basin shall be constructed and made operational prior to disturbance of 10 or more acres draining to a common location.

Temporary sedimentation basins are required prior to runoff leaving the construction site or entering surface waters when 10 or more acres of disturbed soils drain to a common location. The basin must provide 3,600 cubic feet of "storage below the outlet per acre drained. If hydraulic calculations are available, the temporary sedimentation basin must provide a storage volume equivalent to the 2-year, 24-hour storm, but in no case less than 1800 cubic feet per acre drained. The temporary sedimentation basin must be constructed and made operational concurrent with the start of soil disturbance up gradient of the pond. The temporary sedimentation basin shall be designed to prevent short circuiting. The outfall shall be designed to remove floatable debris, allow for complete drawdown of the pond for maintenance activities, and have energy dissipation. The emergency spillway shall be stabilized.

Temporary sedimentation basins shall be situated outside of surface waters and any required buffer zone, and must be designed to avoid draining wetlands, unless the impact is in compliance with the requirements of this permit.

Excessive sediment-laden water that is not properly filtered will not be permitted to discharge from site.

DEWATERING AND BASIN DRAINING

Turbid or sediment-laden waters related to dewatering or basin draining shall be discharged to a temporary or permanent sedimentation basin on the project site unless infeasible. The temporary or permanent basin may discharge to surface waters if the basin water has been visually checked to ensure adequate treatment has been obtained in the basin and that the nuisance conditions will not result from the discharge. Discharge points shall be adequately protected from erosion and proper velocity dissipation provided.

All water from dewatering or basin-draining activities must be discharged in a manner that does not cause nuisance conditions, erosion in the receiving channels or on down slope properties, or inundation in wetlands causing significant adverse impacts to the wetland.

If filters with backwash waters are used, the backwash water shall be hauled away for disposal, returned to the beginning of the treatment process, or incorporated into site in a manner that does not cause erosion. Backwash water may be discharged to sanitary sewer if permission is granted by the sanitary sewer authority.

POLLUTION PREVENTION

Building products that have the potential to leach pollutants must be under cover to prevent discharge or protected by an effective means designed to minimize contact with stormwater.

Pesticides, herbicides, insecticides, fertilizers, treatment chemicals, and landscape materials must be under cover.

Hazardous materials and toxic waste must be properly stored in sealed containers to prevent spills, leaks or other discharge. Restricted access storage areas must be provided to prevent vandalism.

Solid waste must be stored, collected and disposed of in compliance with Minn. R. CH 7035.

Portable toilets must be 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.

Discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded shall be prevented using drip pans or absorbents. Supplies shall be available at all times to clean up discharged materials and that an appropriate disposal method must be available for recovered spilled materials.

Exterior vehicle or equipment washing on the project site shall be limited to a defined area of the site. Runoff from the washing area shall be contained in a sediment basin or other similarly effective controls and waste from the washing activity must be properly disposed of. No engine degreasing is allowed on site. Effective containment for all liquid and solid wastes generated by concrete and other washout operations related to construction activity shall be effectively contained. Liquid and solid washout waste shall not contact the ground, and containment must be designed so that it does not result in runoff from the washout operations or areas. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

INFESTED WATERS:

MN DNR permits are not valid for work in waters that are designated as infested waters unless accompanied by an Infested Waters Permit or written notification has been obtained from MN DNR stating that such permit is not required. There is no exception for pre-existing permits. If a MN DNR Permit has been issued for the project and the

water is later designated as infested, the Contractor shall halt all work covered by the MN DNR Permit until until such time as an Infested Waters Permit is obtained or that written notification is obtained stating that such permit is not required.

INSPECTION & MAINTENANCE

A trained person shall routinely inspect the entire construction site at least once every 7 days during active construction and within 24-hours after a rainfall event greater than 0.5 inches in 24 hours. Following an inspection that occurs within 24-hours after a rainfall event, the next inspection must be conducted within 7 days.

All inspections and maintenance conducted during construction must be recorded within 24 hours in writing and records must be retained with the SWPPP. Inspection report forms are available in the Project Specifications. Inspection report forms other than those provided shall be approved by the engineer. All inspection logs must be submitted to the City. Inspection notes after a rainfall event and weekly notes must be emailed to the City Inspector. The complete history must be submitted prior to finalizing the project.

Where parts of the project site have permanent cover, but work remains on other parts of the site, inspections may be reduced on these areas to once per month.

Where the site has permanent cover on all exposed areas and no construction activity is occurring anywhere on site, the site must be inspected during non-frozen conditions at least once per month for 12 months. Following the 12th month of permanent cover and no construction activity, inspections shall be terminated until construction activity resumes or notification from MPCA has been issued that erosion has been detected at the site.

During frozen ground conditions, inspections may be suspended and shall resume within 24 hours after runoff occurs or 24 hours prior to resuming construction activity, whichever is first.

Inspection and maintenance shall resume until another Permittee has obtained coverage under this Permit or the project has undergone Final Stabilization, and an NOT has been submitted.

All erosion prevention and sediment control BMPs shall be inspected to ensure integrity and effectiveness during all routine and post-rainfall inspections. All non-functioning BMPs must be repaired, replaced, or supplemented with functional BMPs by the end of the next business day after discovery, or as soon as field conditions allow access.

All perimeter control devices must be repaired, replaced, or supplemented when they become non-functional or the sediment reaches one-half (1/2) of the height of the device. These repairs must be made by the end of the next business day after discovery, or as soon as field conditions allow.

Temporary and permanent sediment basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches one-half (1/2) the storage volume. Drainage and sediment removal must be completed within 72 hours of discovery, or as soon as field conditions allow.

Surface waters, including drainage ditches and conveyance systems, must be inspected for erosion and sediment deposition during each inspection. All deltas and sediment deposited in drainage ways, catch basins, and other drainage systems shall be removed. The removal and stabilization must take place within seven (7) days of discovery unless precluded by legal, regulatory, or physical access constraints. The Permittee is responsible for obtaining all applicable permits prior to conducting any work in surface waters.

Construction site vehicle exit locations must be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment must be removed from all paved surfaces both on and off within 3-hours after notification by the City that sweeping is required.

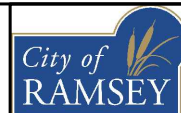
Streets and other areas adjacent to the project must be inspected for evidence of off-site accumulations of sediment. If sediment is present, it must be removed in a manner and at a sufficient frequency to minimize off-site impacts.

All infiltration areas must be inspected to ensure that no sediment from ongoing construction activity is reaching the infiltration area and that equipment is not being driven across the infiltration area.

FINAL STABILIZATION

Final Stabilization is not complete until all of the following requirements have been met:

1. All soil disturbing activities at the site have been completed and all soils are stabilized by a uniform perennial vegetative cover with a density of 70% of its expected final growth density over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions.
2. Permanent stormwater management system is constructed, meets all requirements of the Permit, and is operating as designed. Temporary or permanent sedimentation basins that are to be used as permanent water quality management basins have been cleaned of any accumulated sediment. All sediment has been removed from conveyance systems, and ditches are stabilized with permanent cover.
3. All temporary synthetic and structural erosion prevention and sediment control BMPs have been removed. BMPs designed to decompose on site may be left in place.
4. For residential construction only, individual lots are considered finally stabilized if the structure(s) are finished, temporary erosion protection and down gradient perimeter control has been completed and the residence has been sold to the homeowner. Also, the "Homeowner Fact Sheet" has been provided to the homeowner



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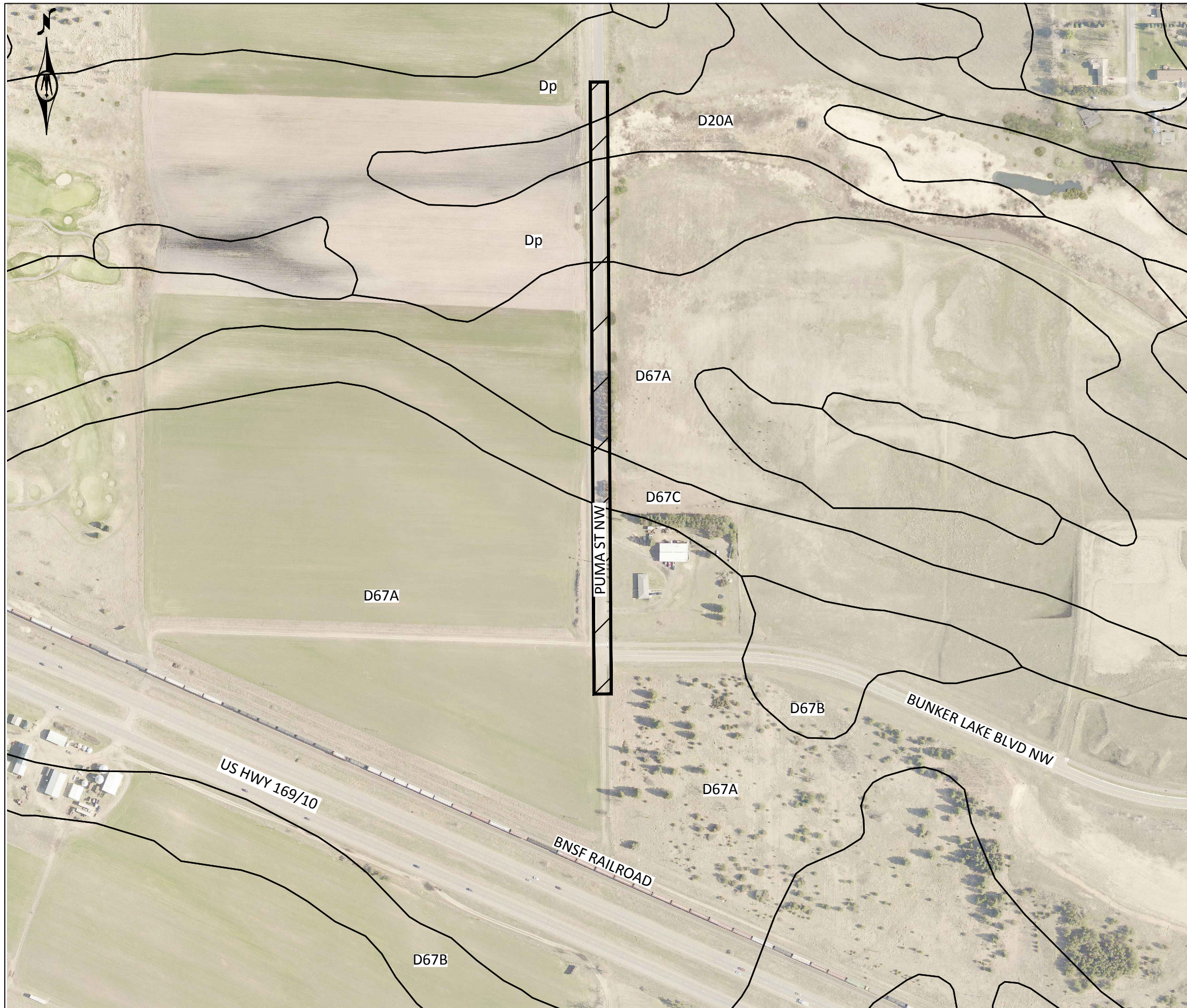
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Kevin P. Kielb
KEVIN P. KIELB
LIC. NO. 23211 DATE 09/20/2017


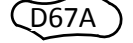
DESIGNED JWC
DRAWN EKD
CHECKED KPK

RAMSEY, MINNESOTA	
2017 PUMA STREET UTILITY IMPROVEMENTS	
SWPPP NARRATIVE	

SHEET
C2.02



LEGEND

-  PROJECT BOUNDARY
-  SOIL TYPE AND BOUNDARY

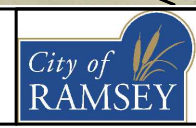
SOIL TYPE SUMMARY

Map Unit Symbol	Soil Name	Hyd. Soil Group	Erodibility
MUSYM	MUNAME	HYDGRP	MUHELCL
D67A	HUBBARD LOAMY SAND, MISSISSIPPI RIVER VALLEY, 0 TO 2 PERCENT SLOPES	A	NHEL
D67B	HUBBARD LOAMY SAND, MISSISSIPPI RIVER VALLEY, 2 TO 6 PERCENT SLOPES	A	NHEL
D67C	HUBBARD LOAMY SAND, MISSISSIPPI RIVER VALLEY, 6 TO 12 PERCENT SLOPES	A	PHL
Dp	DUERM LOAMY SAND, 0 TO 2 PERCENT SLOPES	A	NHEL
D20A	ISAN SANDY LOAM, 0 TO 2 PERCENT SLOPES	A/D	NHEL

NHEL - Not Highly Erodible Land
 PHEL - Potentially Highly Erodible Land
 HEL - Highly Erodible Land

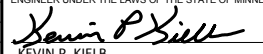
LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	SHEET NO.
SITE MAP	C2.01
DIRECTION OF FLOW	C2.05
FINAL STABILIZATION	C2.05
SOILS	C2.02
EROSION & SEDIMENT CONTROL DETAILS	C2.04
NARRATIVE & NOTES	C2.01 - C2.03



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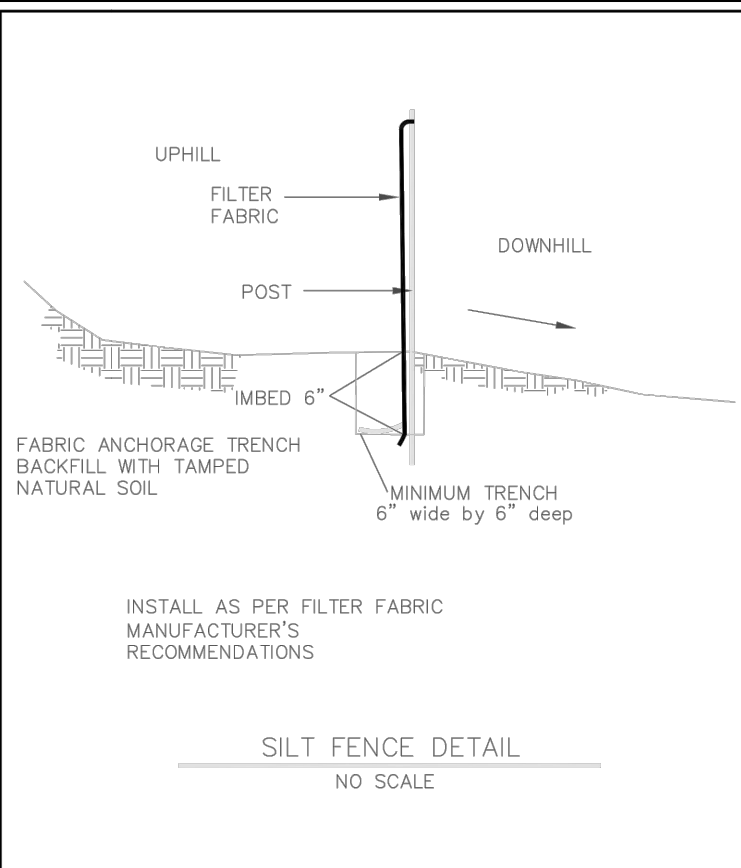
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 KEVIN P. KIELB
 LIC. NO. 23211 DATE 09/20/2017

DESIGNED: JWC
 DRAWN: EKD
 CHECKED: KPK

RAMSEY, MINNESOTA
 2017 PUMA STREET UTILITY IMPROVEMENTS
 SWPPP SOILS MAP

SHEET
C2.03



INSTALL AS PER FILTER FABRIC MANUFACTURER'S RECOMMENDATIONS

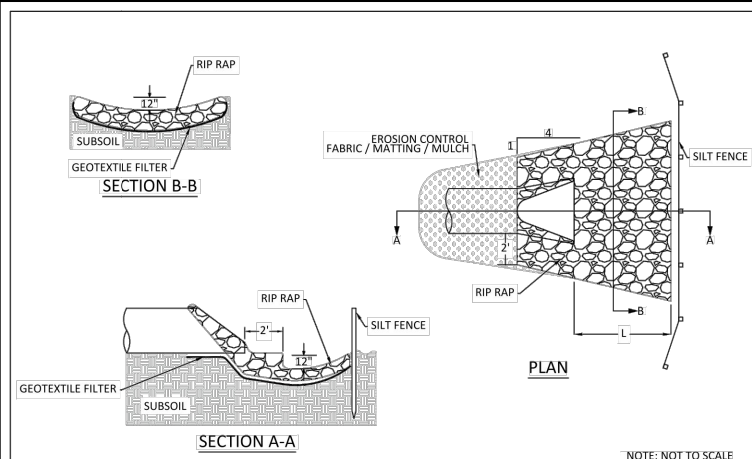
SILT FENCE DETAIL
NO SCALE

APPROVED:
1 - 2016



STANDARD DETAILS:
SILT FENCE

CITY PLATE No. ERO-1



NOTE: NOT TO SCALE

NOTES:

- ON SLOPES 4:1 OR GREATER, ANCHOR OR STRAIGHT DISKED STRAW MULCH, SEEDING NETTING, FABRIC, OR MATTING SUCH AS EXCELSIOR SHALL BE USED TO STABILIZE DISTURBED SOILS. THESE EXPOSED SOILS MUST BE STABILIZED IMMEDIATELY AFTER GRADING OF SOIL IS COMPLETE.
- A SKIRTING OF EROSION CONTROL FABRIC OR MULCH MUST BE USED TO PROTECT OUTLETS AS ILLUSTRATED REGARDLESS OF SLOPE.
- RIP RAP IS CLASS III PLACED 18" THICK.
- FOR PIPE GREATER THAN 48" DIAMETER OR 58" SPAN, QUANTITY OF GEOTEXTILE FABRIC AND RIP RAP WILL BE HANDLED IN A CASE BY CASE MANNER.
- GEOTEXTILE FABRIC SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIP RAP MATERIAL.

RIP RAP AT RCP OUTLETS			
DIA. OF PIPE (IN.)	L (FT.)	GEOTEXTILE FABRIC (SQ. YD)	RIP RAP (CU. YD)
12	8	19.6	4.4
15	8	20.8	4.8
18	10	25.6	6.4
21	10	27.4	7.1
24	12	33.4	9.2
27	12	35.2	9.9
30	14	41.6	12.3
36	16	50.5	15.8
42	18	57.8	18.7
48	20	66.5	22.2

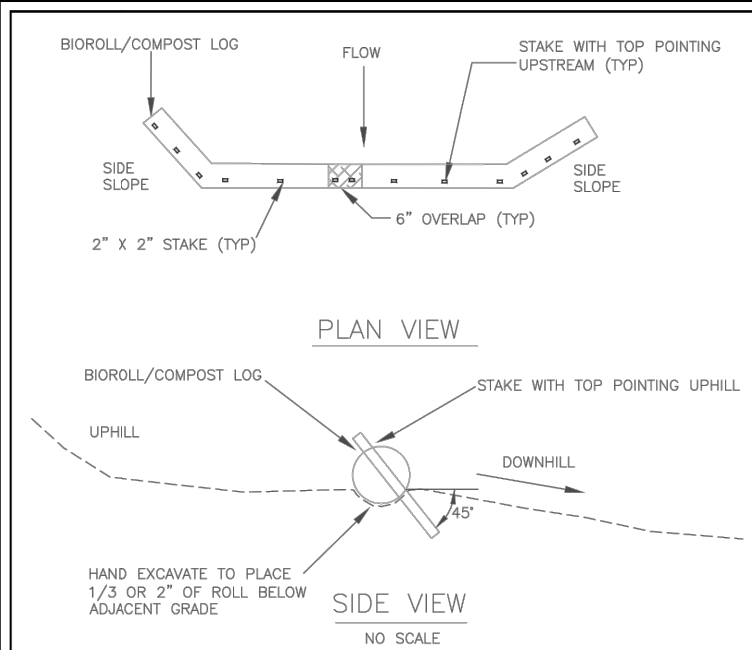
RIP RAP AT RCP-A OUTLETS			
SPAN OF PIPE (IN.)	L (FT.)	GEOTEXTILE FABRIC (SQ. YD)	RIP RAP (CU. YD)
22	10	25.6	6.1
28	12	33.2	8.5
36	14	41.5	11.2
43	16	50.5	14.3
51	18	57.5	16.9
58	20	65.2	19.8

APPROVED:
9 - 2016



STANDARD DETAILS:
RIP-RAP

CITY PLATE No. ERO-3



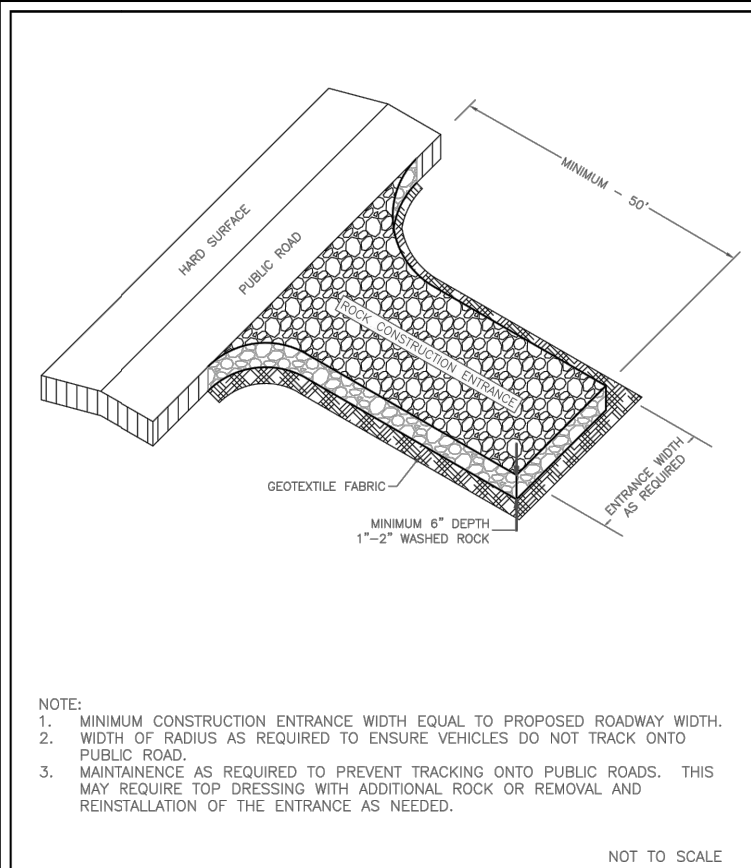
- NOTE:
- STAKE INTO GROUND WITH WOOD STAKES DRIVING STAKE 6" INTO GROUND AND PROTRUDING 2" ABOVE LOG
 - WOOD STAKES ARE A MINIMUM 0.5" X 2" X 16" AND PLACED EVERY 1' UNLESS PRECLUDED BY A ROCK
 - WHEN MORE THAN 1 BIOROLL/COMPOST LOG IS NEEDED, OVERLAP ENDS A MINIMUM OF 6" AND STAKE
 - WOOD STAKES ARE DRIVEN THROUGH BACK HALF OF BIOROLL OR COMPOST LOG AT 45° ANGLE WITH TOP OF STAKE POINTING UPHILL

APPROVED:
3 - 2016



STANDARD DETAILS:
BIO ROLL (COMPOST LOG)

CITY PLATE No. ERO-4



- NOTE:
- MINIMUM CONSTRUCTION ENTRANCE WIDTH EQUAL TO PROPOSED ROADWAY WIDTH.
 - WIDTH OF RADIUS AS REQUIRED TO ENSURE VEHICLES DO NOT TRACK ONTO PUBLIC ROAD.
 - MAINTAINENCE AS REQUIRED TO PREVENT TRACKING ONTO PUBLIC ROADS. THIS MAY REQUIRE TOP DRESSING WITH ADDITIONAL ROCK OR REMOVAL AND REINSTALLATION OF THE ENTRANCE AS NEEDED.

NOT TO SCALE

APPROVED:
1 - 2016



STANDARD DETAILS:
ROCK CONSTRUCTION ENTRANCE

CITY PLATE No. ERO-5



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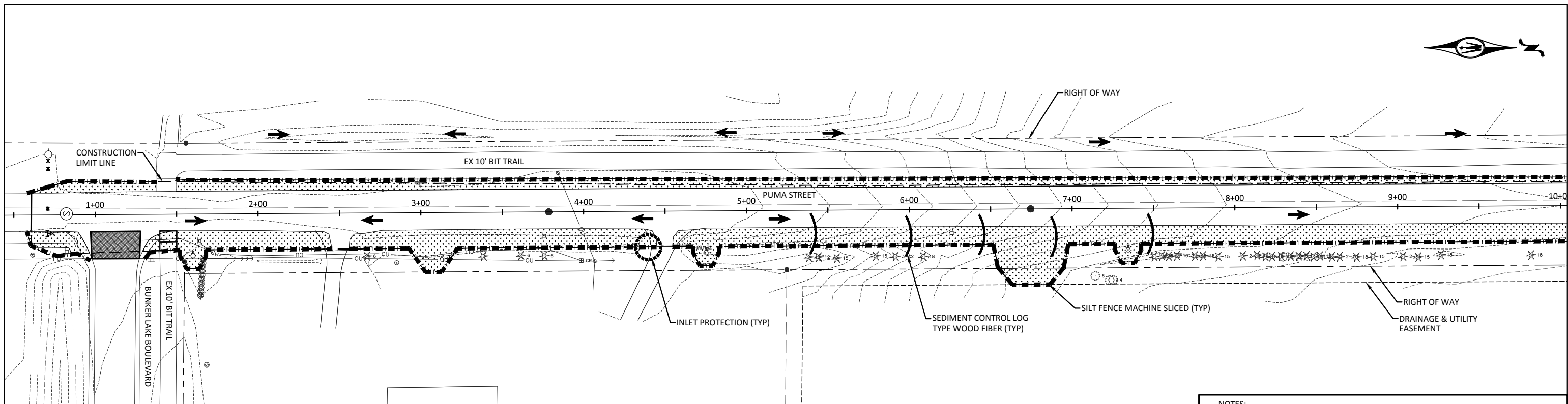
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KEVIN P. KIELB
LIC. NO. 23211 DATE 09/20/2017

DESIGNED JWC
DRAWN EKD
CHECKED KPK

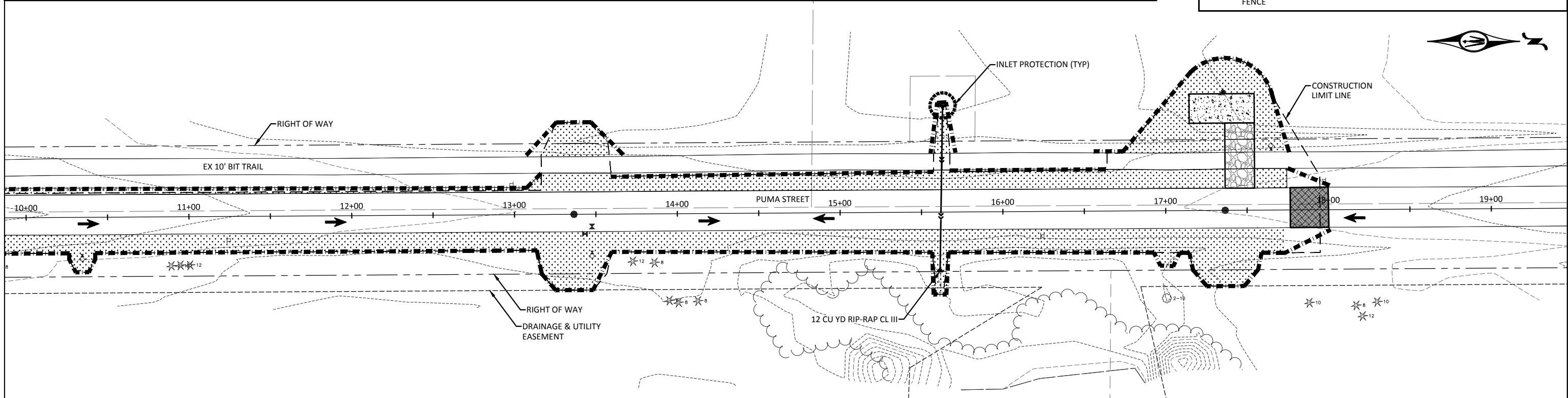
RAMSEY, MINNESOTA
2017 PUMA STREET UTILITY IMPROVEMENTS
EROSION CONTROL DETAILS

SHEET
C2.04



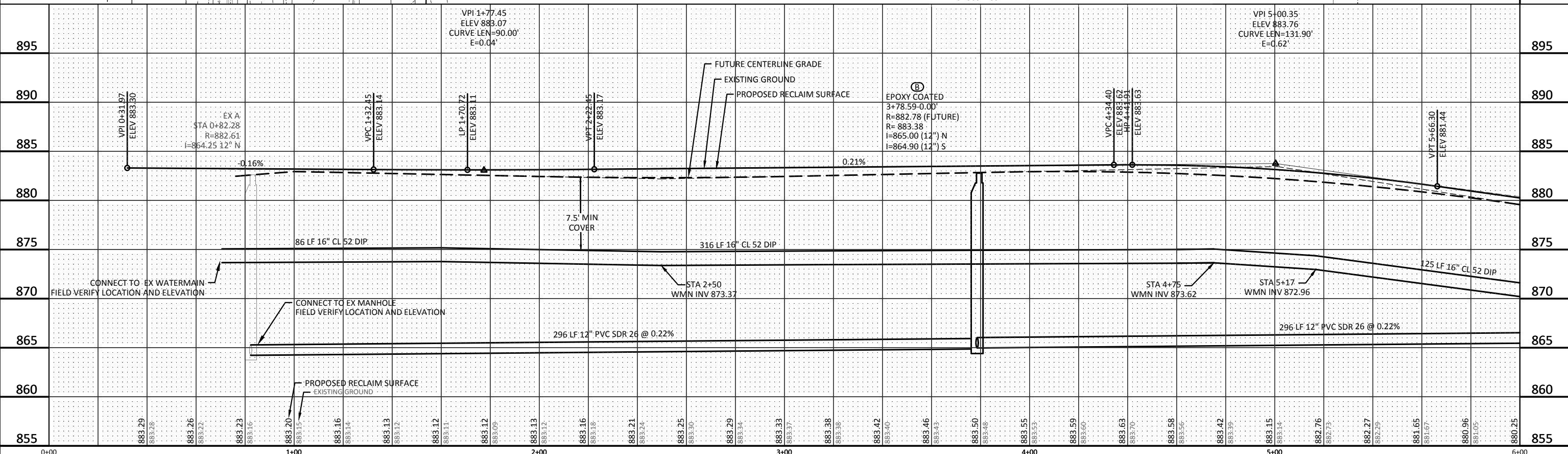
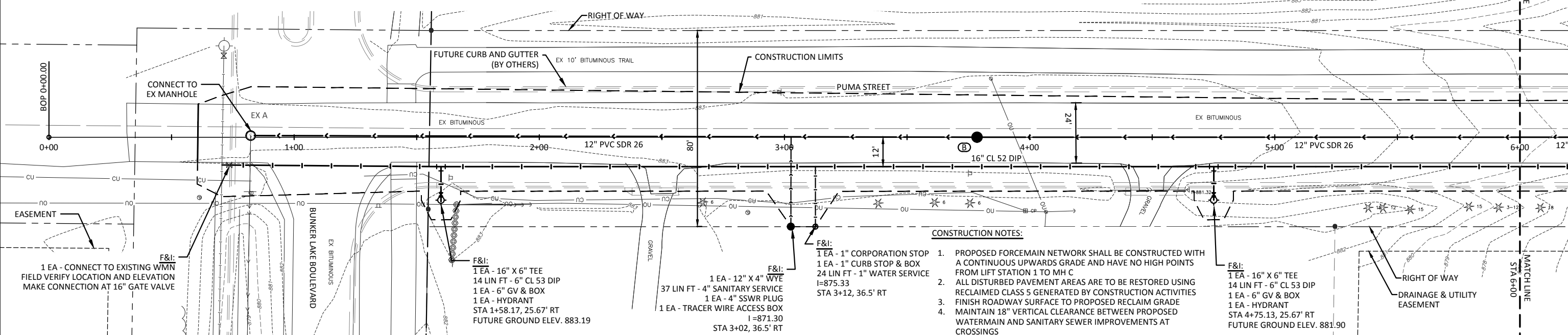
LEGEND					
	STABILIZED CONSTRUCTION EXIT		SILT FENCE TYPE MACHINE SLICED		MONUMENT FOUND
	SEEDING, MIX 25-121, FERTILIZER TYPE 3 (22-5-10), STRAW MULCH TYPE 1		SURFACE FLOW ARROW		ANCHOR
	CONCRETE		CULVERT INLET PROTECTION		APRON
	TEMPORARY LIFT STATION ACCESS		SEDIMENT CONTROL LOGS TYPE WOOD FIBER		COMMUNICATION PEDESTAL
			HYDRANT		TREE STUMP
			POST		UTILITY POLE
			SANITARY MANHOLE		WATER VALVE
			TRAFFIC SIGN		DECIDUOUS TREE
			CONIFER TREE		BUSH
			UNDERGROUND COMMUNICATIONS LINE		OVERHEAD UTILITY LINE
			STORM SEWER		SANITARY SEWER
			EASEMENT LINE		PROPERTY / LOT LINE
			ROAD RIGHT-OF-WAY LINE		CONSTRUCTION LIMIT LINE
			INTERMEDIATE CONTOURS		INDEX CONTOURS

- NOTES:
1. INSTALL EROSION CONTROL MEASURES PRIOR TO COMMENCING CONSTRUCTION.
 2. A STREET SWEEPER MUST BE AVAILABLE WITHIN 3 HOURS UPON NOTICE FROM THE CITY THAT THE STREETS NEED TO BE SWEEPED
 3. ALL SILT FENCE TO BE REMOVED ONCE SEED IS ESTABLISHED.
 4. STABILIZED CONSTRUCTION EXIT SHALL INCLUDE A ROCK FILTER BERM AT A MINIMUM TWO FEET IN HEIGHT AND SIDE SLOPES OF 4:1 AT THE SITE EXIT.
 5. ALL SEDIMENT TRACKED ON CITY STREETS SHALL BE SWEEPED IMMEDIATELY UPON DISCOVERY.
 6. INLET PROTECTIONS AT CULVERT APRONS ARE TO BE CONSTRUCTED OF SILT FENCE



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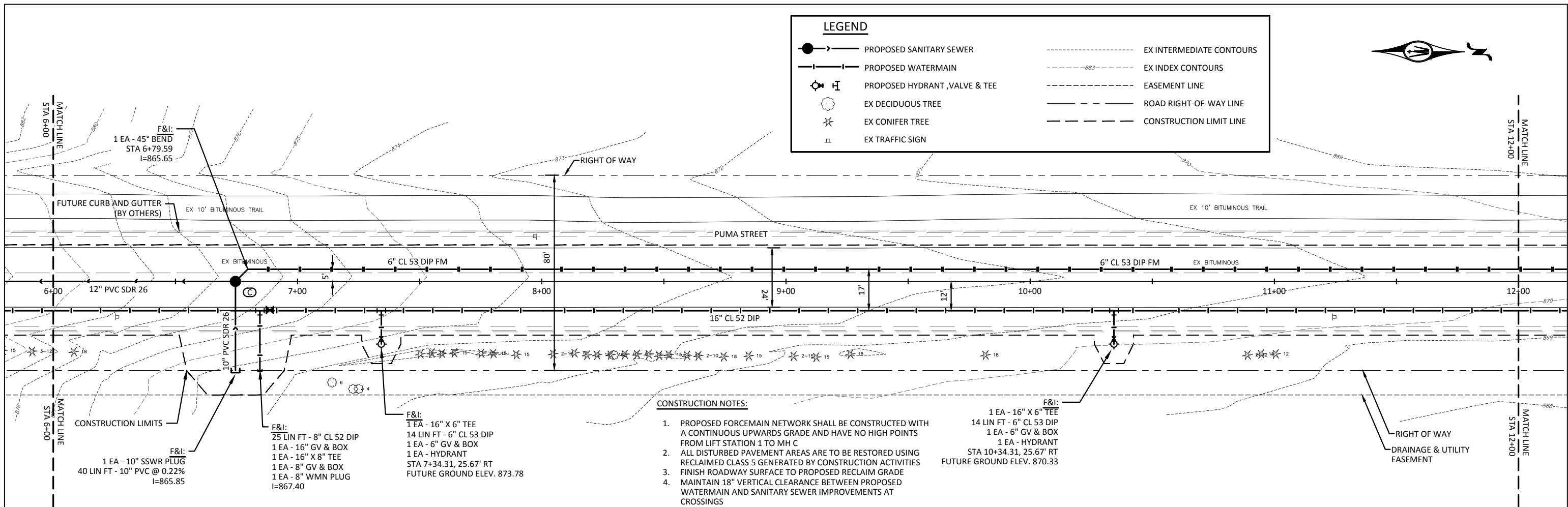
LEGEND			
	PROPOSED SANITARY SEWER		APRON
	TRACER WIRE ACCESS BOX		EX COMMUNICATION PEDESTAL
	PROPOSED WATERMAIN		EX HYDRANT
	PROPOSED HYDRANT, VALVE & TEE		EX POST
	CORP STOP, CURB BOX & STOP		EX SANITARY MANHOLE
	MONUMENT FOUND		EX TRAFFIC SIGN
	ANCHOR		EX DECIDUOUS TREE
			EX CONIFER TREE
			EX BUSH
			EX TREE STUMP
			EX UTILITY POLE
			EX WATER VALVE
			EX UNDERGROUND COMMUNICATIONS LINE
			EX OVERHEAD UTILITY LINE
			EX WATER SYSTEM
			EX STORM CULVERT
			EX SANITARY SEWER
			EX INTERMEDIATE CONTOURS
			EX INDEX CONTOURS
			EASEMENT LINE
			ROAD RIGHT-OF-WAY LINE
			CONSTRUCTION LIMIT LINE



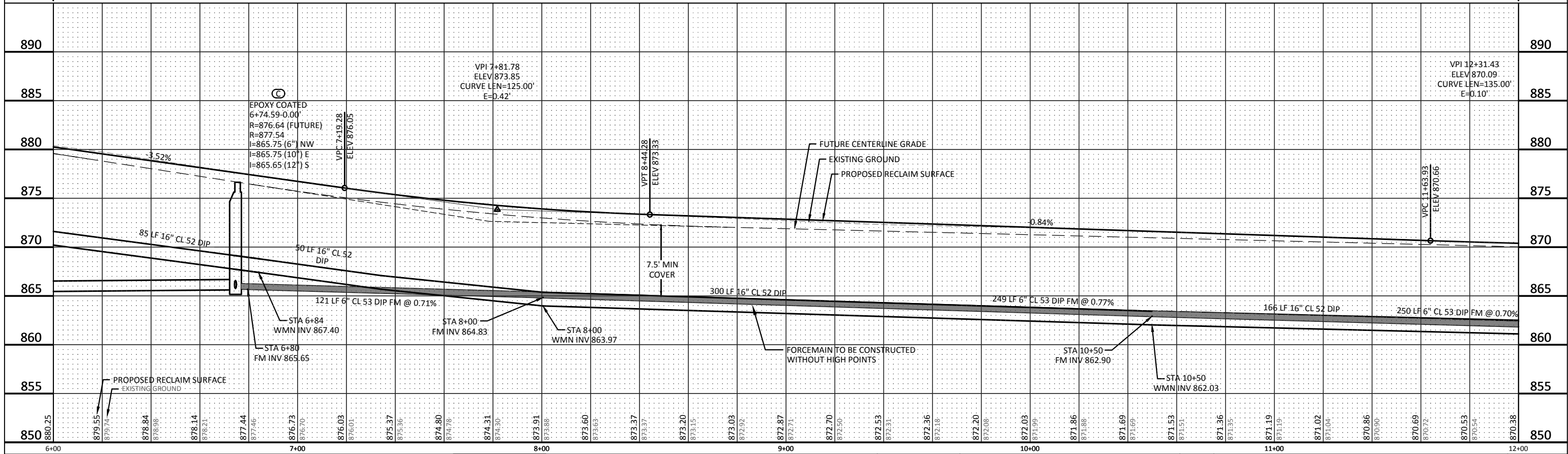
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LEGEND

- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED HYDRANT, VALVE & TEE
- EX DECIDUOUS TREE
- EX CONIFER TREE
- EX TRAFFIC SIGN
- EX INTERMEDIATE CONTOURS
- EX INDEX CONTOURS
- EASEMENT LINE
- ROAD RIGHT-OF-WAY LINE
- CONSTRUCTION LIMIT LINE



- CONSTRUCTION NOTES:**
- PROPOSED FORCEMAIN NETWORK SHALL BE CONSTRUCTED WITH A CONTINUOUS UPWARDS GRADE AND HAVE NO HIGH POINTS FROM LIFT STATION 1 TO MH C
 - ALL DISTURBED PAVEMENT AREAS ARE TO BE RESTORED USING RECLAIMED CLASS 5 GENERATED BY CONSTRUCTION ACTIVITIES
 - FINISH ROADWAY SURFACE TO PROPOSED RECLAIM GRADE
 - MAINTAIN 18\"/>

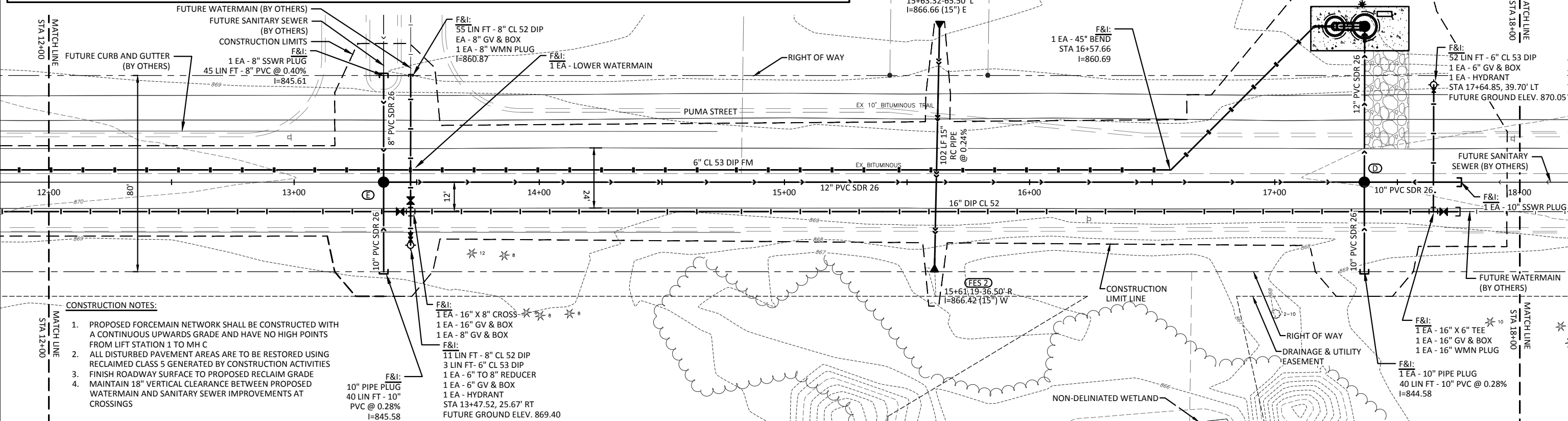


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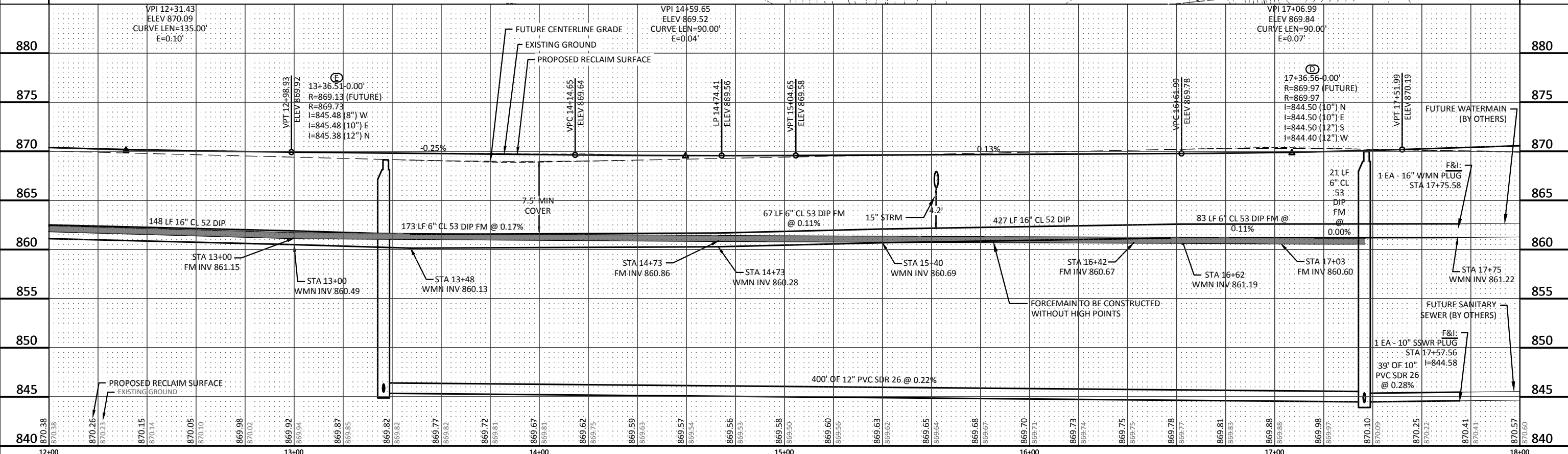
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LEGEND

- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED FORCEMAIN
- EX DECIDUOUS TREE
- EX CONIFER TREE
- EX TRAFFIC SIGN
- TRACER WIRE ACCESS BOX
- PROPOSED HYDRANT, VALVE & TEE
- EX INTERMEDIATE CONTOURS
- EX INDEX CONTOURS
- EASEMENT LINE
- ROAD RIGHT-OF-WAY LINE
- CONSTRUCTION LIMIT LINE

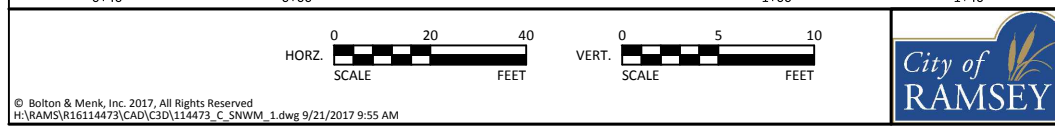
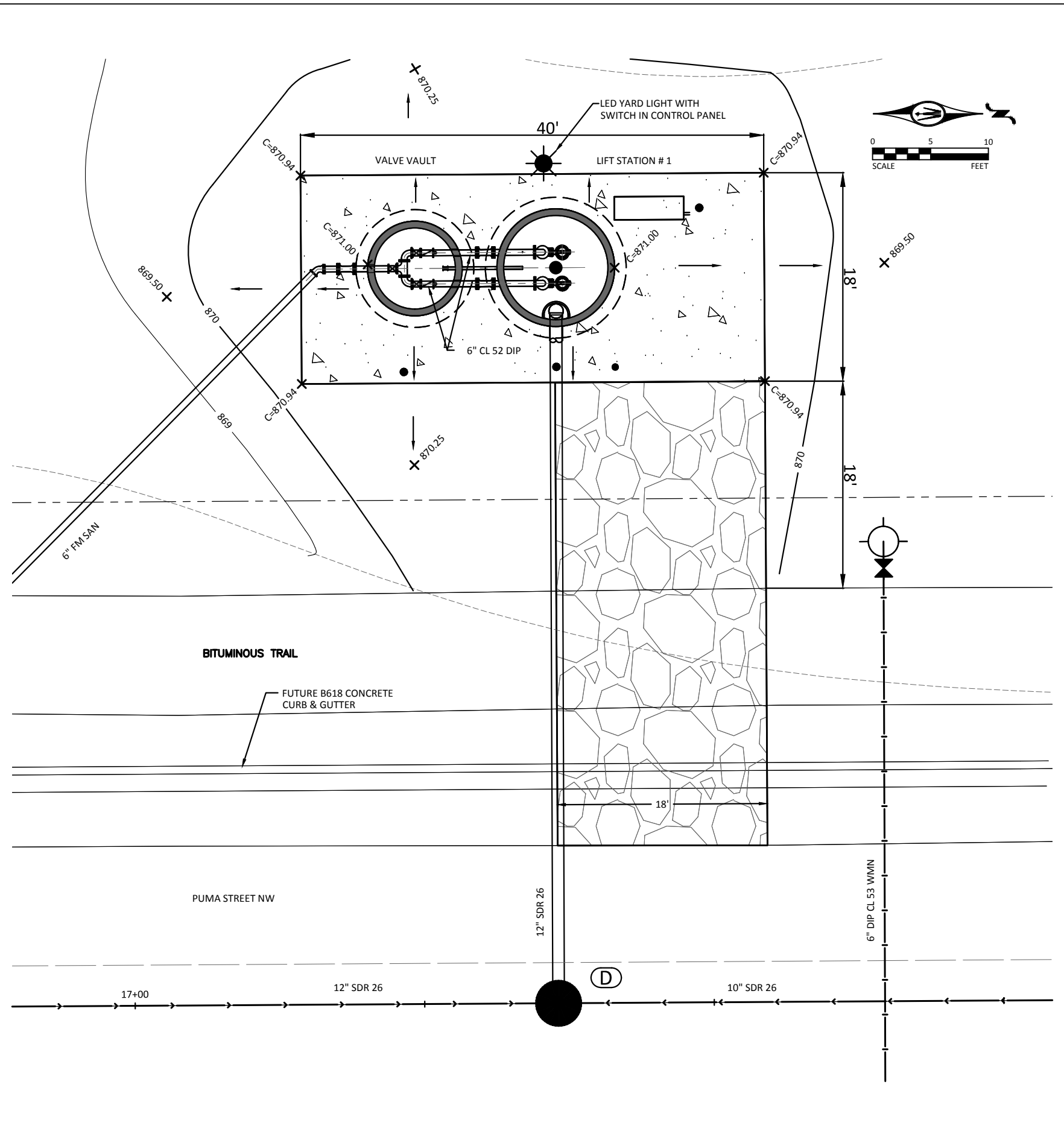
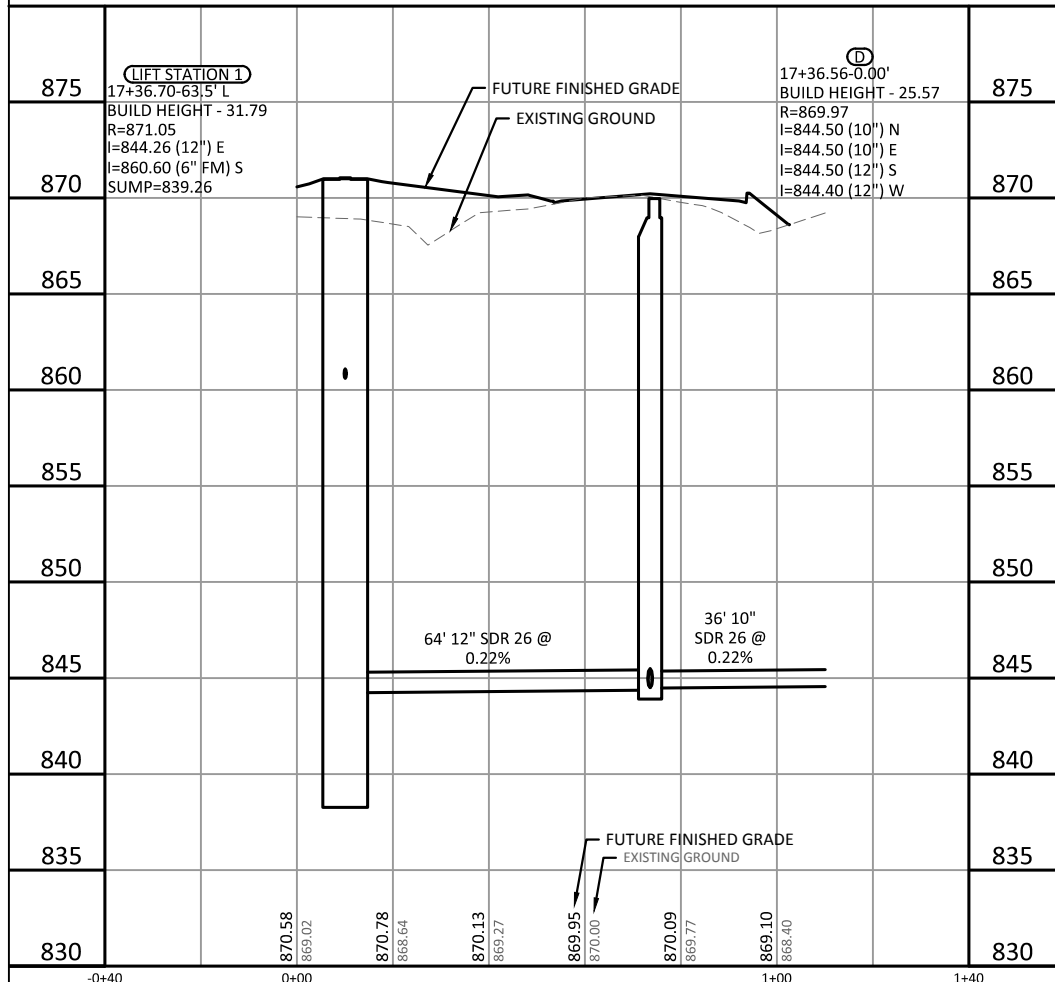
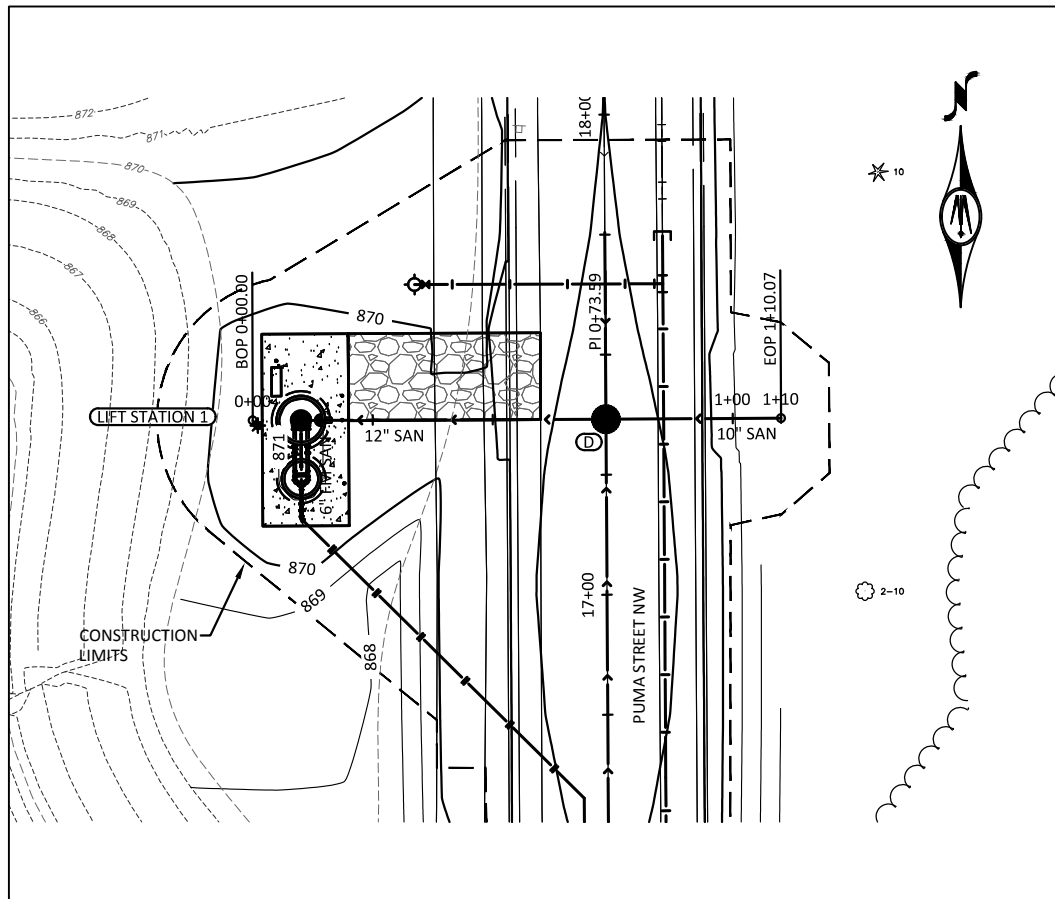


- CONSTRUCTION NOTES:**
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 - ALL DISTURBED PAVEMENT AREAS ARE TO BE RESTORED USING RECLAIMED CLASS 5 GENERATED BY CONSTRUCTION ACTIVITIES
 - FINISH ROADWAY SURFACE TO PROPOSED RECLAIM GRADE
 - MAINTAIN 18" VERTICAL CLEARANCE BETWEEN PROPOSED WATERMAIN AND SANITARY SEWER IMPROVEMENTS AT CROSSINGS

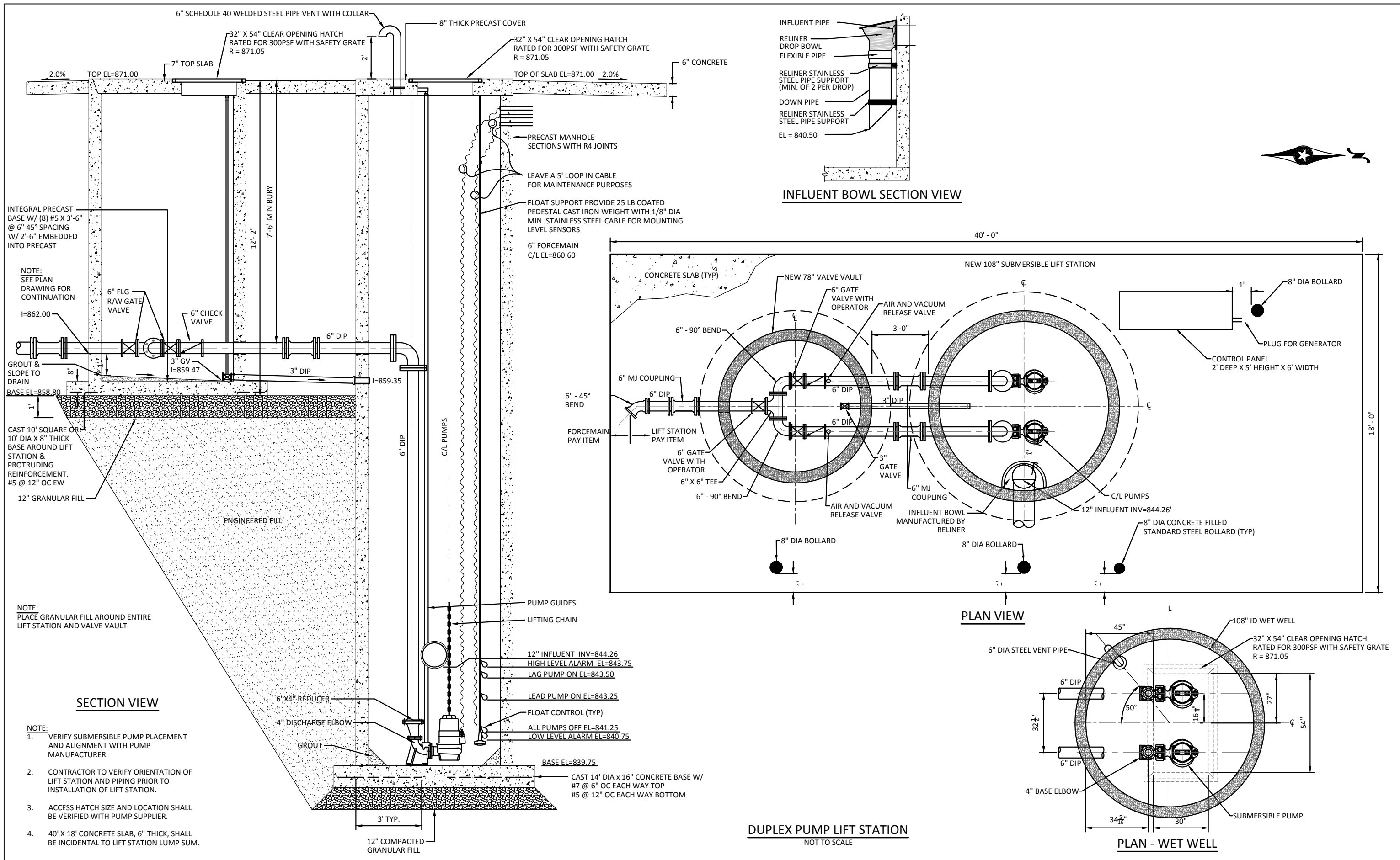


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NOT TO SCALE



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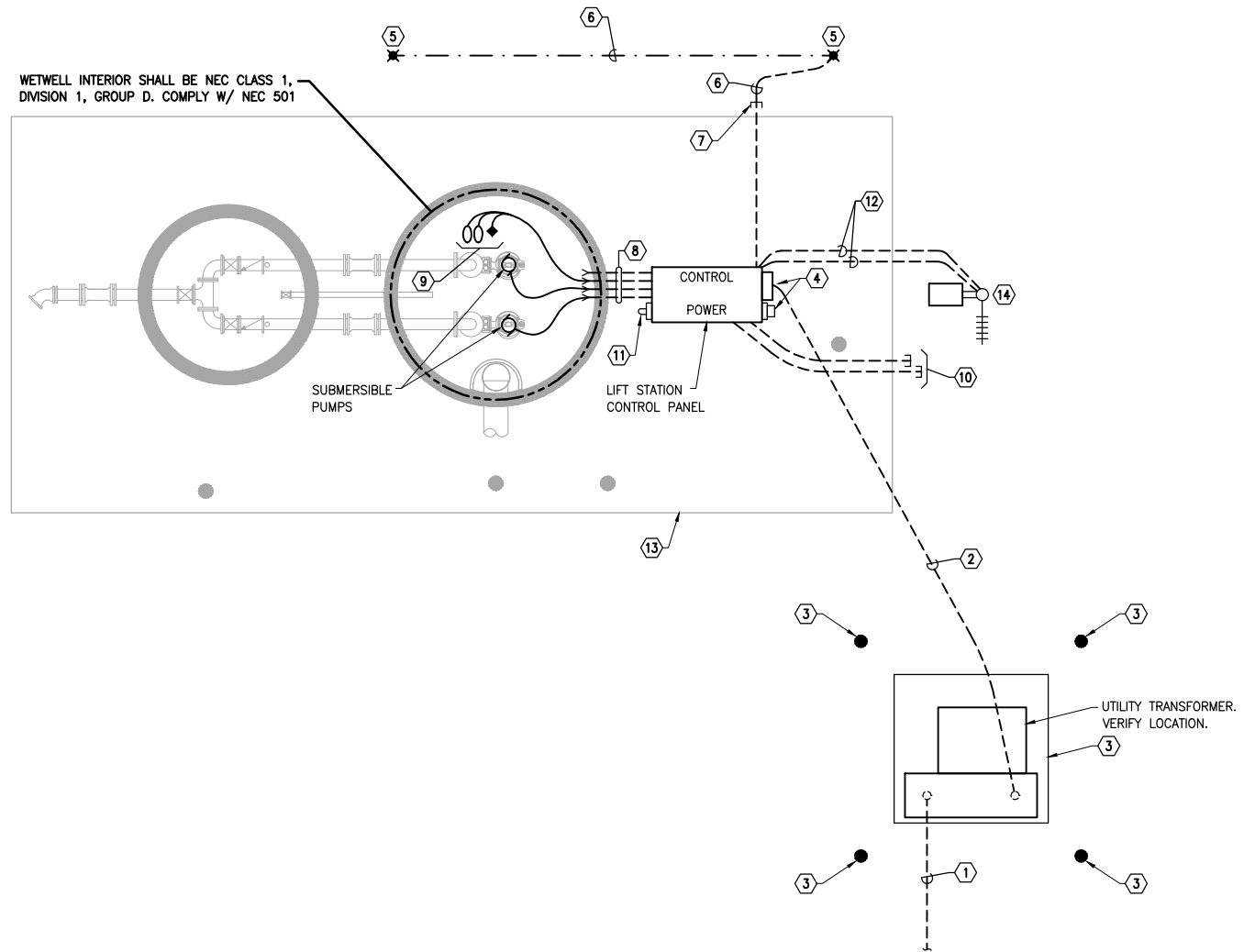
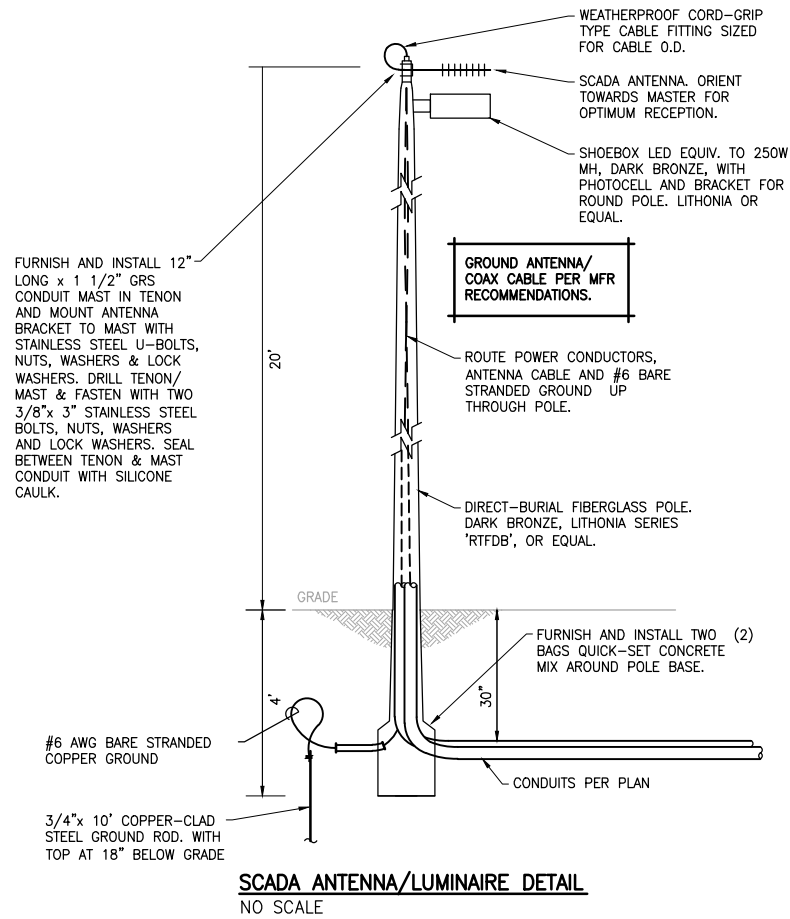
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Kevin P. Kiel
 KEVIN P. KIEL
 LIC. NO. 23211 DATE 09/20/2017

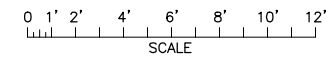
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RAMSEY, MINNESOTA
 2017 PUMA STREET UTILITY IMPROVEMENTS
 LIFT STATION DETAIL

SHEET
 C4.05



LIFT STATION ELECTRICAL PLAN



GENERAL NOTES:

- COORDINATE NEW ELECTRIC SERVICE AND METERING REQUIREMENTS WITH SERVING UTILITY.
- FIELD CONFIRM LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES, CABLES, CONDUITS, ETC. PRIOR TO CONSTRUCTION. CONTRACTOR SHALL REPAIR ALL SUCH ITEMS AT NO EXTRA COST IF DAMAGED BY CONTRACTOR.
- ELECTRONICALLY-LOCATE ALL PRIVATE UNDERGROUND LINES IN AREAS THAT WILL BE DISTURBED. PROTECT ALL EXISTING UNDERGROUND FACILITIES.
- FIELD CONFIRM ALL CONDUIT ROUTES WITH ENGINEER.
- USE DIRECTIONAL BORING OR SIMILAR METHOD FOR NEW CONDUITS TO BE INSTALLED UNDER EXISTING SIDEWALKS AND PAVEMENTS. WHERE PITS ARE OPENED, RESTORE ALL SURFACES TO MATCH EXISTING.
- CORE DRILL EXISTING STRUCTURES AS REQUIRED FOR NEW CONDUIT INSTALLATION.
- RESTORE ALL SURFACES DISTURBED BY THIS WORK.

NUMBERED NOTES:

- UTILITY PRIMARY CABLES. VERIFY QUANTITY AND ROUTES WITH UTILITY.
- SERVICE CABLES AND CONDUIT. SEE ONE-LINE DIAGRAM.
- CONSTRUCT TRANSFORMER PAD AND FOUR (4) BOLLARDS IN ACCORDANCE WITH CONNEXUS ENERGY REQUIREMENTS.
- UTILITY METERING CT/VT CABINET AND METER. SUPPLY EQUIPMENT, CONDUIT AND WIRING PER CONNEXUS ENERGY REQUIREMENTS.
- 3/4" x 10' COPPER-CLAD GROUND ROD WITH EXOTHERMIC WELD TO CONDUCTOR(S) SHOWN. SET TOP 12" DEEP.
- #1/0AWG BARE STRANDED COPPER GROUND CONDUCTOR, 12" DEEP.
- STUB 1.25" SCHEDULE 80 PVC CONDUIT FOR GROUND.
- FOUR (4) 3" SCHEDULE 80 PVC CONDUITS FOR PUMP AND LEVEL SENSOR CABLES. SEE LIFT STATION SECTION.
- FLOAT SWITCHES AND SUBMERSIBLE LEVEL SENSOR WITH STAINLESS STEEL CABLE AND WEIGHT ASSEMBLY. PROVIDE STAINLESS STEEL HANGER BRACKET BELOW HATCH, SECURED WITH ALL STAINLESS STEEL HARDWARE.
- STUB TWO (2) SPARE 2" SCHEDULE 80 PVC CONDUITS FOR FUTURE USE. CAP ENDS.
- GENERATOR CONNECTOR. VERIFY LOCATION WITH PANEL MANUFACTURER.
- SEE ONE-LINE DIAGRAM FOR CABLE AND CONDUIT REQUIREMENTS.
- CONSTRUCT REINFORCED CONCRETE PAD. SEE LIFT STATION SECTION.
- POLE WITH SCADA ANTENNA AND LUMINAIRE. SEE DETAIL.



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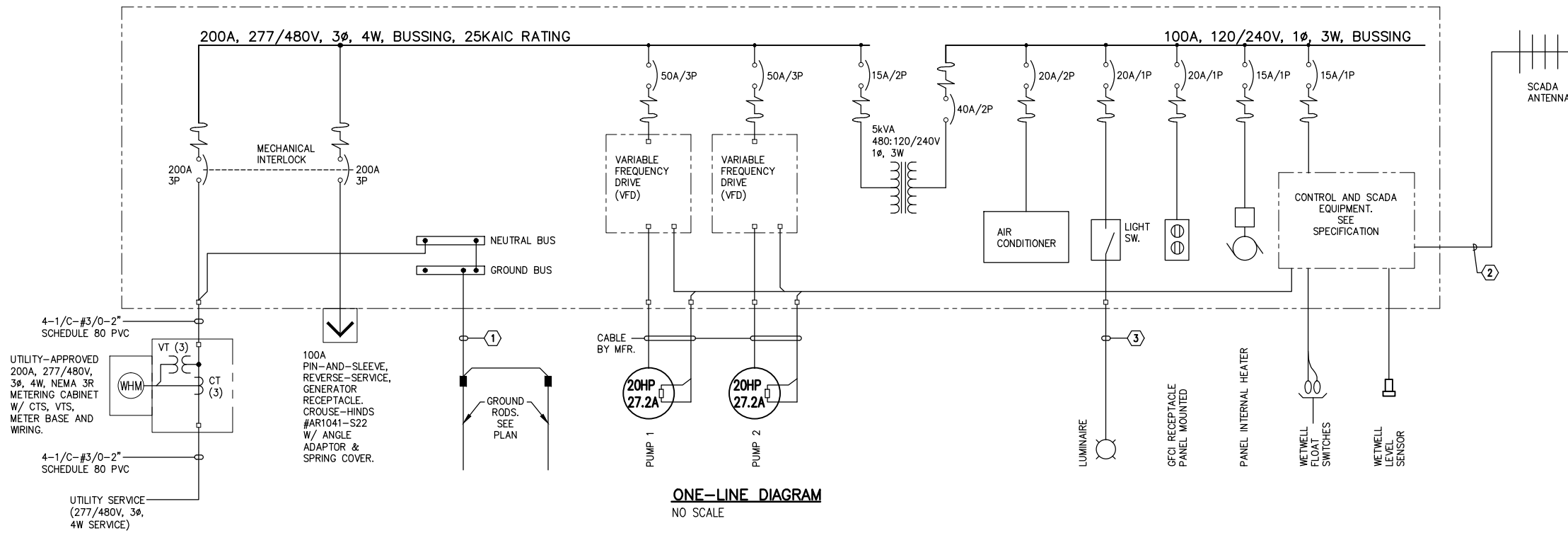
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Sheldon J. Sorensen
SHELDON J. SORENSEN
LIC. NO. 18925 DATE 09/19/2017

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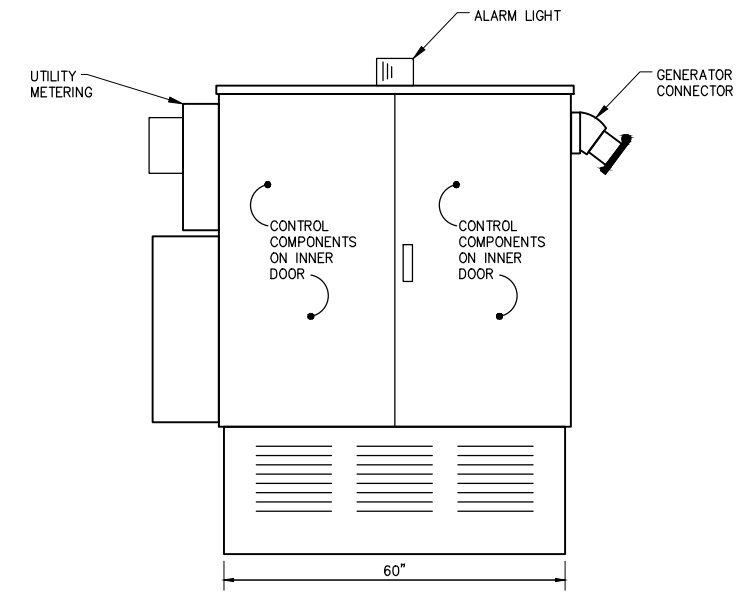
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LIFT STATION ELECTRICAL PLAN

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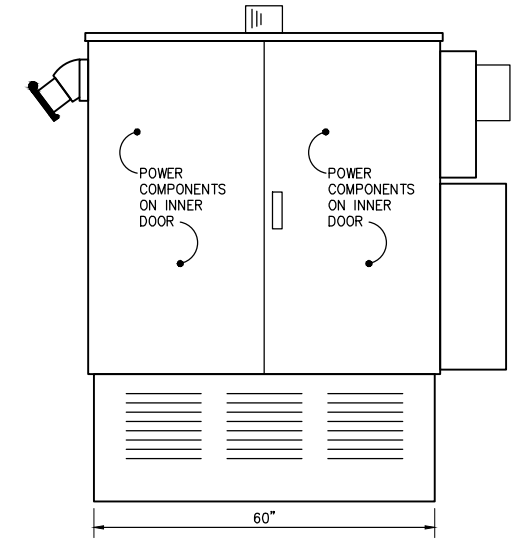


- NUMBERED NOTES:**
- ① 1-1/C-#1/0 GND - 1.25" SCHEDULE 80 PVC.
 - ② ANTENNA CABLE IN 2" SCHEDULE 80 PVC CONDUIT.
 - ③ 2-1/C-#12 & 1-1/C-#12 GND-1" SCHEDULE 80 PVC.

ONE-LINE DIAGRAM
NO SCALE

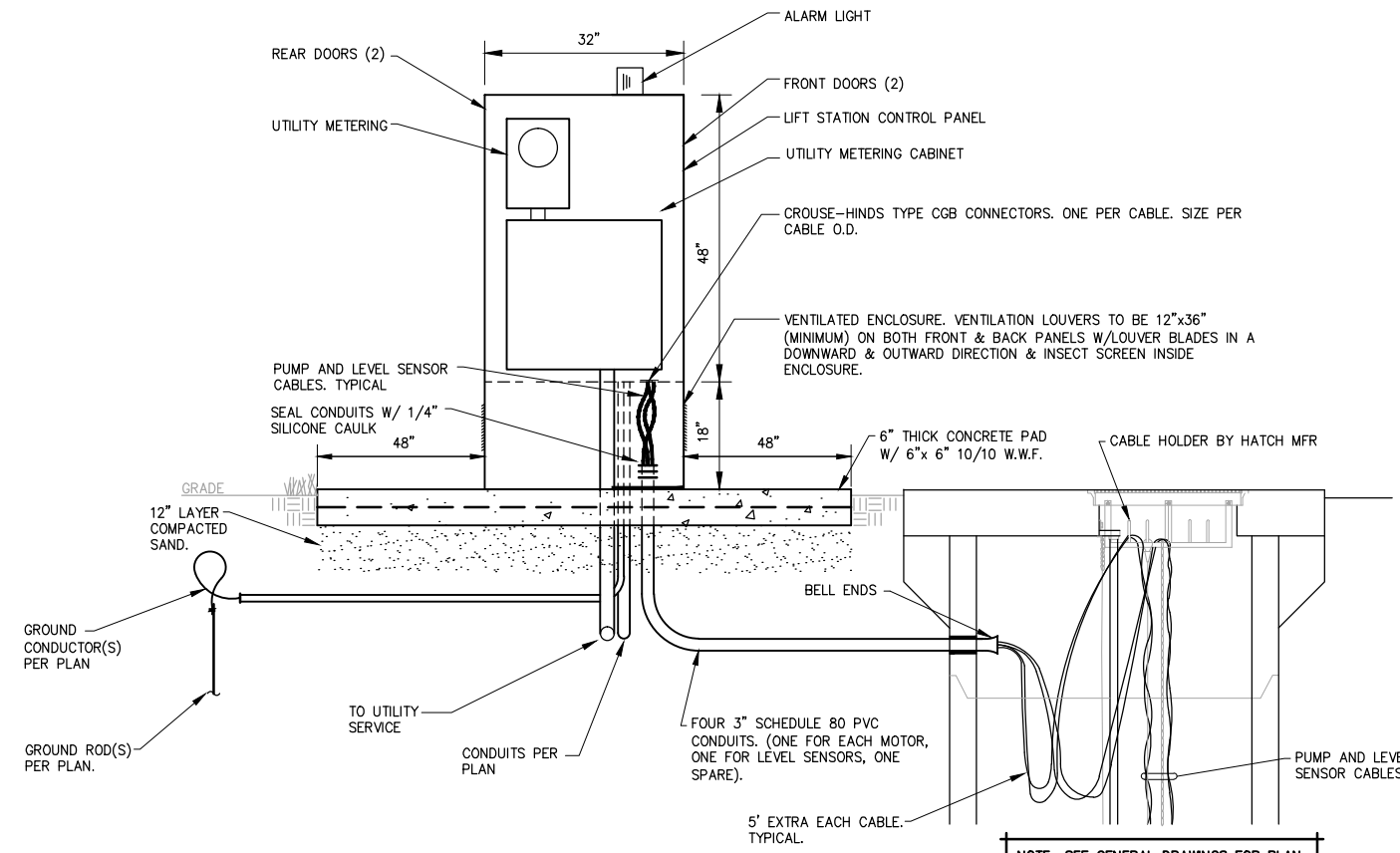


FRONT VIEW



REAR VIEW

LIFT STATION CONTROL PANEL DETAILS
NO SCALE



LIFT STATION SECTION
NO SCALE

NOTE: SEE GENERAL DRAWINGS FOR PLAN LAYOUT AND EQUIPMENT LOCATIONS.



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SHELDON J. SORENSON
LIC. NO. 18925 DATE 09/19/2017

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