

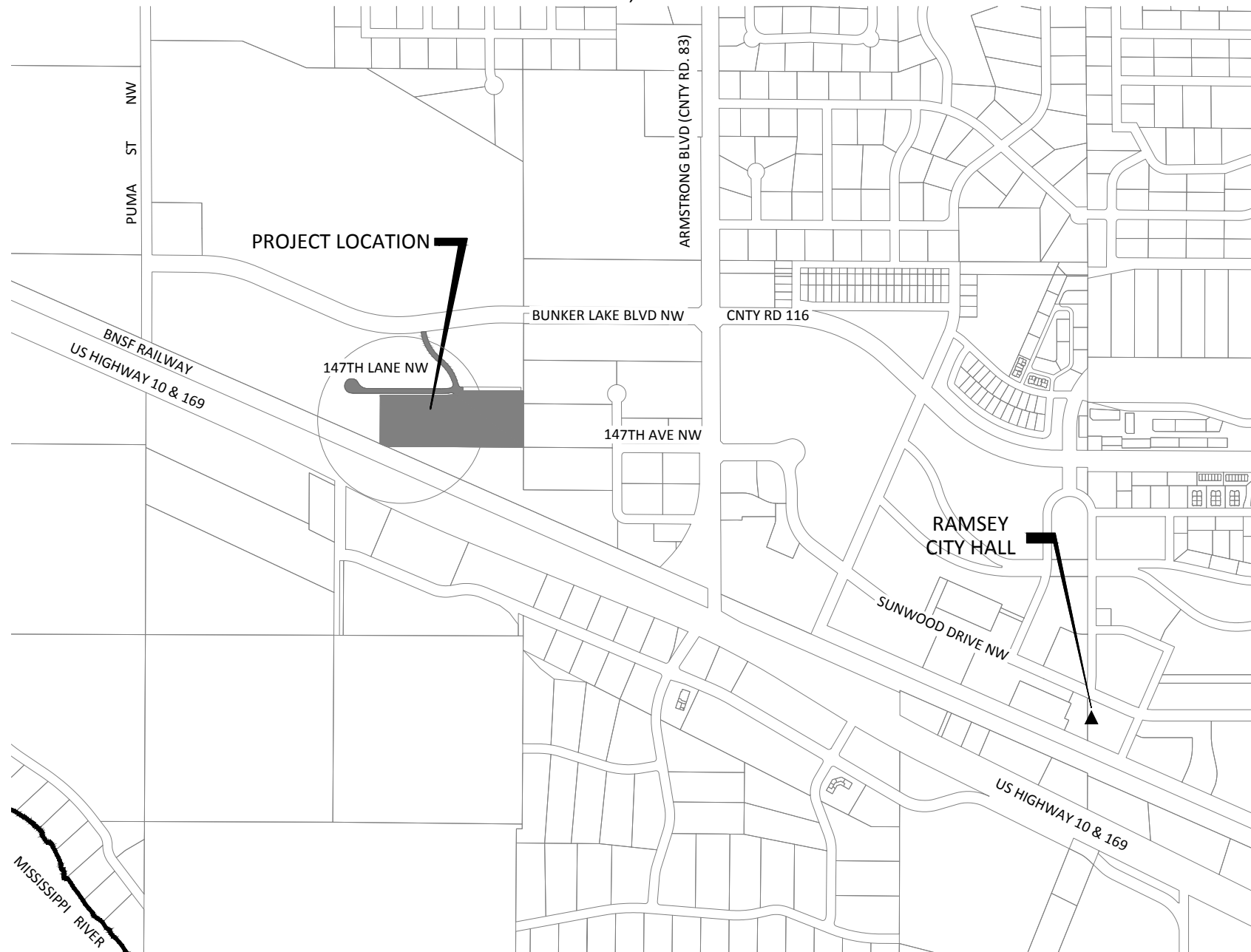
PSD, LLC

CIVIL CONSTRUCTION PLANS FOR

BUNKER LAKE BUSINESS PARK - LOT 2 SITE IMPROVEMENTS

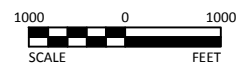
RAMSEY, MINNESOTA
 GRADING, SANITARY SEWER, WATERMAIN, STORM SEWER, AGGREGATE BASE,
 PEDESTRIAN CURB RAMPS, CONCRETE SIDEWALK, & BITUMINOUS SURFACING.

JULY, 2017



SHEET INDEX	
SHEET NO.	GENERAL TITLE
G0.01	TITLE
G0.02	LEGEND
EXISTING CONDITIONS & REMOVALS	
C0.01	EXISTING CONDITIONS
TYPICAL SECTIONS & DETAILS	
C1.01	TYPICAL SECTIONS
C1.02	DETAILS
EROSION CONTROL	
C2.01 - C2.03	STORMWATER POLLUTION PREVENTION PLAN
C2.04	EROSION CONTROL PLAN
C2.05	EROSION CONTROL DETAILS
SITE PLAN	
C2.06	LOT 2 SITE IMPROVEMENTS
GRADING	
C3.01	LOT 2 SITE GRADING PLAN
UTILITY PLANS	
C4.01	LOT 2 UTILITY LAYOUT PLAN
STORM SEWER	
C5.01	STORM SEWER LEADS
LANDSCAPE	
L1.01	LANDSCAPE RESTORATION PLAN

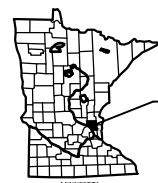
THIS PLAN SET CONTAINS 15 SHEETS.



MAP OF THE CITY OF RAMSEY ANOKA COUNTY, MN

SCALES

PLAN	0' = 20'
PROFILE	0' = 20'
	HORIZ. 0' = 5'
	VERT. 0' = 500'
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 CI/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 F. Bittner
 Kevin F. Bittner REG. NO. 21814 DATE: 08/04/2017

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

DESIGNED: KFB
 DRAWN: KGA
 CHECKED: JDP

BOLTON & MENK

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

REV.	BY	DATE	RECORD DRAWING INFORMATION
1	JDP	8/17/2017	OBSERVER:
			DATE:

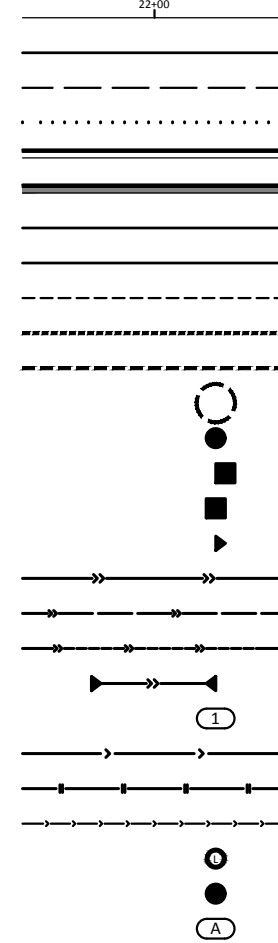
PSD, LLC, RAMSEY, MINNESOTA
 BUNKER LAKE INDUSTRIAL PARK - LOT 2
 TITLE SHEET

SHEET
G0.01

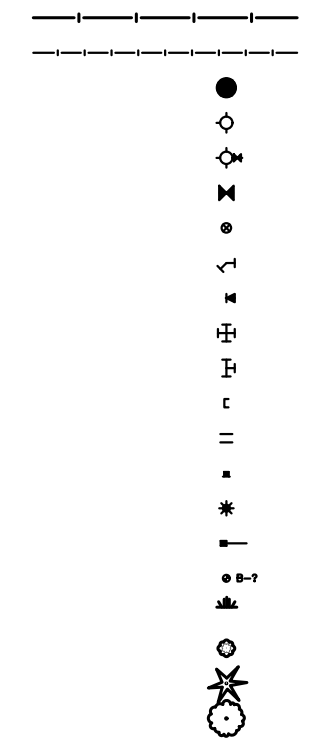
EXISTING

○	IRON PIPE MONUMENT SET	☒	ELECTRIC TRANSFORMER
●	MONUMENT FOUND	☐EV	EXHAUST VENT
⊙	CAST IRON MONUMENT FOUND	~	FLAG POLE
■	STONE MONUMENT FOUND	○	FILL PIPE
△	POST SET	⊙	GAS MANHOLE
⊕	BENCH MARK	⊙	GAS REGULATOR
⊙AS	AUTO SPRINKLER	⊙	GAS VALVE
⊙	ANTENNA	☒	GAS METER
☒	AIR CONDITIONER	☒	ACCESS GRATE
⊂	ANCHOR	♿	HANDICAPPED PARKING
⊙AP	AIR PUMP	☒	HAND HOLE
▷	APRON	⊙	HYDRANT
⊙	BASKETBALL HOOP	⊙	IRRIGATION CONTROL VALVE
☒	BIRD FEEDER	☒	LIGHT DECORATIVE
☒	BENCH	☒	LIGHT POLE
○	BRACE POLE	☒	MAILBOX
☒	CATCH BASIN	☒	METER
○	CLOTHES LINE POLE	⊕	POST
△	CONTROL POINT	⊕	MANHOLE
⊙	CLEAN OUT	⊕	LIFT STATION MANHOLE
☒ CP	COMMUNICATION PEDESTAL	☒	MONITORING WELL
⊙	CURB STOP VALVE	☒	ORDER MICROPHONE
◇	DITCH TOP	☒	PARK GRILL
☒	DRINKING FOUNTAIN	☒	GAS PUMP
▷	DOWN SPOUT	⊙	POST INDICATOR VALVE
⊕	ELECTRIC MANHOLE	☒	PARKING METER
☒	ELECTRIC METER	⊕	SANITARY MANHOLE
☒ E	ELECTRIC PEDESTAL	☒	SATELLITE DISH

PROPOSED



—————	ALIGNMENT/CENTERLINE
—————	RIGHT-OF-WAY LINE
—————	TEMPORARY EASEMENT
.....	CONSTRUCTION LIMITS
—————	CURB & GUTTER
—————	CURB & GUTTER (OUT)
—————	BITUMINOUS EDGE
—————	CONCRETE EDGE
—————	GRAVEL EDGE
—————	SILT FENCE-PREASSEMBLED
—————	SILT FENCE-HEAVY DUTY
—————	EROSION PROTECTION AT INLET
○	MANHOLE
☒	CATCH BASIN
☒	STORM INLET
—————	APRON
—————	STORM SEWER
—————	PERFORATED PIPE DRAIN
—————	STORM DRAIN TILE
—————	CULVERT W/APRON
①	STORM MANHOLE NUMBER
—————	SANITARY SEWER
—————	SANITARY FORCEMAIN
—————	SANITARY SEWER SERVICE
—————	SANITARY LIFT STATION
—————	SANITARY MANHOLE
Ⓐ	SANITARY MANHOLE NUMBER



—————	WATERMAIN
—————	WATERMAIN SERVICE
○	WATER SYSTEM MANHOLE
⊙	HYDRANT
⊙	HYDRANT W/ VALVE
⊕	VALVE
⊙	CURBSTOP
⊕	BEND
☒	REDUCER
☒	CROSS
☒	TEE
☒	CAP
☒	SLEEVE
☒	SIGN
☒	LIGHT POLE
☒	GUARD RAIL
☒	SOIL BORING
☒	WETLAND
☒	BUSH
☒	CONIFEROUS TREE
☒	DECIDUOUS TREE

—————	EO	OVERHEAD ELECTRIC LINE	—————	EASEMENT LINE
—————	EU	UNDERGROUND ELECTRIC LINE	—————	BUILDING SETBACK LINE
—————	G	GAS LINE	—————	FENCE LINE
—————	FO	FIBER OPTIC LINE	—————	GUARD RAIL
—————	CU	UNDERGROUND COMMUNICATIONS LINE	—————	ACCESS CONTROL LINE
—————	OU	OVERHEAD UTILITY LINE	—————	CENTERLINE
—————		WATER SYSTEM	—————	PROPERTY / LOT LINE
—————	>>	STORM SEWER	—————	ROAD RIGHT-OF-WAY LINE
—————	>>---	TILE LINE	—————	RAILROAD RIGHT-OF-WAY LINE
—————	>	SANITARY SEWER	—————	GRAVEL EDGE
—————		SANITARY FORCEMAIN	—————	BITUMINOUS EDGE
—————	=====	CULVERT	—————	CONCRETE EDGE
—————	-----	INTERMEDIATE CONTOURS	—————	CURB & GUTTER
—————	-----	INDEX CONTOURS	—————	WATER EDGE
—————	-----	COUNTY LINE	—————	WATER CENTERLINE
—————	-----	CITY LIMITS	—————	HIGHWATER LINE
—————	-----	SIXTEENTH LINE	—————	WETLAND EDGE
—————	-----	QUARTER LINE	—————	SWALE CENTERLINE
—————	-----	SECTION LINE	—————	RAILROAD TRACKS
—————	-----	ADJACENT LINES	—————	TREE DRIP LINE



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www.bolton-menk.com

REV	ISSUED FOR	DATE

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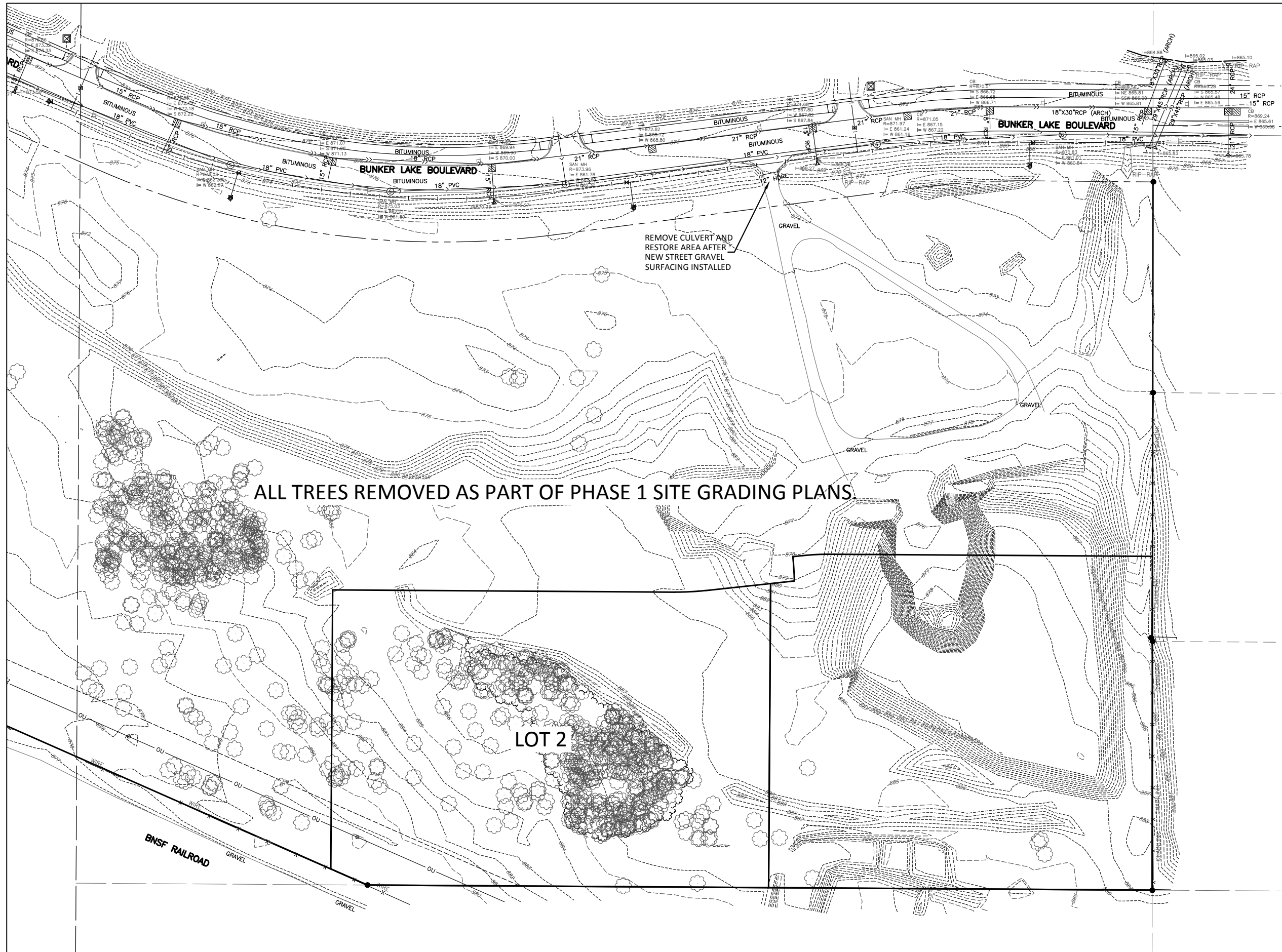
Kevin G. Betts

LIC. NO. 21814 DATE 08/04/2017

DESIGNED JDP
DRAWN KGA
CHECKED JDP

PSD, LLC. RAMSEY, MINNESOTA
BUNKER LAKE INDUSTRIAL PARK - LOT 2
LEGEND

SHEET
G0.02



LEGEND

- MONUMENT FOUND
- ⊕ BENCH MARK
- ⊙ ANCHOR
- ▷ APRON
- ▨ CATCH BASIN
- ⊞ CP COMMUNICATION PEDESTAL
- ⊠ ELECTRIC TRANSFORMER
- ⊙ HYDRANT
- ⊙ POST
- ⊙ SANITARY MANHOLE
- ⊠ TRAFFIC SIGN
- ⊙ TREE
- ⊙ 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
- x-x- FENCE LINE
- PROPERTY / LOT LINE
- ROAD RIGHT-OF-WAY LINE

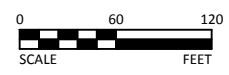
- CONSTRUCTION NOTES:**
1. INSTALL EROSION CONTROL MEASURES PRIOR TO COMMENCING CONSTRUCTION.
 2. ALL TREES ARE PLANNED FOR REMOVAL UNLESS DIRECTED BY THE ENGINEER TO PROTECT.
 5. TOPSOIL SALVAGED AND STOCKPILED FOR REUSE ONSITE.
 6. KEEP ALL STREETS SWEEPED CLEAN OF TRACKED DIRT AND SAND.
 7. RESTORE DISTURBED AREAS WITH MINIMUM OF 4 INCHES OF TOPSOIL, SEED, FERTILIZE AND MULCH OR BLANKET.
 8. REMOVE SEDIMENT AND EROSION CONTROL MEASURES ONCE TURF IS ESTABLISHMENT IS ACCEPTED.
 9. PROTECT EXISTING UTILITIES TO REMAIN.

ALL TREES REMOVED AS PART OF PHASE 1 SITE GRADING PLANS.

REMOVE CULVERT AND RESTORE AREA AFTER NEW STREET GRAVEL SURFACING INSTALLED

LOT 2

BNSF RAILROAD



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 RAMSEY, MINNESOTA 55303
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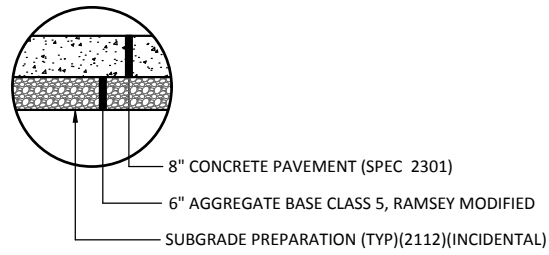
Kevin F. Bittner
 Kevin F. Bittner
 LIC. NO. 21814 DATE 07/28/2017

DESIGNED	JDP
DRAWN	KGA
CHECKED	JDP

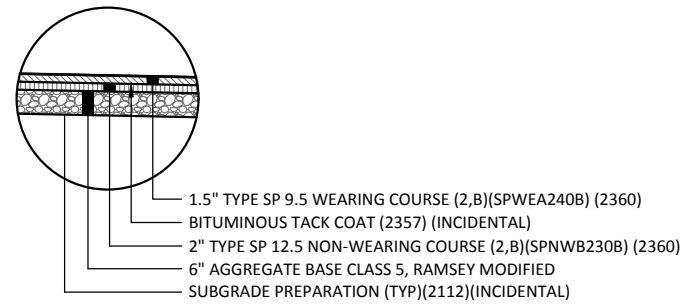
PSD, LLC. RAMSEY, MINNESOTA
 BUNKER LAKE INDUSTRIAL PARK
 EXISTING CONDITIONS & REMOVALS

SHEET
C0.01

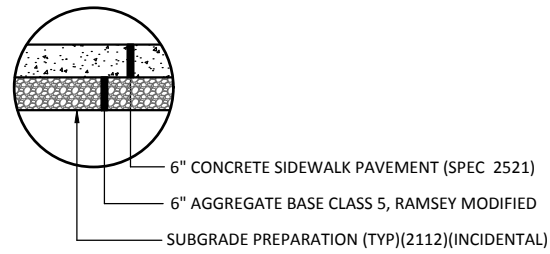
© Bolton & Menk, Inc. 2017. All Rights Reserved
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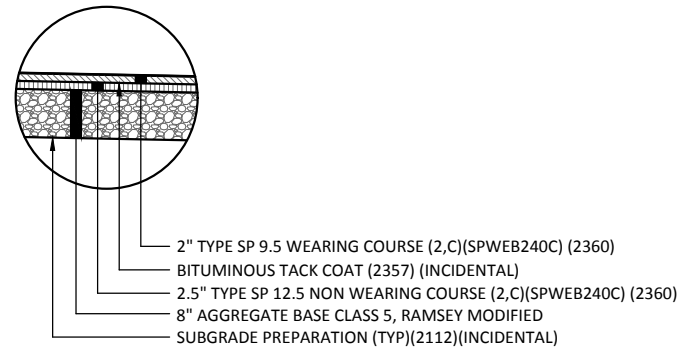
CONCRETE PAVEMENT AREAS (HEAVY DUTY)
NOT TO SCALE



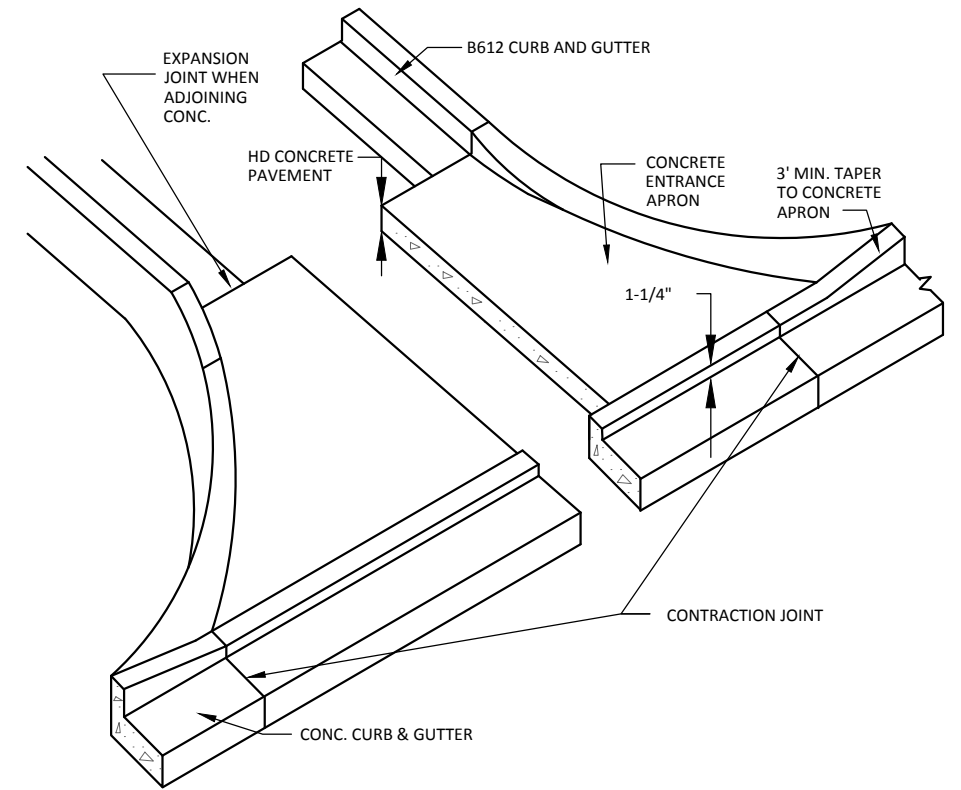
TYPICAL BITUMINOUS PARKING LOT (LIGHT DUTY)
NOT TO SCALE



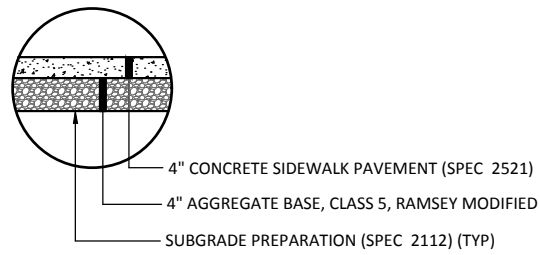
6" CONCRETE TRASH ENCLOSURE & ELECTRICAL PAD
NOT TO SCALE



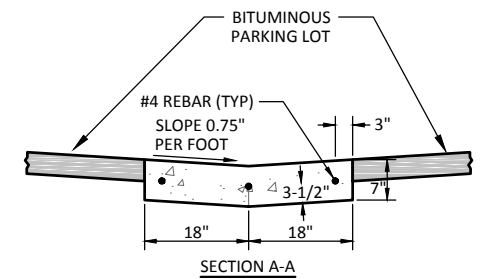
TYPICAL BITUMINOUS PARKING LOT (HEAVY DUTY)
NOT TO SCALE



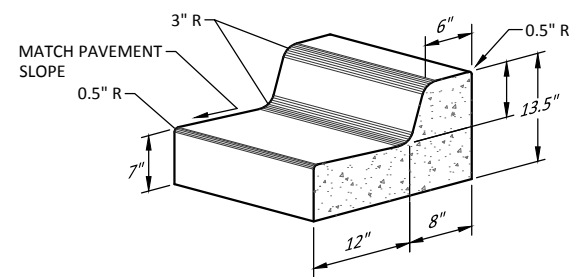
CONCRETE ENTRANCE APRON
NOT TO SCALE



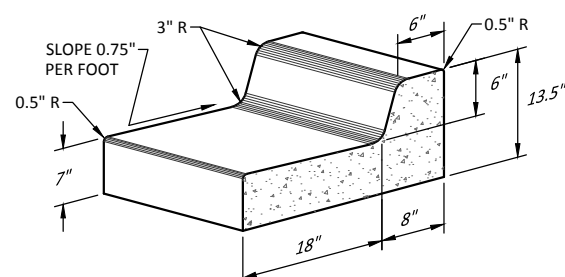
4" CONCRETE WALK
NOT TO SCALE



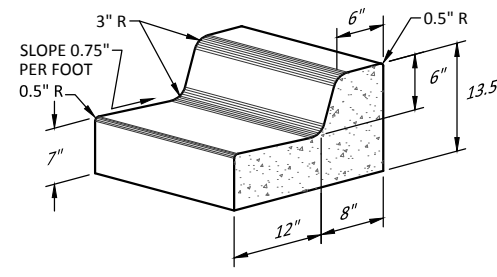
CONCRETE VALLEY GUTTER
NOT TO SCALE



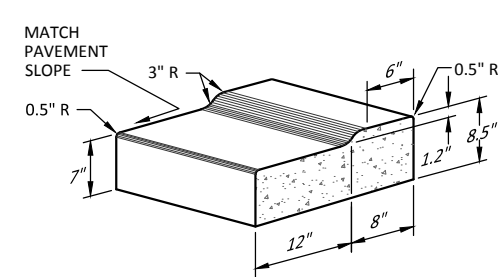
TIP OUT CONCRETE CURB & GUTTER
DESIGN B612
NOT TO SCALE



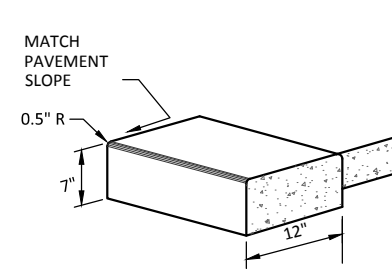
CONCRETE CURB & GUTTER
DESIGN B618
NOT TO SCALE



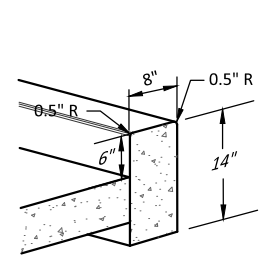
CONCRETE CURB & GUTTER
DESIGN B612
NOT TO SCALE



CONCRETE CURB & GUTTER
KNOCKDOWN
NOT TO SCALE



CONCRETE RIBBON
AT BUILDING ENTRANCE
NOT TO SCALE



CONCRETE "V" CURB
NOT TO SCALE

NOTE: DETAILS NOT TO SCALE



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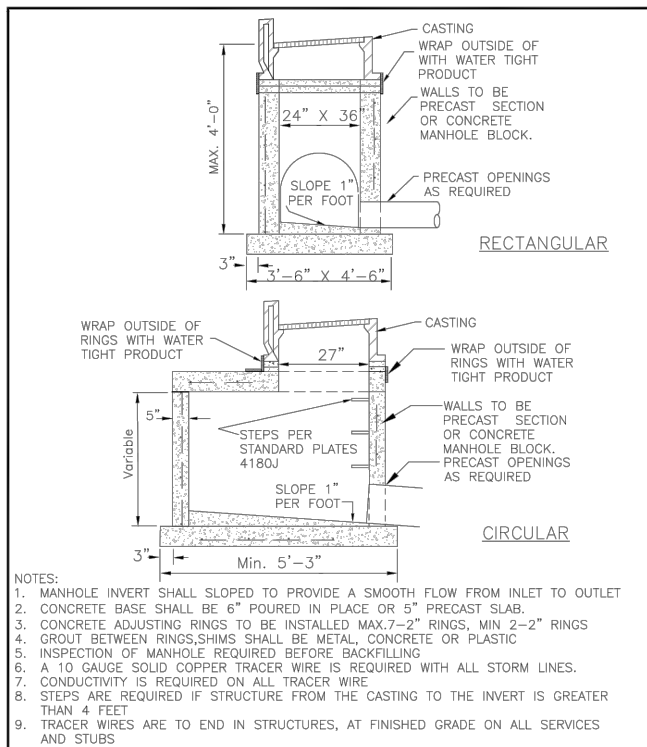
Kevin G. Bette

LIC. NO. 21814 DATE 08/04/2017

DESIGNED
JDP
DRAWN
KGA
CHECKED
JDP

PSD, LLC. RAMSEY, MINNESOTA
BUNKER LAKE INDUSTRIAL PARK - LOT 2
TYPICAL SECTIONS

SHEET
C1.01

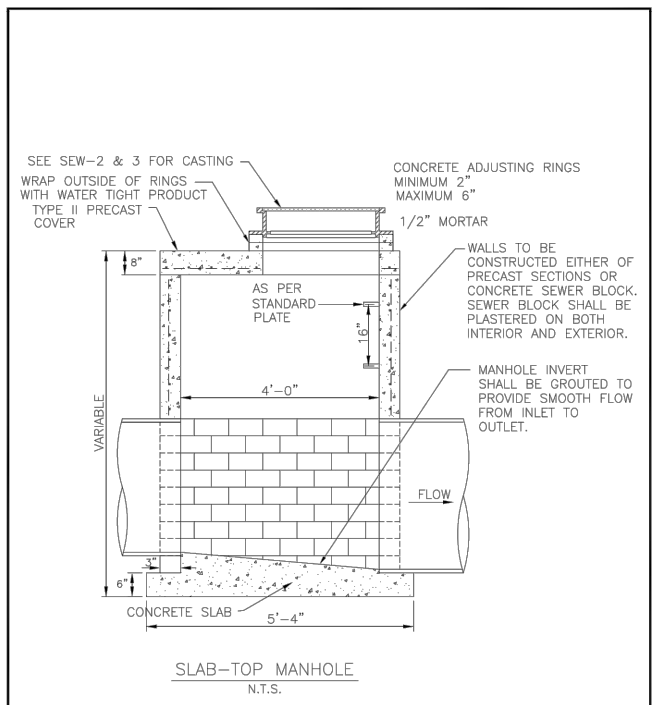


APPROVED DATE 4-2007

City of RAMSEY

STANDARD DETAILS CATCH BASIN

CITY PLATE No. ST0-7

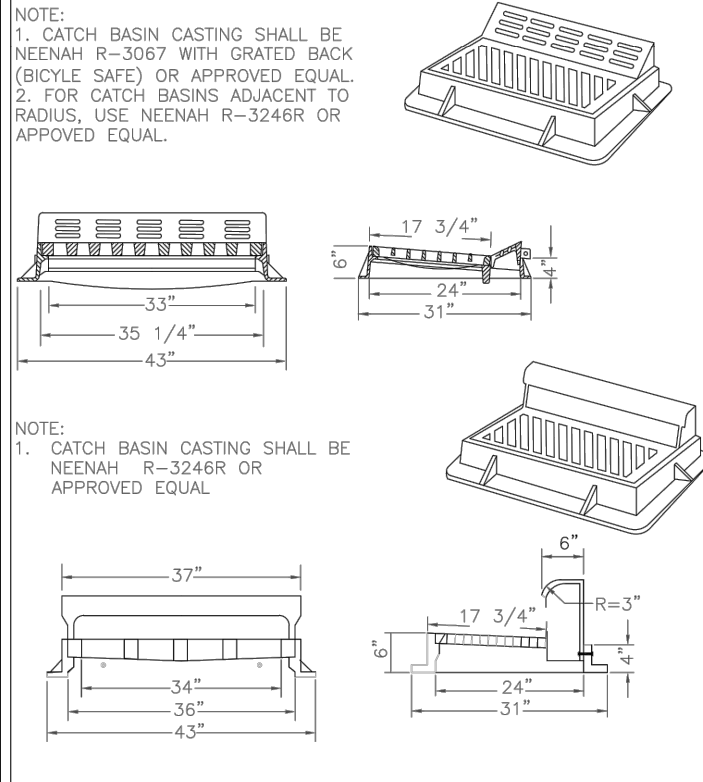


APPROVED DATE 9-2011

City of RAMSEY

STANDARD DETAILS SLAB-TOP MANHOLE

CITY PLATE No. SEW-6

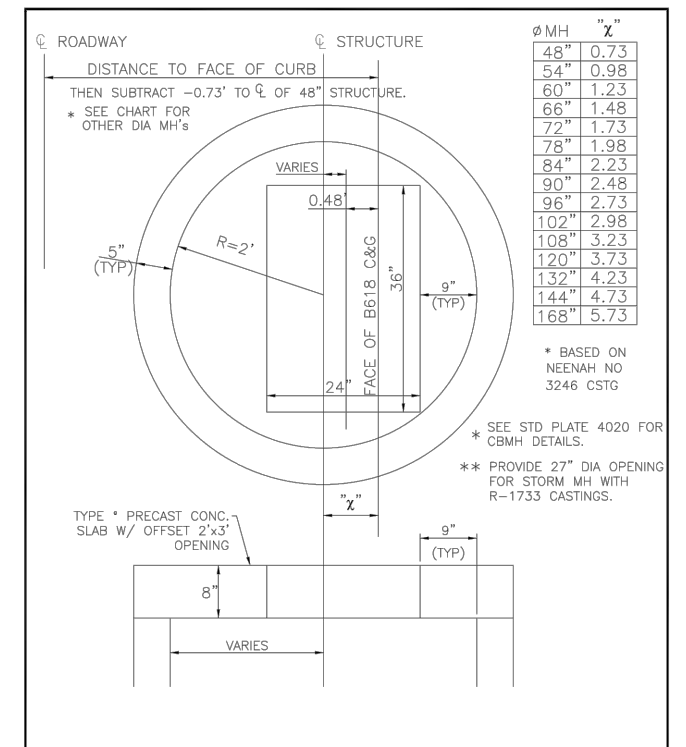


APPROVED DATE 6-2016

City of RAMSEY

STANDARD DETAILS STORMWATER CASTING

CITY PLATE No. ST0-4

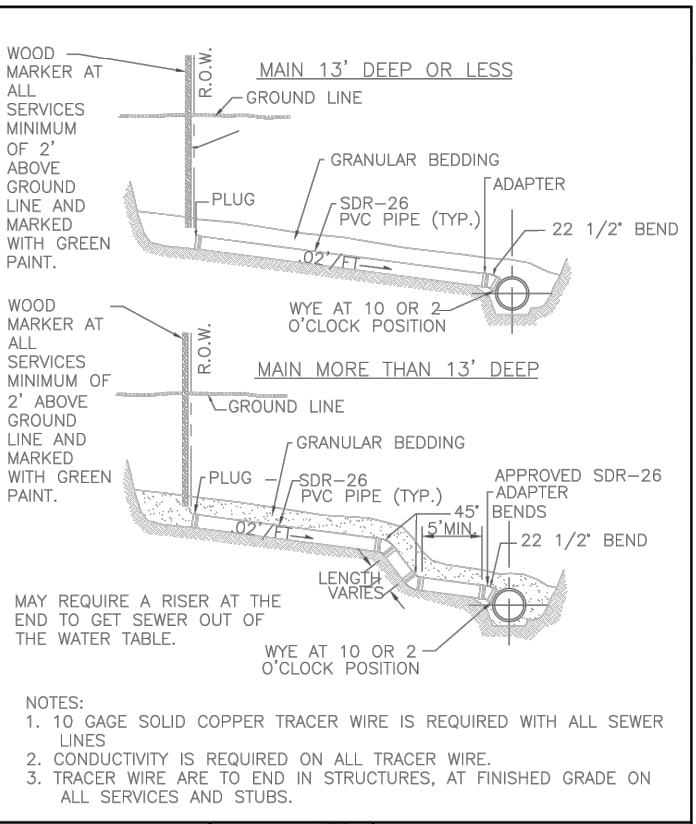


APPROVED DATE 4-2005

City of RAMSEY

STANDARD DETAILS SLAB TOP MANHOLE FOR CBMH

CITY PLATE No. ST0-5



APPROVED DATE 4-2016

City of RAMSEY

STANDARD DETAILS SANITARY SEWER SERVICE

CITY PLATE No. SEW-3

TABLE A MODIFIED CLASS 5 SPECIFICATIONS

% PASSING	
1"	100
3/4"	90 - 100
3/8"	50 - 80
No.4	35 - 70
No.10	20 - 60
No.40	10 - 35
No.200	5 - 10

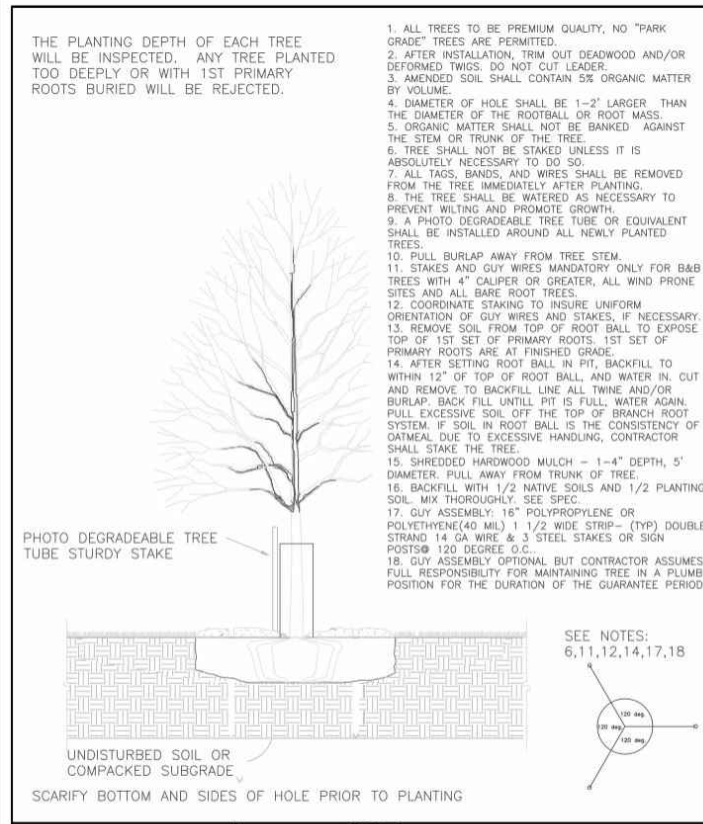
NOTES:
1. THE AGGREGATE BASE CONSTRUCTION WILL BE ACCEPTED FOR PAYMENT IN ACCORDANCE WITH THE PROVISIONS IN TABLE A.
2. IF THE AGGREGATE BASE FAILS TO MEET THE REQUIREMENTS OF TABLE A THE MATERIAL CAN BE CORRECTED IN PLACE OR REMOVED AND REPLACED WITH MATERIAL THAT MEET THE REQUIREMENTS OF TABLE A.
3. IN THE EVENT THAT RECYCLED MATERIAL IS USE IT MUST MEET MNDOT REQUIREMENTS FOR RECYCLED BASE.

APPROVED DATE 2-2003

City of RAMSEY

STANDARD DETAILS MODIFIED CLASS 5 SPECIFICATIONS

CITY PLATE No. STR-26

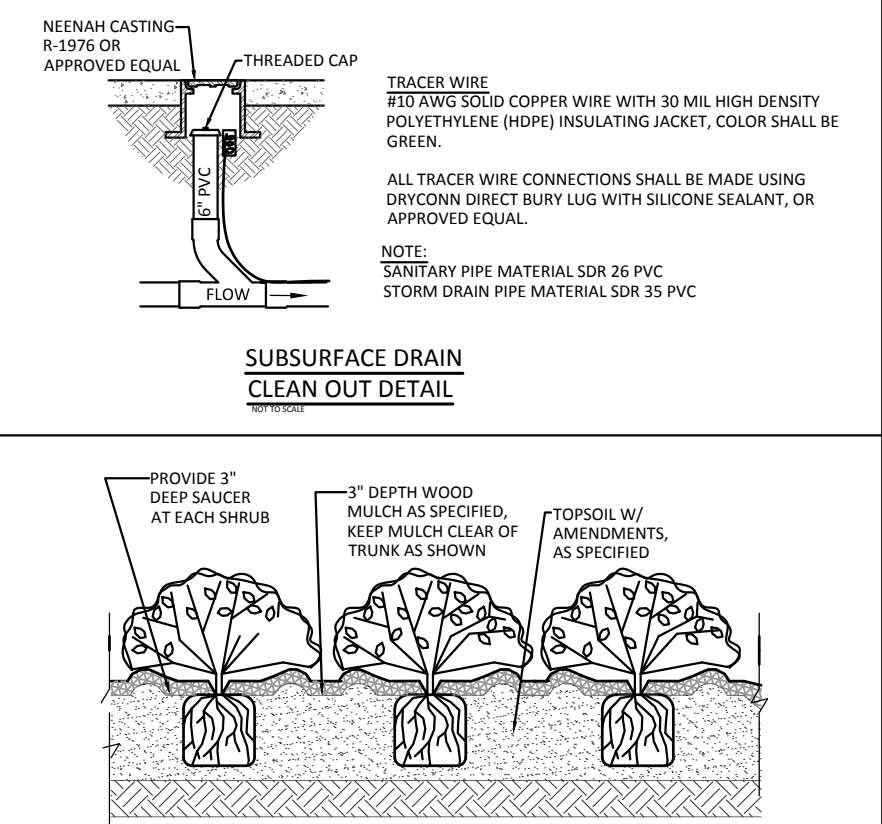


APPROVED DATE 5-1997

City of RAMSEY

STANDARD DETAILS TREE PLANTING

CITY PLATE No. PARK-2



APPROVED DATE 4-2016

City of RAMSEY

STANDARD DETAILS SHRUB BED PLANTING DETAIL

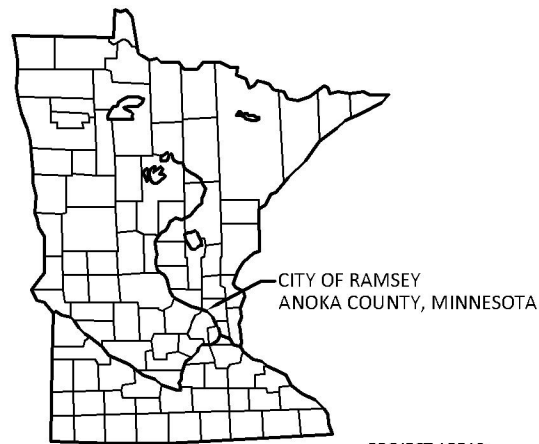
CITY PLATE No. PARK-2

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

BUNKER LAKE INDUSTRIAL PARK - LOT 2
CITY OF RAMSEY
ANOKA COUNTY, MINNESOTA

UNIVERSITY OF MINNESOTA
JOSEPH PELAWA

Design of Construction SWPPP (May 31, 2020)



LEGEND	
	PROJECT BOUNDARY
	IMPAIRED, SPECIAL OR PROTECTED WATERS
	PROJECT LOCATION

PROJECT AREAS:

Total Project Size (disturbed area) =	45.2	ACRES
Existing area of impervious surface =	0.0	ACRES
Post construction area of impervious surface =	9.4	ACRES
Total new impervious surface area created =	9.4	ACRES

Planned Construction Start Date: 07/25/2017
Estimated Construction Completion Date: 08/31/2018

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

X	Wet Sedimentation Basin
X	Infiltration/Filtration
	Regional Pond
	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, BIO LOGS, WOOD CHIP BERM	700	LIN FT
STORM DRAIN INLET PROTECTION	14	EACH
SEDIMENT CONTROL LOG	100	LF
STABILIZED CONSTRUCTION EXIT	1	LUMP SUM
EROSION CONTROL BLANKETS CATEGORY 3	0	SQ YD

DESCRIPTION OF CONSTRUCTION ACTIVITIES AND STORMWATER MANAGEMENT:

Construction activities include: Site final grading, Sanitary and Water extensions, Temporary erosion and sediment control, and Site permanent stabilization.

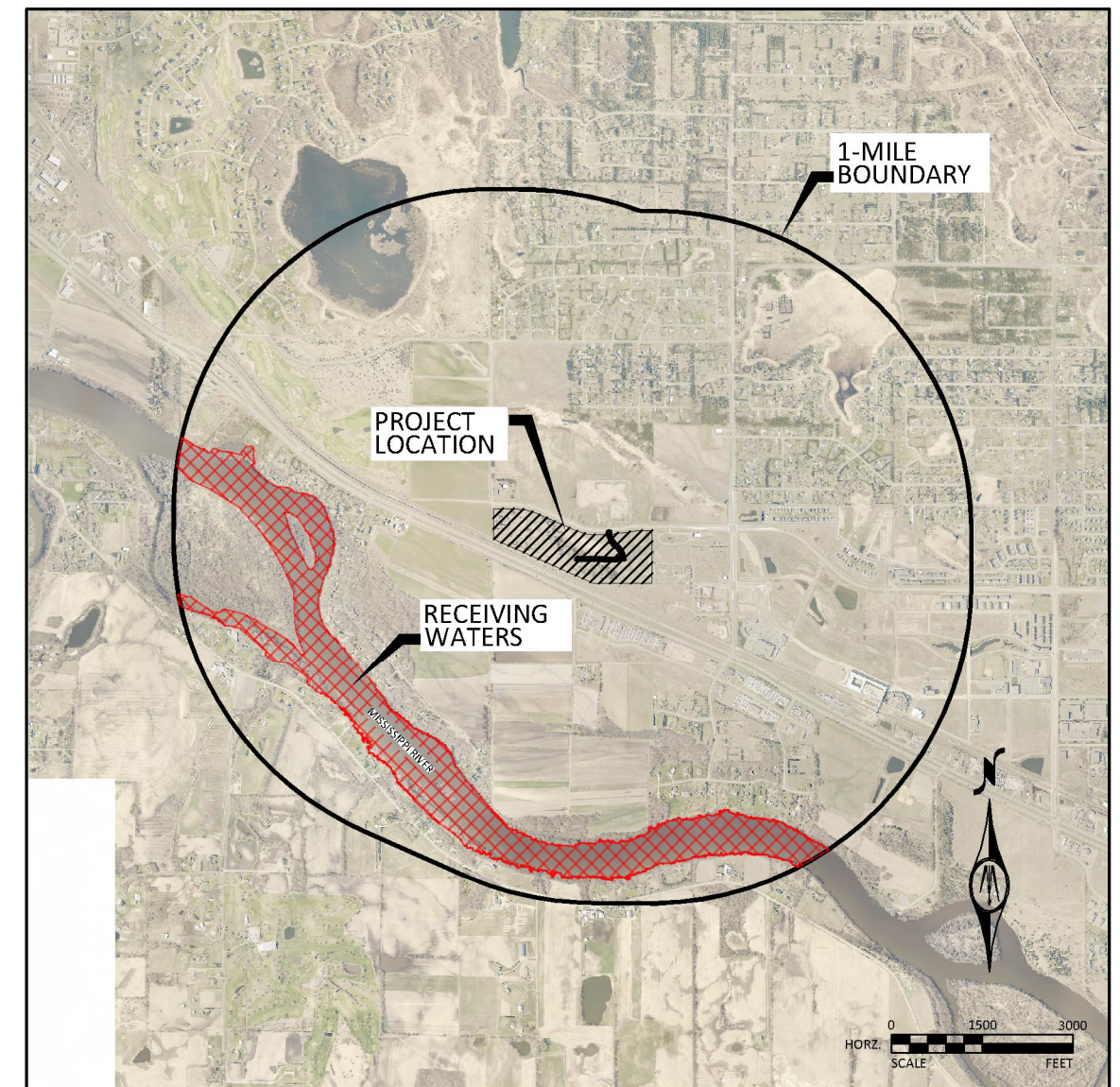
Lot 2 of the Bunker Lake Industrial Park project will include constructing new building, underground utilities, curb & gutter and parking lots for the proposed building. Drainage gathers within the site storm collection system inlets and conveyed to the industrial park regional storm pond (Pond 1). The sedimentation basin water will infiltrate with some peak flows allowed to overflow and routed along a drainage swale. The drainage swale will allow water to infiltrate and drain across the central and northern edge of the site, where it will ultimately discharge to two existing storm pipes that cross to the north of Bunker Lake Boulevard.

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.
- Rough grade site.
- Construct sedimentation basin and drainage. Install sediment control to ensure sediment does not leave site.
- 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.

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:	PSD	Matt Kuker	763-427-5955
SWPPP DESIGNER:	Bolton & Menk, Inc.	Joseph D. Pelawa, P.E.	763-433-2851
CONTRACTOR:	TBD		
CONSTRUCTION SWPPP MANAGER:	TBD		
PARTY RESPONSIBLE FOR LONG TERM O&M:	PSD	Matt Kuker	763-427-5955

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.



7533 SUNWOOD DR NW, SUITE 206
RAMSEY, MINNESOTA 55303
Phone: (763) 433-2851
Email: Ramsey@bolton-menk.com
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REV	ISSUED FOR	DATE
1	JDP	8/17/2017

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Joseph D. Pelawa
Joseph D. Pelawa
LIC. NO. 42603 DATE 08/04/2017

DESIGNED JDP
DRAWN KGA
CHECKED JDP

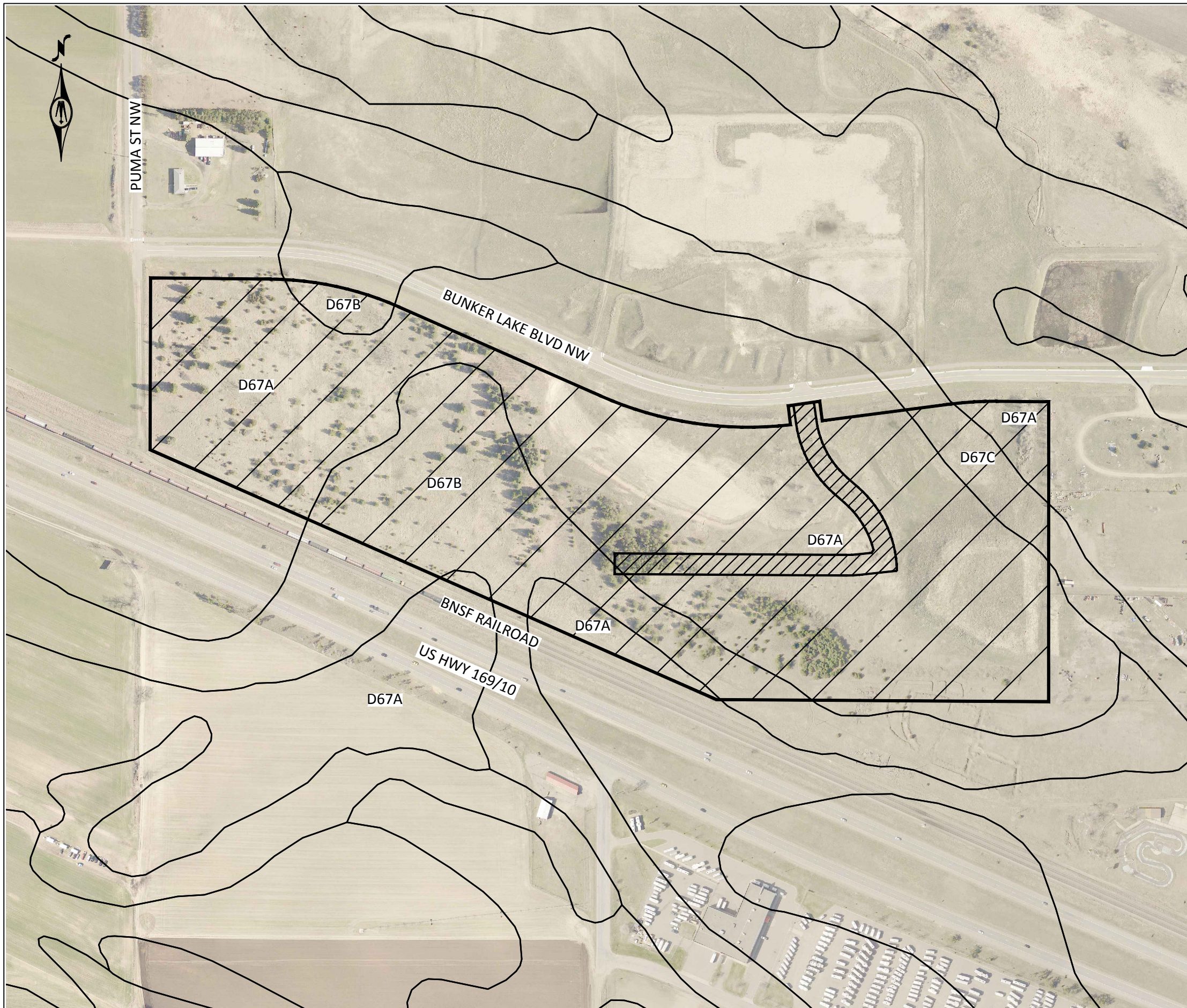
PSD, LLC. RAMSEY, MINNESOTA

BUNKER LAKE INDUSTRIAL PARK - LOT 2



STORM WATER POLLUTION PROTECTION PLAN

SHEET

C2.01



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	PHEL

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

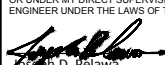
LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	SHEET NO.
SITE MAP	C2.06
DIRECTION OF FLOW	C2.04
FINAL STABILIZATION	C2.04 & L1.01
SOILS	C2.02
DRAINAGE STRUCTURES	C4.01
DRAINAGE TABULATION	NA
STORM SEWER PLAN/PROFILE SHEETS	C5.01
EROSION & SEDIMENT CONTROL DETAILS	C2.05
EROSION CONTROL TABULATION	C2.01
TURF ESTABLISHMENT TABULATION	C2.01
NARRATIVE & NOTES	C2.01 - C2.03



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 William D. Pelawo
 LIC. NO. 42603 DATE 08/04/2017

DESIGNED JDP
DRAWN KGA
CHECKED JDP

PSD, LLC. RAMSEY, MINNESOTA
 BUNKER LAKE INDUSTRIAL PARK - LOT 2
STORM WATER POLLUTION PROTECTION PLAN

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 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.

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 site within 24-hours of discovery, or if applicable, within a shorter time to comply with the permit.

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



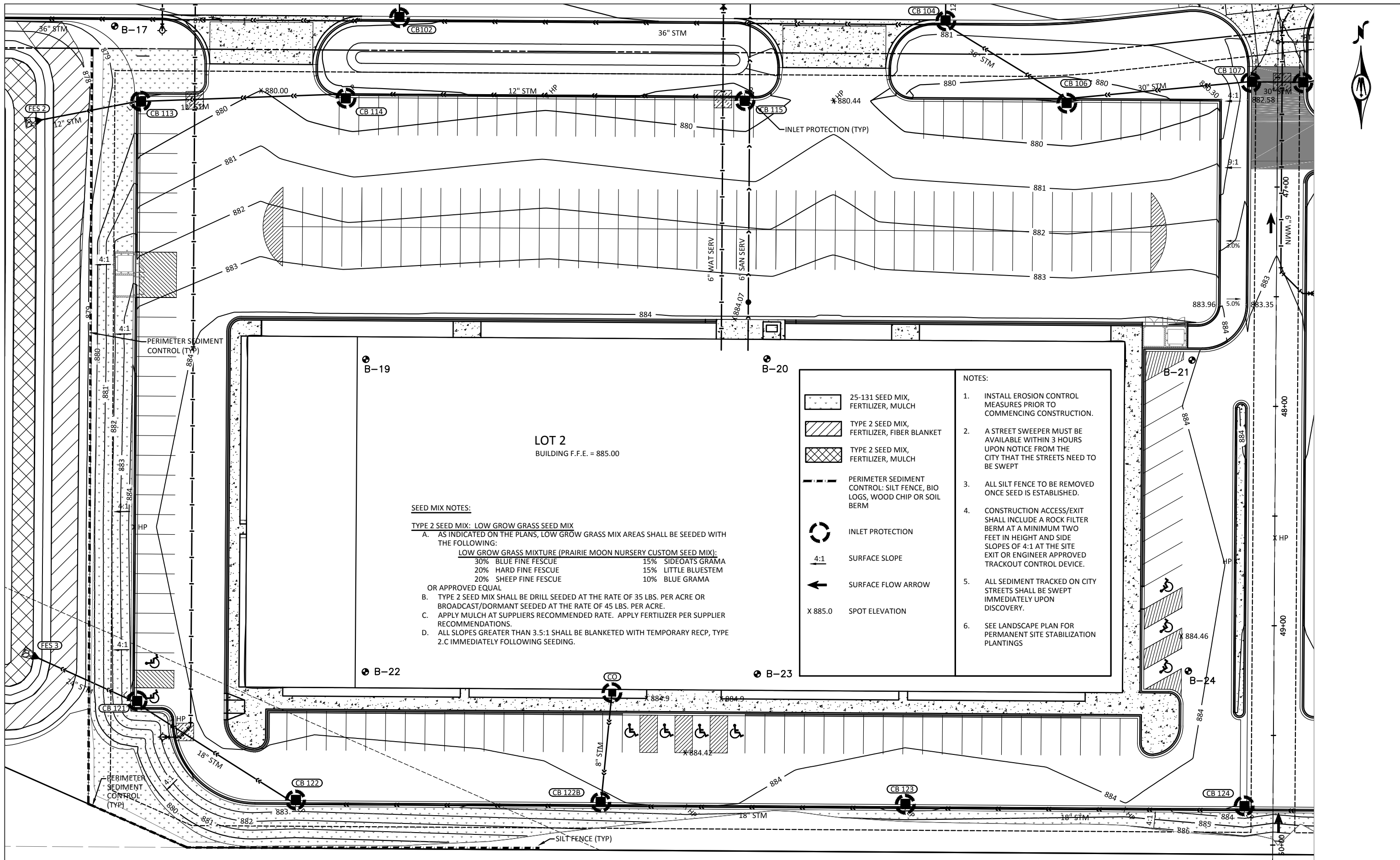
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 [Signature]
 JOHN D. PELAWO
 LIC. NO. 42603 DATE 08/04/2017

DESIGNED JDP
DRAWN KGA
CHECKED JDP

PSD, LLC. RAMSEY, MINNESOTA
 BUNKER LAKE INDUSTRIAL PARK - LOT 2
 STORM WATER POLLUTION PROTECTION PLAN



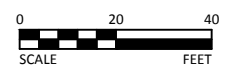
LOT 2
BUILDING F.F.E. = 885.00

SEED MIX NOTES:

- TYPE 2 SEED MIX: LOW GROW GRASS SEED MIX**
- A. AS INDICATED ON THE PLANS, LOW GROW GRASS MIX AREAS SHALL BE SEEDED WITH THE FOLLOWING:
LOW GROW GRASS MIXTURE (PRAIRIE MOON NURSERY CUSTOM SEED MIX):
 30% BLUE FINE FESCUE 15% SIDEOTS GRAMA
 20% HARD FINE FESCUE 15% LITTLE BLUESTEM
 20% SHEEP FINE FESCUE 10% BLUE GRAMA
- OR APPROVED EQUAL
- B. TYPE 2 SEED MIX SHALL BE DRILL SEEDED AT THE RATE OF 35 LBS. PER ACRE OR BROADCAST/DORMANT SEEDED AT THE RATE OF 45 LBS. PER ACRE.
- C. APPLY MULCH AT SUPPLIERS RECOMMENDED RATE. APPLY FERTILIZER PER SUPPLIER RECOMMENDATIONS.
- D. ALL SLOPES GREATER THAN 3.5:1 SHALL BE BLANKETED WITH TEMPORARY RECP, TYPE 2.C IMMEDIATELY FOLLOWING SEEDING.

- 25-131 SEED MIX, FERTILIZER, MULCH
- TYPE 2 SEED MIX, FERTILIZER, FIBER BLANKET
- TYPE 2 SEED MIX, FERTILIZER, MULCH
- PERIMETER SEDIMENT CONTROL: SILT FENCE, BIO LOGS, WOOD CHIP OR SOIL BERM
- INLET PROTECTION
- 4:1 SURFACE SLOPE
- SURFACE FLOW ARROW
- X 885.0 SPOT ELEVATION

- NOTES:**
- INSTALL EROSION CONTROL MEASURES PRIOR TO COMMENCING CONSTRUCTION.
 - A STREET SWEEPER MUST BE AVAILABLE WITHIN 3 HOURS UPON NOTICE FROM THE CITY THAT THE STREETS NEED TO BE SWEEPED
 - ALL SILT FENCE TO BE REMOVED ONCE SEED IS ESTABLISHED.
 - CONSTRUCTION ACCESS/EXIT SHALL INCLUDE A ROCK FILTER BERM AT A MINIMUM TWO FEET IN HEIGHT AND SIDE SLOPES OF 4:1 AT THE SITE EXIT OR ENGINEER APPROVED TRACKOUT CONTROL DEVICE.
 - ALL SEDIMENT TRACKED ON CITY STREETS SHALL BE SWEEPED IMMEDIATELY UPON DISCOVERY.
 - SEE LANDSCAPE PLAN FOR PERMANENT SITE STABILIZATION PLANTINGS



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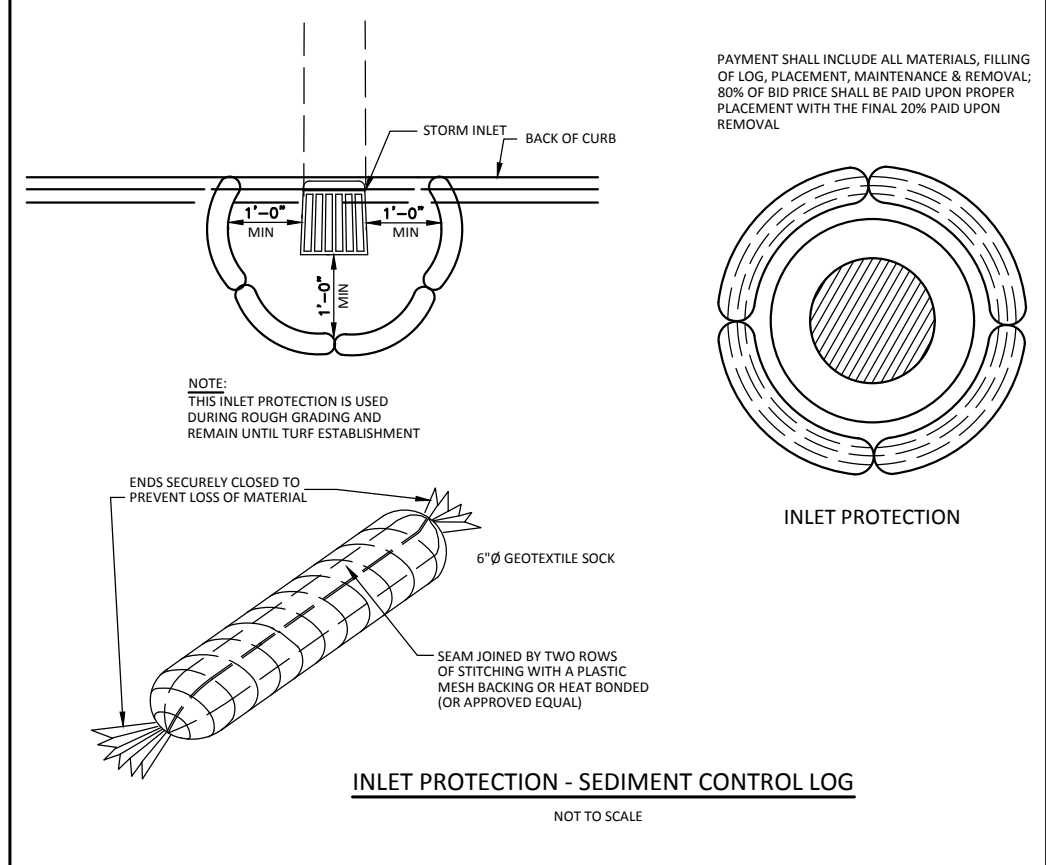
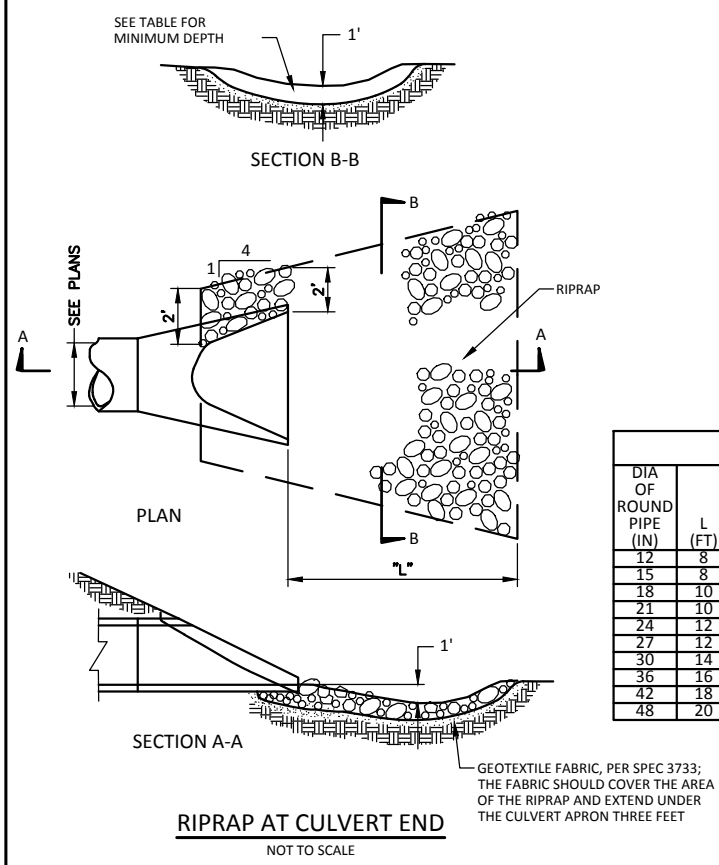
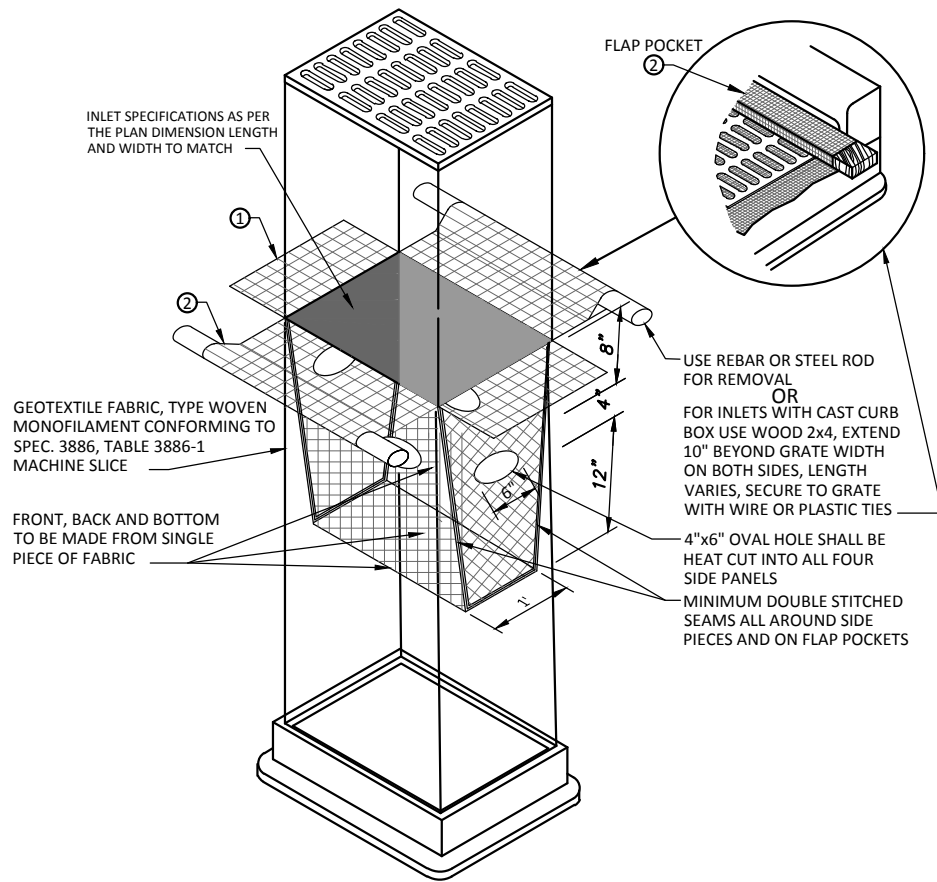
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 LIC. NO. 42603 DATE 08/04/2017

DESIGNED	JDP
DRAWN	KGA
CHECKED	JDP

PSD, LLC. RAMSEY, MINNESOTA
 BUNKER LAKE INDUSTRIAL PARK - LOT 2
 LOT 2 EROSION CONTROL PLAN

SHEET
C2.04

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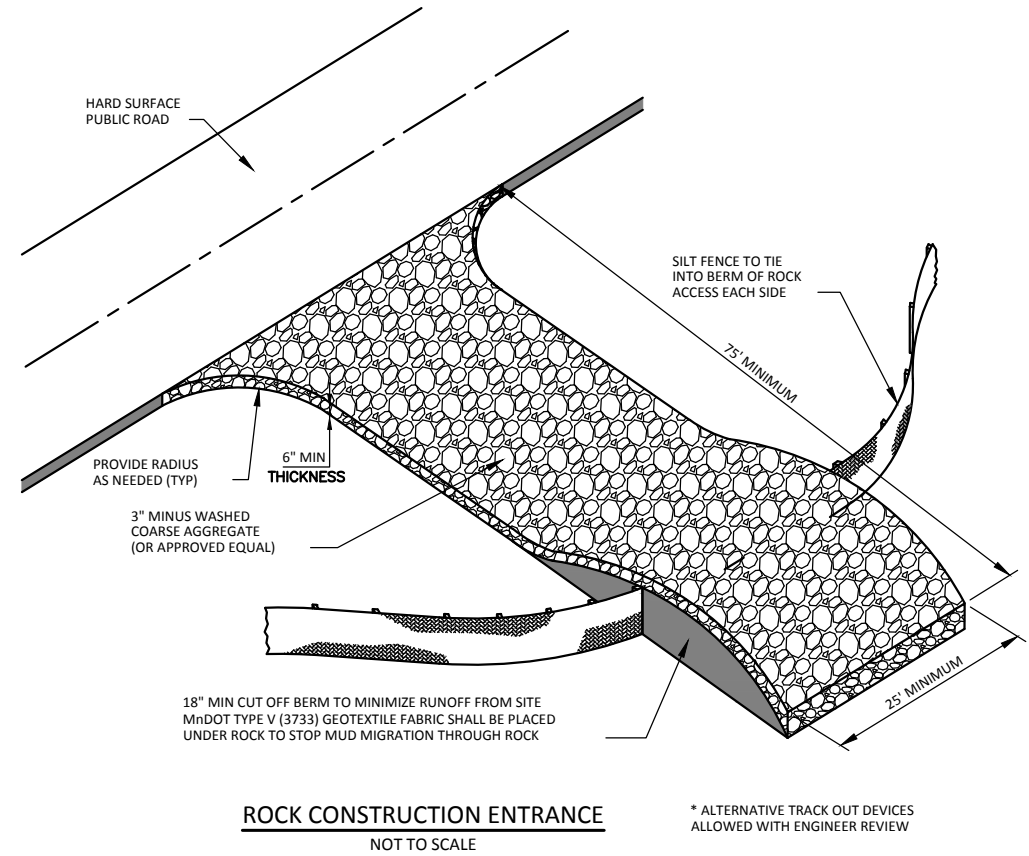
NOTES:
 INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER. MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL IN THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2x4.

INSTALLATION NOTES:
 DO NOT INSTALL PROTECTION IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.
 TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

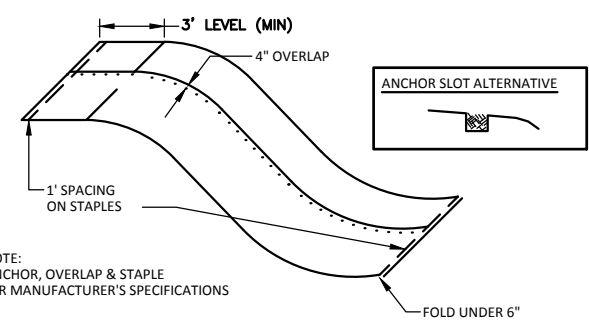
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

**INLET PROTECTION
 GEOTEXTILE BAG**

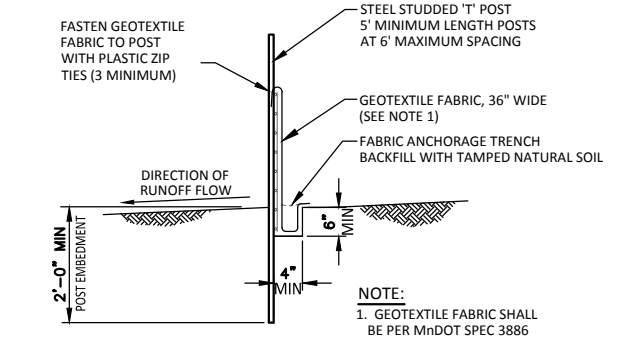


ROCK CONSTRUCTION ENTRANCE
 NOT TO SCALE

* ALTERNATIVE TRACK OUT DEVICES ALLOWED WITH ENGINEER REVIEW



EROSION CONTROL BLANKET INSTALLATION
 NOT TO SCALE



SILT FENCE - HEAVY DUTY
 NOT TO SCALE

NOTE: DETAILS NOT TO SCALE



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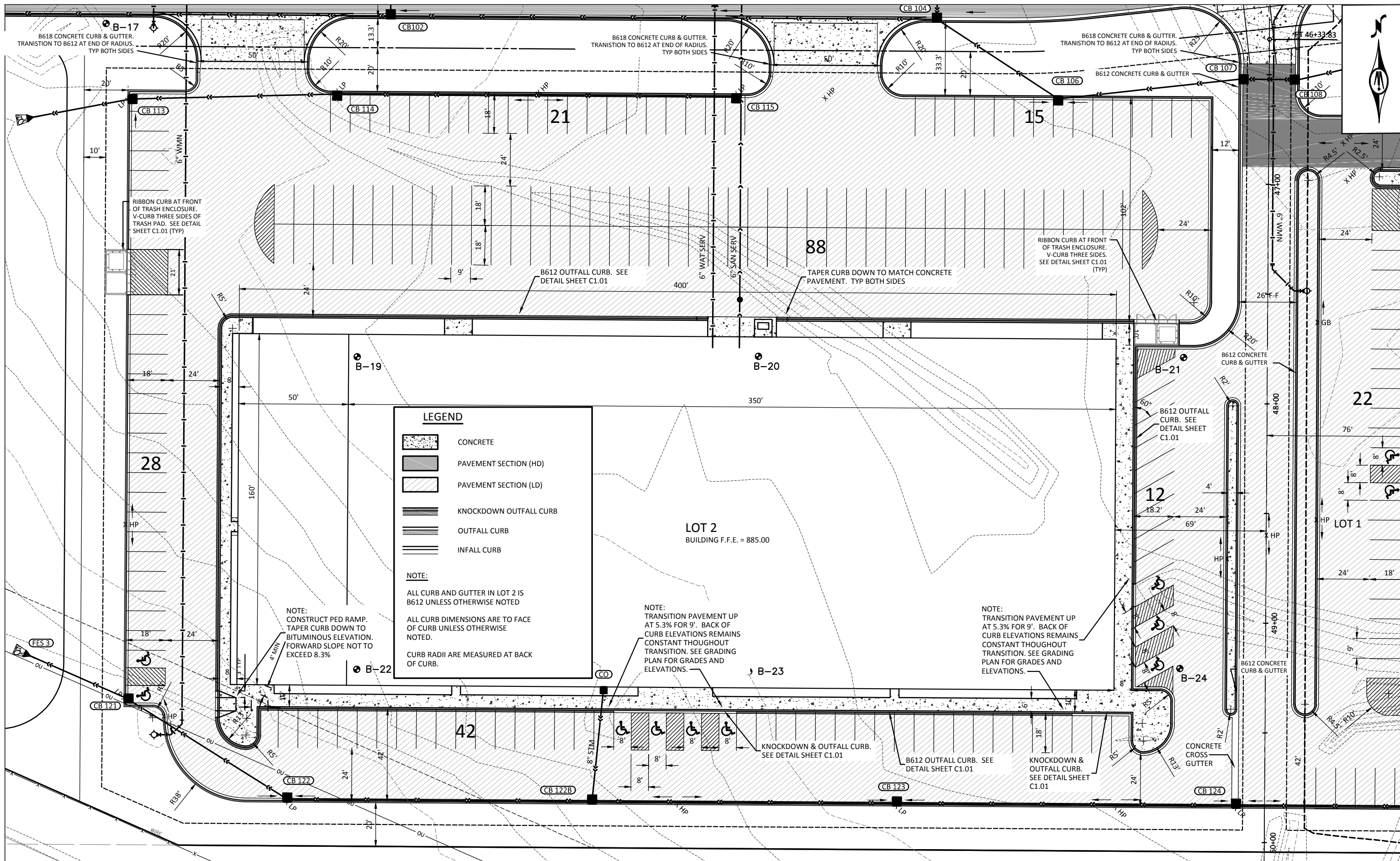
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

[Signature]
 D. Pelawo
 LIC. NO. 42603 DATE 08/04/2017

DESIGNED JDP
 DRAWN KGA
 CHECKED JDP

PSD, LLC. RAMSEY, MINNESOTA
 BUNKER LAKE INDUSTRIAL PARK
 EROSION CONTROL DETAILS

SHEET
C2.05



LEGEND

- CONCRETE
- PAVEMENT SECTION (HD)
- PAVEMENT SECTION (LD)
- KNOCKDOWN OFFFALL CURB
- OFFFALL CURB
- INFALL CURB

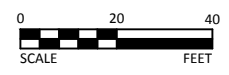
NOTE:
 ALL CURB AND GUTTER IN LOT 2 IS B612 UNLESS OTHERWISE NOTED

NOTE:
 ALL CURB DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
 CURB RADII ARE MEASURED AT BACK OF CURB.

NOTE:
 CONSTRUCT PED RAMP. TAPER CURB DOWN TO BITUMINOUS ELEVATION. FORWARD SLOPE NOT TO EXCEED 8.3%

NOTE:
 TRANSITION PAVEMENT UP AT 5.3% FOR 9'. BACK OF CURB ELEVATIONS REMAINS CONSTANT THOUGHOUT TRANSITION. SEE GRADING PLAN FOR GRADES AND ELEVATIONS.

NOTE:
 TRANSITION PAVEMENT UP AT 5.3% FOR 9'. BACK OF CURB ELEVATIONS REMAINS CONSTANT THOUGHOUT TRANSITION. SEE GRADING PLAN FOR GRADES AND ELEVATIONS.



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

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1	JDP	8/17/2017

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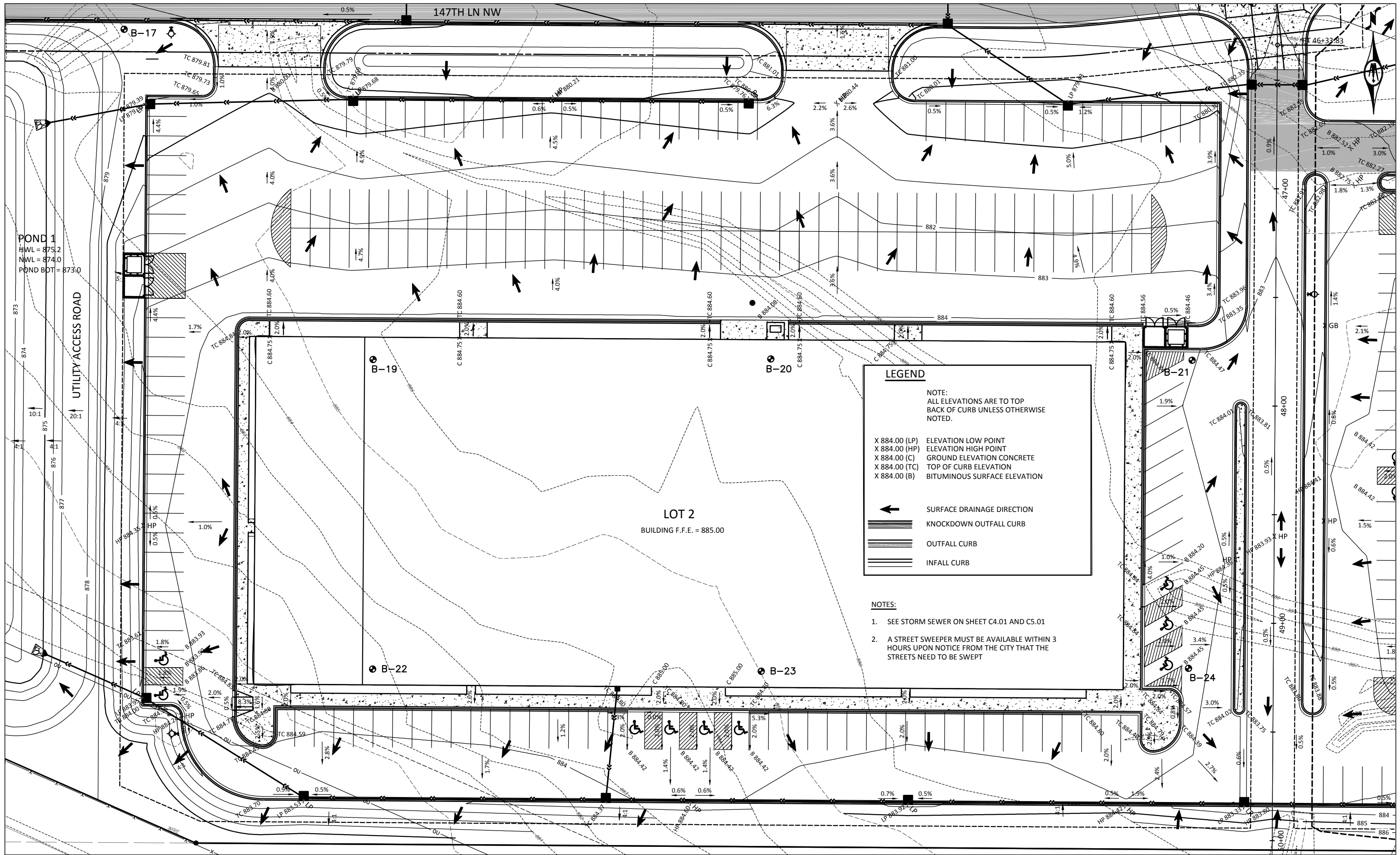
[Signature]
 ARNOLD D. PEIROW
 LIC. NO. 42603 DATE 08/04/2017

DESIGNED: JDP
 DRAWN: KGA
 CHECKED: JDP

PSD, LLC. RAMSEY, MINNESOTA
 BUNKER LAKE INDUSTRIAL PARK - LOT 2
 LOT 2 SITE IMPROVEMENTS

SHEET
C2.06

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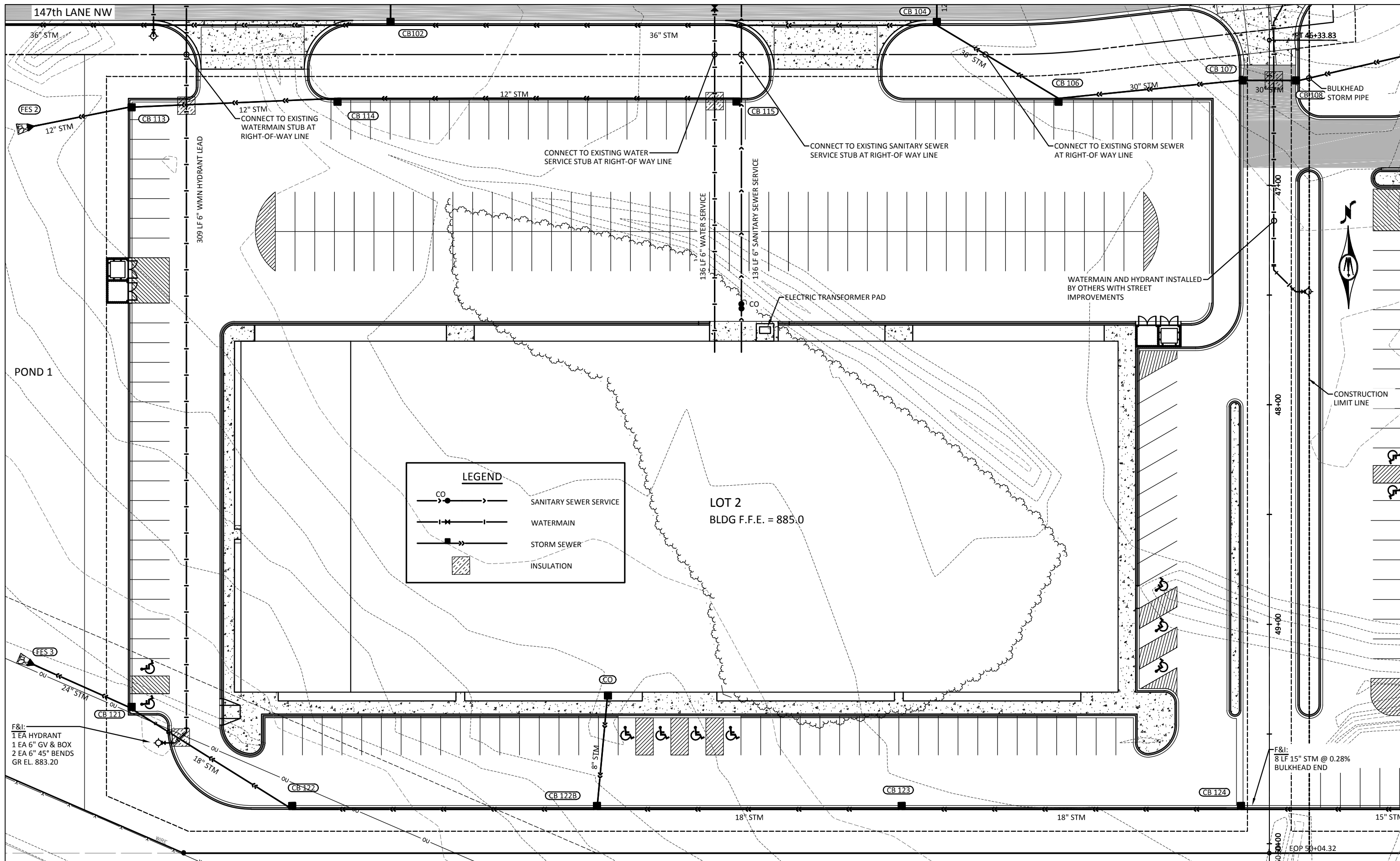
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D. D. Feiwel
LIC. NO. 42603 DATE 08/04/2017

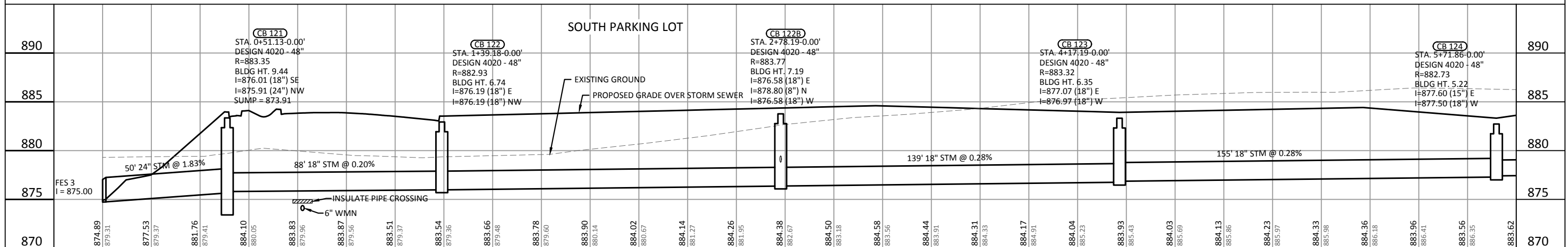
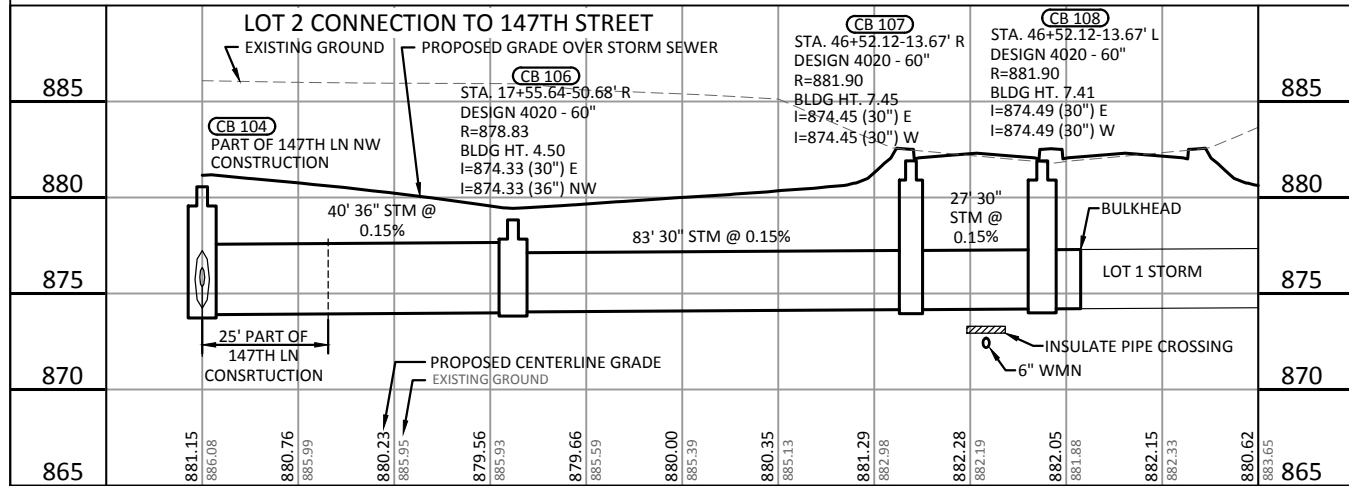
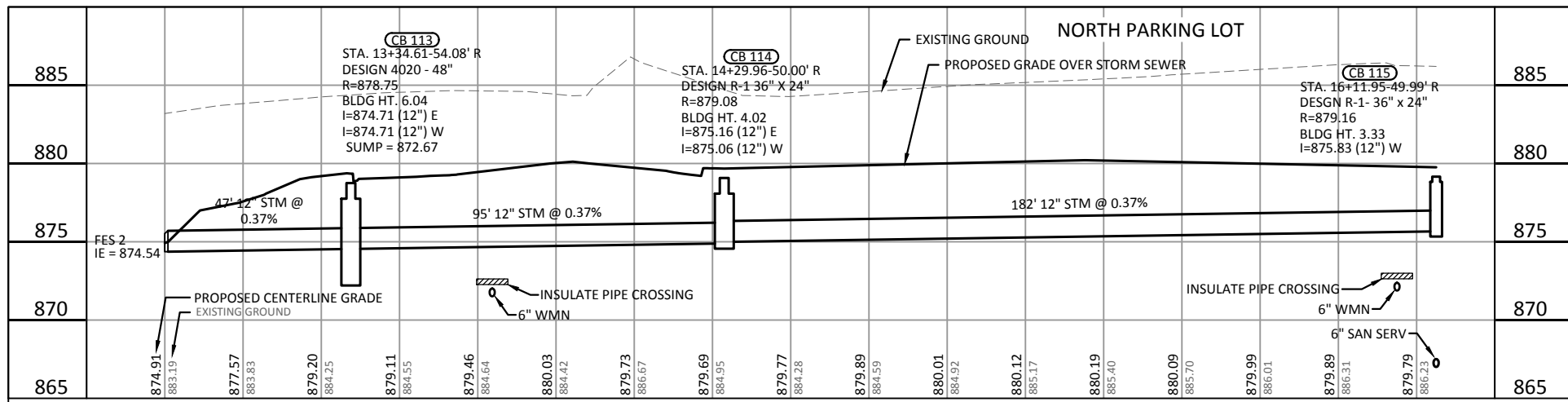
DESIGNED
JDP
DRAWN
KGA
CHECKED
JDP

PSD, LLC. RAMSEY, MINNESOTA
BUNKER LAKE INDUSTRIAL PARK - LOT 2
LOT 2 GRADING PLAN

SHEET
C3.01

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[Signature]
 D. Pelawo
 LIC. NO. 42603 DATE 08/04/2017

DESIGNED KPB
DRAWN KGA
CHECKED JDP

PSD, LLC. RAMSEY, MINNESOTA
 BUNKER LAKE INDUSTRIAL PARK - LOT 2
 LOT 2 STORM LEADS

SHEET
 C5.01

