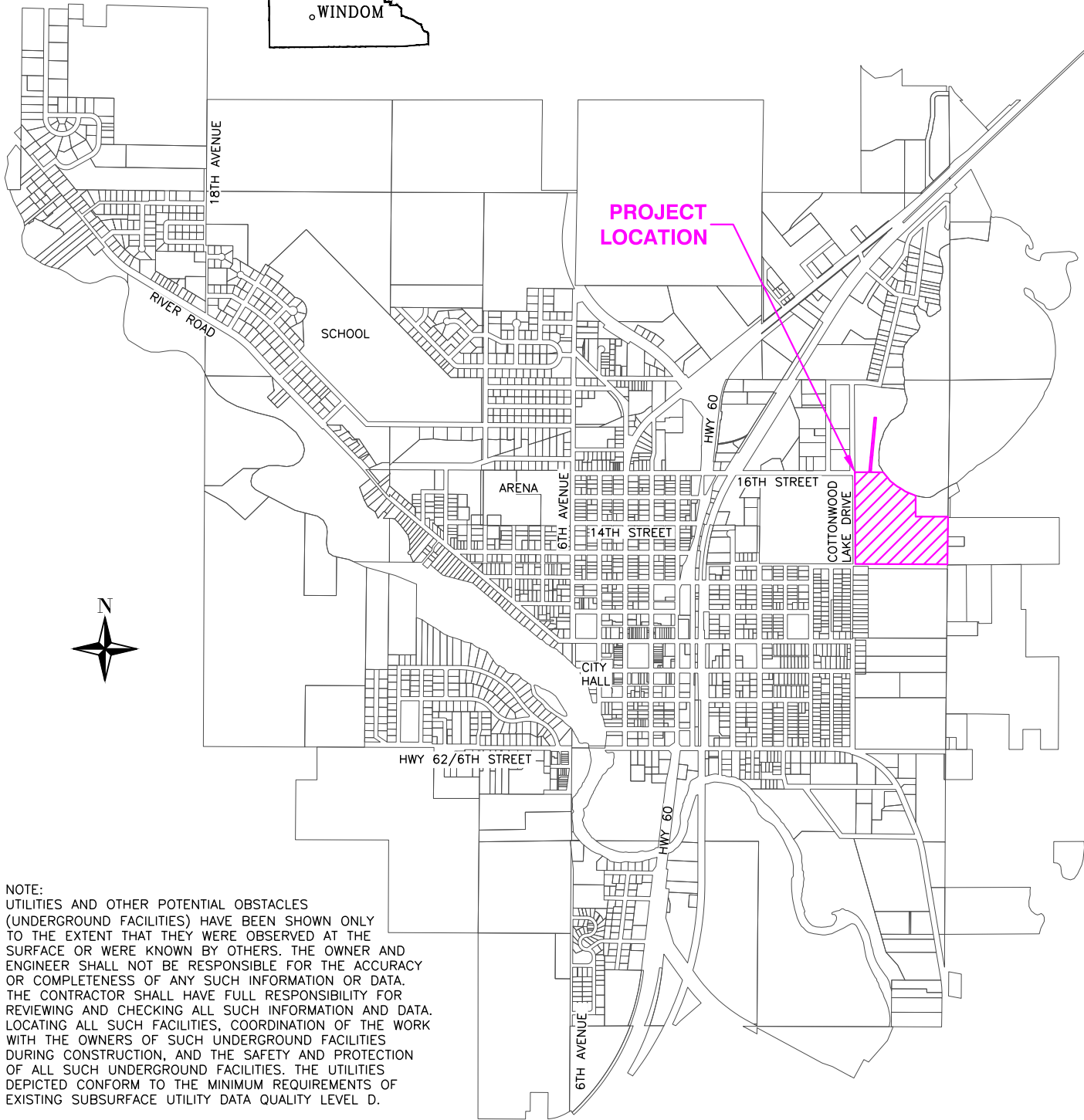




S COTTONWOOD LAKE SUBDIVISION WINDOM, MINNESOTA



NOTE:
UTILITIES AND OTHER POTENTIAL OBSTACLES (UNDERGROUND FACILITIES) HAVE BEEN SHOWN ONLY TO THE EXTENT THAT THEY WERE OBSERVED AT THE SURFACE OR WERE KNOWN BY OTHERS. THE OWNER AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA. LOCATING ALL SUCH FACILITIES, COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION, AND THE SAFETY AND PROTECTION OF ALL SUCH UNDERGROUND FACILITIES. THE UTILITIES DEPICTED CONFORM TO THE MINIMUM REQUIREMENTS OF EXISTING SUBSURFACE UTILITY DATA QUALITY LEVEL D.

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.

DANIEL L. VAN SCHEPEN, P.E.
DATE: 10-02-2023 REG. NO. 45596



Project Manager: DLV
Designer: BMH
Project Number: 369202
Phone: (712) 472-2531

S COTTONWOOD LAKE SUBDIVISION
WINDOM, MINNESOTA

TITLE SHEET

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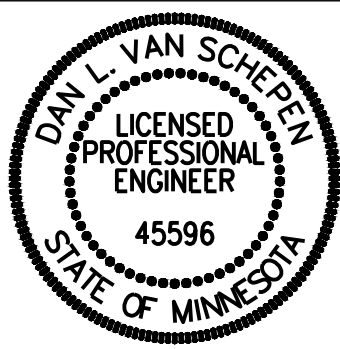
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F.01-F.05	FORCE SEWER

LEGEND

EXISTING	PROPOSED	DESCRIPTION
---	---	LOT LINE
---	---	EASEMENT LINE
---	---	CENTER LINE
	---	TELEPHONE BOX, CABLE TV LINE
SA-S		SANITARY SEWER, MANHOLE
FM	---	SANITARY SEWER FORCE MAIN
ST-S		STORM SEWER, MANHOLE, INTAKE
---	---	SUBDRAIN
---	---	CURB & GUTTER
---		PCC PAVEMENT
W		WATER MAIN, HYDRANT, VALVE
UGE		UNDERGROUND ELECTRIC LINE, BOX, LIGHT POLE
	---	POWER POLE, GUY WIRE
OHE	---	OVERHEAD ELECTRIC LINE
GAS	---	GAS LINE, VALVE
TEL	---	TELEPHONE LINE
	---	EVERGREEN, BUSH, TREE
	---	SIGN POST, MAILBOX
FO	---	FIBER OPTIC LINE
1455		CONTOURS
	---	PAVEMENT REMOVALS
---	---	DRAINAGE ARROW

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BY: DATE: 10-02-2023
DANIEL L. VAN SCHEPEN, P.E. LICENSE NO. 45596
MY LICENSE RENEWAL DATE IS JUNE 30, 2024
PAGES OR SHEETS COVERED BY THIS SEAL: ALL

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NOTES

MOBILIZATION– THE CONTRACTOR SHALL COMPLETE THE ENTIRE PROJECT AND ALL STREETS OPEN TO TRAFFIC BY THE CONTRACT COMPLETION/MILESTONE DATE(S). CONTRACTOR SHALL COORDINATE AND COOPERATE ON WORK OF OTHER CONTRACTORS ADJACENT TO THIS PROJECT (IE UTILITY OWNERS). THIS ITEM SHALL INCLUDE COSTS AS DEFINED IN THE PLANS AS WELL AS IN MNDOT 2021. ALL PROJECT PAYMENT ITEMS WILL BE COMPLETED AS BID ACCORDING TO THE PLANS AND SPECIFICATIONS, ALL REFERENCES TO MNDOT STANDARD SPECIFICATIONS ARE IN REGARD TO MATERIALS AND CONSTRUCTION METHOD ONLY, CONTRACTOR SHALL BID WORK ACCORDING TO THE BID TABULATION, PLANS AND CONTRACT SPECIFICATIONS.

PAVEMENT REMOVAL– ALL SAW CUTTING FOR REMOVALS SHALL BE INCIDENTAL TO THE REMOVAL. DAMAGE TO EXISTING PAVEMENT OUTSIDE THE PROJECT LIMITS DUE TO THE CONTRACTOR’S OPERATIONS SHALL BE REPAIRED AT NO COST TO THE OWNER. EXISTING BITUMINOUS PAVEMENT SHALL BE MILLED AND USED TO PROVIDE TEMPORARY ACCESS TO ALL PROJECT SEGMENTS THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL DISPOSE OF ALL UNUSED REMOVED MATERIALS. THE CONTRACTOR MAY NEED TO RE–SAW PAVEMENT IF REMOVAL LIMITS ARE ADJUSTED, NO ADDITIONAL COMPENSATION FOR RE–SAWING. ADDITIONAL PAVEMENT REMOVAL WILL BE MEASURED AND PAID UNDER CONTRACT PRICES. EXISTING PAVEMENT THICKNESS MAY VARY, REMOVAL OF DIFFERENT THICKNESS PAVEMENT SHALL BE INCIDENTAL TO THIS BID ITEM (SEE GEOTEK REPORT IN THE SPEC). REMOVAL OF EXISTING CURB AND GUTTER SHALL BE MEASURED IN THE PAVEMENT REMOVAL ITEM.

COMMON EXCAVATION– THE CONTRACTOR SHALL RETAIN ALL EXCAVATED STREET EMBANKMENT MATERIAL UNTIL ALL GRADING AND SUBGRADE PREPARATION IS COMPLETE. THE CONTRACTOR WILL NOT BE COMPENSATED TWICE FOR REMOVING MATERIAL FROM THE SITE THAT IS SUBSEQUENTLY RETURNED TO THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF ANY EXCESS MATERIAL. THE COST FOR DISPOSING OF MATERIAL OR PLACING EMBANKMENT ON SITE SHALL BE INCIDENTAL. ALL GRADING, SALVAGING, HAULING, STORAGE, AND INSTALLATION COSTS SHALL BE INCIDENTAL TO COMMON EXCAVATION. ITEM SHALL BE PAID PLAN QUANTITY UNLESS ADDITIONAL WORK IS REQUESTED BY THE OWNER OR ENGINEER. ITEM INCLUDES REPLACEMENT OF UNSUITABLE BASE OR UTILITY BACKFILL MATERIAL AS NECESSARY TO MEET SPECIFIED COMPACTION AND STABILITY REQUIREMENTS. ITEM INCLUDES INDEPENDENT TESTING AND PROOF ROLLING COSTS AS SPECIFIED.

GEOTEXTILE FABRIC– GEOTEXTILE FABRIC SHALL BE INSTALLED UNDERNEATH THE GRANULAR BASE COURSE IN UNSTABLE AREAS DETERMINED BY THE ENGINEER. THE BID ITEM “GEOTEXTILE FABRIC” HAS BEEN ESTABLISHED TO PAY FOR ALL LABOR, EQUIPMENT AND MATERIAL TO INSTALL THE FABRIC WHEN REQUIRED. PAY QUANTITIES FOR THE GEOTEXTILES WILL BE PAID FOR AT THE CONTRACT PRICE PER SQUARE YARD IN PLACE AS NECESSARY AS DETERMINED BY THE ENGINEER (AND WILL LIKELY VARY GREATLY FROM THE ESTIMATED BID QUANTITY, THIS VARIATION WILL NOT BE BASIS FOR A CHANGE ORDER IN TIME OR BID ITEM UNIT COST). MEASUREMENT FOR PAYMENT EXCLUDES THE GEOTEXTILE USED FOR OVERLAPPING AS WELL AS SEAM OVERLAPS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER’S RECOMMENDATIONS. OVERLAP SHALL BE A MINIMUM OF 24 INCHES. THE END OF THE ROLL OVERLAPS SHALL BE THREE FEET MINIMUM. THE CONTRACTOR SHALL NOT DRIVE EQUIPMENT DIRECTLY ON TOP OF THE GEOTEXTILE. SHOULD THE GEOTEXTILE BE TORN OR PUNCTURED, THE DAMAGED AREA SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER. THE REPAIR SHALL CONSIST OF A PATCH OF THE SAME TYPE OF GEOTEXTILE A MINIMUM OF THREE FEET FROM THE EDGE OF ANY PART OF THE DAMAGED AREA. PREAPPROVED PRODUCTS INCLUDE MIRAFI HP465, PROPEX GEOTEX 3X3 AND LUMITE GTF465.

SUBGRADE PREPARATION– COMPACT THE TOP 12” OF SUBGRADE TO 98% OF STANDARD PROCTOR DENSITY WITH MOISTURE CONTENT –3% TO +2% OF OPTIMUM. SUBGRADE PREPARATION SHALL EXTEND TO 2’ BEYOND THE BACK OF CURB. ITEM INCLUDES INDEPENDENT TESTING COSTS. AFTER PASSING COMPACTION TESTING, THE CONTRACTOR WILL BE REQUIRED TO COMPLETE A TEST ROLL OF 3 PASSES OF EACH CROSS SECTION OF THE PROJECT WITH A MAXIMUM LEGALLY LOADED SINGLE AXLE DUMP TRUCK. PASSES SHALL BE CONDUCTED AT LESS THAN 5 MPH AND RESULT IN NO DEFORMATION OF THE GRADE OF ½” OR GREATER, FAILING AREAS SHALL BE RECONDITIONED UNTIL PASSING. ALL TESTING AND REWORK NECESSARY ARE INCIDENTAL TO THE BID ITEM.

AGGREGATE BASE CLASS 5– SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY WITH MOISTURE CONTENT –0 TO +4% OF OPTIMUM. MATERIAL SHALL BE PROCESSED, SHIPPED AND INSTALLED ACCORDING TO MNDOT SPECIFICATION 2211 FOR CLASS 5 MATERIAL. SHOWN ON THE PLANS ALL STREETS ARE 12” BASE. THIS ITEM WILL BE PAID TO THE CONTRACTOR BY SY BASIS ON FURNISHING, SPREADING AND COMPACTING THE AGGREGATE BASE.

BITUMINOUS PAVEMENT– ALL NEW PAVEMENT SHALL MATCH EXISTING PAVEMENT AND RESULT IN A SMOOTH TRANSITION BETWEEN NEW AND EXISTING. SEE PLANS AND DETAIL FOR PAVING THICKNESSES. MATERIAL AND INSTALLATION SHALL BE PROCESSED, SHIPPED AND INSTALLED ACCORDING TO MNDOT SPECIFICATION 2360 (SEE PAGE C.01 FOR MIX DESIGN REQUIREMENTS). INSTALLATION AND TESTING SHALL BE COMPLETED ACCORDING TO MNDOT SPECIFICATION 2360. TACK COAT SHALL BE APPLIED BETWEEN EACH LIFT OF BITUMINOUS AND ALONG EXISTING CONCRETE AND BITUMINOUS FACES AND ANY AREAS AS DETERMINED BY THE ENGINEER AT THE RATE OF .05 GAL/SQ. YD. PAYMENT FOR ALL MATERIALS AND WORK SHALL BE INCIDENTAL TO THE UNIT PRICE FOR ASPHALT. ITEM INCLUDES INDEPENDENT TESTING COSTS.

SUBDRAIN, PERFORATED, 4”– REFER TO DETAIL, PLACEMENT AS ILLUSTRATED ON THE PLAN PAGES, ENGINEERING FABRIC IS REQUIRED, COST INCLUDES POROUS BACKFILL, 2–4’ BURY DEPTH (VERIFY ELEVATION OF OUTLET AND ADJUST DEPTH AND GRADE ACCORDINGLY).

SUBDRAIN OUTLET AND CONNECTION– REFER TO DETAIL FOR TYPE AND PLACEMENT.

STORM SEWER – # IN. DIA.– PIPE BEDDING (PIT RUN GRAVEL) SHALL BE INSTALLED TO THE PIPE SPRING LINE AND INCIDENTAL TO THE COST OF THE PIPE. ALL STORM SEWER CONNECTIONS SHALL BE WATER TIGHT. RCP STORM SEWER PIPE SHALL CONTAIN JOINT SEALING GASKETS, OR MASTIC WITH JOINTS WRAPPED IN ENGINEERING FABRIC. PUMPING MAY BE REQUIRED DURING STORM EVENTS DURING CONSTRUCTION. ALL STORM WATER PUMPING SHALL BE INCIDENTAL TO THE STORM SEWER CONTRACT ITEMS. THOROUGHLY CLEAN STREET TO PREVENT SEDIMENT FROM LEAVING THE PROJECT. DAMAGE TO STREET, DRIVEWAYS, AND SIDEWALKS WILL REQUIRE CORRECTIVE ACTION BY THE CONTRACTOR AT NO COST TO THE OWNER. USE FILTER TUBE DOWN GRADE OF TRENCH STOCKPILES TO PREVENT SEDIMENT FROM ENTERING THE STORM SYSTEM, COST INCIDENTAL TO THE PIPE. ITEM INCLUDES INDEPENDENT COMPACTION TESTING COSTS.

STORM SEWER INTAKE– REFER TO DETAIL AND DIMENSIONS ON PLANS.

SANITARY SEWER SERVICE– INLINE PREFORMED HEAVY WALL PVC WYE AS SPECIFIED, SDR–26. THIS INCLUDES ALL PIPE, BEDDING MATERIAL, CONNECTIONS, CAPS, SAWING, REMOVALS OF EXISTING SERVICES, TRACER WIRE, TRACER WIRE ACCESS BOX (AT EACH CONNECTION TO EXISTING SERVICE) AND ALL OTHER INCIDENTAL ITEMS INVOLVED IN RECONNECTING THE SANITARY SEWER SERVICE IS INCLUDED IN THIS BID ITEM.

SANITARY SEWER PIPE– ALL SANITARY SEWER SHALL BE SDR–26 PVC PIPE. CONNECTIONS TO EXISTING SHALL BE MADE USING FERNCO STRONG BACK COUPLERS. GRANULAR BEDDING TO THE SPRINGLINE, MECHANICALLY TAMPED. ALL PIPE AND SERVICES SHALL HAVE TRACER WIRE INSTALLED AND TERMINATED IN MANHOLES AND AT SERVICES AS SPECIFIED, COST INCIDENTAL TO THE PIPE. SANITARY SEWER PIPE INSTALLATION MAY REQUIRE BY–PASS PUMPING DEPENDING ON THE CONTRACTORS OPERATIONS, COST SHALL BE INCIDENTAL TO THE PROJECT. AT NO TIME SHALL THE CONTRACTOR TEMPORARILY HALT SEWER FLOW WITHOUT PROVIDING FOR PUMPING TO AVOID SERVICE BACKUPS. ITEM INCLUDES INDEPENDENT COMPACTION TESTING AND REQUIRED CONTRACTOR TESTING COSTS.

CONNECT TO EXISTING SANITARY SEWER PIPE– CONNECT TO EXISTING SANITARY SEWER WITH SPECIFIED RIGID COUPLER CONNECTION TO DIFFERENT TYPES AND SIZES OF PIPE, COSTS INCLUDED IN THIS BID ITEM.

SANITARY SEWER MANHOLE– PRECAST CONCRETE MANHOLE, SEE DETAILS & SPECIFICATIONS. MANHOLE IS LUMP SUM PER EACH BID ITEM PROPERLY INSTALLED INCLUDING ADJUSTMENT RINGS. CASTING NEENAH 1669 AND SHALL BE ADJUSTED USING HDPE ADJUSTMENT RINGS, SEALED WITH THE RECOMMENDED ADHESIVE AND ADJUSTED TO MATCH THE GRADE AND SLOPE OF THE PROPOSED ROADWAY PRIOR TO PAVING. ALL SANITARY RINGS SHALL BE SEALED WITH AN EXTERNAL CHIMNEY SEAL AS MANUFACTURED BY CRETEX SPECIALTY PRODUCTS OR AN APPROVED EQUAL. IN LIEU OF RINGS AND SEAL, AN INTEGRALLY POURED INSERT WITH PVC RING RISER WILL BE AN ACCEPTABLE ALTERNATE, SEE DETAILS.

CONNECT TO EXISTING WATER MAIN– INSTALL NEW WATER MAIN AS SPECIFIED. COORDINATE WATER MAIN WORK WITH CITY STAFF 48 HOURS PRIOR TO BEGINNING WORK TO ALLOW PROPER NOTIFICATION OF RESIDENTS. CONNECT TO EXISTING WATER MAIN WITH SPECIFIED RIGID COUPLER CONNECTION TO DIFFERENT TYPES AND SIZES OF PIPE (VERIFY THE FITTINGS NECESSARY PRIOR TO BEGINNING SERVICE INTERRUPTION), INCLUDED IN THE BID ITEM FOR THIS ITEM. INCLUDES COST FOR FITTINGS NEEDED TO MATCH EXISTING ALIGNMENT AND ELEVATION. CONTRACTOR SHALL LAYOUT AND PRE–CONSTRUCT SEGMENTS TO THE GREATEST EXTENT POSSIBLE TO MINIMIZE DISRUPTIONS IN WATER SERVICE.

WATER SERVICE– WATER SERVICES SHALL BE 1” DR–9 MUNICIPEX PIPE, AS SPECIFIED IN PLANS, WITH TRACER WIRE MEASURED PER LIN FT INSTALLED. ALL CONNECTIONS (CORP STOPS AND CURB STOPS) SHALL BE SUPPORTED BY STIFFENERS, NO SPLICES ALLOWED. CONNECT TO EXISTING WATER SERVICE. BID ITEMS INCLUDE ALL COSTS FOR FITTINGS FOR WATER SERVICES, SADDLE, CURB STOP BOXES, STIFFENERS, ETC.

WATER MAIN FITTINGS– ALL WATER MAIN FITTINGS SHALL BE DUCTILE IRON PIPE FITTINGS AS SPECIFIED AND INCLUDE CORROSION PROTECTION NUTS ON ALL BOLTS (SEE SPECIFICATIONS). ALL FITTINGS SHALL BE SECURED WITH MECHANICAL JOINTS AND WRAPPED IN 8 MIL POLY WRAP. CONNECTIONS (TO BE VERIFIED BY THE CONTRACTOR IN THE FIELD) TO DIFFERENT TYPES AND SIZES OF EXISTING PIPE SHALL BE INCIDENTAL TO THE COST OF THE CONNECTION BID ITEM. FITTINGS NOT SPECIFICALLY CALLED OUT FOR PAYMENT SHALL BE INCIDENTAL TO THE PIPE.

WATER MAIN C900– WATER MAIN PIPE SHALL BE MEASURED BY LINEAR FOOT INSTALLED. ALL MAINS SHALL CONFORM TO AWWA C900. PLACEMENT AT EXTRA DEPTH TO FACILITATE EXISTING AND PROPOSED UTILITIES SHALL BE INCIDENTAL. ALL PIPE SHALL HAVE TRACER WIRE (INCLUDING GROUNDING RODS AT ALL TERMINATION POINTS) INSTALLED AND TERMINATED IN BOXES (ADJACENT THE HYDRANTS) AS SPECIFIED, COST INCIDENTAL TO THE PIPE. ITEM INCLUDES INDEPENDENT COMPACTION TESTING AND REQUIRED CONTRACTOR TESTING COSTS.

TERRACE GRADING– ALL DISTURBED AREAS SHALL BE FINE GRADED TO PREPARE FOR SEEDING OPERATIONS. ALL ROCK AND DEBRIS SHALL BE REMOVED FROM TERRACES PRIOR TO FINISH GRADING, COST INCIDENTAL. CONTRACTOR SHALL PROVIDE TOPSOIL FREE OF DEBRIS FOR FILL MATERIAL ADJACENT TO NEW CURB AND GUTTER AND SIDEWALK IN RESIDENTIAL AREAS. TOPSOIL MAY BE ACQUIRED DURING EXCAVATION FOR NEW PAVEMENT. FINE GRADING THE TERRACE AND REMOVING ROCK AND OTHER DEBRIS IS INCIDENTAL (INCLUDING PROVIDING ADDITIONAL TOPSOIL MATERIAL IF THE CONTRACTOR NEGLECTS SALVAGING THE EXISTING PROPERLY). ADJUST EXISTING CURB STOPS, TRACER WIRE TERMINAL BOXES AND VALVE BOXES TO MATCH PROPOSED GRADES, COST INCIDENTAL.

DEWATERING – THE LUMP SUM BID ITEM FOR DEWATERING SHALL INCLUDE MAINTAINING WATER LEVELS BELOW THE BOTTOM OF TRENCH EXCAVATION. THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN TO THE ENGINEER PRIOR TO CONSTRUCTION FOR APPROVAL. DEWATERING PLAN MAY NEED TO BE MODIFIED THROUGHOUT CONSTRUCTION TO MEET ACTUAL FIELD CONDITIONS. WATER SHALL NOT BE DISCHARGED DOWN THE SANITARY SEWER AND NECESSARY PRECAUTIONARY MEASURES SHALL BE TAKEN TO PREVENT SEDIMENT FROM LEAVING THE SITE. DEWATERING SHALL COMPLY WILL ALL APPLICABLE REGULATIONS. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION REGARDING SOIL TYPES AND POSSIBLE GROUNDWATER LEVELS.

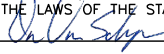
SPECIAL ROCK BEDDING– .5” TO 2.0” ROCK SHALL BE USED ONLY WHEN AUTHORIZED BY ENGINEER OR OWNER. THE BEDDING WILL ONLY BE PAID FOR UP TO THE BOTTOM OF THE PIPE OR TO THE GROUND WATER LEVEL FOR SANITARY SEWER. AS TYPICALLY AUTHORIZED, PAYMENT OF 0.33 TONS/LF WILL BE PAID FOR UNLESS ADDITIONAL AMOUNTS ARE APPROVED BY THE WRITTEN AUTHORIZATION OF THE ENGINEER.

TRAFFIC CONTROL– ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE “MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES” (MMUTCD) AND PART VI, “FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS”, THE “GUIDE TO ESTABLISHING SPEED IN HIGHWAY WORK ZONES”, THE MINNESOTA FLAGGING HANDBOOK, THE PROVISIONS ON MN/DOT 1404 AND 1710, THE MINNESOTA STANDARD SIGNS MANUAL PARTS I AND II, THE “TRAFFIC ENGINEERING MANUAL, THE TRAFFIC CONTROL LAYOUTS IN THE PLAN, AND THE SPECIAL PROVISIONS. ACCESS SHALL BE MAINTAINED TO ADJACENT RESIDENCES AS MUCH AS POSSIBLE. EMERGENCY ROUTES SHALL BE COORDINATED WITH THE CITY (POLICE AND FIRE DEPARTMENT) DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY MAINTAIN TRAFFIC CONTROL DEVICES WHEN CALLED BY ENGINEER OR OWNER. FAILURE TO DO SO WILL RESULT IN A \$100 PENALTY PER DAY THE TRAFFIC CONTROL DEVICE IS NOT MAINTAINED. DO NOT DAMAGE TREES, DRIVEWAYS, SIDEWALKS AND MINIMIZE DAMAGE TO EXISTING TURF. TURF DAMAGED DUE TO TRAFFIC CONTROL WILL BE RESTORED TO PRECONSTRUCTION CONDITIONS AS PART OF THIS BID ITEM.

SWPPP MANAGEMENT– CONTRACTOR SHALL USE THE APPROPRIATE INLET PROTECTION/EROSION CONTROL DEVICES INCLUDED IN THE CONTRACT TO PREVENT CONTAMINANTS FROM LEAVING THE SITE AND ENTERING THE STORM SEWER SYSTEM. THESE DEVICES ARE TO BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT AND REMOVED ONCE VEGETATION IS 70% STABILIZED. CONTRACTOR SHALL ALSO UTILIZE TOPSOIL STOCK PILES (MAXIMUM 2’ TALL) ON THE UP HILL SIDES OF R.O.W. TO CONTROL & SLOW STORM WATER RUNOFF. CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING AND PAYING FOR THE MPCA STORM WATER PERMIT AND FOLLOWING ITS RECOMMENDATIONS, ALL COSTS INCLUDED IN THIS ITEM.

SEEDING, FERTILIZING & HYDROMULCHING– INSTALL URBAN SEED MIX AT A RATE OF 175 LB/AC, INSTALL 13–13–13 FERTILIZER AT A RATE OF 700 LB/AC. PREPARE SEED BED AS SPECIFIED, REMOVE ALL DEBRIS AND GRANULAR MATERIAL BEFORE SEED INSTALLATION, COST INCIDENTAL TO THE SEEDING BID ITEM. HYDROMULCHING TO BE INSTALLED AS SPECIFIED AND RECOMMENDED BY THE MANUFACTURER, INCLUDING COMPLETE COVER OF ALL DISTURBED AREAS. ALL SEEDING NECESSARY DUE TO CONTRACTOR’S STAGING AREAS SHALL BE COMPLETED AS SPECIFIED BUT WILL NOT BE MEASURED FOR PAYMENT UNLESS ADDITIONAL PROJECT WORK IS REQUESTED BY THE OWNER/ENGINEER. SEEDING STAGING SHALL BE COMPLETED AS PROJECT SEGMENTS ARE COMPLETED, ADDITIONAL COSTS OF MOBILIZATION ARE INCIDENTAL TO THIS PROJECT AND THE SWPPP. SEED SHALL BE SALT AND SHADE RESISTANT AS DETERMINED IN THE FIELD.

INCIDENTAL WORK (UTILITIES)– THERE IS NO BID ITEM FOR INCIDENTAL WORK NECESSARY TO COMPLETE THE UTILITIES, THE FOLLOWING IS A LIST OF MAJOR ITEMS OF INCIDENTAL WORK THAT WILL BE INCLUDED IN THEIR RESPECTIVE UTILITY BID ITEM COSTS:
A. TEMPORARY HYDRANTS, IF NEEDED, FOR TESTING/FLUSHING PURPOSES. (DEPENDING ON THE CONTRACTORS OPERATIONS)
B. ADDITIONAL WORK FOR HORIZONTAL AND/OR VERTICAL ADJUSTMENTS THAT MAY BE INVOLVED WHEN INSTALLING PROPOSED UTILITIES (SANITARY, WATER AND STORM) AROUND EXISTING UTILITIES.
C. REMOVAL AND DISPOSAL OF EXISTING WATER (OR CAP AND ABANDON IN PLACE), STORM SEWER & CULVERTS, AND SANITARY SEWER PIPES, FITTINGS, HYDRANTS OR STRUCTURES FOR WHICH NO PAY ITEM EXISTS. SALVAGE AND PROVIDE TO THE CITY THE HYDRANTS ABOVE THE GROUND LINE, COST INCIDENTAL TO THE WORK.
D. THE REMOVAL AND DISPOSAL OF UNMARKED OR ABANDONED CONDUIT OR PIPE REQUIRED IN ORDER TO PLACE THE UNDERGROUND UTILITIES AT THE PROPER HORIZONTAL AND VERTICAL LOCATIONS.
E. ADDITIONAL WORK REQUIRED FOR INSTALLING WATER MAIN WITH COVER GREATER THAN 7 FEET TO AVOID CONFLICTS.
F. ADJUSTMENT OF UTILITY PEDESTALS/VAULTS. COORDINATION WITH THE UTILITY OWNER MAY BE REQUIRED.
G. REMOVE AND DISPOSE OF DRIVEWAY LANDSCAPING THE PROPERTY OWNER DOES NOT WANT TO SALVAGE.
ALL MISCELLANEOUS ITEMS OF UTILITY–RELATED WORK FOR WHICH NO PAY ITEM EXISTS.

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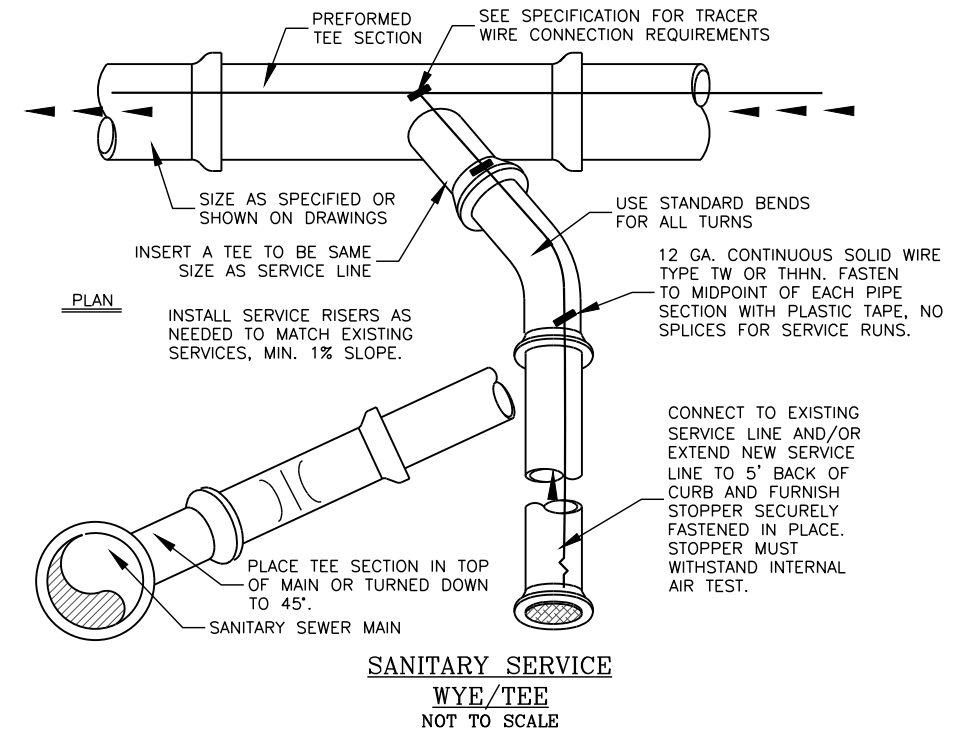
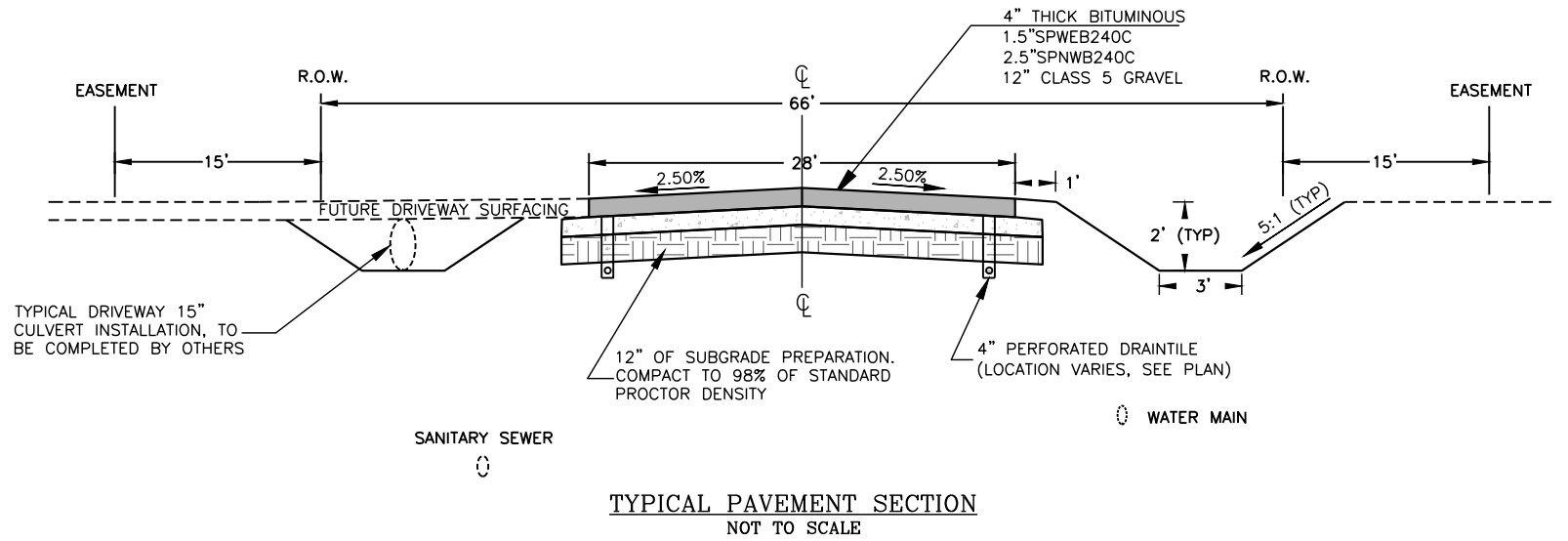
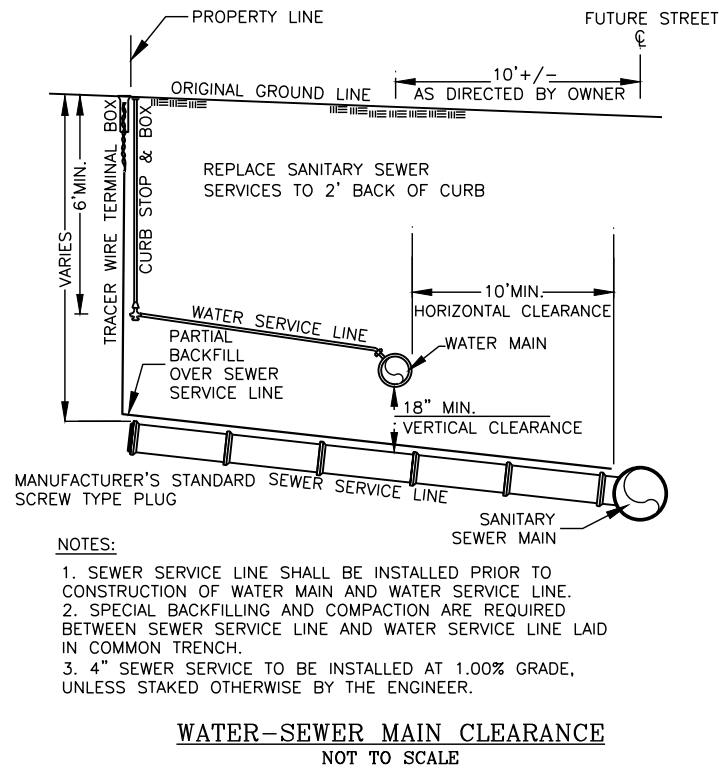
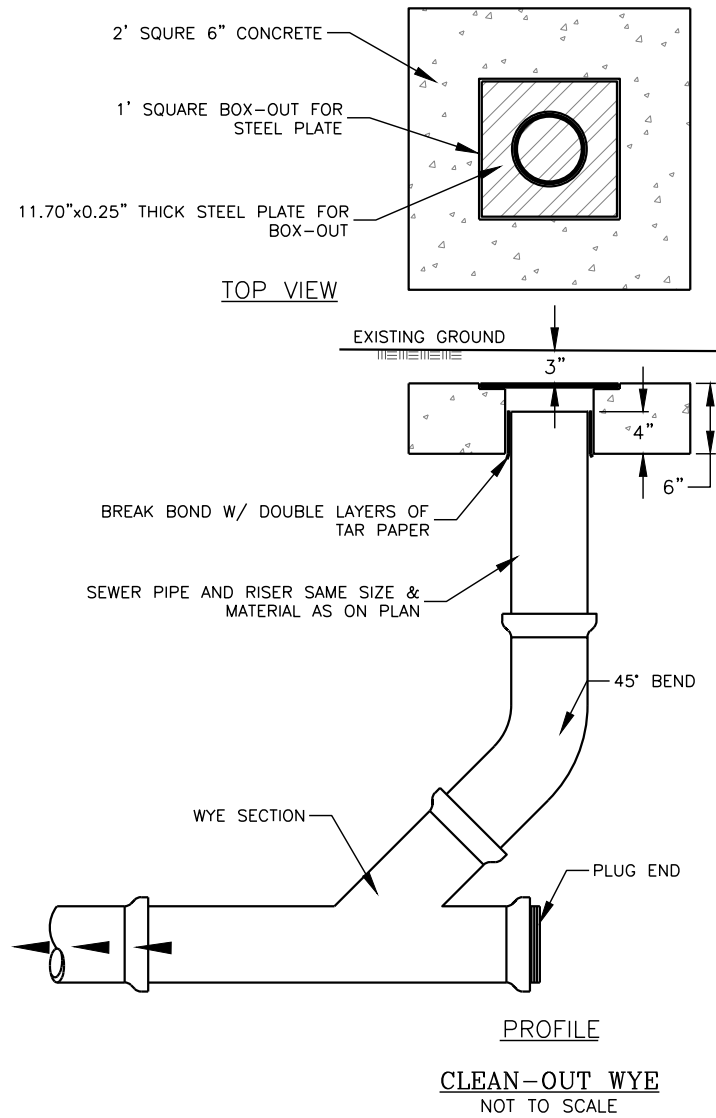
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Phone: (712) 472-2531

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WINDOM, MINNESOTA

QUANTITIES/CONSTRUCTION NOTES

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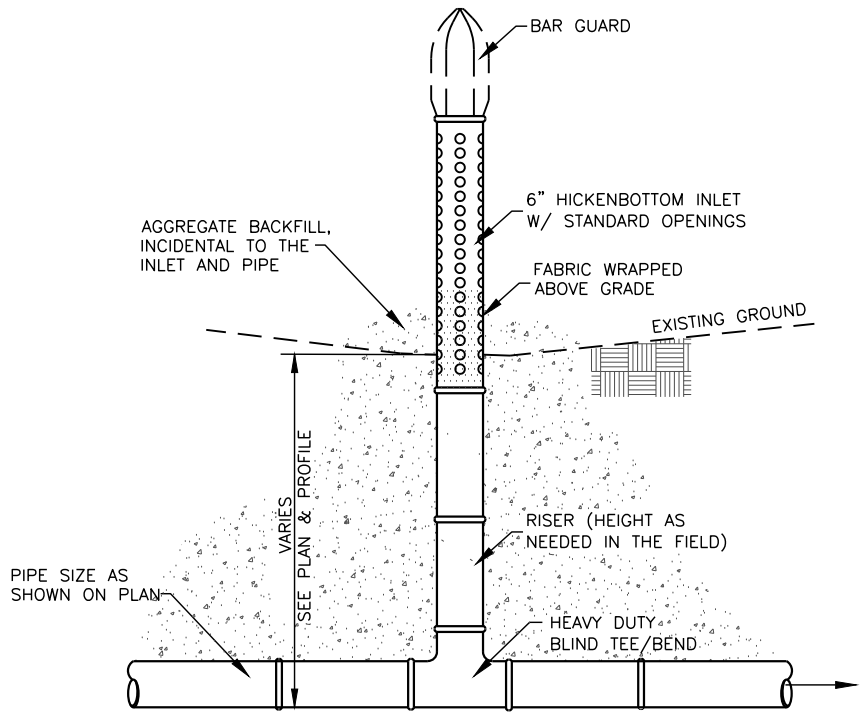
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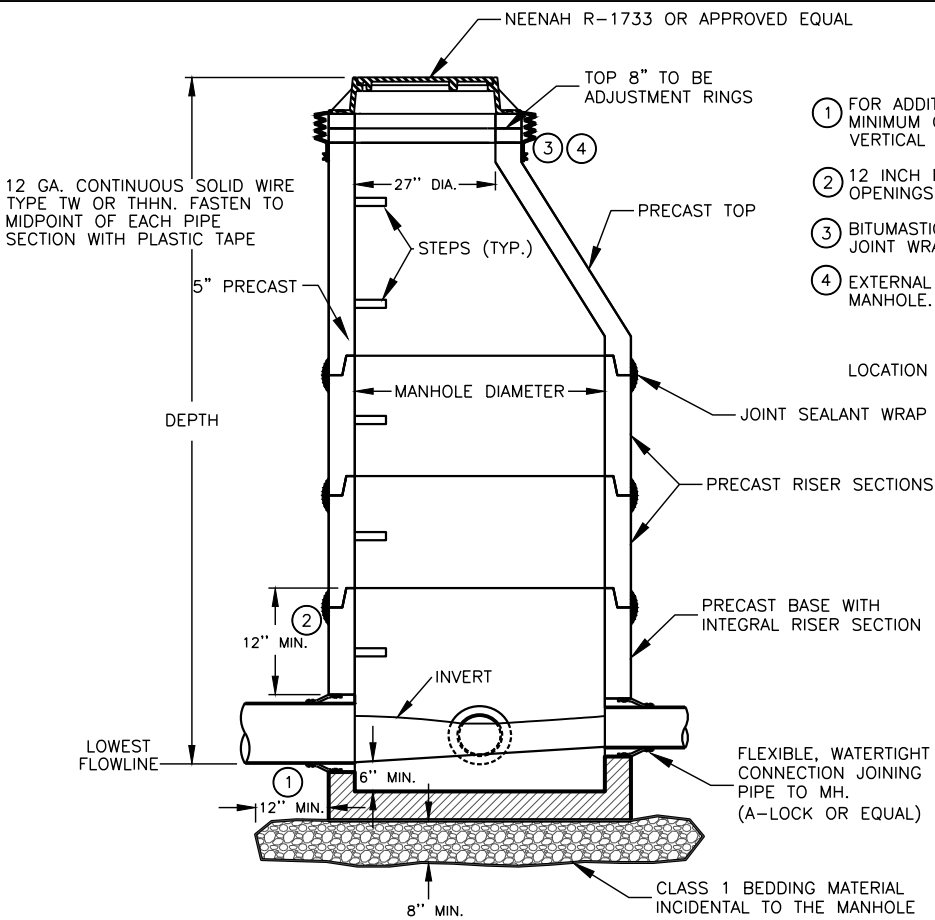
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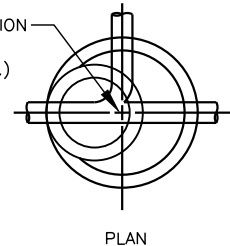


HICKENBOTTOM INTAKE
NOT TO SCALE

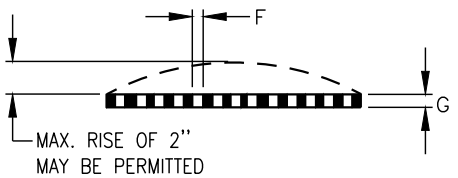


CIRCULAR SANITARY SEWER MANHOLE
NOT TO SCALE

- 1 FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES OF CONCRETE BETWEEN VERTICAL EDGES OF PIPE OPENINGS.
- 2 12 INCH MINIMUM RISER HEIGHT ABOVE ALL PIPE OPENINGS.
- 3 BITUMASTIC OR GASKET MATERIAL AT JOINT WITH JOINT WRAP TO ASSURE NO LEAKAGE.
- 4 EXTERNAL CHIMNEY SEAL INCIDENTAL TO THE MANHOLE.

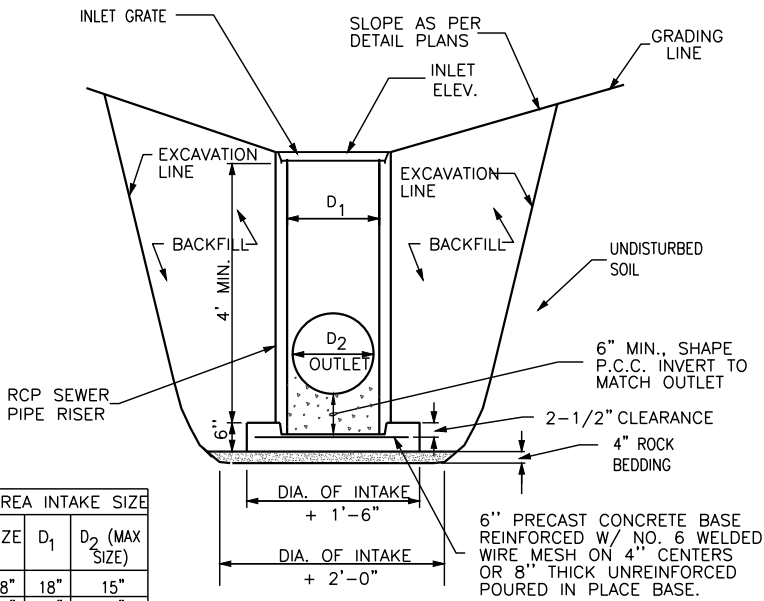


MANHOLE DIAMETER (INCHES)	MAXIMUM PIPE DIAMETER (INCHES) FOR 2 PIPES ①	
	AT 180° SEPARATION	AT 90° SEPARATION
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42



TYPE	D	E	F	G
4A	18"	19 7/8"±1/8"	3/4" MIN.	1-1/2" MIN.
4B	24"	25 7/8"±1/4"	3/4" MIN.	1-1/2" MIN.
4C	30"	32 1/4"±1/4"	1" MIN.	2" MIN.
4D	36"	38 1/4"±1/4"	1" MIN.	2" MIN.

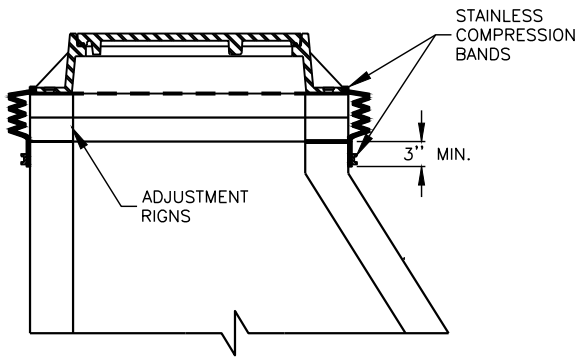
AREA INTAKE GRATE
NOT TO SCALE



AREA INTAKE SIZE		
SIZE	D ₁	D ₂ (MAX SIZE)
18"	18"	15"
24"	24"	18"
30"	30"	24"
36"	36"	30"

AREA INTAKE
NOT TO SCALE

CHIMNEY SEALS FOR TYPICAL 2-PIECE CASTINGS



CHIMNEY SEAL FOR SANITARY SEWER MANHOLE
NOT TO SCALE

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DANIEL L VAN SCHEPEN, P.E.
DATE: 10-02-2023 REG. NO. 45596



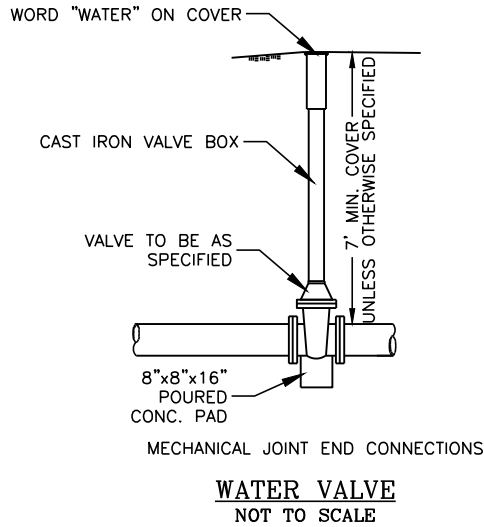
Project Manager: DLV
Designer: BMH
Project Number: 369202
Phone: (712) 472-2531

S COTTONWOOD LAKE SUBDIVISION
WINDOM, MINNESOTA

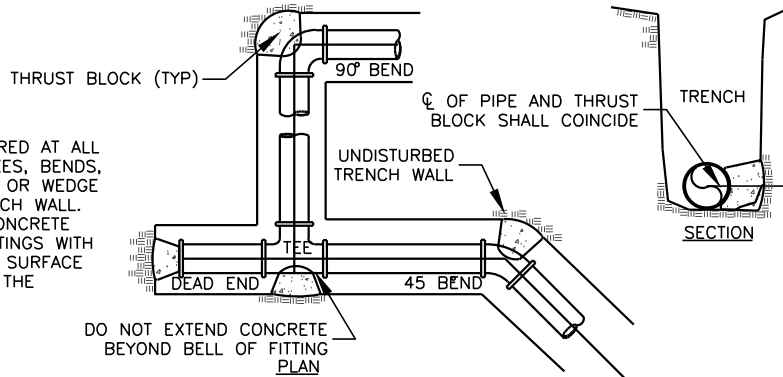
CONSTRUCTION DETAILS

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NOTE: THRUST BLOCKS ARE REQUIRED AT ALL ABRUPT CHANGES IN DIRECTION TEES, BENDS, DEAD ENDS AND HYDRANTS. POUR OR WEDGE AGAINST SOLID UNDISTURBED TRENCH WALL. BREAK BOND BETWEEN POURED CONCRETE THRUST BLOCKS AND PIPE OR FITTINGS WITH TAR PAPER. LENGTH OF BEARING SURFACE SHALL BE BETWEEN 1 & 2 TIMES THE HEIGHT OF BEARING SURFACE.

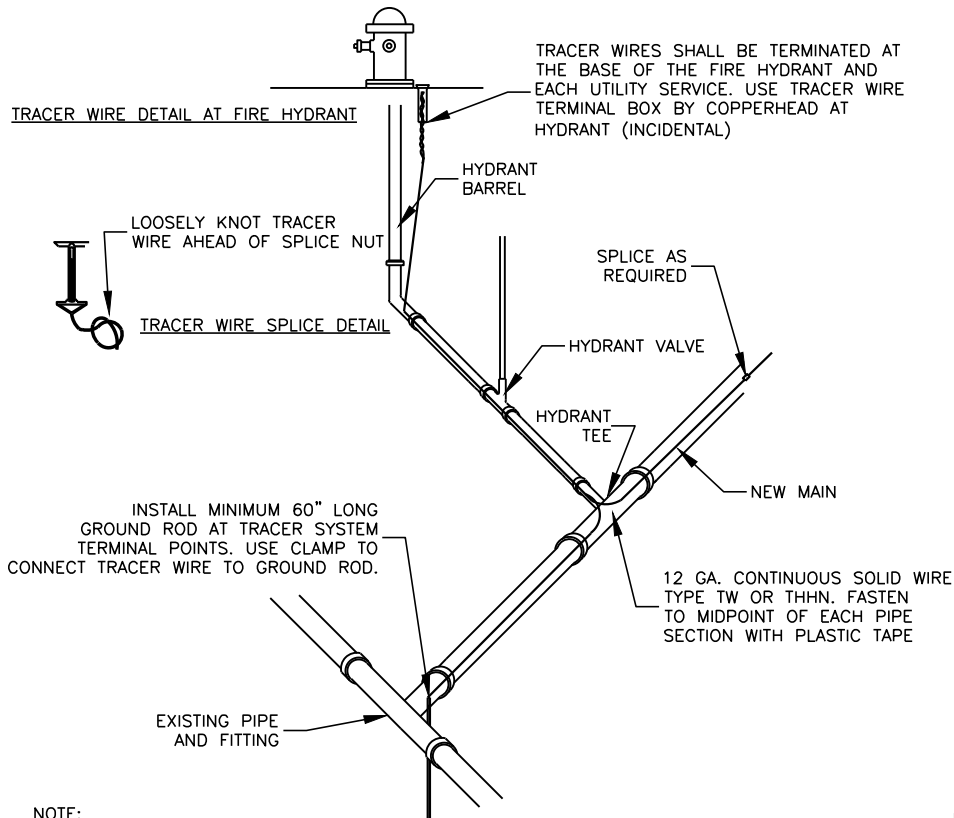


SCHEDULE OF BEARING REQUIRED FOR FITTINGS

PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
12"	11.5 SF	16 SF	9 SF	4.5 SF	2.5 SF
10"	8 SF	11 SF	6 SF	3 SF	1.5 SF
8"	5 SF	7 SF	4 SF	2 SF	1 SF
6"	3 SF	4 SF	2 SF	1 SF	0.5 SF
4"	1.5 SF	1.5 SF	1 SF	0.5 SF	-

VALUES IN TABLE ARE MIN. REQUIREMENTS FOR STABLE TRENCH CONDITIONS. WHERE UNSTABLE TRENCH CONDITIONS ARE ENCOUNTERED, BEARING AREA SHALL BE AS DIRECTED BY THE ENGINEER.

THRUST BLOCK
NOT TO SCALE



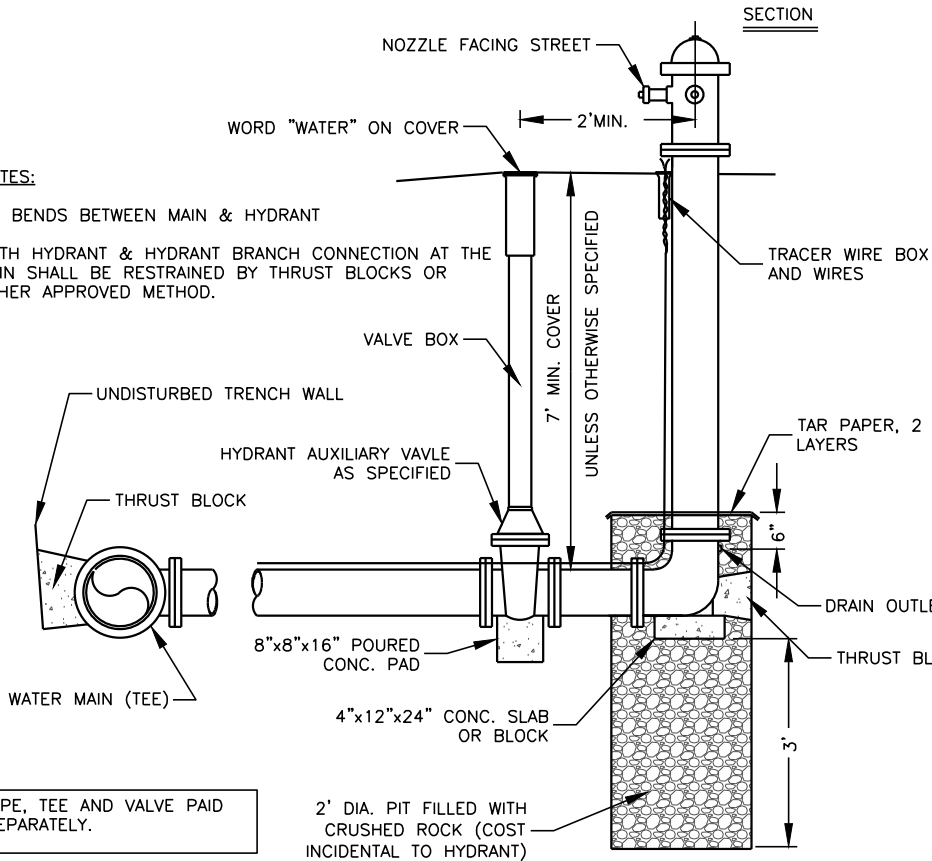
NOTE: INSTALL TRACER WIRE ON ALL NEW WATER MAIN, SEWER MAIN AND SERVICE LINES FOR BOTH UTILITIES. TRACER WIRE SHALL EXTEND ALONG SERVICES LINES AND SURFACE AT BASE OF CURB BOXES AND TERMINATE AT ACCESS BOX FOR EACH. EXTEND TRACER WIRE TO FIRE HYDRANTS AND SANITARY SEWER MANHOLES. TRACER WIRE SHALL EXTEND ALONG THE SIDE OF THE SEWER MANHOLE AND EXTEND TO THE INSIDE OF THE MANHOLE BENEATH THE CASTING. SECURE TRACER WIRE TO MANHOLE AND EXTEND WIRE INTO MANHOLE 1' MINIMUM. NOTCH MANHOLE CASTING TO PREVENT FUTURE DAMAGE TO THE WIRE EXTENSION. ALL COST INCIDENTAL TO RESPECTIVE PIPE. CONTRACTOR SHALL TEST TRACER WIRE SYSTEM FOR CONDUCTIVITY PRIOR TO ACCEPTANCE BY THE OWNER.

TRACER WIRE DETAIL
NOT TO SCALE

NOTES:

NO BENDS BETWEEN MAIN & HYDRANT

BOTH HYDRANT & HYDRANT BRANCH CONNECTION AT THE MAIN SHALL BE RESTRAINED BY THRUST BLOCKS OR OTHER APPROVED METHOD.

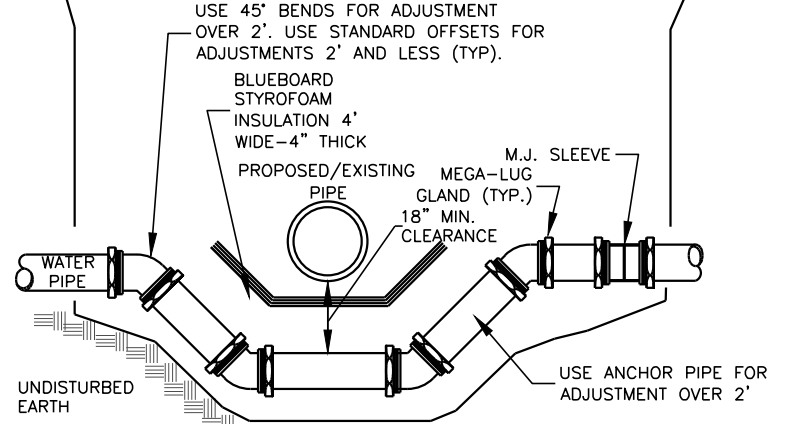


PIPE, TEE AND VALVE PAID SEPARATELY.

NOTE:

7' MINIMUM BURY AND CONSTRUCTION TO THE BURY LINE AS SHOWN ON THE PLANS ARE CONTRACTORS RESPONSIBILITY. ALL FITTINGS OR HYDRANT ADJUSTMENTS NECESSARY ARE AT NO ADDITIONAL COST TO THE BID UNIT ITEM.

FIRE HYDRANT ASSEMBLY
NOT TO SCALE



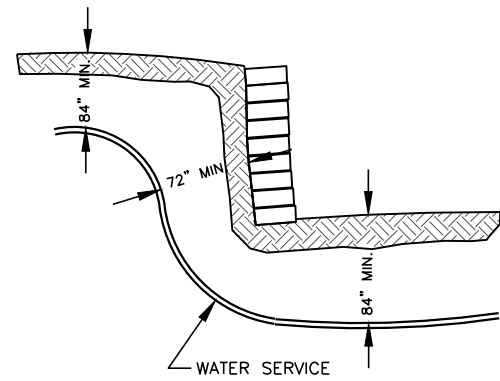
NOTE: TIE TOP BENDS TO EXISTING MAIN WITH M.J. RETAINER GLANDS IF A PIPE JOINT IS EXPOSED MATERIALS AND INSTALLATION SHALL CONFORM WITH CITY SPECIFICATIONS

THE STYROFOAM INSULATION BOARD SHALL BE PLACED BELOW THE PIPE BEDDING.

USE TIE RODS AND MEGA-LUG GLANDS WHEN STANDARD OFFSETS OR ANCHOR PIPES ARE NOT USED.

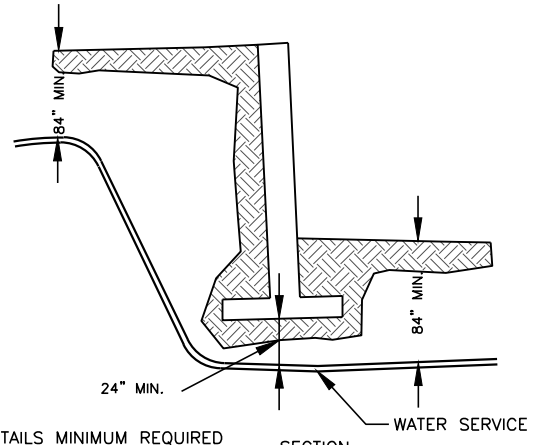
CONTRACTOR SHALL COMPLETE WATER MAIN ELEVATION ADJUSTMENTS AS NECESSARY TO AVOID CONFLICTS BETWEEN NEW AND EXISTING UTILITIES, PAYMENT FOR 45° BENDS WILL CONSTITUTE PAYMENT FOR ADJUSTMENT AS NECESSARY AND NOT BE BASIS FOR A CHANGE ORDER.

WATER MAIN ADJUSTMENT UNDER PROPOSED PIPE
NOT TO SCALE

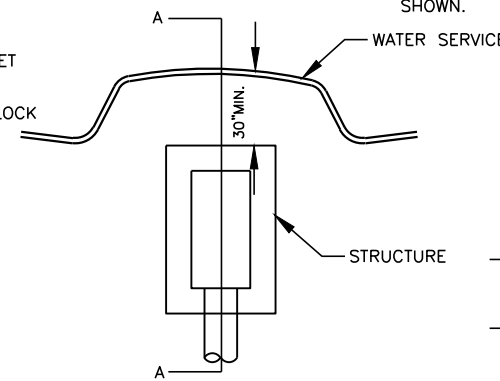


SECTION

THIS FIGURE DETAILS MINIMUM REQUIRED CLEARANCES BETWEEN STRUCTURE AND WATER SERVICE LINES. ADJUST LOCATION OF WATER SERVICES AS DIRECTED BY THE ENGINEER TO MAINTAIN THE CLEARANCES SHOWN.

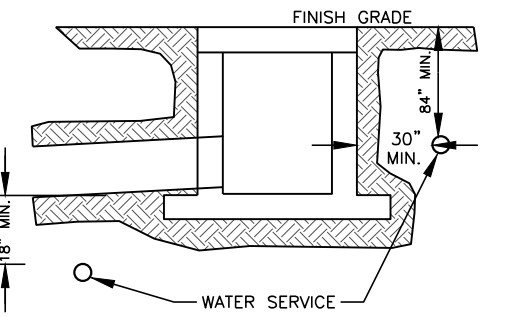


SECTION



PLAN VIEW

WATER SERVICE CLEARANCE
NOT TO SCALE



SECTION A-A

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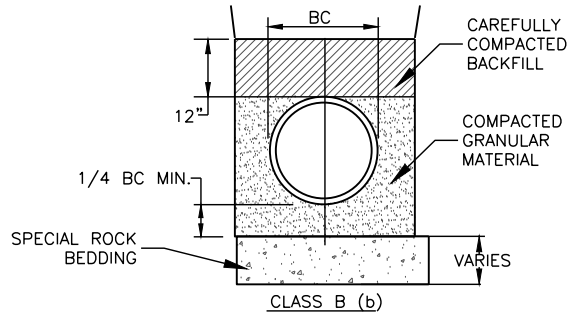
Project Manager: DLV
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WINDOM, MINNESOTA

CONSTRUCTION DETAILS

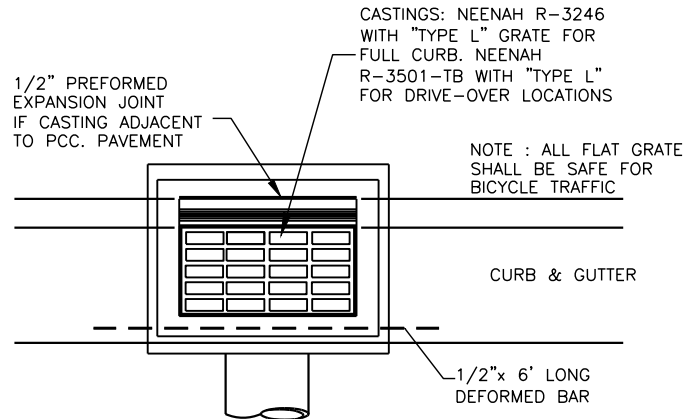
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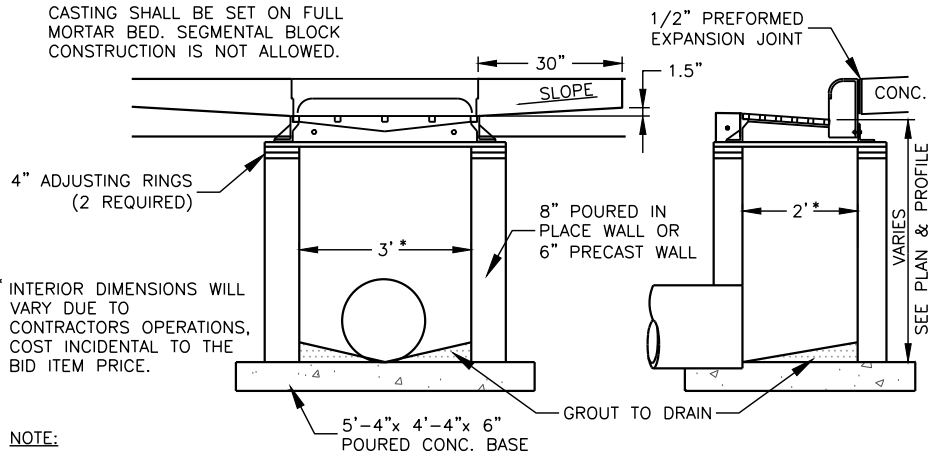


CLASS B (b)
COMPACTED GRANULAR MATERIAL SHALL BE INCIDENTAL TO THE UTILITY BID ITEM. SPECIAL ROCK BEDDING (IF NEEDED) SHALL ONLY BE USED WHEN AND WHERE AUTHORIZED BY THE ENGINEER/OWNER.

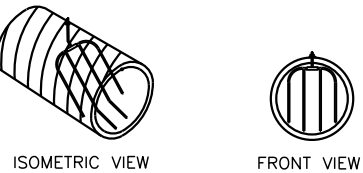
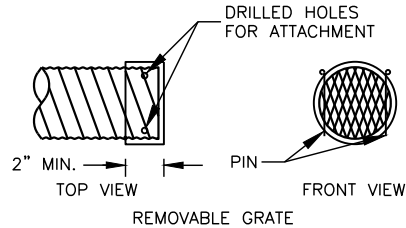
UTILITY BEDDING CONDITIONS
NOT TO SCALE



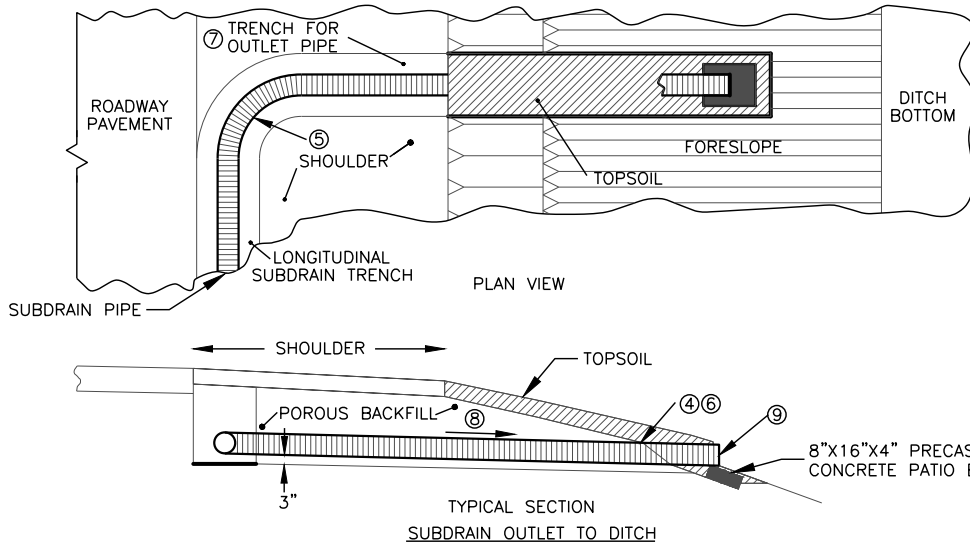
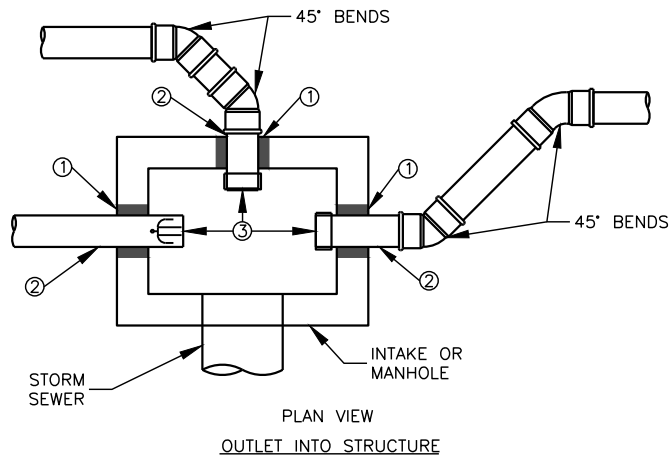
NOTE:
CASTING SHALL BE SET ON FULL MORTAR BED. SEGMENTAL BLOCK CONSTRUCTION IS NOT ALLOWED.



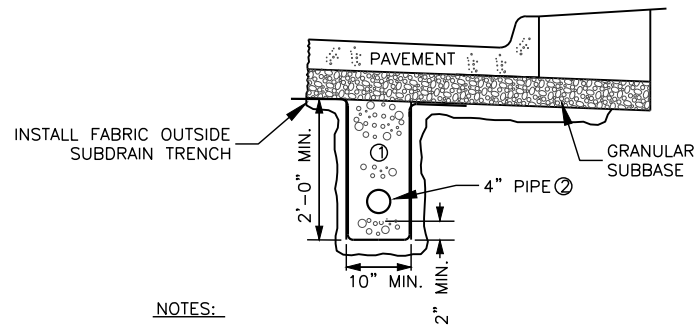
SINGLE GRATE INTAKE (SGI)
NOT TO SCALE



**REMOVABLE FORK
RODENT GUARD DETAILS**



SUBDRAIN OUTLETS
NOT TO SCALE



- NOTES:
- BACKFILL ALL SUBDRAIN WITH POROUS BACKFILL (PEA ROCK).
 - HDPE PERFORATED DRAIN TILE.
 - LINE TRENCH WITH ENGINEERING FABRIC

PERFORATED SUBDRAIN
NOT TO SCALE

TRANSVERSE AND BACKSLOPE SUBDRAINS REQUIRE ONLY SINGLE OUTLETS. INSTALL DOUBLE OUTLET PIPES ON ALL LONGITUDINAL SUBDRAIN SYSTEMS, EXCEPT AT THE BEGINNING AND END OF THE SYSTEM. AT THESE LOCATIONS, INSTALL A SINGLE OUTLET PIPE.

- FILL ANNULAR SPACE WITH NON-SHRINK GROUT.
- OUTLETS THROUGH INTAKE WALLS TO BE CMP; CORRUGATED, DOUBLE-WALLED HDPE; OR PVC.
- EXTEND OUTLET PIPE INTO STRUCTURE AS REQUIRED TO INSTALL REMOVABLE RODENT GUARD.
- CONSTRUCT SUBDRAIN OUTLET TO DITCH WITH THE SAME TYPE AND SIZE OF PIPE AS USED FOR THE SUBDRAIN.
- PROVIDE A MINIMUM 1 FOOT RADIUS FOR ALL BENDS OR USE TWO 45° FITTINGS
- IF A CMP OUTLET IS SPECIFIED IN THE CONTRACT DOCUMENTS, CONSTRUCT THE FINAL 10 TO 12 FEET OF THE SUBDRAIN OUTLET TO DITCH WITH CMP 2 INCHES LARGER THAN THE SUBDRAIN PIPE. CONNECT PIPES WITH A MANUFACTURED COUPLER OR CONCRETE COLLAR.
- PROVIDE A MINIMUM TRENCH WIDTH OF 12 INCHES FOR A SINGLE OUTLET AND 24 INCHES FOR A DOUBLE OUTLET.
- PROVIDE A 6 INCH MINIMUM DROP IN ELEVATION BETWEEN LONGITUDINAL SUBDRAIN AND OUTLET.
- USE ONLY FORK TYPE RODENT GUARD FOR SUBDRAIN OUTLET TO DITCH.

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DANIEL L. VAN SCHEPEN, P.E.
DATE: 10-02-2023 REG. NO. 45596

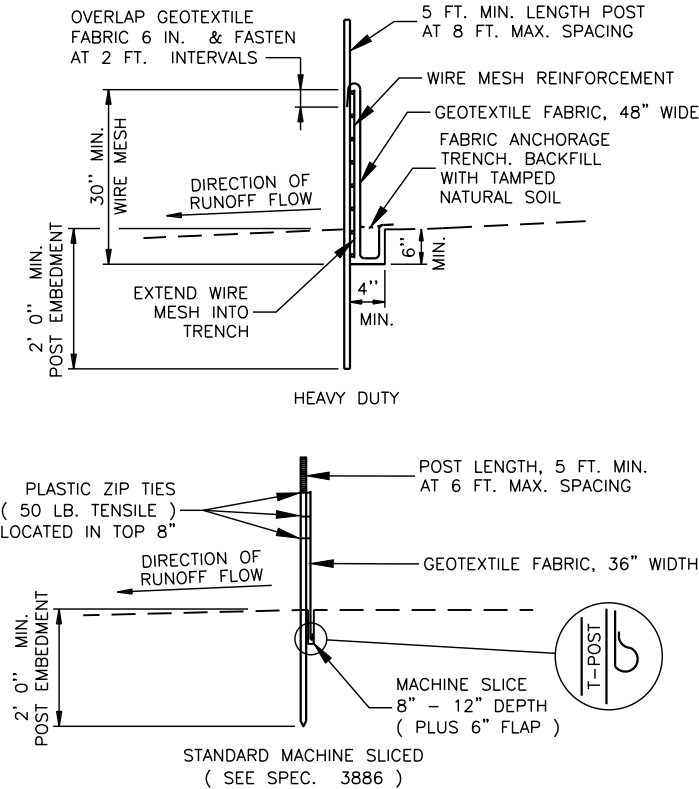


Project Manager: DLV
Designer: BMH
Project Number: 369202
Phone: (712) 472-2531

S COTTONWOOD LAKE SUBDIVISION
WINDOM, MINNESOTA

CONSTRUCTION DETAILS

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SILT FENCE
NOT TO SCALE

CONSTRUCTION NOTES:

TRAFFIC SHOULD BE KEPT BACK OF AN IMAGINARY 2:1 LINE DRAWN UP AND OUTWARD FROM THE BOTTOM OF ANY SUB CUT OR TRENCH EXCAVATION.

CONTRACTOR SHALL REMOVE AND SALVAGE ALL TRAFFIC SIGNS THAT ARE WITHIN THE PAVEMENT REMOVAL LIMITS. THE CONTRACTOR SHALL REINSTALL SIGNS FOLLOWING CONSTRUCTION. COORDINATION WITH CITY STAFF WILL BE REQUIRED, COST INCIDENTAL TO THE PROJECT.

EXISTING WATER AND SEWER SERVICES ARE TO BE INSPECTED BY THE CITY STAFF OR ENGINEER PRIOR TO REPLACEMENT. THE CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF THE SERVICE LINES REPLACED (LOCATION, LENGTH, CORP STOP, CURB STOP, EXISTING MATERIAL, ETC.) AND SHALL PROVIDE THE OWNER AND ENGINEER AN ACCURATE AND COMPLETE RECORD DRAWINGS AT THE COMPLETION OF THE PROJECT. FINAL PAYMENT MAY BE WITHHELD UNTIL RECORD DRAWINGS ARE SUBMITTED TO THE OWNER OR ENGINEER.

ALL SERVICE LINE SIZES AND QUANTITIES ARE APPROXIMATE AND FINAL QUANTITIES ARE TO BE FIELD VERIFIED. THE NUMBER AND LOCATION OF WATER SERVICES SHOWN ON THE PLANS ARE APPROXIMATE. INPLACE SERVICE LINES SHALL BE LOCATED BY THE CONTRACTOR IN THE FIELD. ALL LEAD AND GALVANIZED SERVICES SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER OR OWNER.

CONTRACTOR SHALL VERIFY LOCATION AND ELEVATIONS OF EXISTING UTILITIES (WATER MAIN, SANITARY SEWER AND STORM SEWER) AT ALL CONNECTION POINTS WITH PROPOSED UTILITIES. ADJUSTMENT OF PROPOSED UTILITIES, AS NEEDED, ARE TO BE MADE DURING CONSTRUCTION AS AUTHORIZED BY THE ENGINEER OR OWNER. COST FOR ADJUSTMENTS SHALL BE INCIDENTAL TO THE RESPECTIVE UTILITY.

CONTRACTOR SHALL USE EROSION CONTROL DEVICES INCLUDED IN THE CONTRACT TO PREVENT CONTAMINANTS FROM ENTERING THE STORM SEWER SYSTEM. THESE DEVICES ARE TO BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT AND PAID FOR AT CONTRACT UNIT PRICES. (SEE DETAILS)

CONTRACTOR MAY PLACE TRENCH EXCAVATION MATERIAL BACK OF CURB WITHIN THE RIGHT-OF-WAY. DO NOT DAMAGE TREES, DRIVEWAYS, SIDEWALKS AND MINIMIZE DAMAGE TO EXISTING TURF. DO NOT MIX ANY TOPSOIL WITH TRENCH EXCAVATION MATERIAL.

BACKFILLING OPERATIONS, ASPHALT MILLINGS & ADEQUATE TRAFFIC CONTROL SHALL BE UTILIZED TO MAINTAIN TRAFFIC THROUGH THE INTERSECTIONS THROUGHOUT THE PROJECT. COST TO COMPLETE WORK SHALL BE INCIDENTAL TO THE PROJECT.

WATER MAIN CAPS SHALL BE PROVIDED AS NECESSARY TO PRESSURE TEST AND DISINFECT WATER MAIN WORK DEPENDING ON THE CONTRACTORS OPERATIONS AND INSTALLATION COORDINATION. SERVICE TO ADJACENT RESIDENTS SHALL BE RESTORED BY THE END OF EACH DAY THROUGHOUT CONSTRUCTION.

ALL OVER-EXCAVATIONS DURING UTILITY INSTALLATIONS SHALL BE BACKFILLED WITH GRANULAR MATERIAL AND MECHANICALLY TAMPED, COST INCIDENTAL THE EACH UTILITY. SANITARY AND STORM SEWER REQUIRE FURTHER BEDDING REQUIREMENTS.

STORM PPP NOTES:
THE CONTRACTOR SHALL PROVIDE INLET PROTECTION AT ALL TIMES AFTER PAVEMENT IS REMOVED AND UNTIL FINAL STABILIZATION IS ACHIEVED. THE CONTRACTOR WILL NEED TO CHANGE THE TYPE OF INLET PROTECTION TO FIT THE WORK BEING PERFORMED. THE DETAILS SHOWN ARE TO BE USED AND DETERMINED BY THE PLACE OF CONSTRUCTION.

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AS NEEDED OR AT THE OPTION OF THE ENGINEER/OWNER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON MN/DOT'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 INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY. ALL EROSION CONTROL DEVICES SHALL BE INSPECTED WEEKLY AND AFTER ALL WEATHER EVENTS, NON-COMPLYING EQUIPMENT SHALL BE FIXED WITHIN THE WORKING DAY.

THE CONTRACTOR SHALL TAKE STEPS TO CONTROL SOIL EROSION AND FUGITIVE DUST DURING CONSTRUCTION. IF NECESSARY, HAY BALES, CHECK DAMS, SEDIMENT TRAPS OR ADDITIONAL SILT FENCE (NOT INDICATED ON THE PLANS) SHALL BE USED TO RETAIN SILT AND PREVENT SILT FROM ENTERING THE SEWER SYSTEM. THIS WORK SHALL BE PAID FOR AS PER PAY ITEMS IN THE PROPOSAL. THE CONTRACTOR SHALL CONSTRUCT EROSION CONTROL PRIOR TO ANY GRADING ON THE PROJECT IN ORDER TO PREVENT SILT TRANSPORT AND SOIL TRACKING INTO PUBLIC RIGHT-OF-WAY. CONTRACTOR SHALL MAINTAIN AND WATER HAUL ROADS TO CONTROL FUGITIVE DUST.

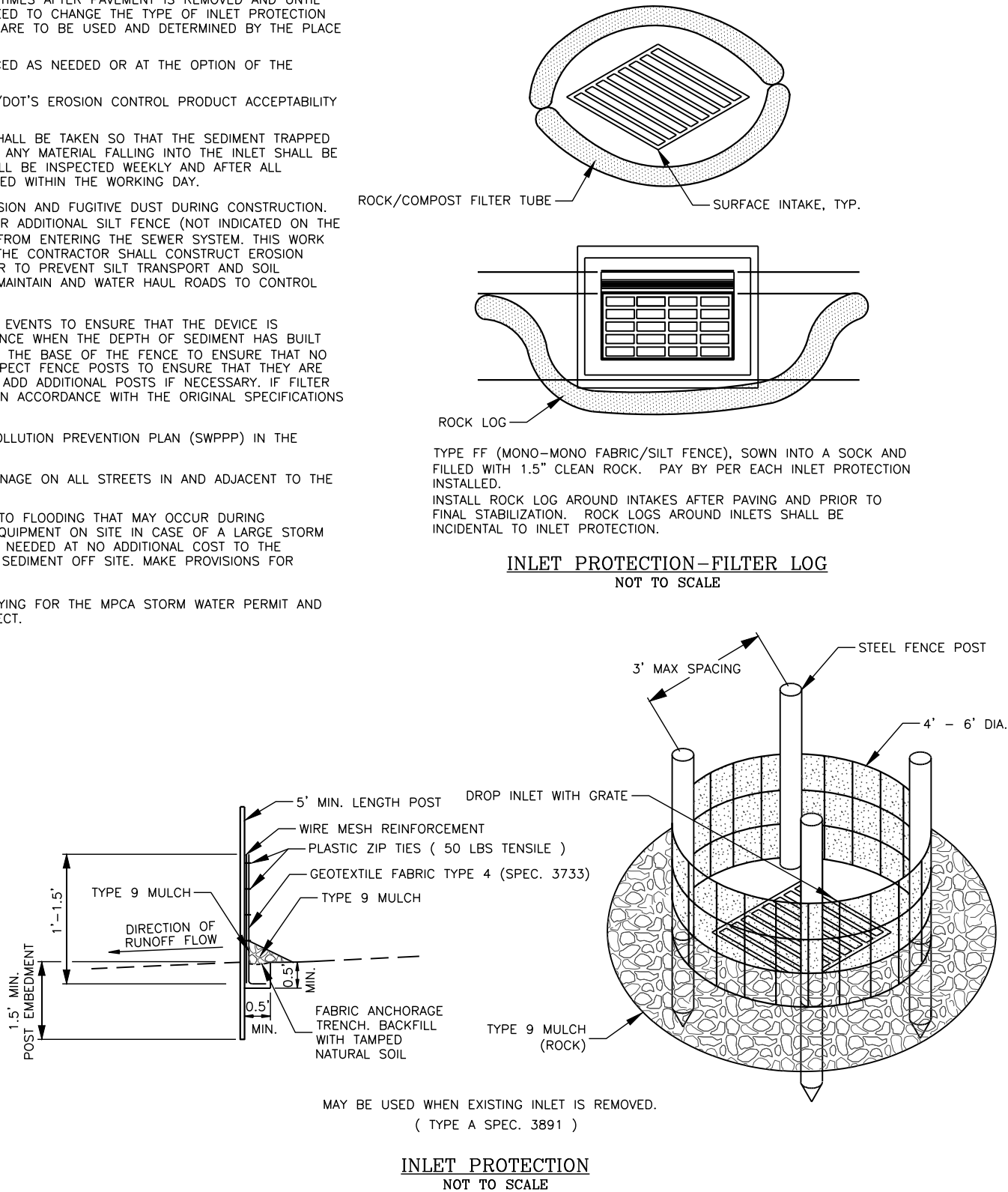
SILT FENCE SHOULD BE INSPECTED WEEKLY AND AFTER RAIN EVENTS TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM BEHIND FENCE WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO 1/3 THE HEIGHT OF THE FENCE ABOVE GRADE. INSPECT THE BASE OF THE FENCE TO ENSURE THAT NO GAPS HAVE DEVELOPED AND RE-TRENCH AS NECESSARY. INSPECT FENCE POSTS TO ENSURE THAT THEY ARE PROPERLY SUPPORTING THE FENCE. STRAIGHTEN, RESET AND ADD ADDITIONAL POSTS IF NECESSARY. IF FILTER FABRIC IS RIPPED, DAMAGED OR DETERIORATED, REPLACE IT IN ACCORDANCE WITH THE ORIGINAL SPECIFICATIONS & DETAILS.

THE CONTRACTOR SHALL COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN THE PROJECT MANUAL

THE CONTRACTOR SHALL MAKE PROVISIONS TO MAINTAIN DRAINAGE ON ALL STREETS IN AND ADJACENT TO THE PROJECT THROUGHOUT THE CONSTRUCTION PERIOD.

CONTRACTOR SHALL HAVE A PERSON ON CALL TO RESPOND TO FLOODING THAT MAY OCCUR DURING NON-WORKING HOURS. CONTRACTOR SHALL HAVE PUMPING EQUIPMENT ON SITE IN CASE OF A LARGE STORM EVENT. CONTRACTOR SHALL PUMP STORM WATER OFF SITE IF NEEDED AT NO ADDITIONAL COST TO THE PROJECT. CONTRACTOR SHALL NOT PUMP WATER CONTAINING SEDIMENT OFF SITE. MAKE PROVISIONS FOR FILTERING WATER TO BE PUMPED.

CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING AND PAYING FOR THE MPCA STORM WATER PERMIT AND FOLLOWING ITS RECOMMENDATIONS, INCIDENTAL TO THE PROJECT.



MAY BE USED WHEN EXISTING INLET IS REMOVED.
(TYPE A SPEC. 3891)

INLET PROTECTION
NOT TO SCALE

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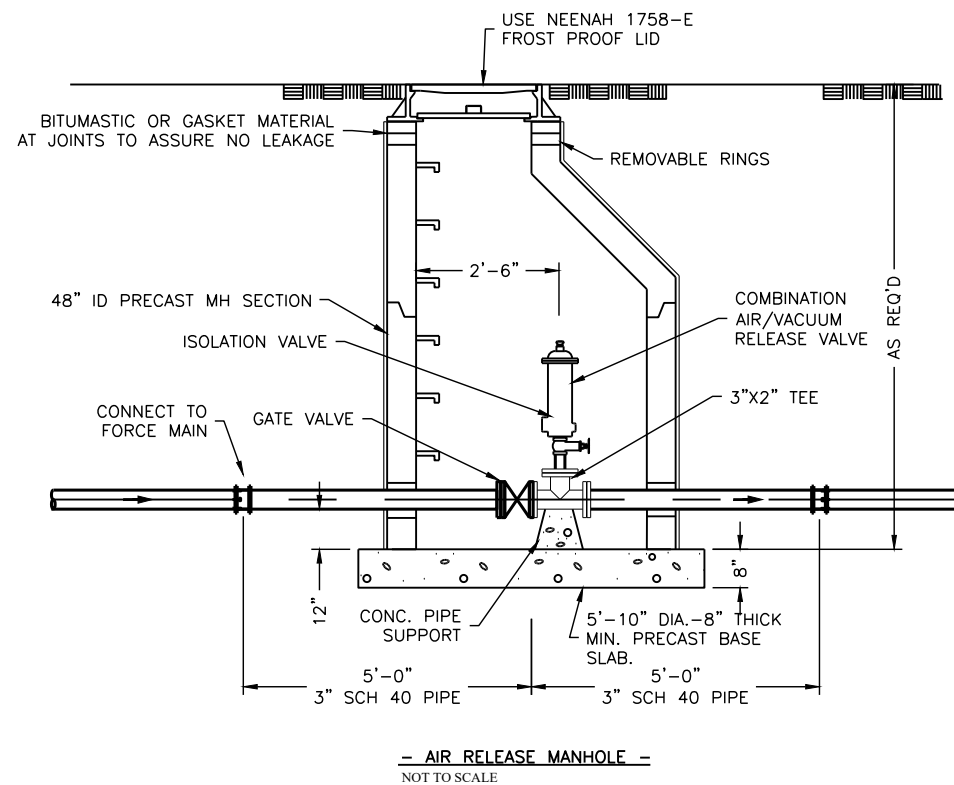
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Phone: (712) 472-2531

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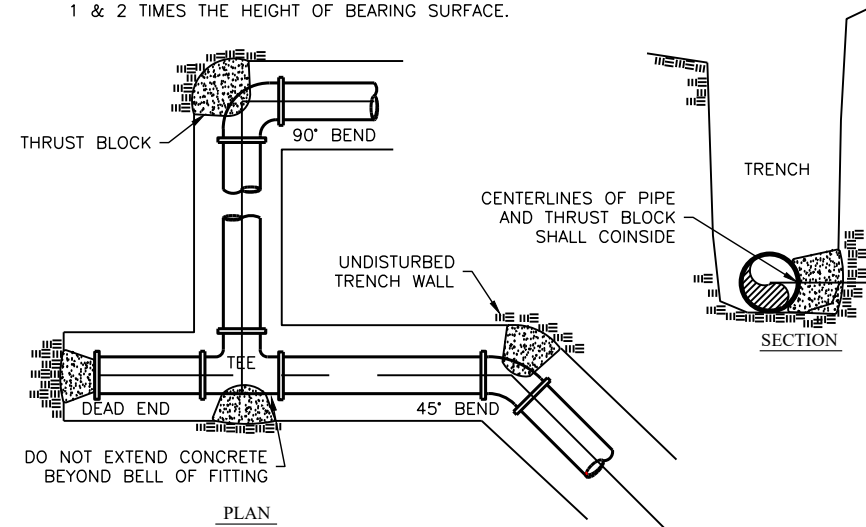
CONSTRUCTION DETAILS

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NOTE:
THRUST BLOCKS ARE REQUIRED AT ALL ABRUPT CHANGES IN DIRECTION TEES, BENDS, DEAD ENDS AND HYDRANTS. POUR OR WEDGE AGAINST SOLID UNDISTURBED TRENCH WALL. BREAK BOND BETWEEN POURED CONCRETE THRUST BLOCKS AND PIPE OR FITTINGS WITH TAR PAPER. LENGTH OF BEARING SURFACE SHALL BE BETWEEN 1 & 2 TIMES THE HEIGHT OF BEARING SURFACE.



SCHEDULE OF BEARING REQUIRED FOR FITTINGS

PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
12"	11.5 SF	16 SF	9 SF	4.5 SF	2.5 SF
10"	8 SF	11 SF	6 SF	5 SF	1.5 SF
8"	5 SF	7 SF	4 SF	2 SF	1 SF
6"	3 SF	4 SF	2 SF	1 SF	0.5 SF
4"	1.5 SF	1.5 SF	1 SF	0.5 SF	-

VALUES IN TABLE ARE MIN. REQUIREMENTS FOR STABLE TRENCH CONDITIONS. WHERE UNSTABLE TRENCH CONDITIONS ARE ENCOUNTERED, BEARING AREA SHALL BE AS DIRECTED BY THE ENGINEER.

- THRUST BLOCK -
NOT TO SCALE

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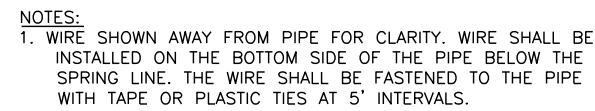
Project Manager: DLV
Designer: MJC
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S COTTONWOOD LAKE ADDITION
WINDOM, MINNESOTA

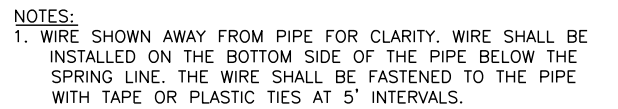
CONSTRUCTION DETAILS

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TRACE WIRE PLAN (WATER)
NOT TO SCALE



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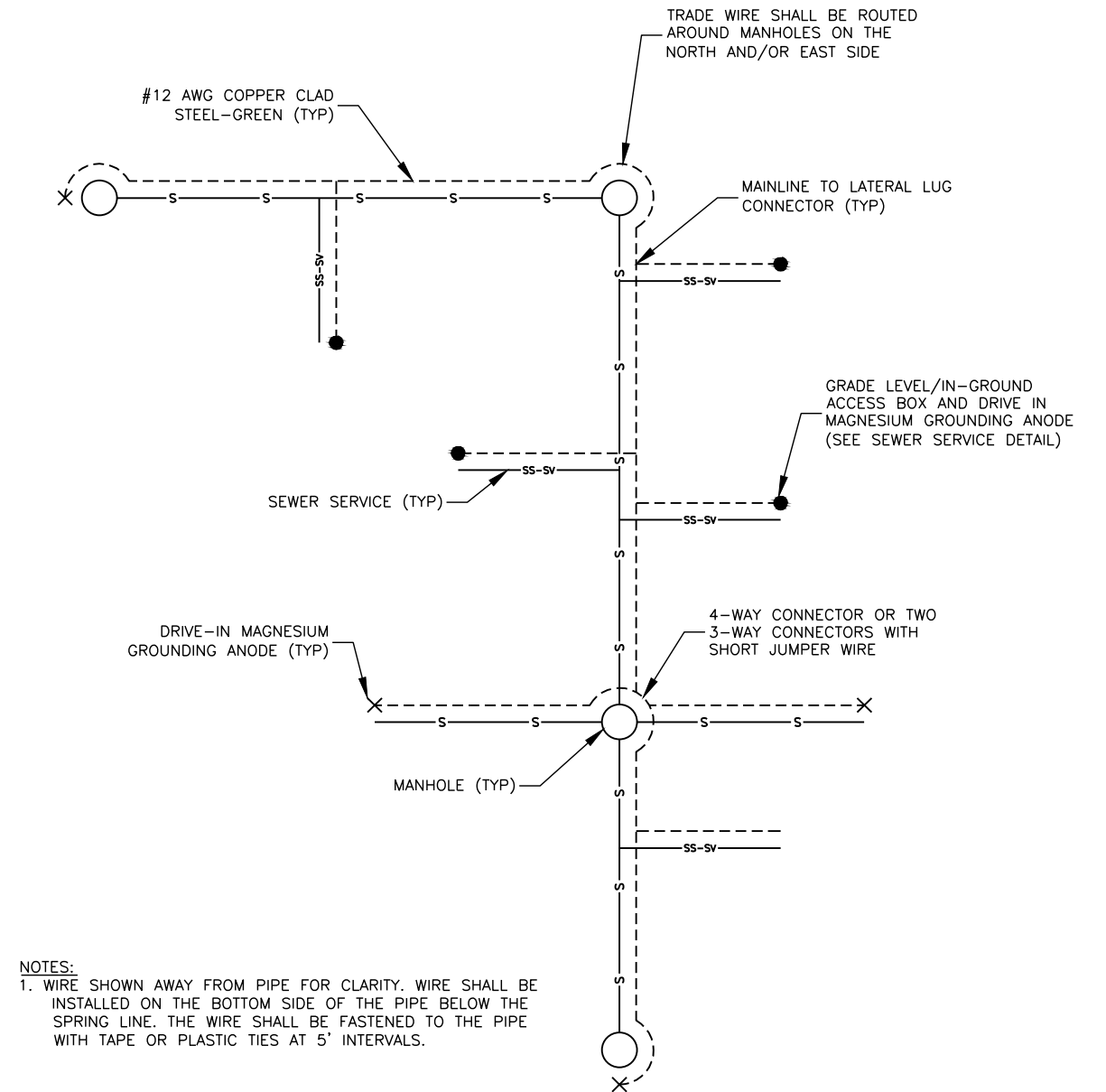
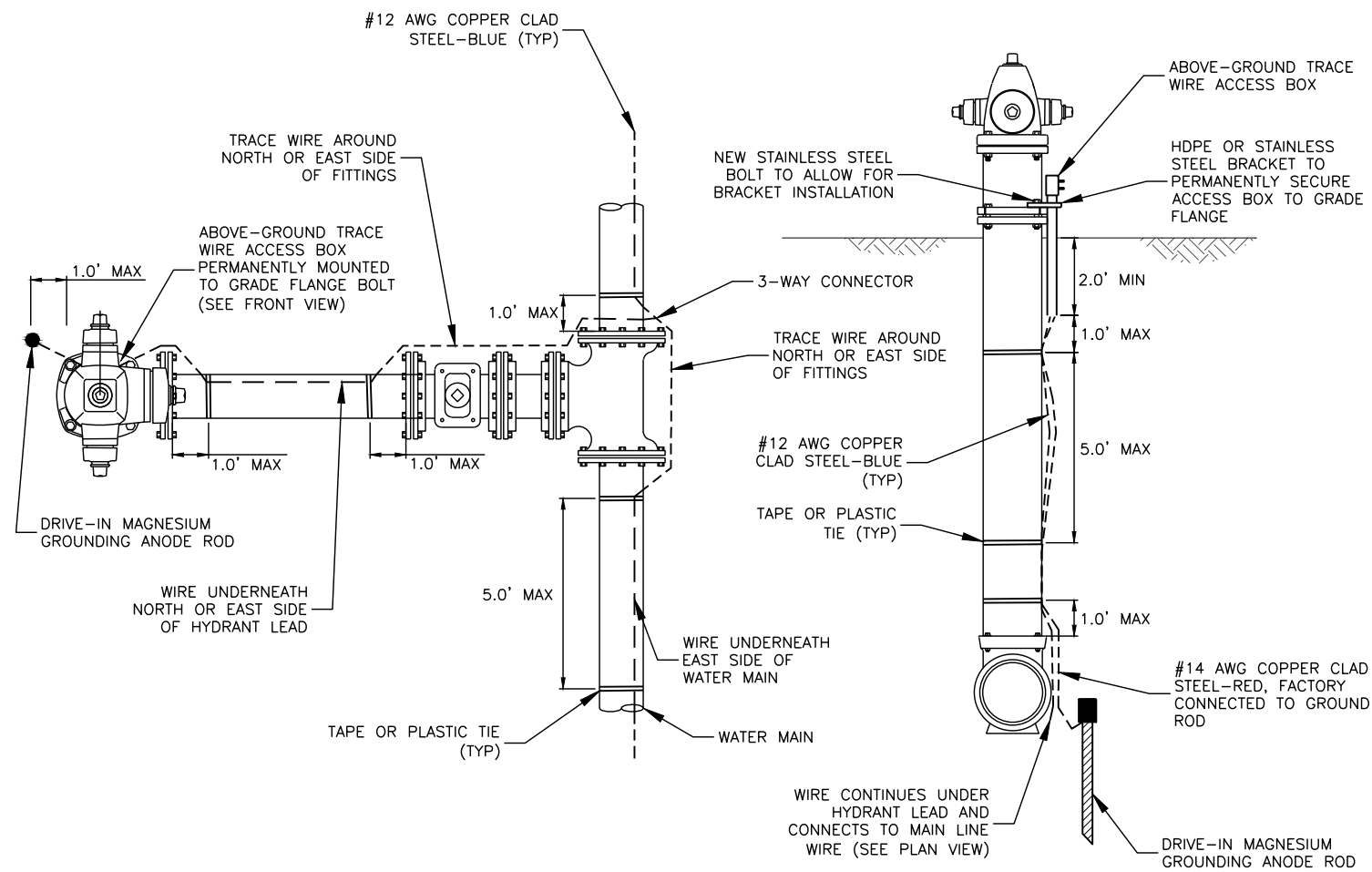


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Designer:	MJC
Project Number:	369202
Phone:	(712) 472-2531

S COTTONWOOD LAKE ADDITION
WINDOM, MINNESOTA

CONSTRUCTION DETAILS

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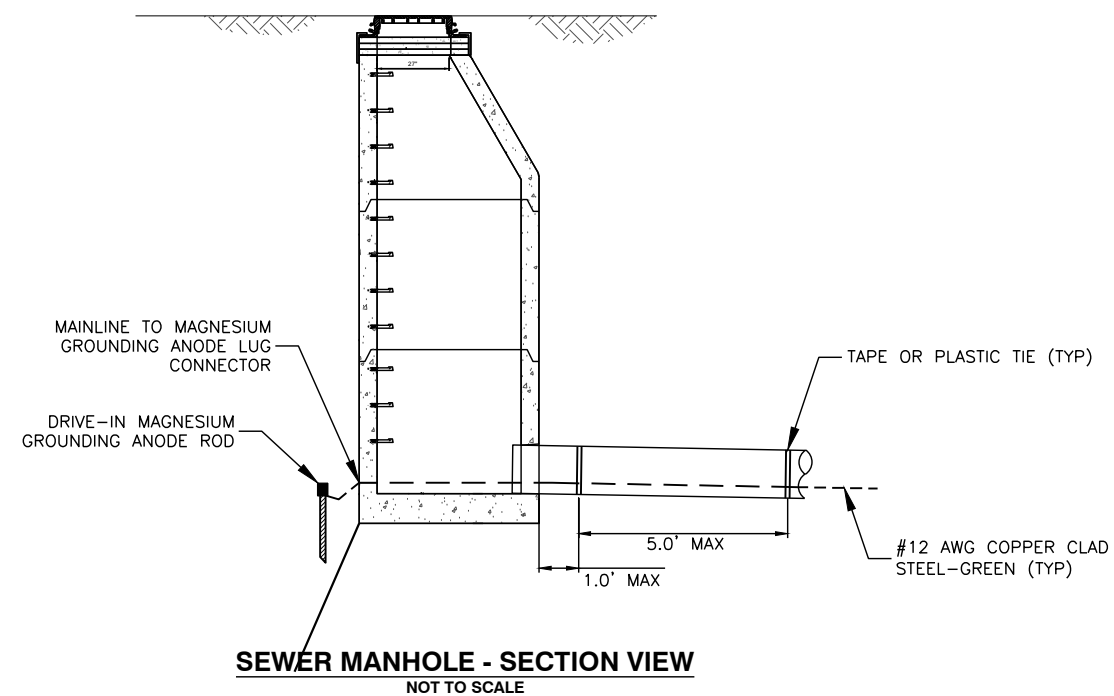
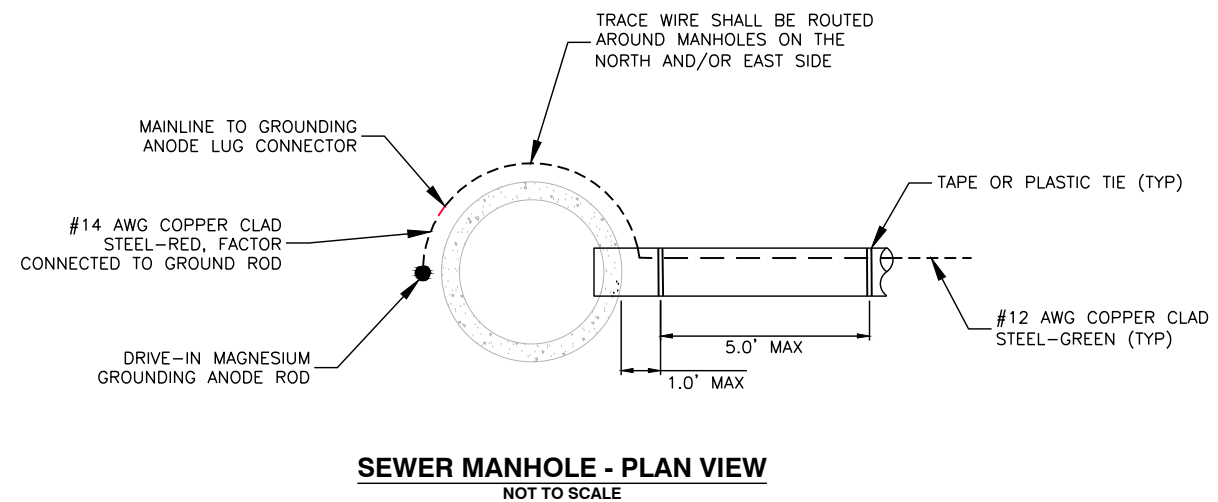
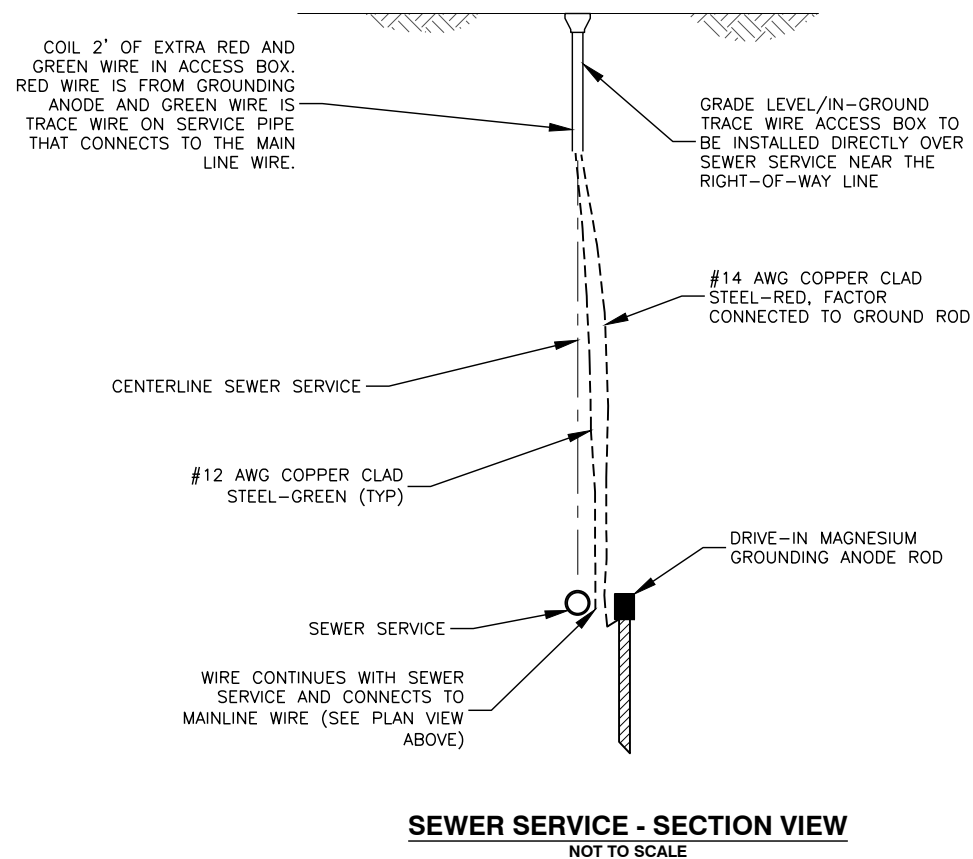
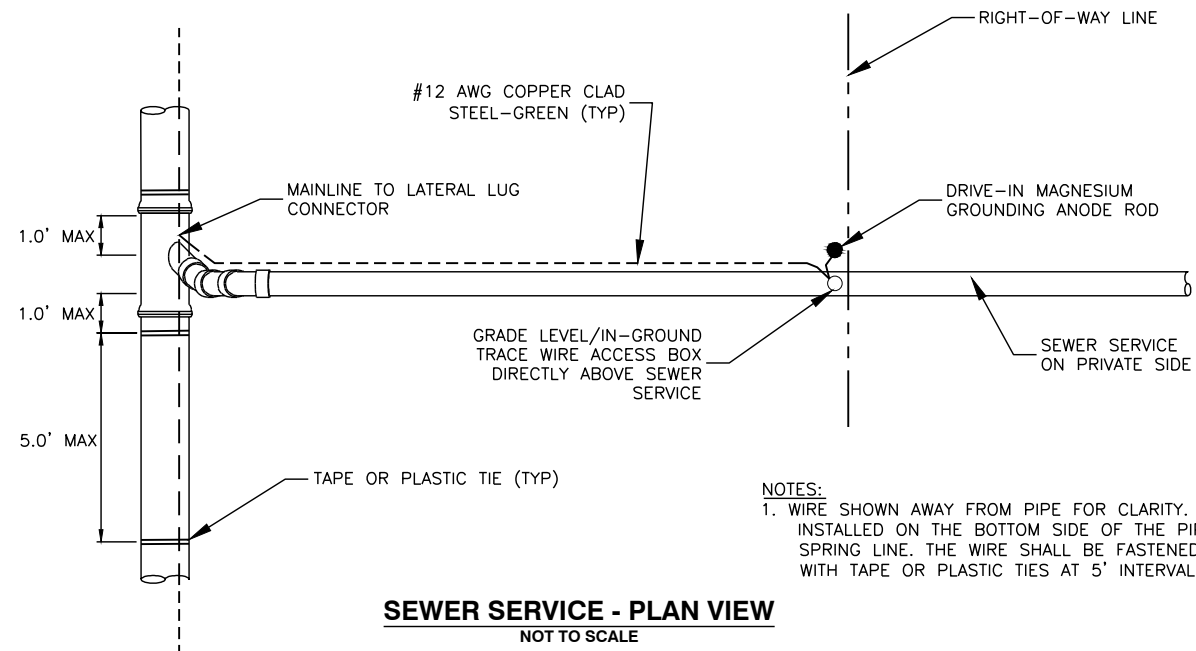
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WINDOM, MINNESOTA

CONSTRUCTION DETAILS

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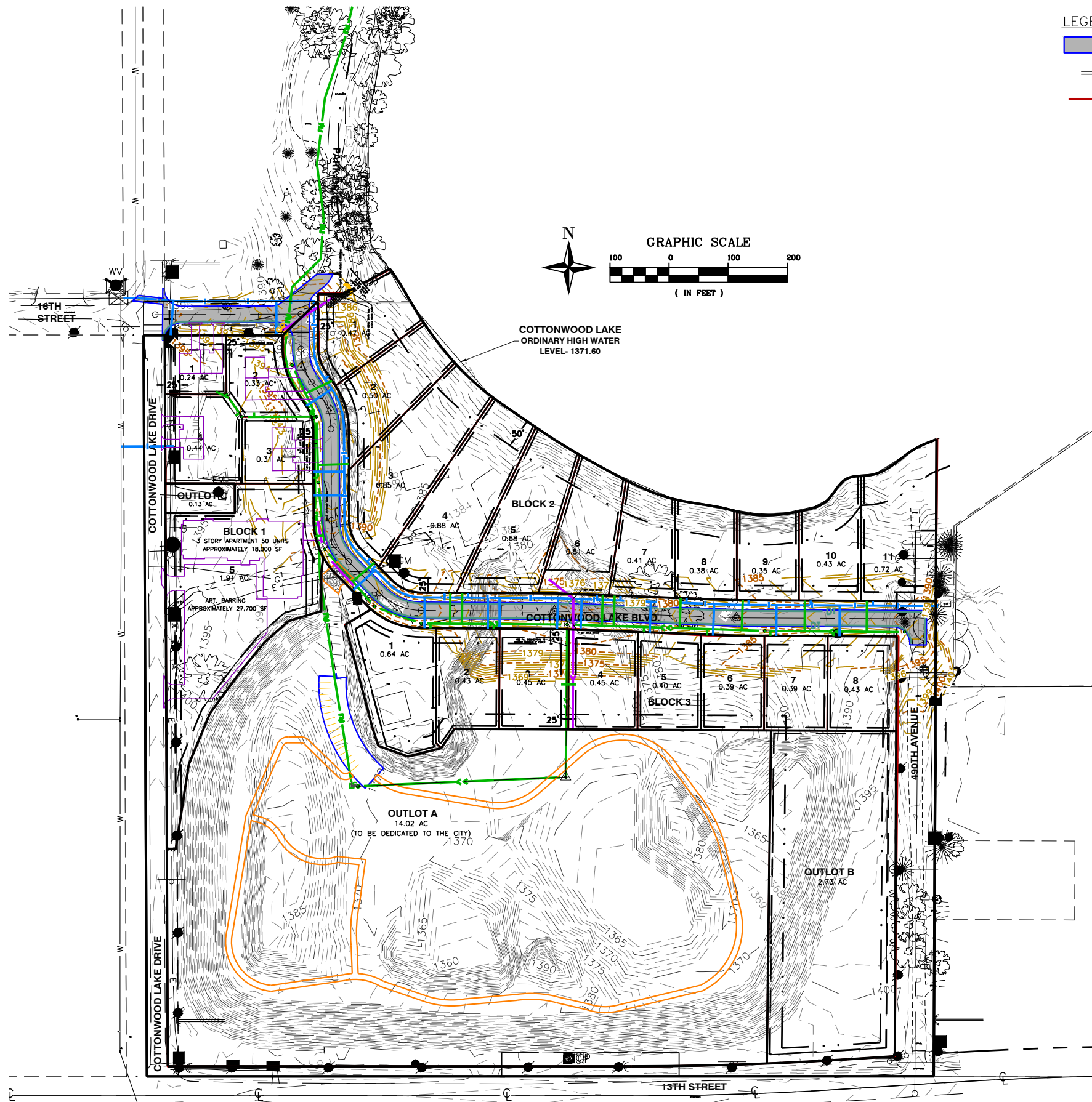
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WINDOM, MINNESOTA

CONSTRUCTION DETAILS

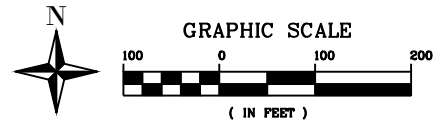
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LEGEND- PROPOSED SITE FACILITIES

	6" PCC PAVEMENT OVER 12" SUBGRADE PREPARATION		SANITARY SERVICE
	DRAINAGE DIRECTION		STORM SEWER
	PROPERTY LINE		WATER SERVICE
			PROPOSED CONTOURS



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DANIEL L. VAN SCHEPEN, P.E.

DATE: 2-26-2024 REG. NO. 45596



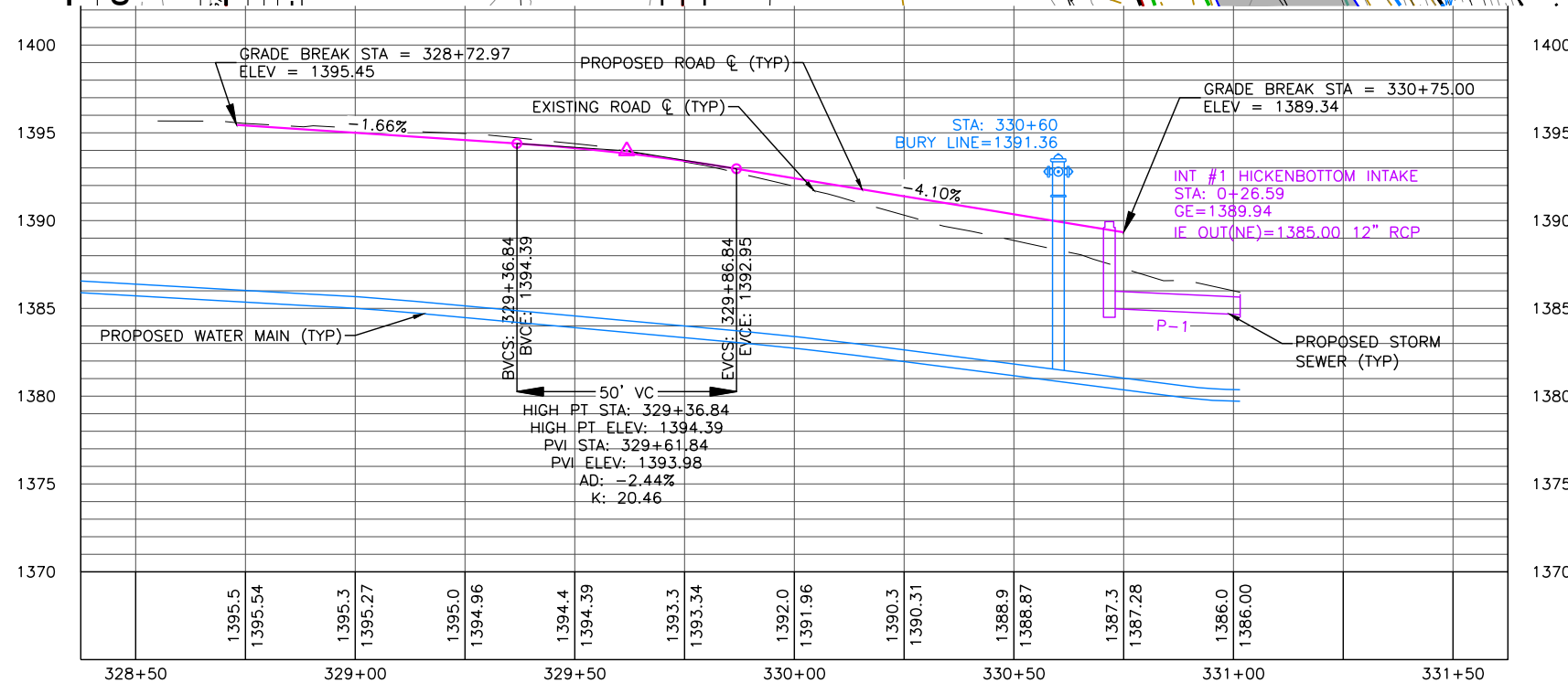
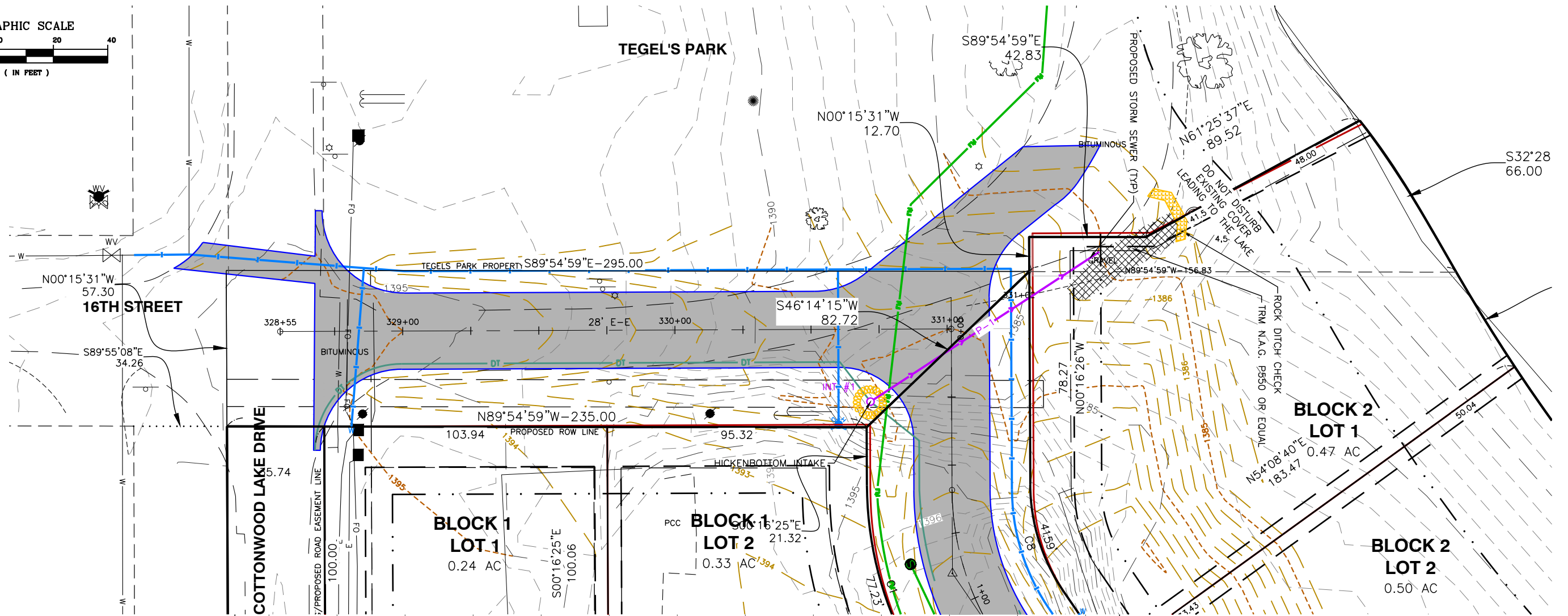
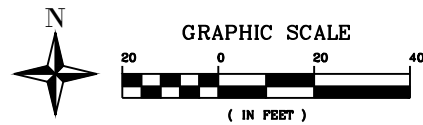
Project Manager: DLV
Designer: DLV
Project Number: 369202
Phone: (712) 472-2531

S COTTONWOOD LAKE SUBDIVISION
WINDOM, MINNESOTA

SITE PLAN

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P-1 100LF OF 12" RCP @ 0.99%

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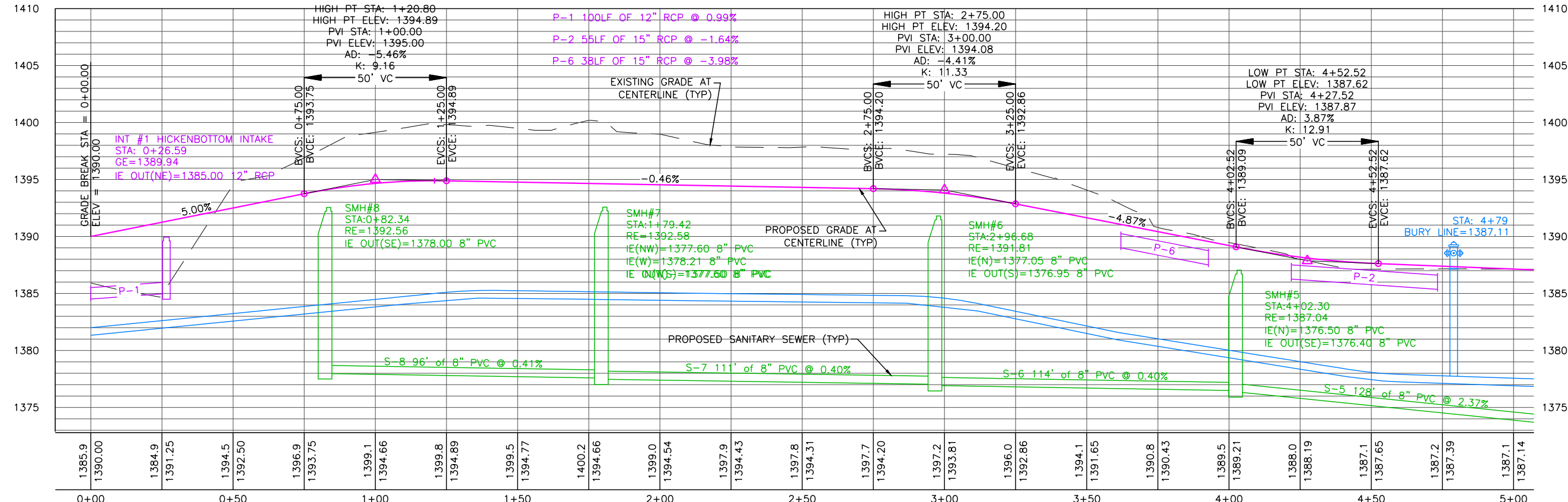
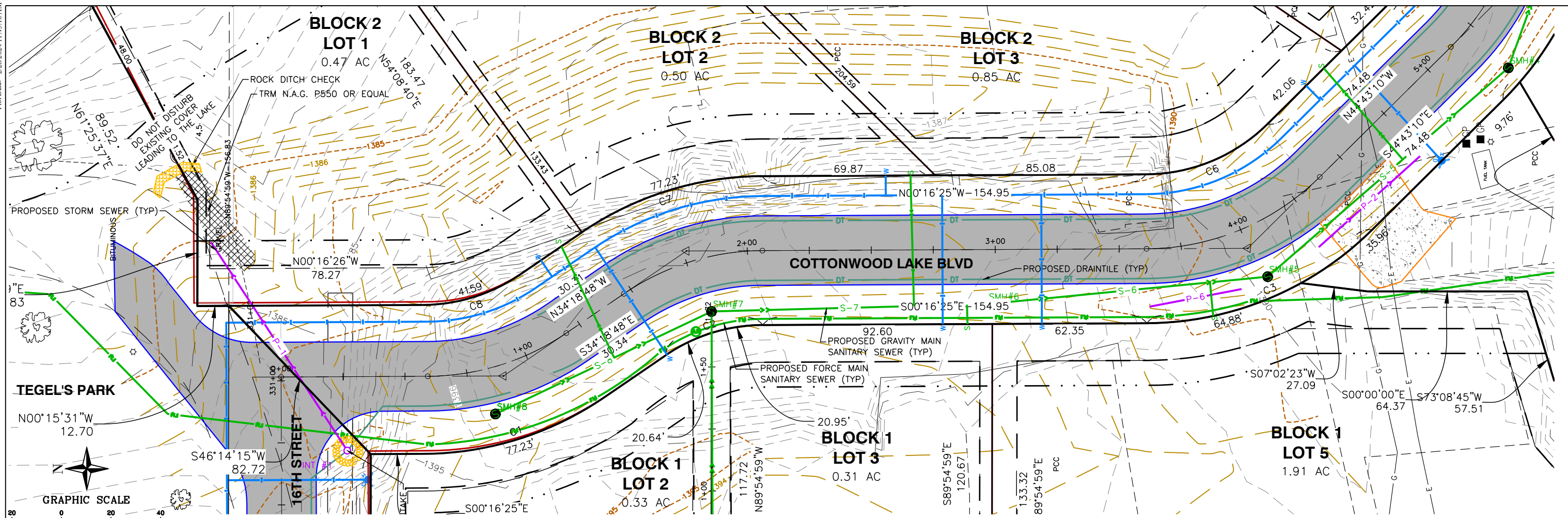


Project Manager: DLV
Designer: DLV
Project Number: 369202
Phone: (712) 472-2531

S COTTONWOOD LAKE SUBDIVISION
WINDOM, MINNESOTA

PLAN/PROFILE

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Phone: (712) 472-2531

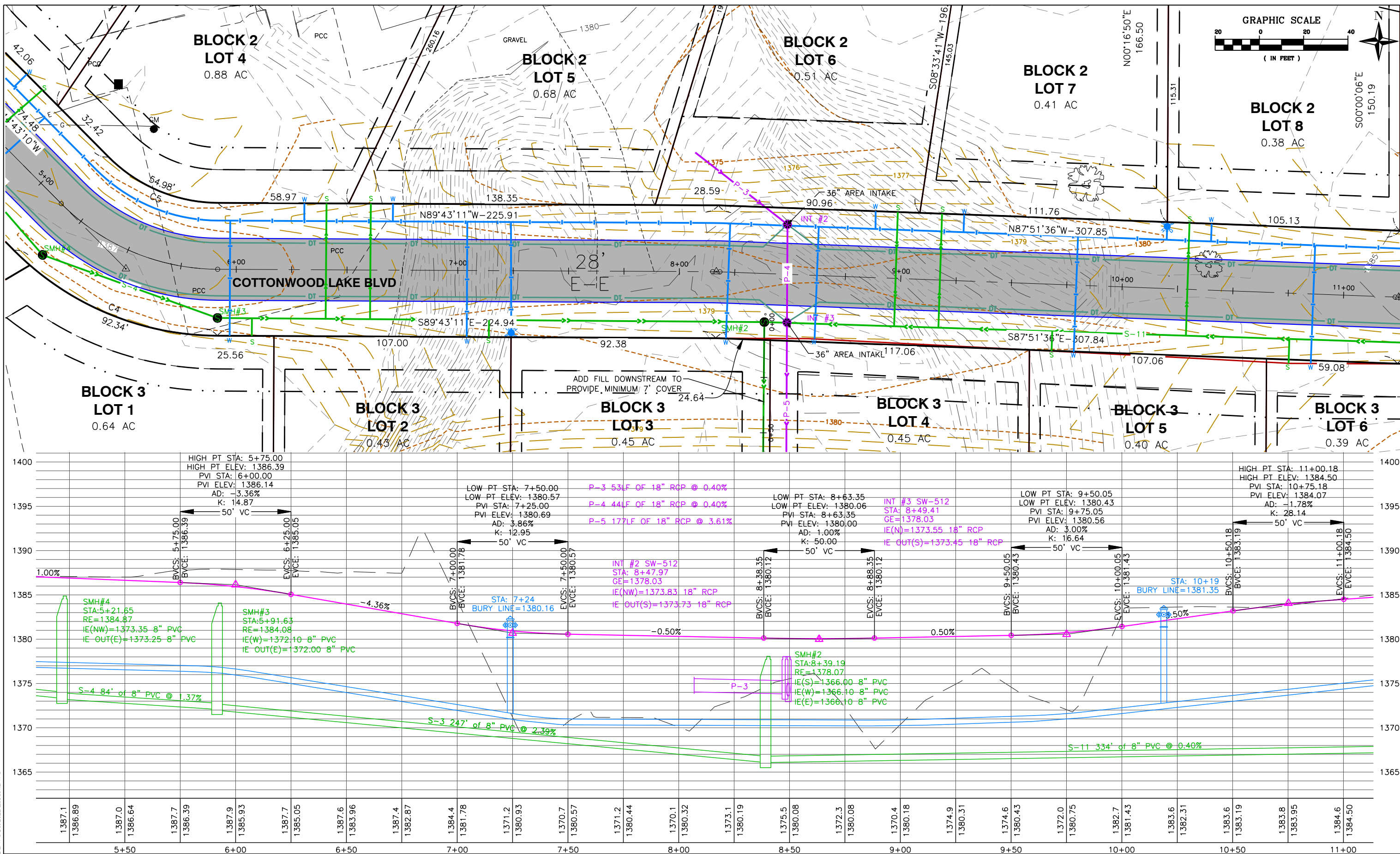
S COTTONWOOD LAKE SUBDIVISION
WINDOM, MINNESOTA

PLAN/PROFILE

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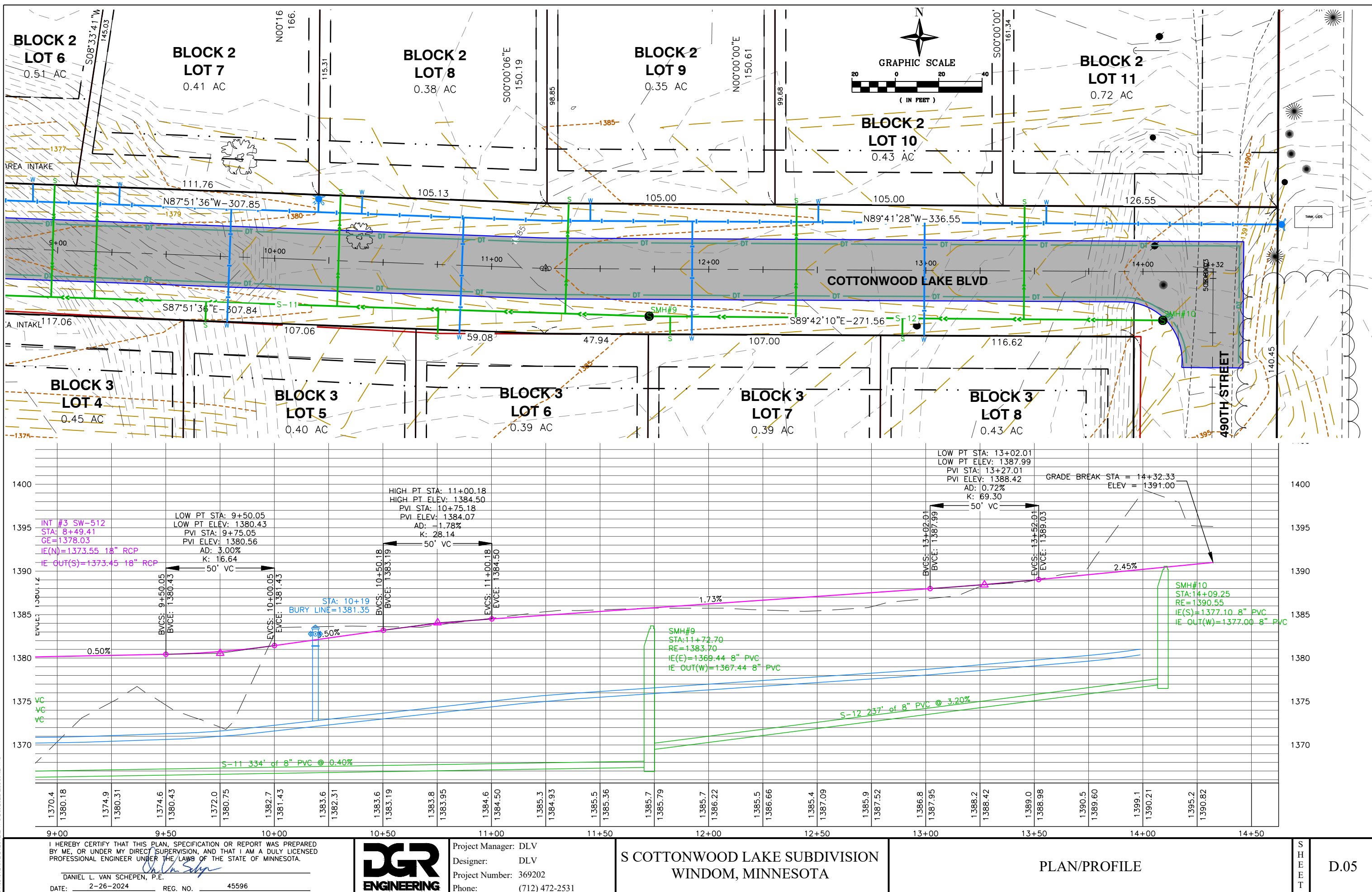


Project Manager: DLV
Designer: DLV
Project Number: 369202
Phone: (712) 472-2531

S COTTONWOOD LAKE SUBDIVISION
WINDOM, MINNESOTA

PLAN/PROFILE

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DATE: 2-26-2024 REG. NO. 45596



Project Manager: DLV
Designer: DLV
Project Number: 369202
Phone: (712) 472-2531

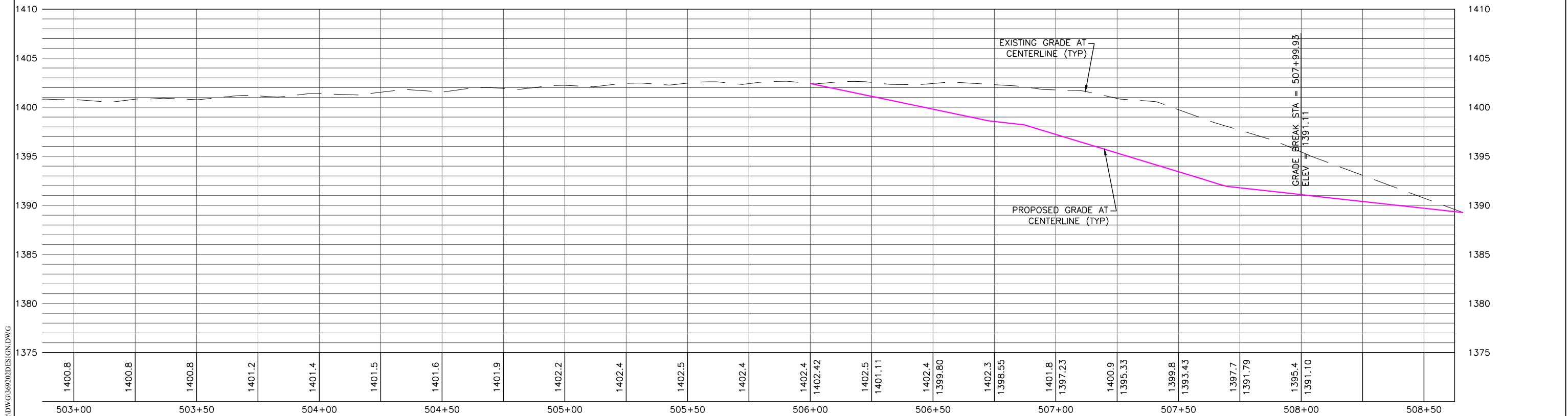
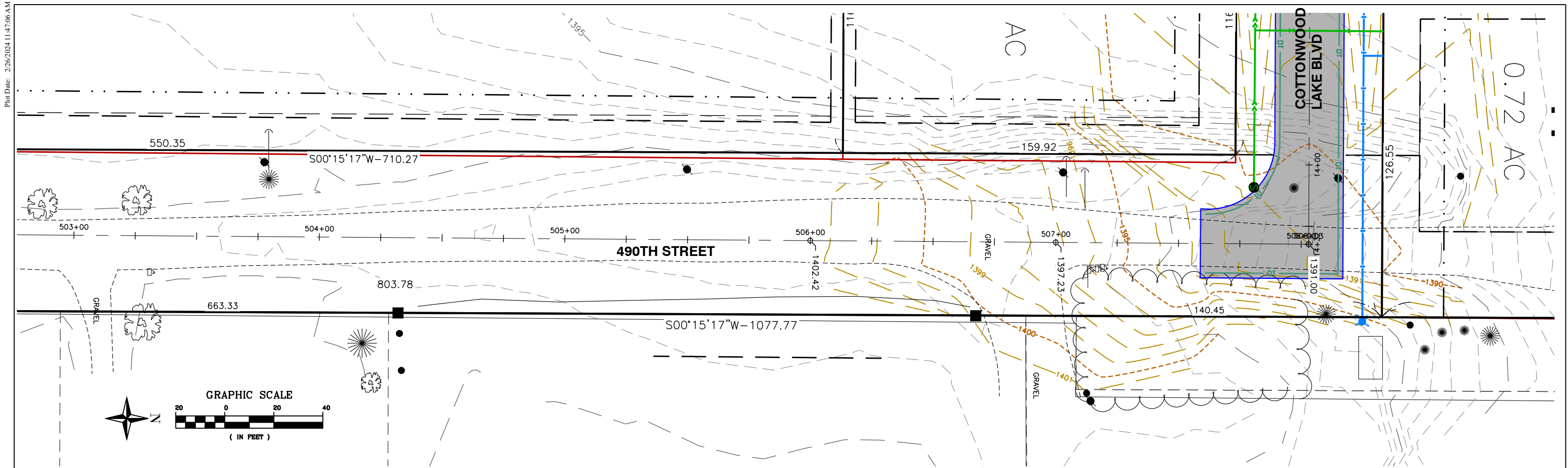
S COTTONWOOD LAKE SUBDIVISION
WINDOM, MINNESOTA

PLAN/PROFILE

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Plot Date: 2/26/2024 11:47:06 AM



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DANIEL L. VAN SCHEPEN, P.E.

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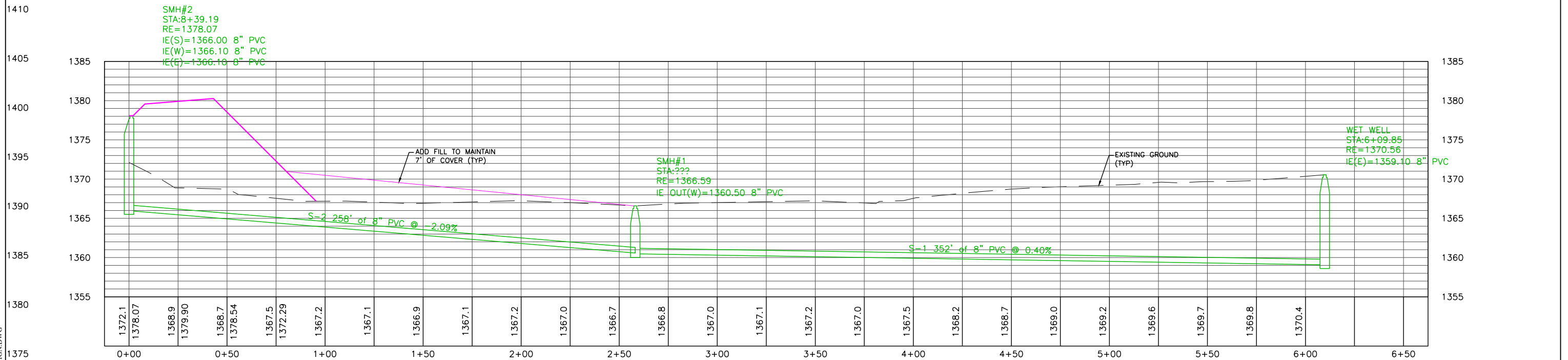
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WINDOM, MINNESOTA

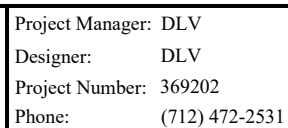
PLAN/PROFILE

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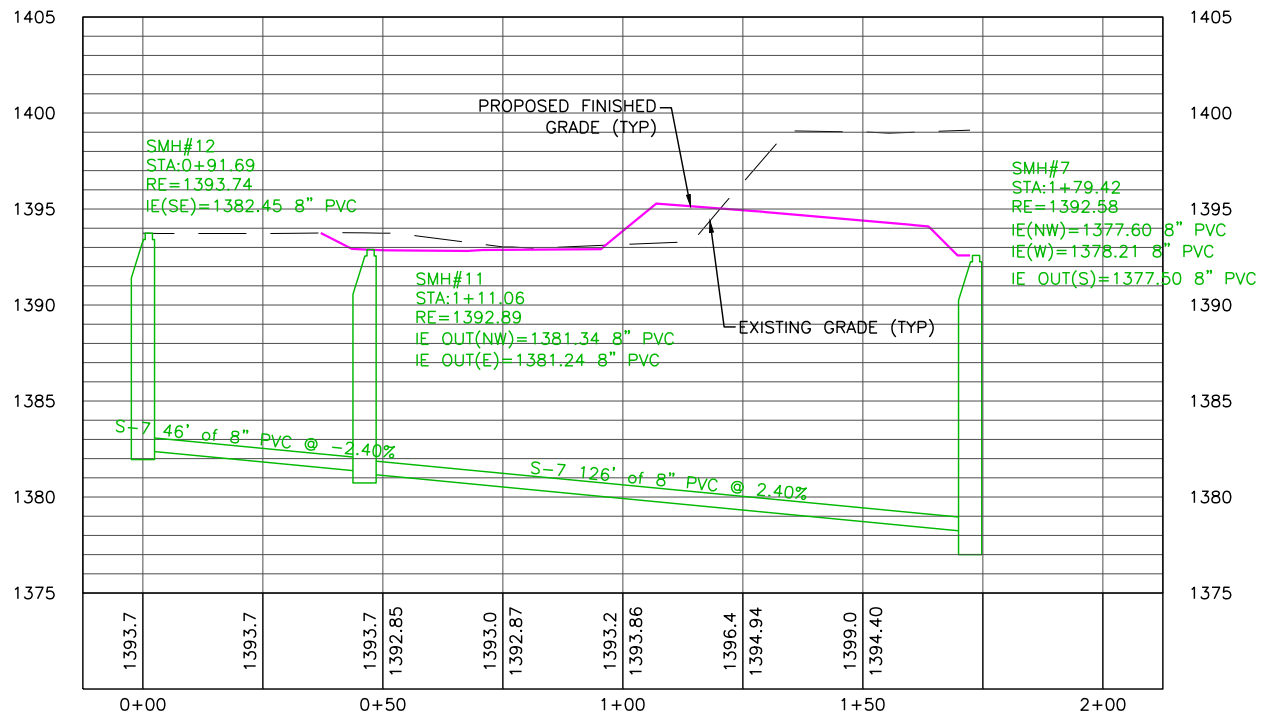
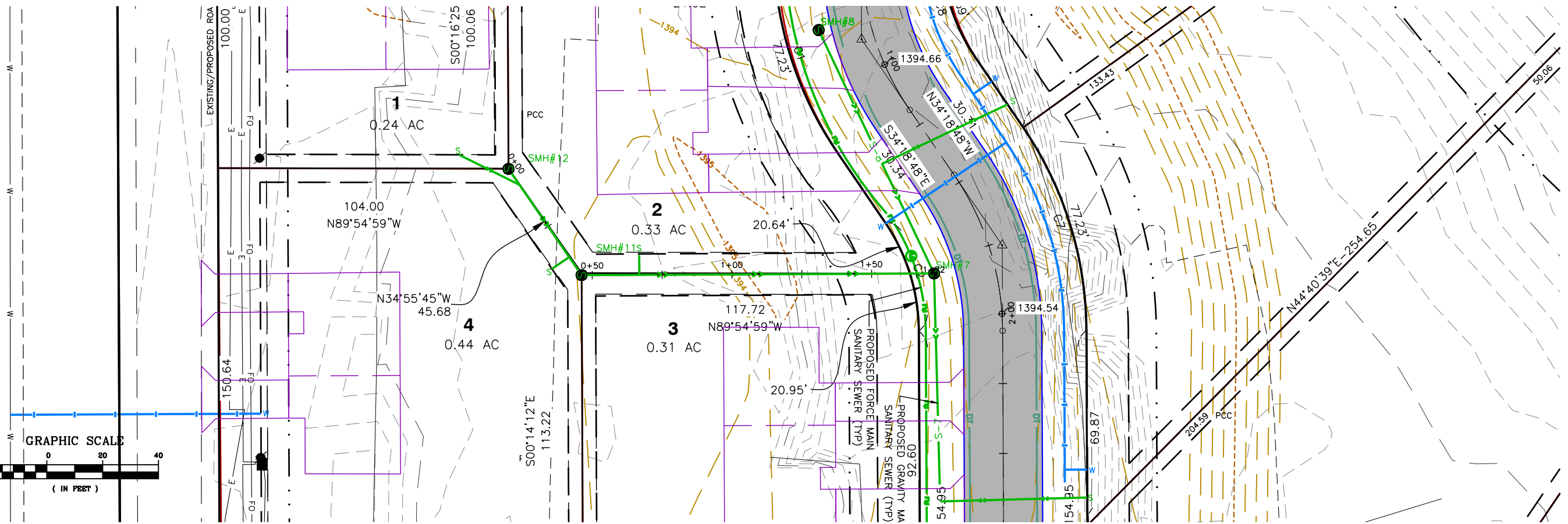
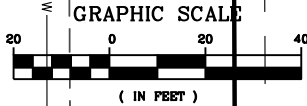


DANIEL L. VAN SCHEPEN, P.E.
DATE: 2-26-2024 REG. NO. 45596



PLAN/PROFILE

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DANIEL L. VAN SCHEPEN, P.E.
DATE: 2-26-2024 REG. NO. 45596



Project Manager: DLV
Designer: DLV
Project Number: 369202
Phone: (712) 472-2531

S COTTONWOOD LAKE SUBDIVISION
WINDOM, MINNESOTA

PLAN/PROFILE

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LIFT STATION - ELEVATIONS -	
DESCRIPTION	ELEVATION
TOP STRUCTURE	1371.66
TOP/BASE SLAB	1353.25
TOP/BASE GROUT	1353.50
PUMP OFF	1355.00
LEAD PUMP ON	1357.00
LAG PUMP ON	1358.00
HIGH LEVEL ALARM	1358.50
LOW LEVEL ALARM	1354.25
IE	1359.10

NOTE:

- FLOATS ARE SHOWN OUT OF SECTION
- FIELD VERIFY FLOAT LOCATION WITH OWNER
- CONTRACTOR TO PLACE 12" MINIMUM OF COMPACTED GRADED ROCK BELOW THE BASE SLAB OF THE WELL AND VALVE VAULT. COST INCIDENTAL TO THE LIFT STATION.
- VERIFY TOTAL WEIGHT OF CONCRETE DISPLACED MUST EXCEED TOTAL WEIGHT OF WATER DISPLACED.

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Michael J. Carr, P.E.

DATE: 10/02/2023 REG. NO. 41114



Project Manager:	DLV
Designer:	MJC
Project Number:	369202
Phone:	(712) 472-2531

S COTTONWOOD LAKE ADDITION
WINDOM, MINNESOTA

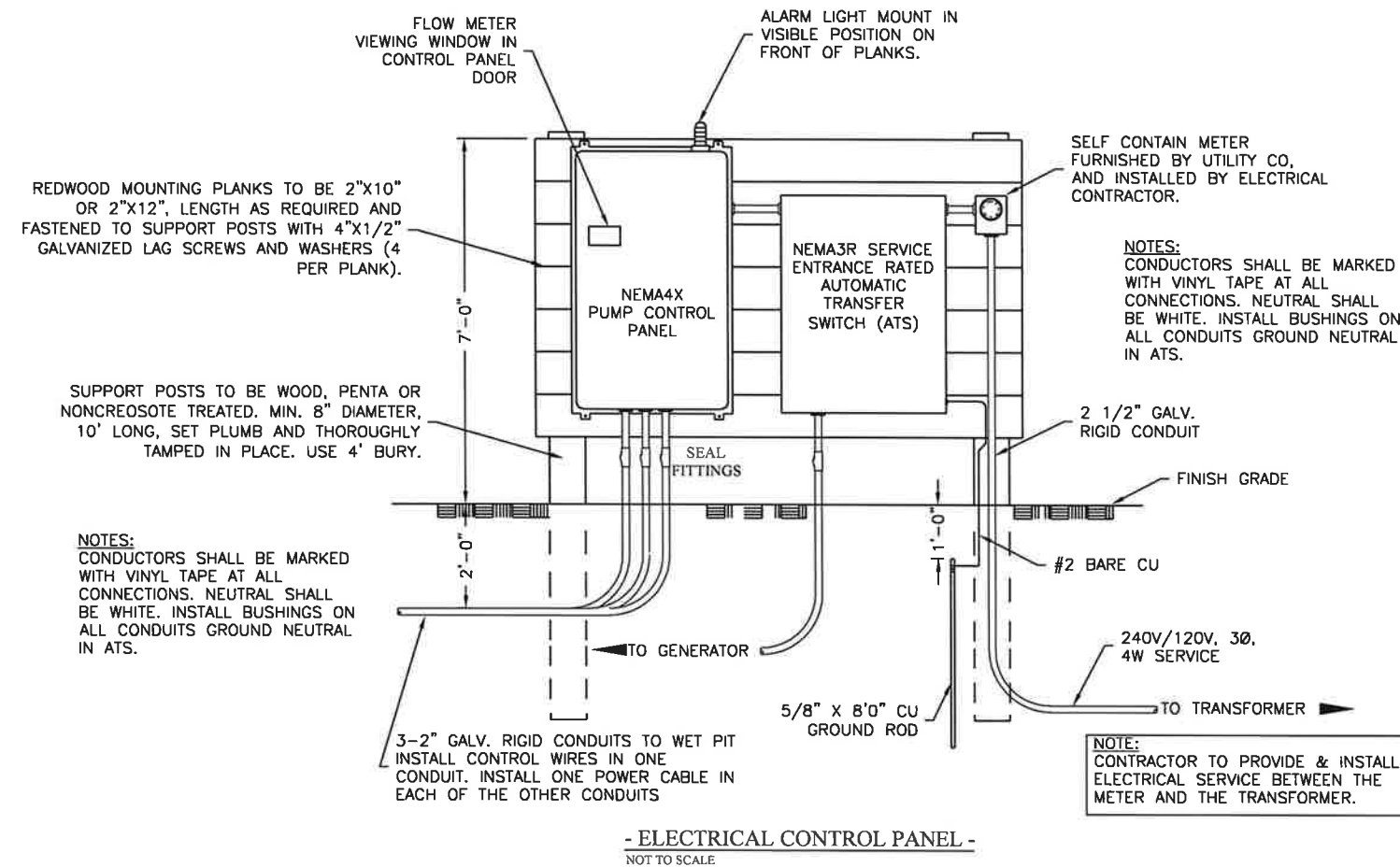
FORCE SEWER - LIFT STATION DETAIL

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NOTE

① CONTROL PANEL TO BE WIRED FOR INSTALLATION OF FUTURE GENERATOR.



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Michael J. Carr
Michael J. Carr, P.E.

DATE: 10/02/2023 REG. NO. 41114



Project Manager: DLV
Designer: MJC
Project Number: 369202
Phone: (712) 472-2531

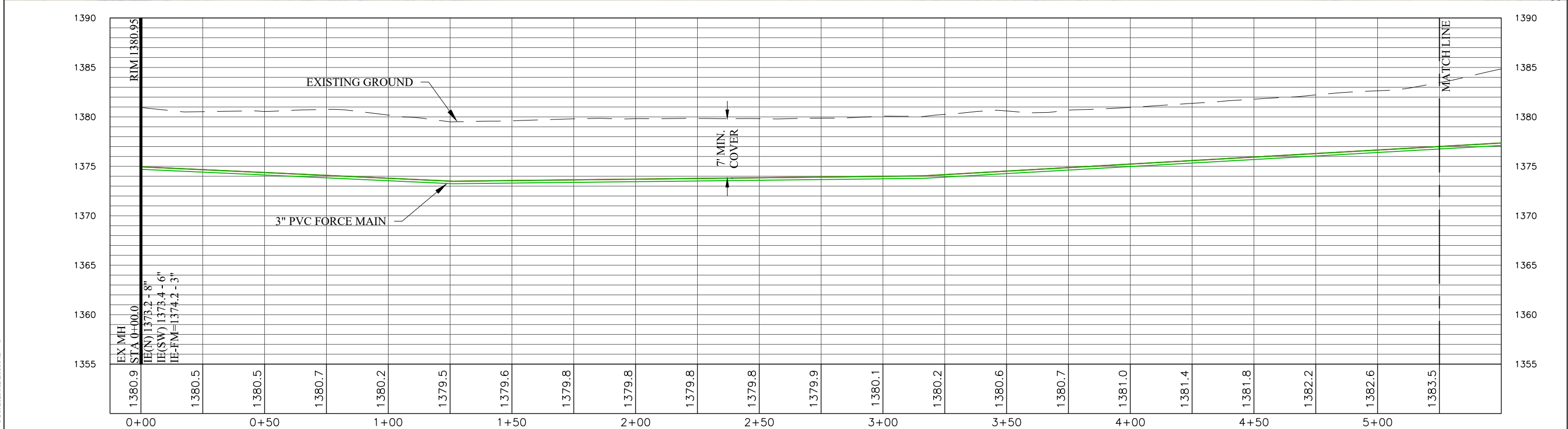
S COTTONWOOD LAKE ADDITION
WINDOM, MINNESOTA

FORCE SEWER

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DANIEL L. VAN SCHEPEN, P.E.
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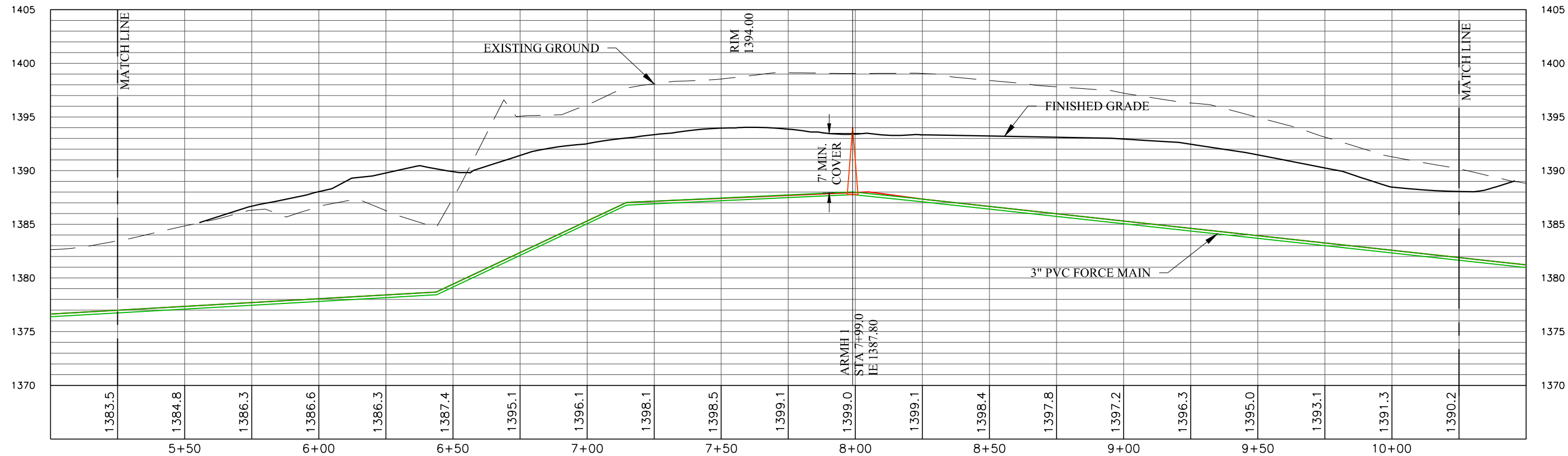
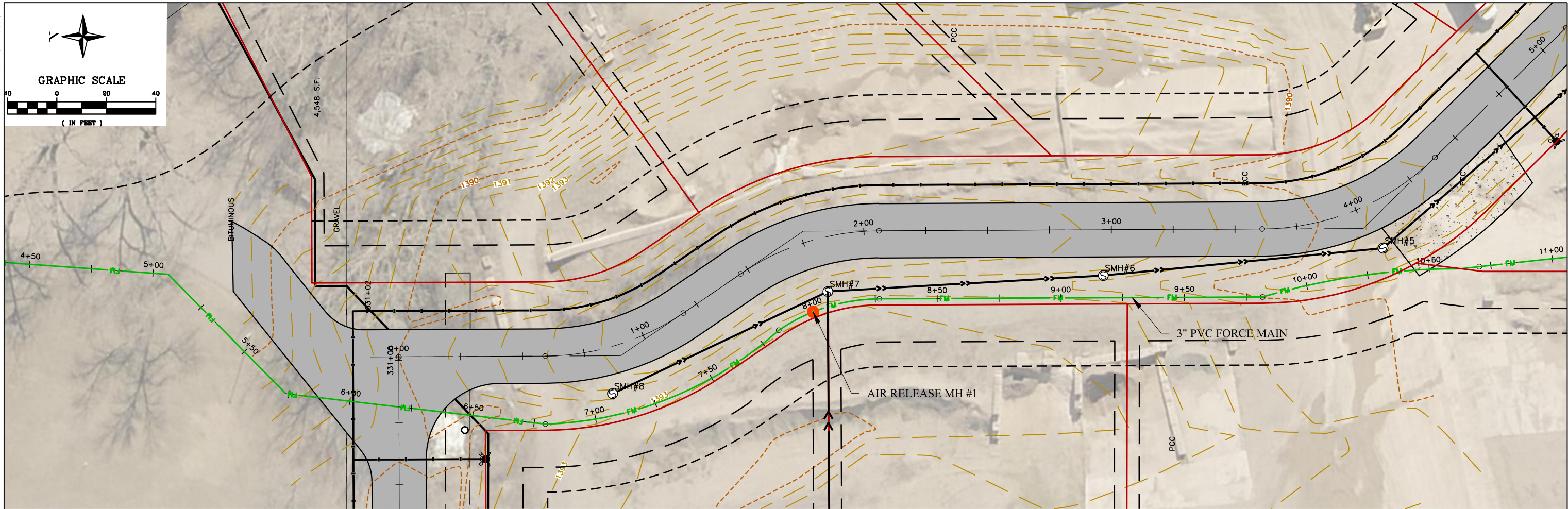
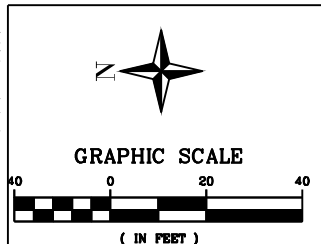
S COTTONWOOD LAKE ADDITION
WINDOM, MINNESOTA

PLAN/PROFILE
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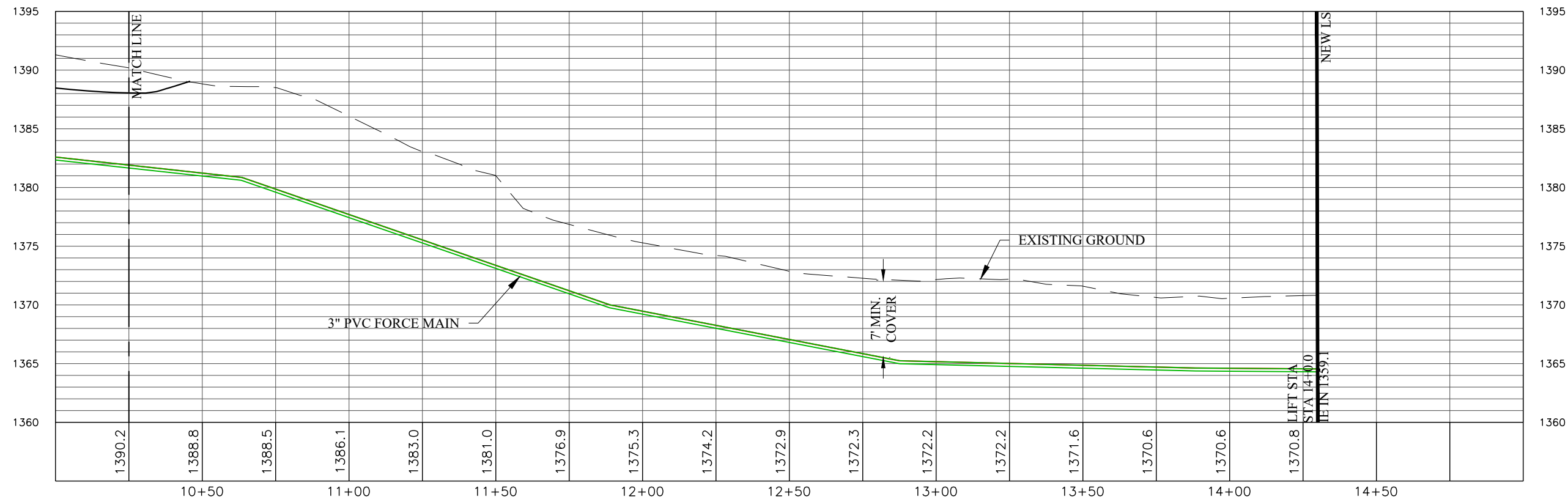
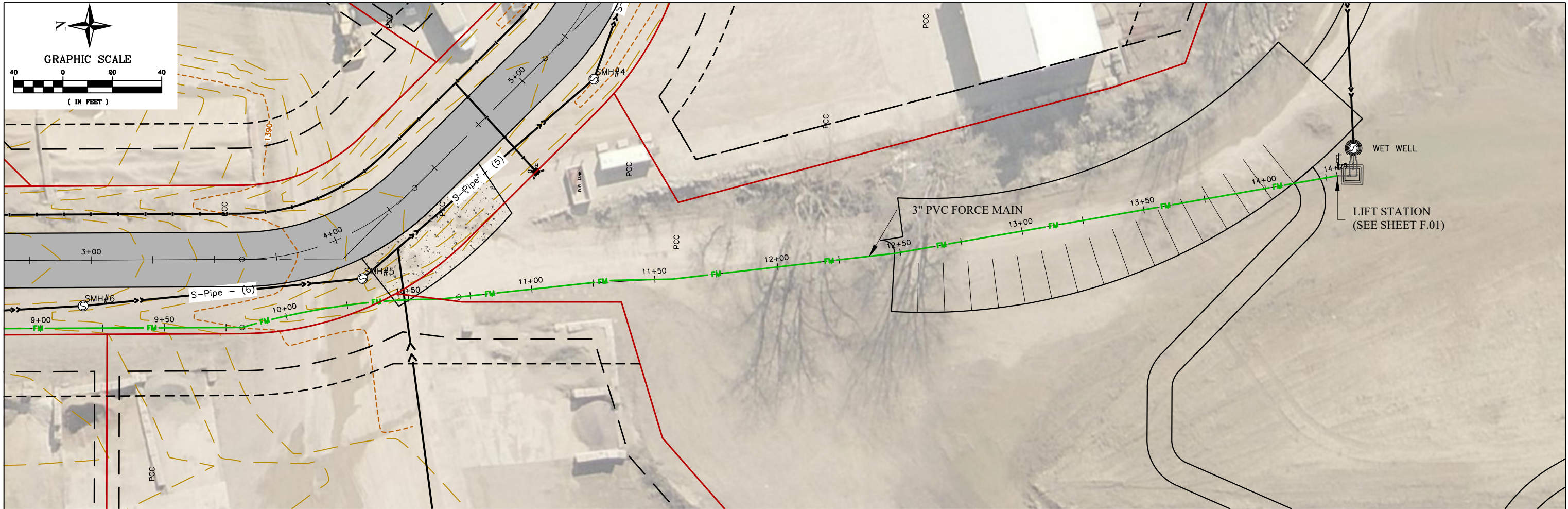
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S COTTONWOOD LAKE ADDITION
WINDOM, MINNESOTA

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FORCE SEWER

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