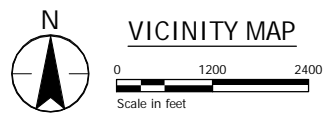
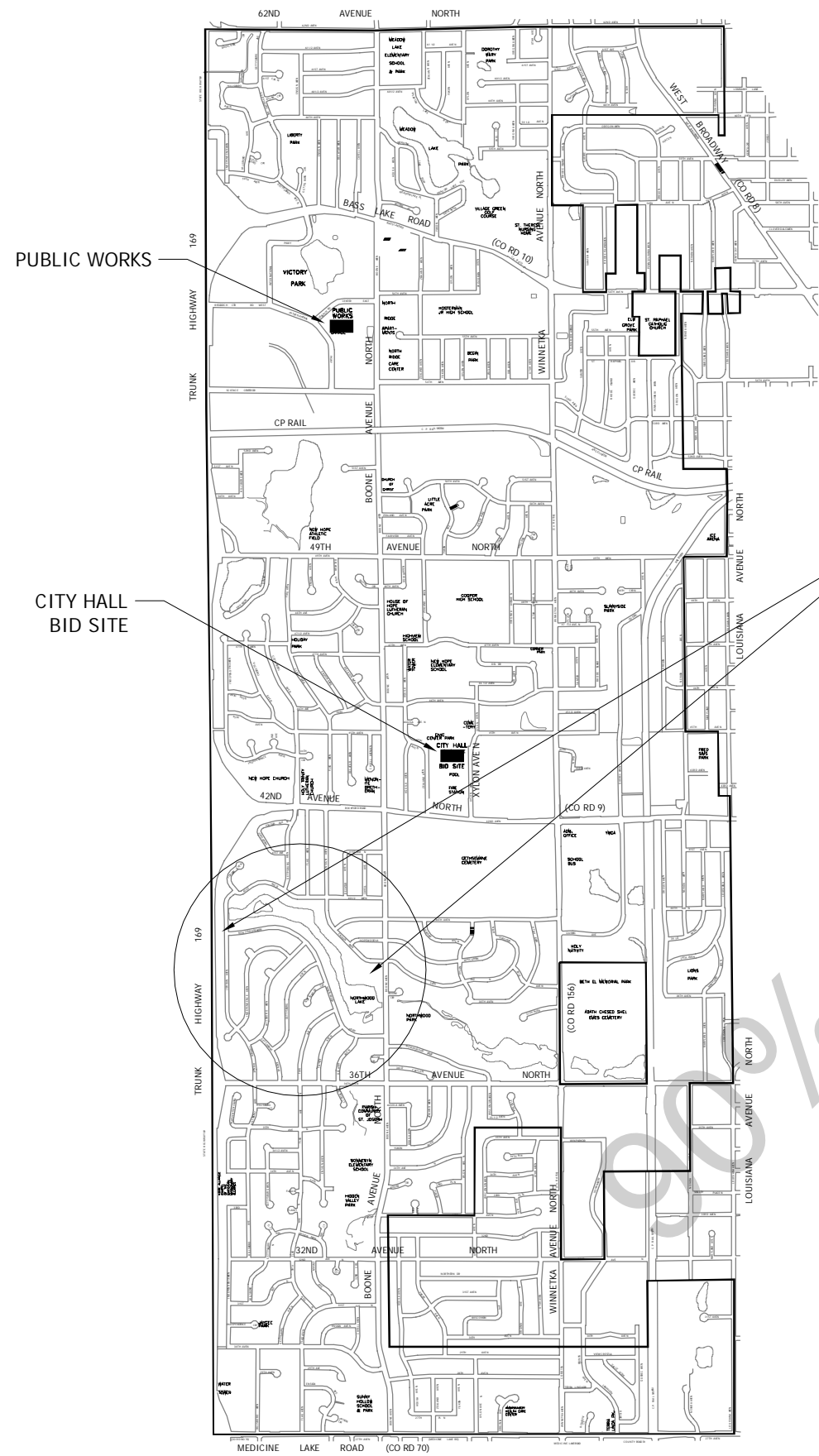


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Plot Date: 11/02/2016 - 11:53am
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 User: jordan



5C.
 BCWMC 11-18-15
 Full Plan Set

CITY OF NEW HOPE

2016 NORTHWOOD LAKE IMPROVEMENTS

CITY PROJECT NUMBER 938
 2016

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C1.01	TYPICAL SECTIONS
C2.01	TEMPORARY EROSION CONTROL - CONCEPT C
C2.02	TEMPORARY EROSION CONTROL - CONCEPT A
C2.03	PERMANENT EROSION CONTROL - CONCEPT C
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S3.01	STORM WATER REUSE BOOSTER STATION STRUCTURAL SECTIONS
S5.01	STRUCTURAL DETAILS
E1.01	STORMWATER STORAGE TANK ELECTRICAL SITE PLAN
E8.01	ELECTRICAL DETAILS

38 - SHEETS TOTAL

KATHI HEMKEN	MAYOR
JOHN ELDER	COUNCILMEMBER
ANDY HOFFE	COUNCILMEMBER
ERIC LAMMLE	COUNCILMEMBER
JONATHAN LONDON	COUNCILMEMBER
KIRK McDONALD	CITY MANAGER
BOB PASCHKE	PUBLIC WORKS DIRECTOR
STEVE SONDRALL	CITY ATTORNEY
SUSAN RADAR	PARKS AND RECREATION DIRECTOR



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NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 TITLE SHEET

NO.	REVISION	DATE

SHEET NUMBER
G0.01

Plot Date: 11/02/2015 - 11:54am
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 User: jordan

EXISTING TOPOGRAPHIC SYMBOLS

	STORM SEWER APRON		PEDESTAL CATV
	BASKETBALL POST		PEDESTAL COMMUNICATIONS
	BARRICADE PERMANENT		POST INDICATOR VALVE
	BENCH		POLE-COMMUNICATIONS
	BOOSTER STATION		POLE-GUY
	BUILDING LOWEST OPENING		POLE-LIGHT
	BURIAL CONTROL MONUMENT		POLE-POWER
	BUSH DECIDUOUS		POLE-UTILITY
	CATCH BASIN BEEHIVE		POLE-UTILITY SERVICE
	CURB BOX		POST
	CATCH BASIN		PROPANE TANK
	COLUMN		PICNIC TABLE
	CONTROL BOX SIGNAL		SAMPLING WELL
	CLEAN OUT (SEWER)		ROCK
	CULVERT END		RR SIGNAL CONTROL BOX
	DRINKING FOUNTAIN		RR CROSSING GATE
	ENERGY DISSIPATER		RR SIGNAL
	FLAG POLE		REGULATION STATION GAS
	FUEL PUMP		SATELLITE DISH
	GUY WIRE		SEPTIC TANK
	GRILL		SEPTIC VENT
	HANDICAP SPACE		SEPTIC DRAIN FIELD
	HANDHOLE		SIGN
	FIRE HYDRANT		SOIL BORING
	HYDRANT PVMNT MARKER (REFLECTOR)		STAND PIPE GAS
	HYDRANT VALVE		SPIGOT WATER
	INLET (SMALL DIA.)		SPRINKLER HEAD
	LIFT STATION CONTROL PANEL		SPRINKLER VALVE BOX
	LIFT STATION DRY WELL		STUMP
	LIFT STATION WET WELL		SERVICE-GAS POINT ON LINE
	LIGHT YARD		SERVICE-SANITARY SEWER POINT ON LINE
	LOOP DETECTOR		SERVICE-STORM SEWER POINT ON LINE
	MAIL BOX		SERVICE-WATER POINT ON LINE
	MAIL RELAY BOX		TELEPHONE BOOTH
	MANHOLE-AIR RELEASE		TRANSMISSION TOWER ELECTRIC
	MANHOLE-HEAT		TEST PIT LOC
	MANHOLE-GAS		TRANSFORMER POWER
	MANHOLE-POWER		TREE DEAD
	MANHOLE-SANITARY SEWER		TREE-CONIFEROUS
	MANHOLE-STORM SEWER		TREE-DECIDUOUS
	MANHOLE-COMMUNICATIONS		TREE-FRUIT
	MANHOLE-UNKNOWN		TRASH CAN
	MANHOLE-WATER		TRAFFIC SIGNAL
	METER POWER		VALVE GAS
	METER GAS		VALVE
	ORDINARY HIGH WATER MARK		VENT GAS
	OUTLET CONTROL STRUCTURE		WATER REDUCER
	PARKING METER		WETLAND
	PEDESTRIAN PUSH BUTTON		WELL-MONITORING
	PEDESTAL POWER		WELL-WATER

SURVEY SYMBOLS

	AIR CONTROL POINT		AERIAL CONTROL POINT
	BACKSIGHT CONTROL POINT		GPS CONTROL POINT
	JUDICIAL LAND MONUMENT		MONUMENT COMPUTED
	MONUMENT IRON FOUND		MONUMENT IRON SET
	RESECTED POINT		ROW MONUMENT
	ROW MARKER POST		SECTION CORNER
	TRAVERSE CONTROL POINT		BENCH MARK LOCATION

PROPOSED TOPOGRAPHIC SYMBOLS

	BOLLARD		SANITARY CLEANOUT
	MANHOLE		SANITARY OR STORM LIFT STATION
	STORM SEWER BEEHIVE CATCH BASIN		STORM SEWER CATCH BASIN
	STORM SEWER FLARED END SECTION		STORM SEWER OUTLET STRUCTURE
	STORM SEWER OVERFLOW STRUCTURE		CURB BOX
	FIRE HYDRANT		WATER REDUCER
	VALVE		RIP RAP
	DRAINAGE FLOW		PEDESTRIAN RAMP

EXISTING PRIVATE UTILITY LINES

	CABLE TV QUALITY LEVEL D		FIBER OPTIC QUALITY LEVEL D
	CABLE TV QUALITY LEVEL C		FIBER OPTIC QUALITY LEVEL C
	CABLE TV QUALITY LEVEL B		FIBER OPTIC QUALITY LEVEL B
	CABLE TV QUALITY LEVEL A		FIBER OPTIC QUALITY LEVEL A
	POWER QUALITY LEVEL D		COMMUNICATION QUALITY LEVEL D
	POWER QUALITY LEVEL C		COMMUNICATION QUALITY LEVEL C
	POWER QUALITY LEVEL B		COMMUNICATION QUALITY LEVEL B
	POWER QUALITY LEVEL A		COMMUNICATION QUALITY LEVEL A
	GAS QUALITY LEVEL D		OVERHEAD POWER
	GAS QUALITY LEVEL C		OVERHEAD COMMUNICATION
	GAS QUALITY LEVEL B		OVERHEAD UTILITIES
	GAS QUALITY LEVEL A		

EXISTING TOPOGRAPHIC LINES

	RETAINING WALL
	FENCE - BARBED WIRE
	FENCE - CHAIN LINK
	FENCE - DECORATIVE
	FENCE - STOCKADE
	FENCE - WOOD
	FENCE - ELECTRIC
	GUARD RAIL
	TREE LINE
	WETLAND

SURVEY LINES

	BOUNDARY
	CENTERLINE
	EXISTING EASEMENT LINE
	PROPOSED EASEMENT LINE
	FLOOD PLAIN BOUNDARY
	EXISTING LOT LINE
	PROPOSED LOT LINE
	EXISTING RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY
	SETBACK LINE
	SECTION LINE
	QUARTER SECTION LINE
	SIXTEENTH SECTION LINE

EXISTING UTILITY LINES

	FORCE MAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER
	WATER MAIN
	WATER SERVICE

PROPOSED UTILITY LINES

	FORCE MAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER DRAINTILE
	STORM SEWER
	WATER MAIN
	WATER SERVICE
	PIPE CASING
	RECLAIMED STORMWATER
	ABANDON PIPE

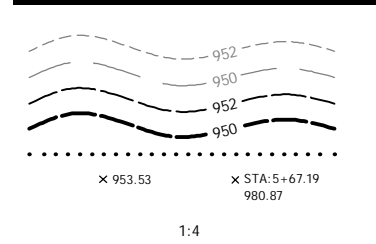
FUTURE UTILITY LINES

	FORCE MAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER DRAINTILE
	STORM SEWER
	WATER MAIN
	WATER SERVICE
	PIPE CASING

CONCRETE CURB AND GUTTER

	EXISTING
	PROPOSED
	FUTURE
	DEMOLITION

GRADING INFORMATION



EXISTING CONTOUR MINOR
 EXISTING CONTOUR MAJOR
 PROPOSED CONTOUR MINOR
 PROPOSED CONTOUR MAJOR
 PROPOSED GRADING LIMITS / SLOPE LIMITS
 PROPOSED SPOT ELEVATION
 RISE:RUN (SLOPE)

ABBREVIATIONS

AD	ALGEBRAIC DIFFERENCE
BV	BUTTERFLY VALVE
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
CL	CENTER LINE
CL	CLASS
CMP	CORRUGATED METAL PIPE
C.O.	CHANGE ORDER
DIP	DUCTILE IRON PIPE
EL/ELEV	ELEVATION
EOF	EMERGENCY OVERFLOW
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX	EXISTING
FES	FLARED END SECTION
F/F	FACE TO FACE
FM	FORCE MAIN
F.O.	FIELD ORDER
GV	GATE VALVE
HP	HIGH POINT
HWL	HIGH WATER LEVEL
INV	INVERT
K	CURVE COEFFICIENT
LP	LOW POINT
MH	MANHOLE (SANITARY)
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NWL	NORMAL WATER LEVEL
PC	POINT OF CURVE
PCC	COMPOUND CURVE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PPVC	PERFORATED POLYVINYL CHLORIDE PIPE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT-OF-WAY
SS	STORM SEWER STRUCTURE
STA	STATION
TCE	TEMPORARY CONSTRUCTION EASEMENT
TNH	TOP NUT HYDRANT
TYP	TYPICAL
VC	VERTICAL CURVE
WM	WATER MAIN

HATCH PATTERNS

	HEAVY DUTY BITUMINOUS		SAND
	BITUMINOUS		BEDROCK
	CONCRETE		GROUND
	GRAVEL		

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 DATE: _____
 LIC. NO. _____

NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 LEGEND

NO	REVISION	DATE

SURVEY	B.H
DRAWN	CWL
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816
SHEET NUMBER	G0.02

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SUBSURFACE UTILITY INFORMATION:

THE SUBSURFACE UTILITY INFORMATION ON THIS PLAN IS SHOWN TO UTILITY QUALITY LEVEL IN ACCORDANCE WITH LEGEND PROVIDED BELOW. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA. UTILITY DESIGNATIONS ARE SHOWN ON DRAWING G0.02.

UTILITY QUALITY LEVELS:

LEVEL D - INFORMATION COMES SOLELY FROM EXISTING UTILITY RECORDS.

LEVEL C - SURVEYING ABOVE GROUND UTILITY FACILITIES, SUCH AS MANHOLES, VALVE BOXES, ETC; AND CORRELATING THIS INFORMATION WITH EXISTING UTILITY RECORDS.

LEVEL B - THE USE OF SURFACE GEOPHYSICAL TECHNIQUES TO DETERMINE THE EXISTENCE AND HORIZONTAL POSITION OF UNDERGROUND UTILITIES.

LEVEL A - THE USE OF NONDESTRUCTIVE DIGGING EQUIPMENT AT HORIZONTAL AND VERTICAL POSITION OF UNDERGROUND UTILITIES, AS WELL AS THE TYPE, SIZE, CONDITION, MATERIAL, AND OTHER CHARACTERISTICS.

PRIVATE UTILITIES ARE SHOWN IN THE LOCATIONS PROVIDED BY THE OWNER PRIOR TO CONSTRUCTION.

CONCEPT C

STORM SEWER SCHEDULE - JORDAN POND					
STRUCTURE	TYPE	DETAIL	CASTING	DIA	COMMENTS
CB-1	CB	C8.04	R-3290-VB	2'x3'	
CB-2	CBMH	C8.03	R-3290-VB	4'	
CB-3	CBMH	C8.03	R-3290-VB	4'	
CB-4	CBMH	C8.03	R-3290-VB	7'	
CB-5	CBMH	C8.03	R-3290-VB	6'	3' SUMP
CB-6	CBMH	C8.03	R-3290-VB	5'	5' SUMP
CB-7	CB	C8.04	R-3290-VB	2'x3'	
CB-8	CBMH	C8.03	R-3290-VB	4'	
FES-9	FES	C8.02	-	36"	
OCS-10	OCS	C8.04	R-4342	6'	5' SUMP
CB-12	CBMH	C8.03	R-3290-VB	4'	
CB-13	CB	C8.03	R-3290-VB	4'	3' SUMP
FES-14	FES	C8.02	-	12"	
FES-15	FES	C8.02	-	66"	
FES-16	FES	C8.02	-	66"	

CONCEPT A

STORM SEWER SCHEDULE - BOONE AVE AND NORTHWOOD PARK					
STRUCTURE	TYPE	DETAIL	CASTING	DIA	COMMENTS
MH-20	MH	C8.02	R-1642-B	7'	WITH OVERFLOW WEIR
MH-21	MH	C8.02	R-1642-B	6'	
MH-22	MH	C8.02	R-1642-B	10'	STORM INTERCEPTOR
MH-24	MH	C8.02	R-1642-B	4'	
FES-5	FES	C8.02	-	-	TRASH GUARD
OCS-1	OCS	C8.04	R-4342	4'	
FES-6	FES	C8.02	-	-	TRASH GUARD
OCS-2	OCS	C8.04	R-4342	4'	
MH-25	MH	C8.02	R-1642-B	4'	
FES-7	FES	C8.02	-	-	TRASH GUARD
OCS-3	OCS	C8.04	R-4342	4'	
FES-4	FES	C8.02	-	-	TRASH GUARD
CBMH-26	CBMH	C8.04	R-3290-B	5'	4' SUMP
CB-27	CB	C8.04	R-3290-B	4'	3' SUMP

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NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 STORM SCHEDULE

NO	REVISION	DATE

SURVEY	
DRAWN	B.J.H
DESIGNED	C.W.L
CHECKED	C.W.L
APPROVED	C.W.L
PROJ. NO.	193802816

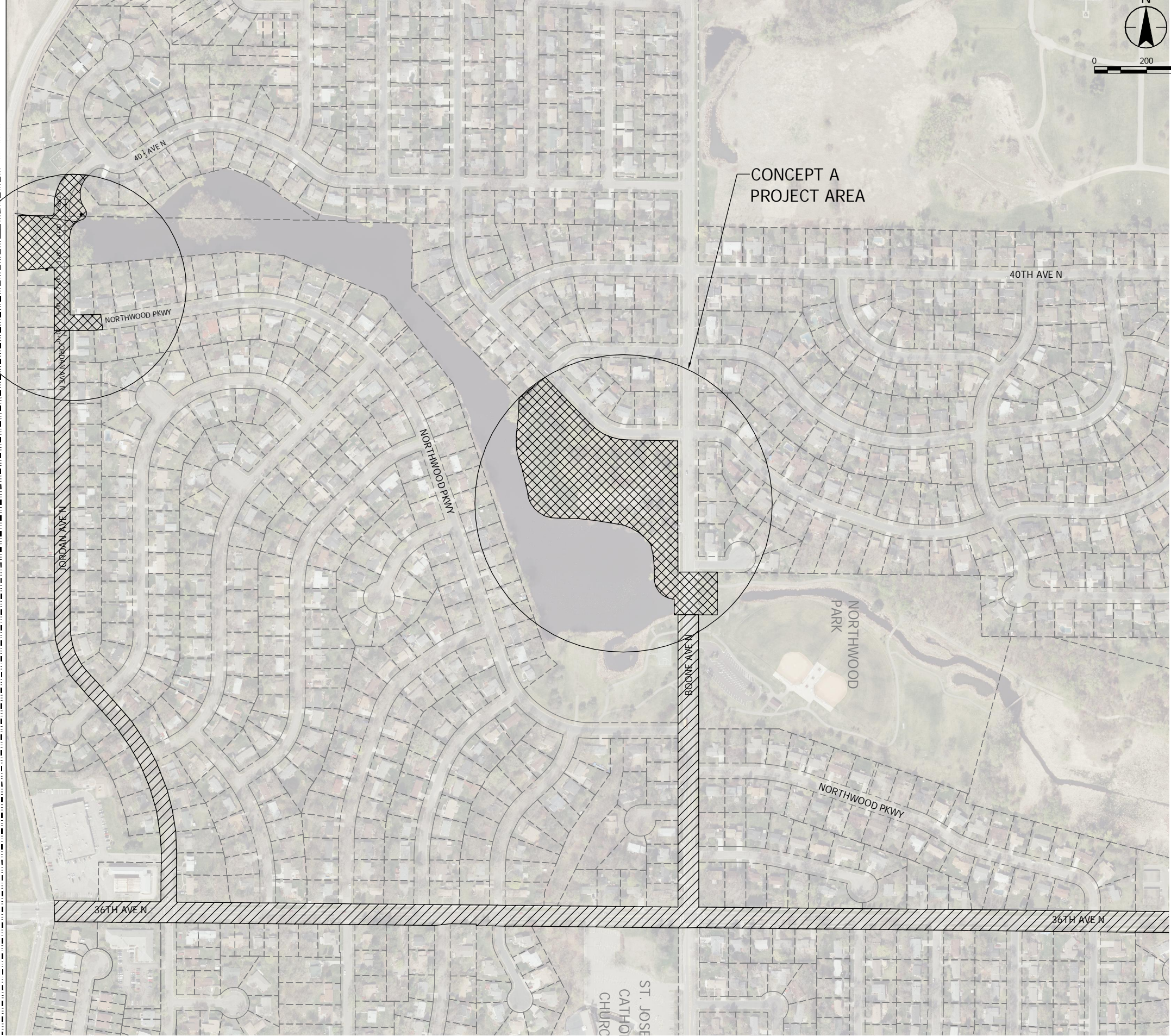
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

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CONCEPT C
PROJECT AREA

CONCEPT A
PROJECT AREA



-  PROJECT AREAS
-  HAUL ROUTES

GENERAL CONSTRUCTION NOTES:

1. NEWLY CONSTRUCTED ROADS SHALL NOT BE USED AS HAUL ROUTES.
2. CONSTRUCTION SEQUENCING AND HAUL ROUTES TO BE REVIEWED AND APPROVED BY ENGINEER.
3. ALL WORK SHALL BE COORDINATED WITH THE POSTAL SERVICE, GARBAGE SERVICE, SCHOOL DISTRICT, AND EMERGENCY SERVICES TO MAINTAIN SERVICE THROUGHOUT THE PROJECT

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 SIGNATURE: _____
 DATE: _____ LIC. NO. _____

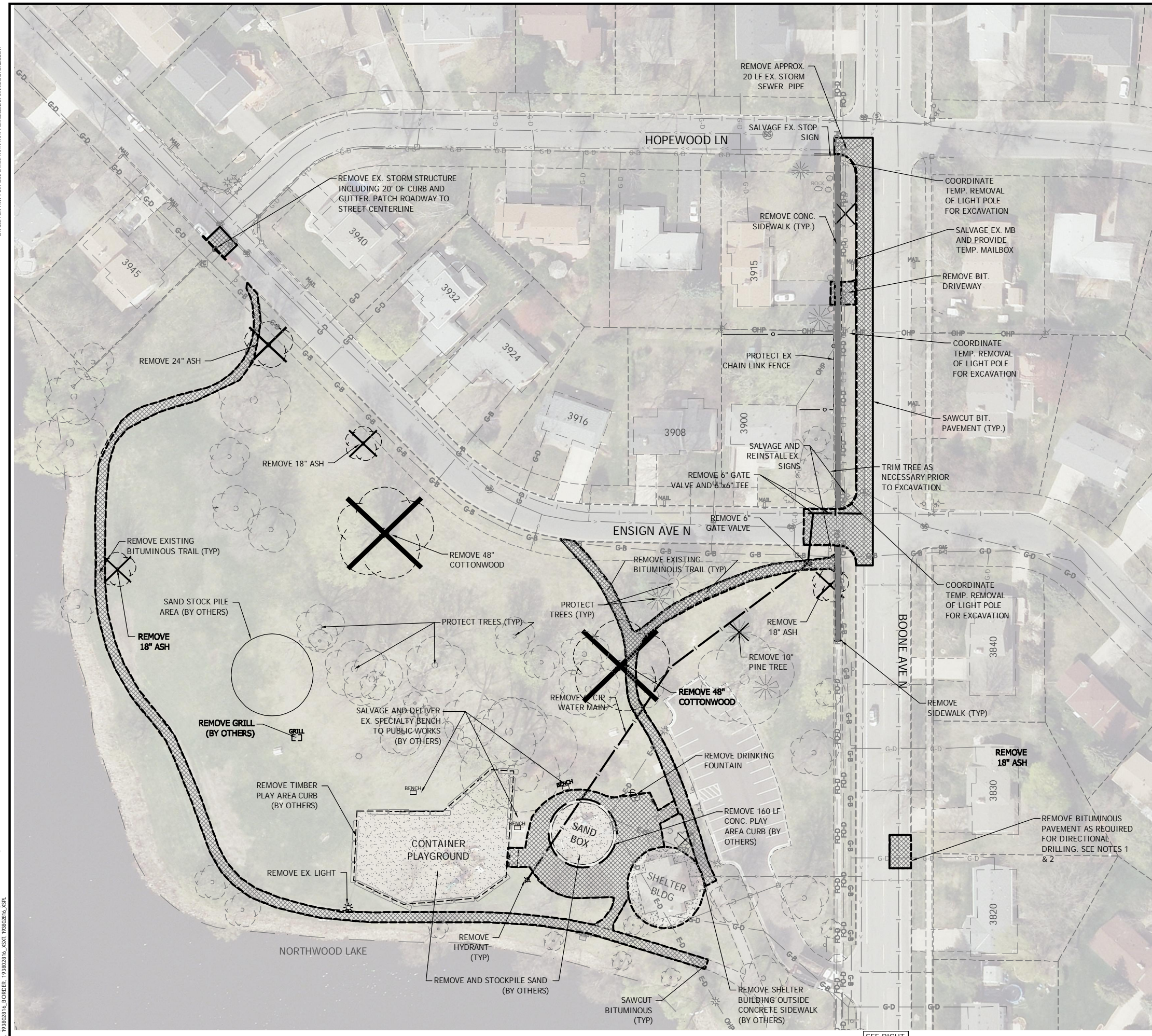
NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 LOCATION PLAN/HAUL ROUTES

NO	REVISION	DATE

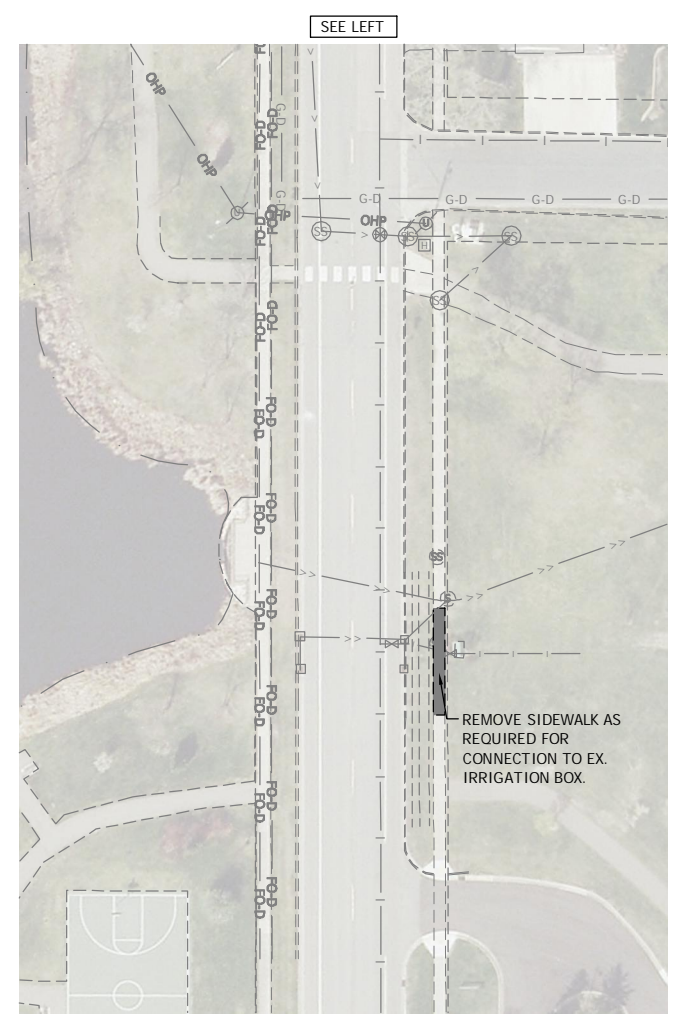
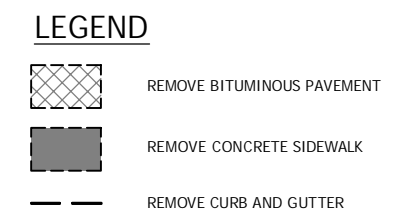
SURVEY	
DRAWN	B.J.H.
DESIGNED	C.W.L.
CHECKED	C.W.L.
APPROVED	C.W.L.
PROJ. NO.	193802816

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NOTES:
 1. ALL BITUMINOUS PAVEMENT SHOWN TO BE REMOVED SHALL BE SAWCUT FULL-DEPTH IN STRAIGHT AND/OR PERPENDICULAR LINES PRIOR TO REPLACEMENT.
 2. BITUMINOUS PAVEMENT REMOVAL ON BOONE AVENUE SHALL MAINTAIN 2-WAY TRAFFIC WITH MIN. 12' LANE WIDTH IN EACH DIRECTION.





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DATE: _____
 SIGNATURE: _____
 LIC. NO. _____

NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 REMOVALS - CONCEPT A AREA

NO.	REVISION	DATE

SURVEY	ACD
DRAWN	CWL
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816

SHEET NUMBER
C0.02

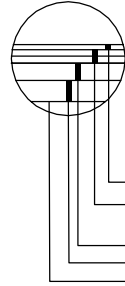
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 User: jordan

CONCEPT C

JORDAN & NORTHWOOD AVENUE N

BITUMINOUS STREET TYPICAL SECTION

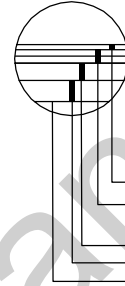


- MATCH EXISTING (ANTICIPATE 1.5") - TYPE 12.5 WEARING MIXTURE, 2C
- MATCH EXISTING (ANTICIPATE 2.0") - TYPE 12.5 NON-WEARING MIXTURE, 2B MIN. PLACEMENT IN TWO LIFTS
- MATCH EXISTING (ANTICIPATE 8") - AGGREGATE BASE
- MATCH EXISTING - SELECT GRANULAR BORROW
- GEOTEXTILE FABRIC, TYPE 5

CONCEPT A

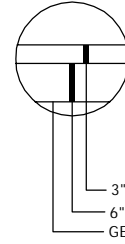
BOONE, HOPEWOOD, & ENSIGN AVENUE NORTH

BITUMINOUS STREET PATCHING SECTION



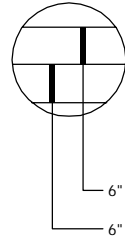
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- MATCH EXISTING (ANTICIPATE 5") - TYPE 12.5 NON-WEARING MIXTURE, 3B MIN. PLACEMENT IN TWO LIFTS
- MATCH EXISTING (ANTICIPATE 8") - AGGREGATE BASE
- MATCH EXISTING - SELECT GRANULAR BORROW
- GEOTEXTILE FABRIC, TYPE 5

BITUMINOUS DRIVEWAY/TRAIL SECTION



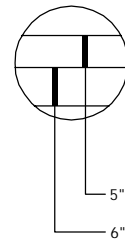
- 3" - WEARING COURSE (SPWEA240B)
- 6" CLASS 5 AGGREGATE BASE
- GEOTEXTILE FABRIC, TYPE 5 (TRAIL SECTION ONLY)

RESIDENTIAL CONCRETE DRIVEWAY APRON SECTION



- 6" CONCRETE PAVEMENT
- 6" CLASS 5 AGGREGATE BASE

CONCRETE SIDEWALK SECTION



- 5" CONCRETE SIDEWALK
- 6" CLASS 5 AGGREGATE BASE

90% Draft Plans

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.

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 SIGNATURE: _____ DATE: _____

NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 TYPICAL SECTION

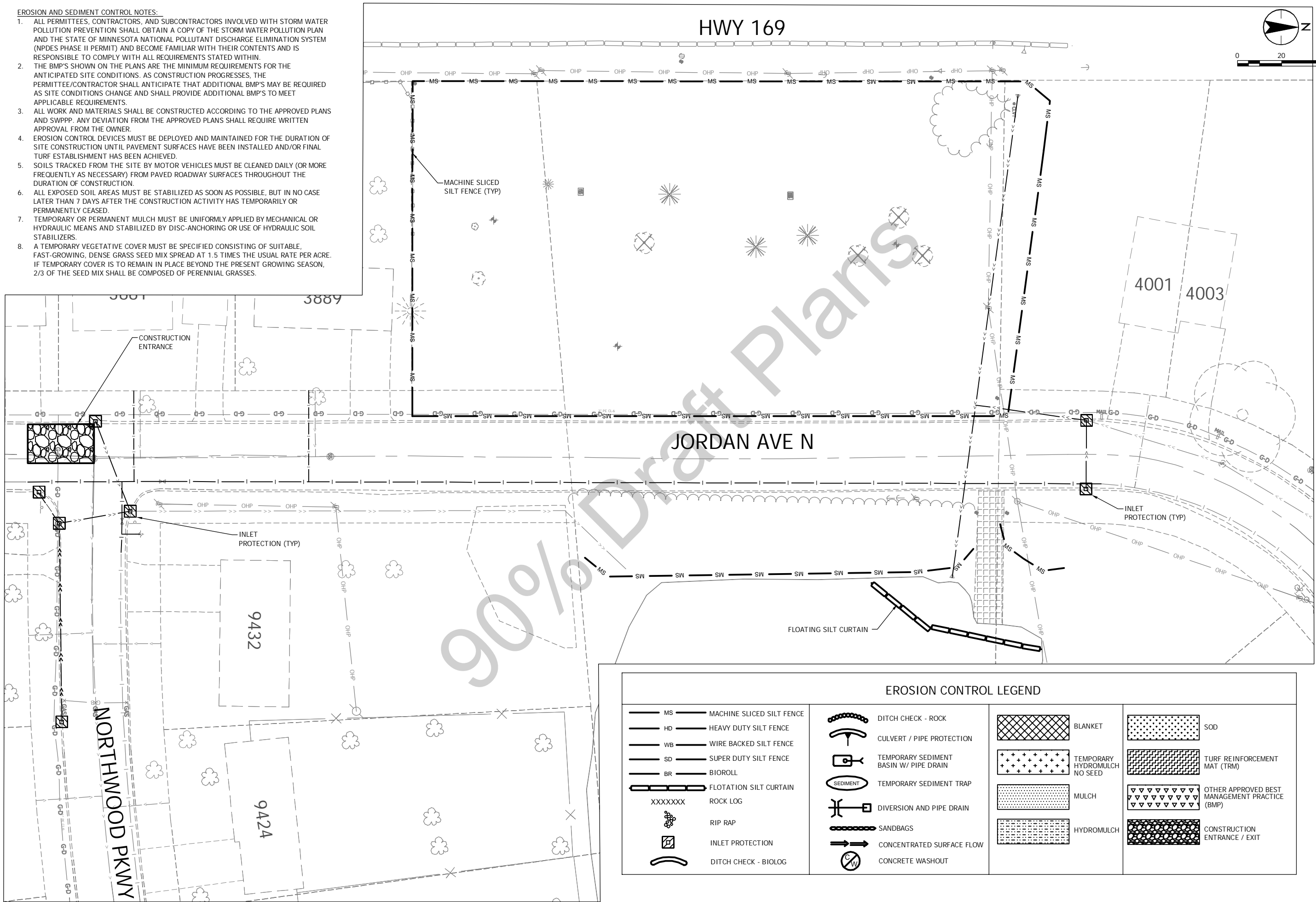
NO.	REVISION	DATE

SURVEY	
DRAWN	ACD
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816

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EROSION AND SEDIMENT CONTROL NOTES:

1. ALL PERMITTEES, CONTRACTORS, AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PLAN AND THE STATE OF MINNESOTA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES PHASE II PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS AND IS RESPONSIBLE TO COMPLY WITH ALL REQUIREMENTS STATED WITHIN.
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8. A TEMPORARY VEGETATIVE COVER MUST BE SPECIFIED CONSISTING OF SUITABLE, FAST-GROWING, DENSE GRASS SEED MIX SPREAD AT 1.5 TIMES THE USUAL RATE PER ACRE. IF TEMPORARY COVER IS TO REMAIN IN PLACE BEYOND THE PRESENT GROWING SEASON, 2/3 OF THE SEED MIX SHALL BE COMPOSED OF PERENNIAL GRASSES.



MS	MACHINE SLICED SILT FENCE		DITCH CHECK - ROCK		BLANKET		SOD
HD	HEAVY DUTY SILT FENCE		CULVERT / PIPE PROTECTION		TEMPORARY HYDROMULCH NO SEED		TURF REINFORCEMENT MAT (TRM)
WB	WIRE BACKED SILT FENCE		TEMPORARY SEDIMENT BASIN W/ PIPE DRAIN		MULCH		OTHER APPROVED BEST MANAGEMENT PRACTICE (BMP)
SD	SUPER DUTY SILT FENCE		TEMPORARY SEDIMENT TRAP		HYDROMULCH		CONSTRUCTION ENTRANCE / EXIT
BR	BIOROLL		DIVERSION AND PIPE DRAIN				
	FLOTATION SILT CURTAIN		SANDBAGS				
XXXXXX	ROCK LOG		CONCENTRATED SURFACE FLOW				
	RIP RAP		CONCRETE WASHOUT				
	INLET PROTECTION						
	DITCH CHECK - BIOLG						

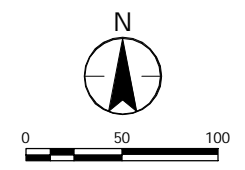
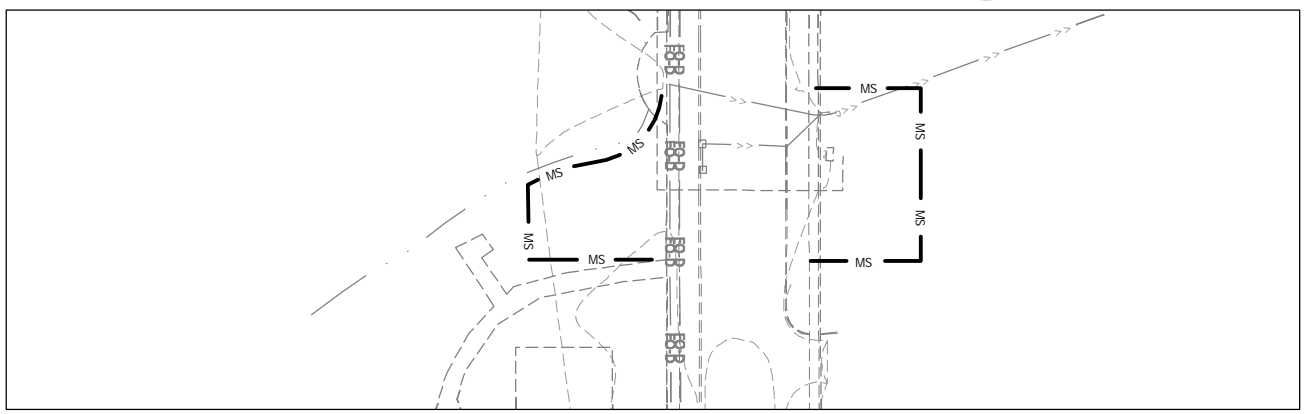
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EROSION CONTROL LEGEND

MS	MACHINE SLICED SILT FENCE
HD	HEAVY DUTY SILT FENCE
WB	WIRE BACKED SILT FENCE
SD	SUPER DUTY SILT FENCE
BR	BIOROLL
[Symbol]	FLOTATION SILT CURTAIN
XXXXXXX	ROCK LOG
[Symbol]	RIP RAP
[Symbol]	INLET PROTECTION
[Symbol]	DITCH CHECK - BIOLOG
[Symbol]	DITCH CHECK - ROCK
[Symbol]	CULVERT / PIPE PROTECTION
[Symbol]	TEMPORARY SEDIMENT BASIN W/ PIPE DRAIN
[Symbol]	TEMPORARY SEDIMENT TRAP
[Symbol]	DIVERSION AND PIPE DRAIN
[Symbol]	SANDBAGS
[Symbol]	CONCENTRATED SURFACE FLOW
[Symbol]	CONCRETE WASHOUT
[Symbol]	EROSION CONTROL BLANKET W/MNDOT 25-151 SEED MIX
[Symbol]	TEMPORARY HYDROMULCH NO SEED
[Symbol]	MULCH
[Symbol]	HYDROMULCH W/MNDOT 25-151 SEED MIX
[Symbol]	SOD
[Symbol]	TURF REINFORCEMENT MAT (TRM)
[Symbol]	OTHER APPROVED BEST MANAGEMENT PRACTICE (BMP)
[Symbol]	CONSTRUCTION ENTRANCE / EXIT



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 LIC. NO. _____

NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 TEMPORARY EROSION CONTROL PLAN

NO.	REVISION	DATE

SURVEY	ACD	
DRAWN	CWL	
DESIGNED	CWL	
CHECKED	CWL	
APPROVED	CWL	
PROJ. NO.	193802816	

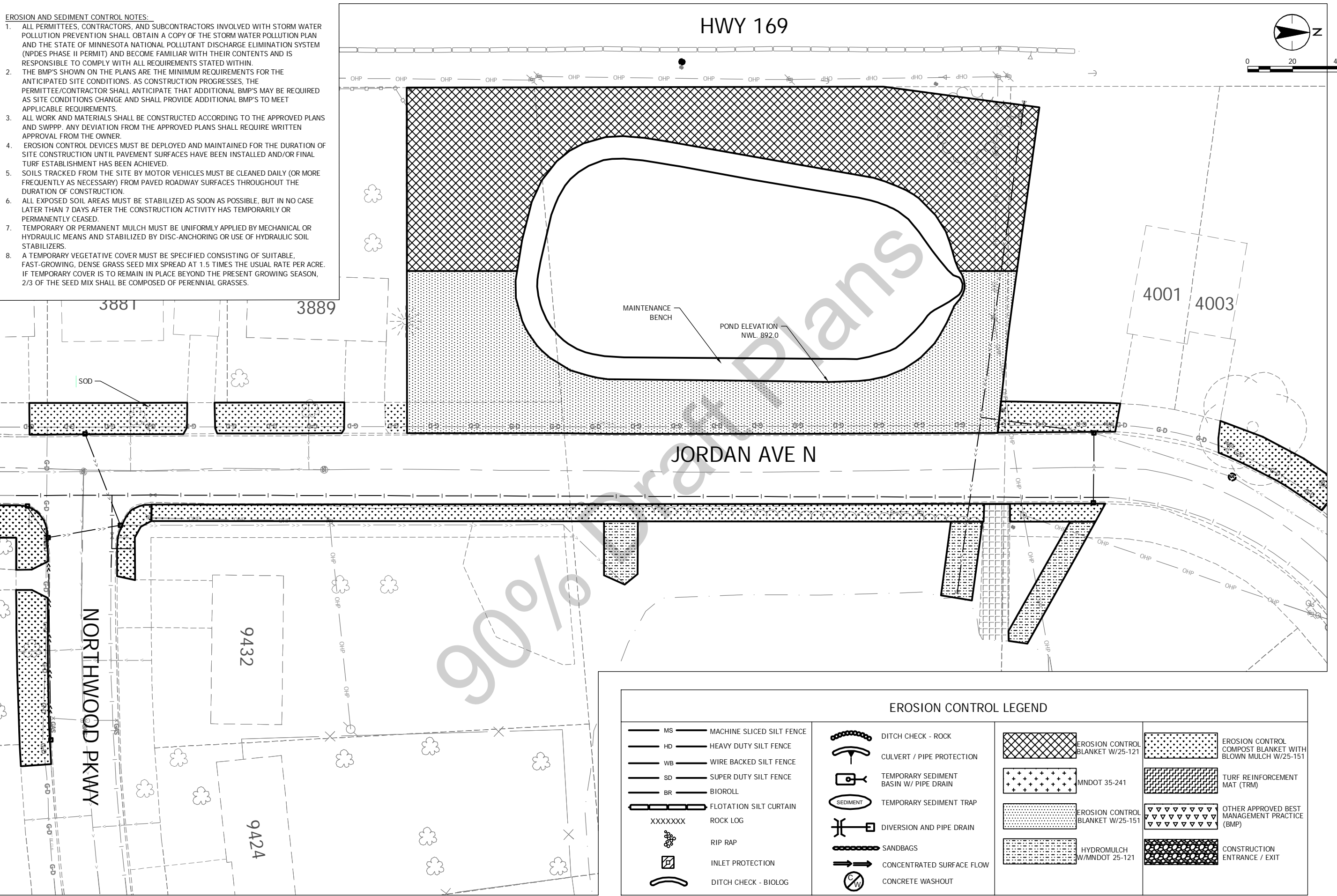
SHEET NUMBER
C2.02

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EROSION CONTROL LEGEND			
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BR	BIOROLL		DIVERSION AND PIPE DRAIN
	FLOTATION SILT CURTAIN		SANDBAGS
XXXXXXX	ROCK LOG		CONCENTRATED SURFACE FLOW
	RIP RAP		CONCRETE WASHOUT
	INLET PROTECTION		EROSION CONTROL BLANKET W/25-121
	DITCH CHECK - BIOLOG		MNDOT 35-241
			EROSION CONTROL BLANKET W/25-151
			HYDROMULCH W/MNDOT 25-121
			EROSION CONTROL COMPOST BLANKET WITH BLOWN MULCH W/25-151
			TURF REINFORCEMENT MAT (TRM)
			OTHER APPROVED BEST MANAGEMENT PRACTICE (BMP)
			CONSTRUCTION ENTRANCE / EXIT

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NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
PERMANENT EROSION CONTROL

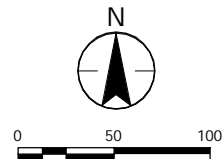
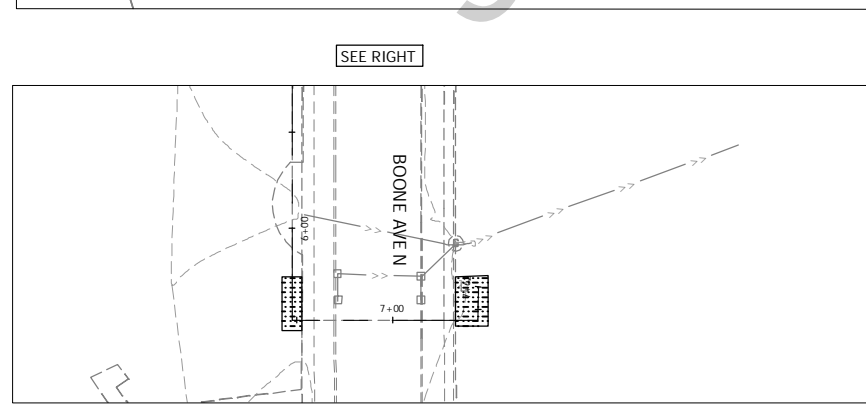
NO	REVISION	DATE

SURVEY: _____ B.H.
DRAWN: _____ C.W.L.
DESIGNED: _____ C.W.L.
CHECKED: _____ C.W.L.
APPROVED: _____ C.W.L.
PROJ. NO. 193802816
SHEET NUMBER
C2.03

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EROSION CONTROL LEGEND

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- HD — HEAVY DUTY SILT FENCE
- WB — WIRE BACKED SILT FENCE
- SD — SUPER DUTY SILT FENCE
- BR — BIOROLL
- FLOTATION SILT CURTAIN
- XXXXXXX — ROCK LOG
- RIP RAP
- INLET PROTECTION
- DITCH CHECK - BIOLOG
- DITCH CHECK - ROCK
- CULVERT / PIPE PROTECTION
- TEMPORARY SEDIMENT BASIN W/ PIPE DRAIN
- TEMPORARY SEDIMENT TRAP
- DIVERSION AND PIPE DRAIN
- SANDBAGS
- CONCENTRATED SURFACE FLOW
- CONCRETE WASHOUT
- EROSION CONTROL BLANKET W/MNDOT 25-151 SEED MIX
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- MULCH
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- EROSION CONTROL COMPOST BLANKET BLOWN W/MNDOT 25-151 SEED MIX
- TURF REINFORCEMENT MAT (TRM)
- OTHER APPROVED BEST MANAGEMENT PRACTICE (BMP)
- CONSTRUCTION ENTRANCE / EXIT

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User: 193802816_BORDR 193802816_SXT 193802816_SPT 193802816_CDD\C204.dwg

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SIGNATURE: _____ DATE: _____

NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
PERMANENT EROSION CONTROL PLAN

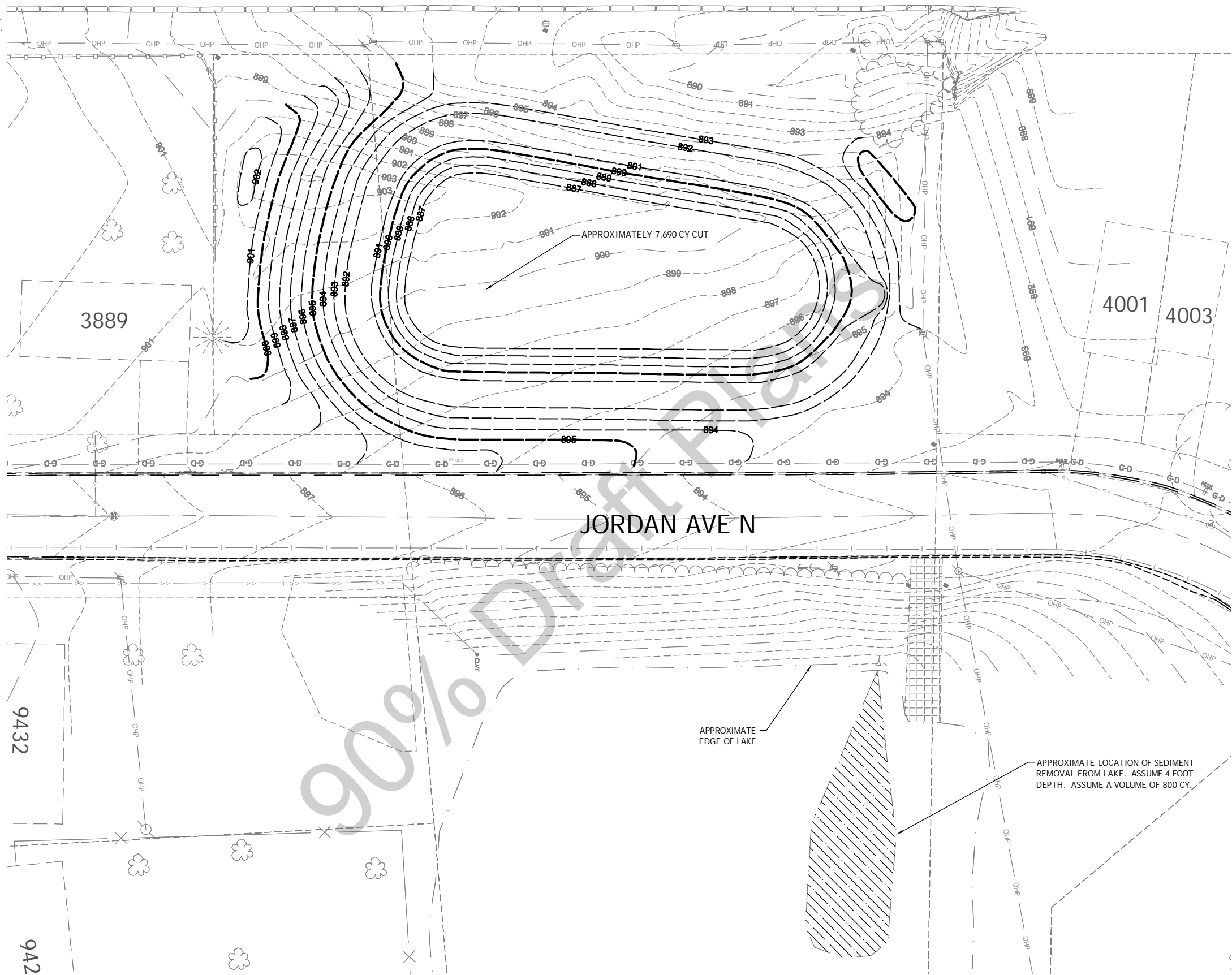
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SURVEY	ACD
DRAWN	CWL
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL

PROJ. NO. 193802816
SHEET NUMBER
C2.04

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- NOTES:
- SEE SHEET C3.01 FOR TYPICAL GRADING SECTION.
 - DEAD STORAGE VOLUME APPROXIMATELY 1509 CY.



Plot Date: 11/02/2016 9:55am
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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.
PRINT NAME: _____ LIC. NO. _____
SIGNATURE: _____
DATE: _____

NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
GRADING PLAN

NO.	REVISION	DATE

SURVEY	
DRAWN	BJH
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816

SHEET NUMBER
C3.01

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RAIN GARDEN 3
 BOT. ELEV: 887.25
 4:1 SIDE SLOPES
 TREATMENT VOLUME: 5,170 CF

EOF: 890.0

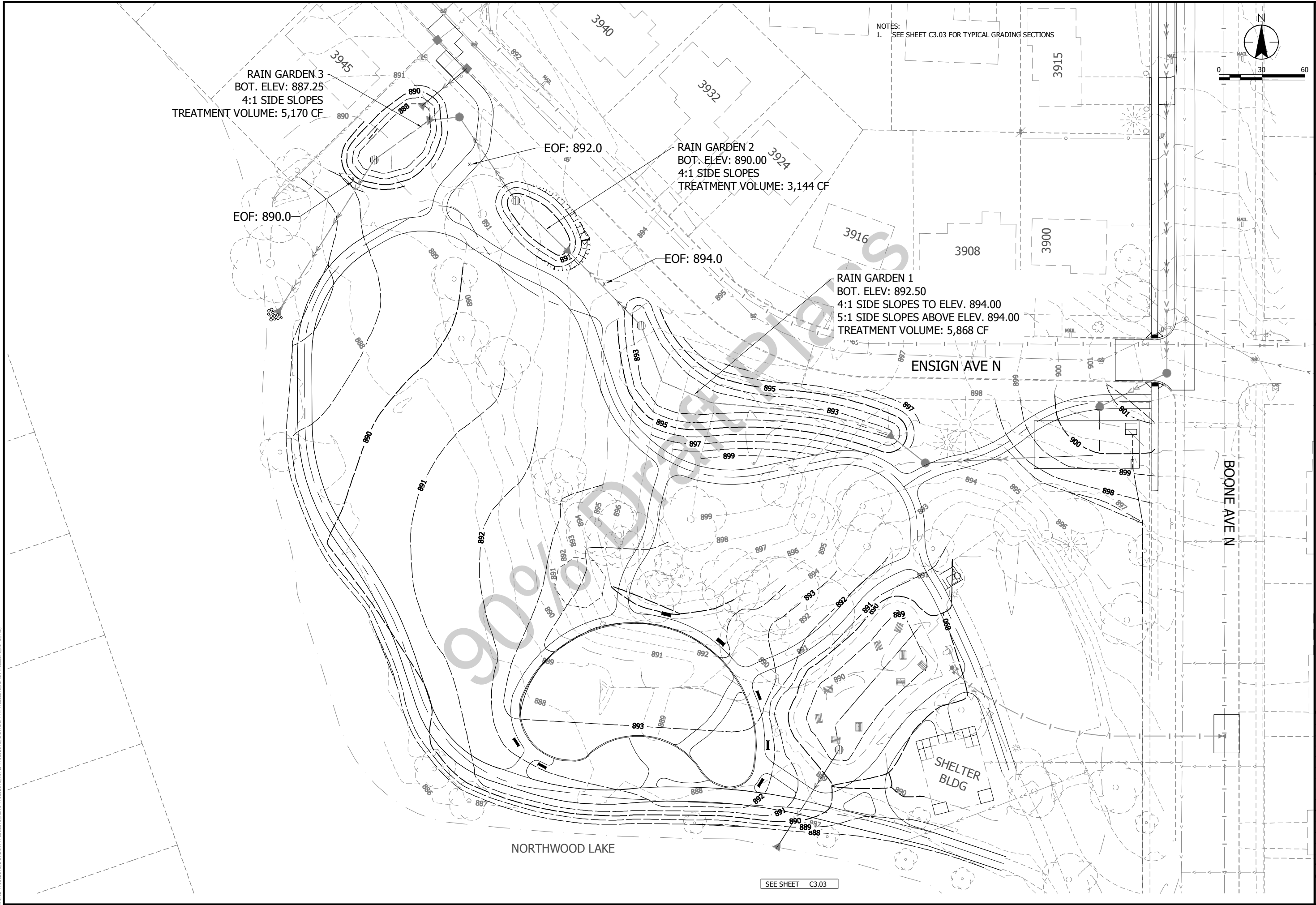
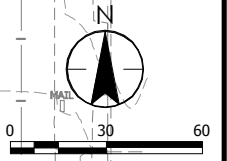
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RAIN GARDEN 2
 BOT. ELEV: 890.00
 4:1 SIDE SLOPES
 TREATMENT VOLUME: 3,144 CF

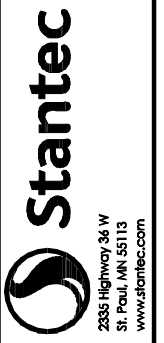
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RAIN GARDEN 1
 BOT. ELEV: 892.50
 4:1 SIDE SLOPES TO ELEV. 894.00
 5:1 SIDE SLOPES ABOVE ELEV. 894.00
 TREATMENT VOLUME: 5,868 CF

NOTES:
 1. SEE SHEET C3.03 FOR TYPICAL GRADING SECTIONS



SEE SHEET C3.03



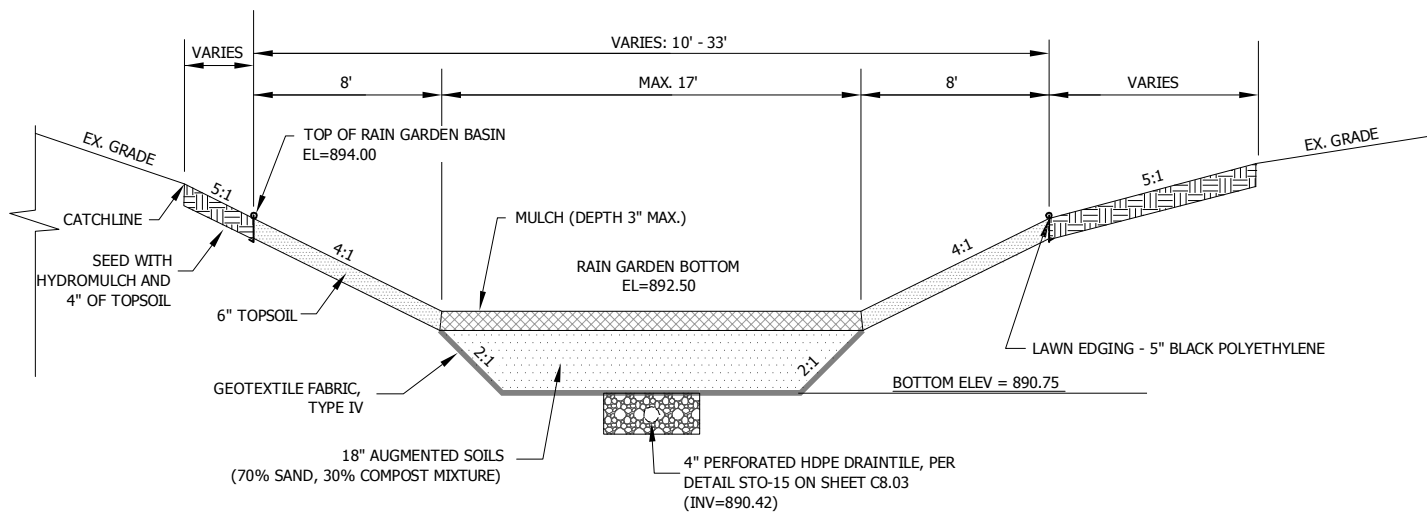
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NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 GRADING PLAN

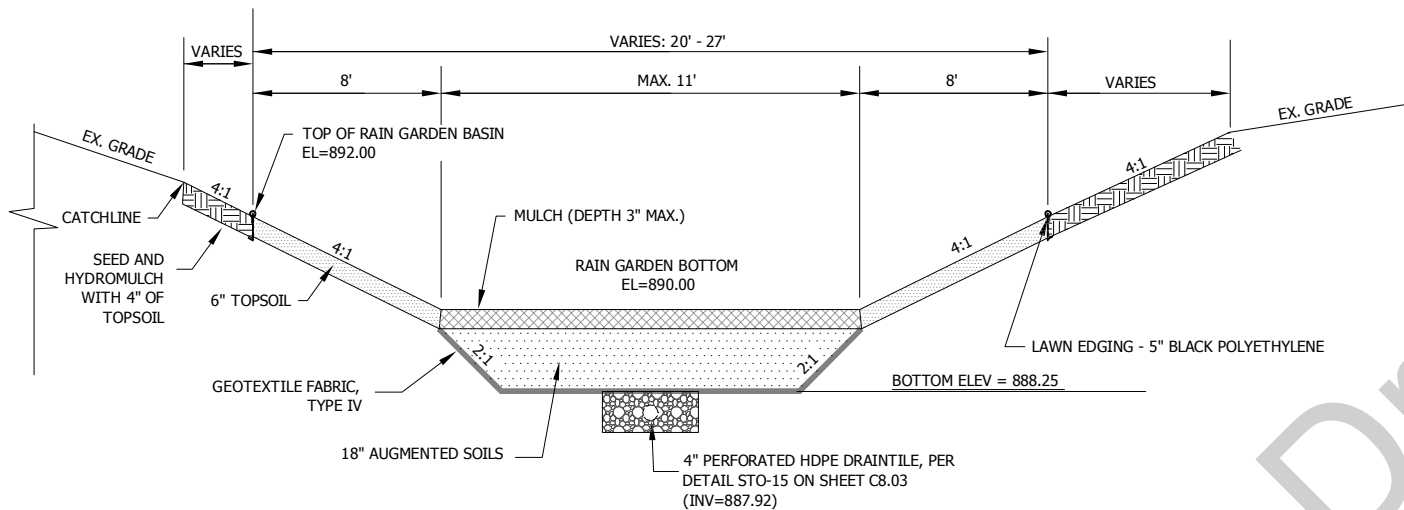
NO.	REVISION	DATE

SHEET NUMBER
C3.02

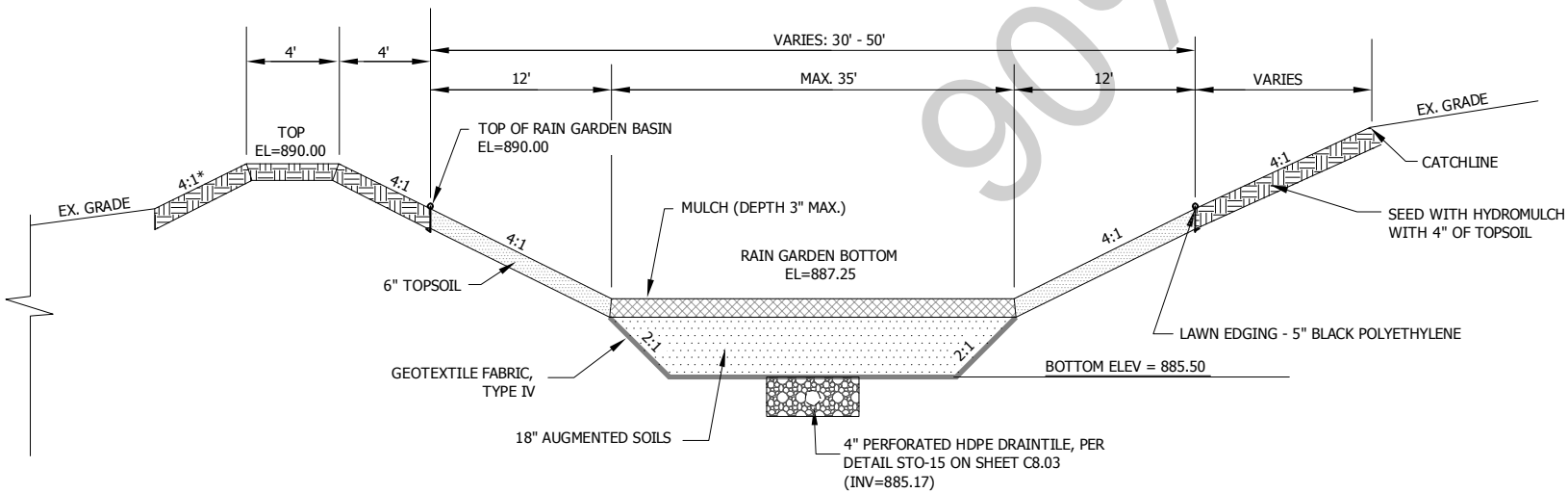
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RAIN GARDEN 1 SECTION
SCALE: N/A



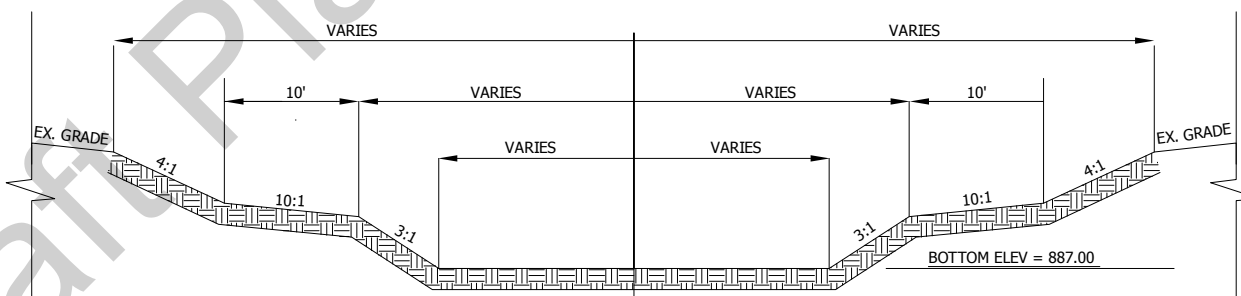
RAIN GARDEN 2 SECTION
SCALE: N/A



RAIN GARDEN 3 SECTION
SCALE: N/A

GENERAL RAIN GARDEN NOTES:

1. THE INSTALLER MUST BE A COMPANY SPECIALIZING IN INSTALLING AND PLANTING THE SPECIFIED PLANTS WITH A MINIMUM OF 3-YEARS DOCUMENTED EXPERIENCE AS REPRESENTED BY A LIST OF COMPLETED PAST PROJECTS.
2. ALL LANDSCAPE WORK SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURES, AND WORK SHALL BE LAID OUT UNDER THE DIRECTION OF A QUALIFIED PLANTING SUPERVISOR.
3. PROTECT AGAINST COMPACTION OF AUGMENTED SOIL MIXTURE DURING CONSTRUCTION.
4. INSTALL TEMPORARY CONSTRUCTION FENCE AROUND PERIMETER OF RAIN GARDEN IMMEDIATELY FOLLOWING PLANTING INSTALLATION.
5. THE AUGMENTED SOILS SHALL CONSIST OF THE FOLLOWING: 70% CLEAN SAND, FREE OF DELETERIOUS MATERIAL - MN/DOT 3149.2.B.2 SELECT GRANULAR BORROW & 30% ORGANIC LEAF COMPOST - MN/DOT 3890B GRADE 2.
6. MULCH SHALL CONSIST OF DOUBLE SHREDDED HARDWOOD MULCH AND SHALL MEET THE REQUIREMENTS OF MN/DOT 3882.2 TYPE
7. HEAVY EQUIPMENT AND TRAFFIC SHALL BE RESTRICTED FROM TRAVELING OVER THE INFILTRATION TRENCHES TO MINIMIZE COMPACTION OF THE SOIL.
8. RAIN GARDEN SHALL NOT RECEIVE RUNOFF UNTIL THE ENTIRE DRAINAGE AREA CONTRIBUTING TO THE RAIN GARDEN HAS BEEN STABILIZED.
9. SELECT GRANULAR BORROW CONFORMS TO MNDOT SPEC.3149.2.B.2.
10. SANDY LOAM TOPSOIL BORROW CONFORMS TO MNDOT SPEC. 3877.2.D
11. THE LAWN EDGING SHALL BE 5" BLACK POLYETHYLENE. USE ONLY NON-METALLIC STAKES TO SECURE EDGING AND INSTALL PER MANUFACTURER'S DIRECTIONS.



JORDAN POND SECTION
SCALE: N/A

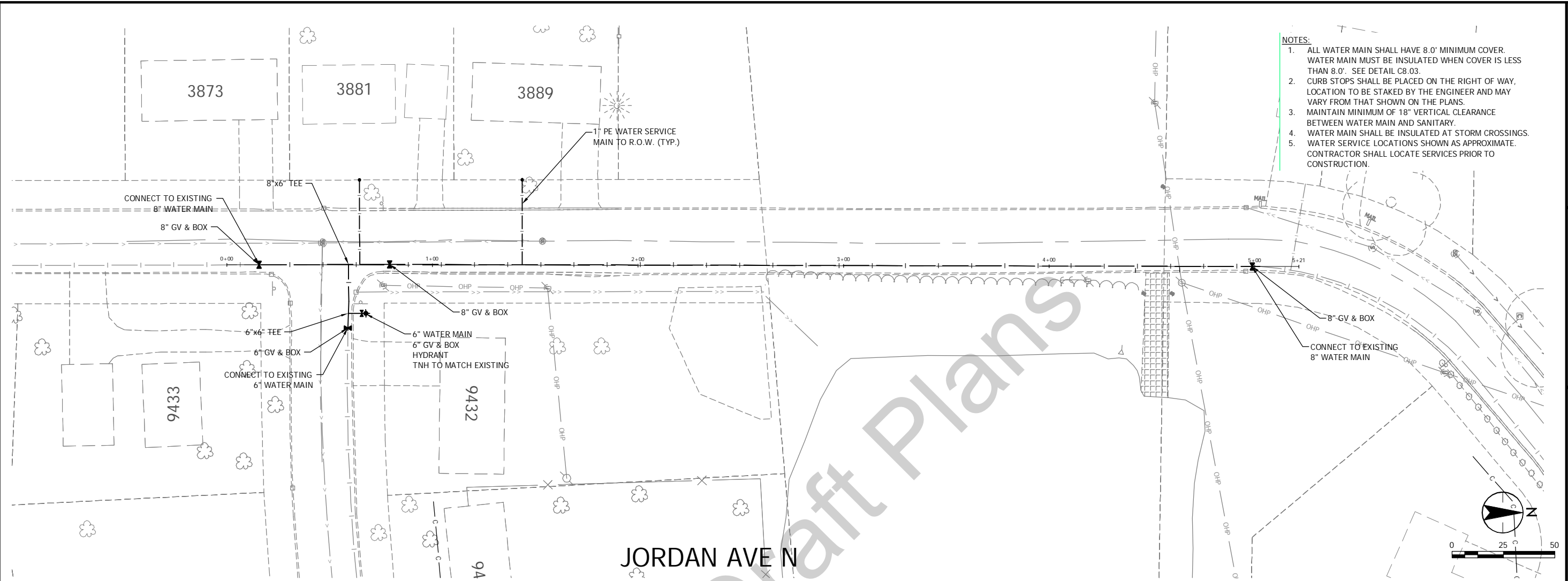
EARTHWORK SUMMARY

GRADING AREA	CUMULATIVE CUT VOLUME	COMMON EXCAVATION *	CUMULATIVE FILL VOLUME	EXCESS MATERIAL
	(CY-EV)	(CY-EV)	(CY-CV)	(CY-EV)
JORDAN POND	7690	7690	0	7690
RAIN GARDEN 1	1493	1493	0	1493
RAIN GARDEN 2	131	131	2	129
RAIN GARDEN 3	223	223	14	209
PLAYGROUND AREA	364	364	0	364
NW LAKE OUTLET	800	800	0	800
PARK SITE GRADING	354	354	8861	-8507
TOTALS		11055	8877	2178

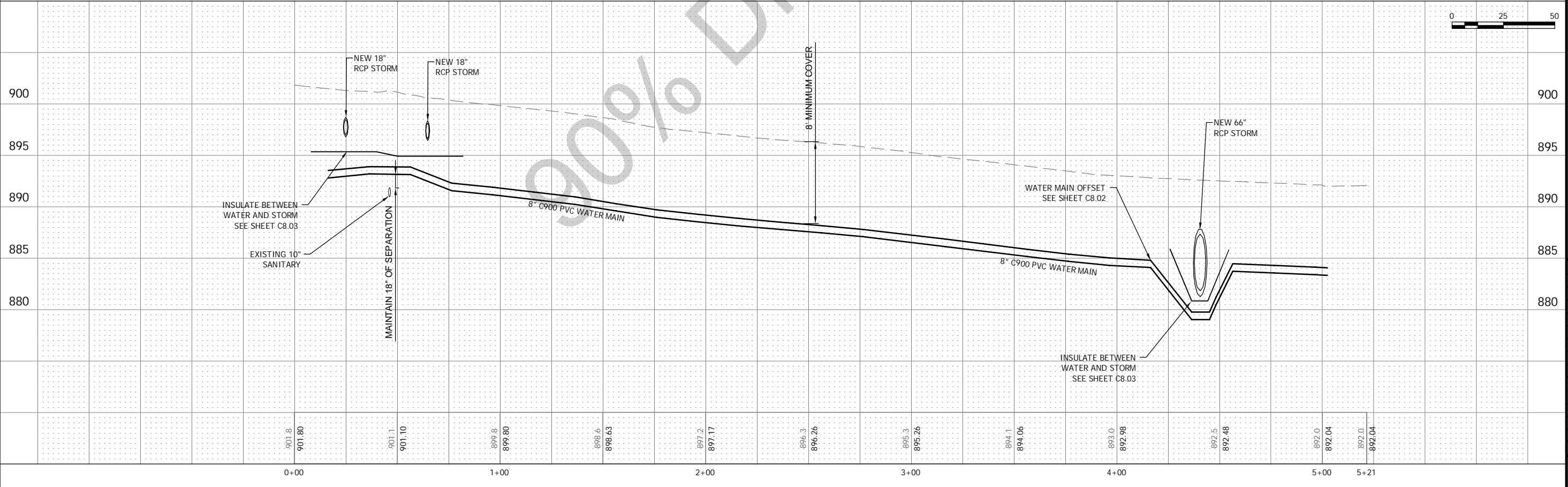
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User: 193802816_jordan

NO	REVISION	DATE

THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING. ANY ERRORS OR OMISSIONS SHALL BE REPORTED TO STANTEC IMMEDIATELY. THIS DRAWING IS FOR INFORMATION ONLY AND SHALL NOT BE USED FOR ANY OTHER PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC CORPORATION.



- NOTES:**
- 1. ALL WATER MAIN SHALL HAVE 8.0' MINIMUM COVER. WATER MAIN MUST BE INSULATED WHEN COVER IS LESS THAN 8.0'. SEE DETAIL C8.03.
 - 2. CURB STOPS SHALL BE PLACED ON THE RIGHT OF WAY, LOCATION TO BE STAKED BY THE ENGINEER AND MAY VARY FROM THAT SHOWN ON THE PLANS.
 - 3. MAINTAIN MINIMUM OF 18" VERTICAL CLEARANCE BETWEEN WATER MAIN AND SANITARY.
 - 4. WATER MAIN SHALL BE INSULATED AT STORM CROSSINGS.
 - 5. WATER SERVICE LOCATIONS SHOWN AS APPROXIMATE. CONTRACTOR SHALL LOCATE SERVICES PRIOR TO CONSTRUCTION.



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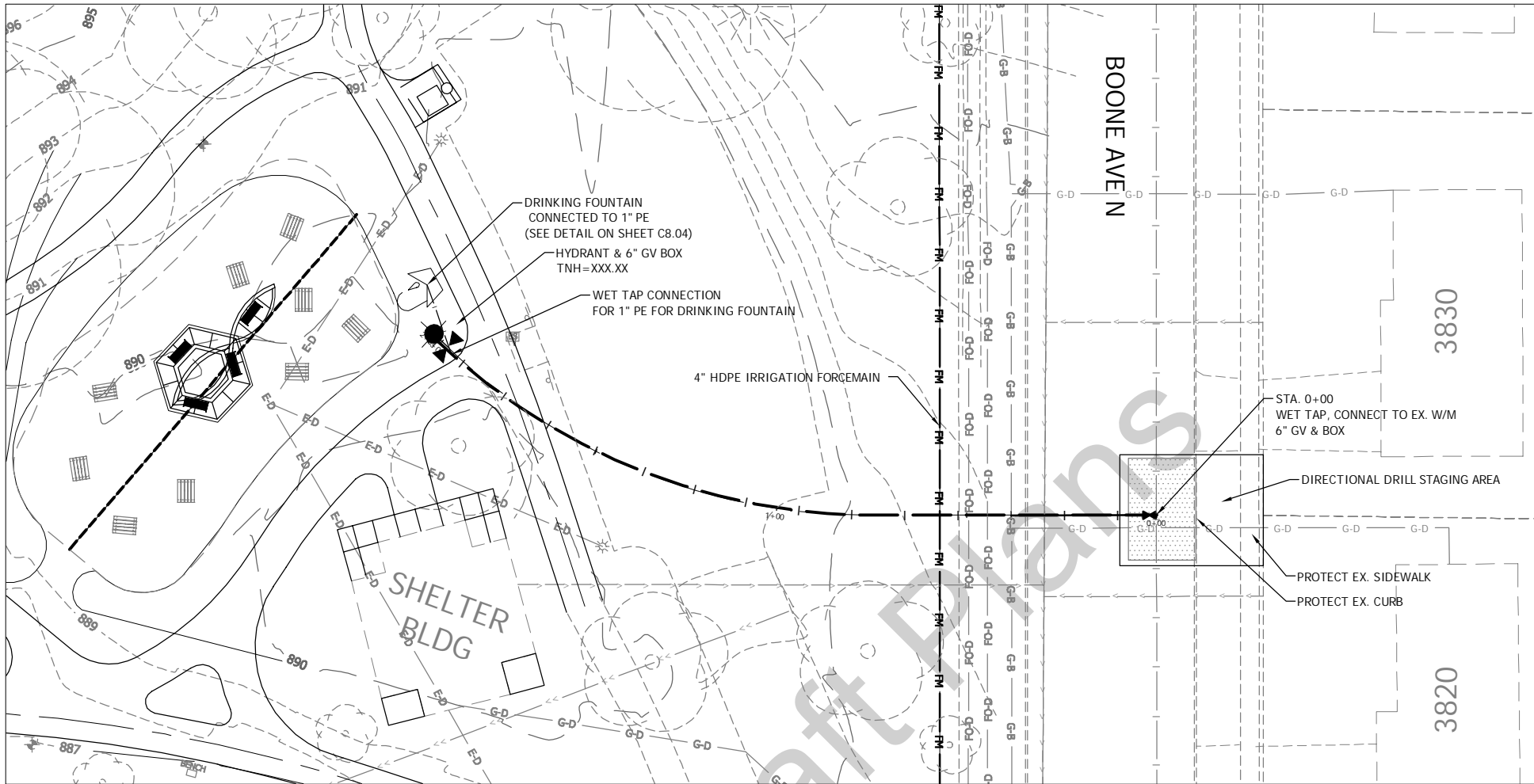
NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
WATER MAIN IMPROVEMENTS

NO	REVISION	DATE

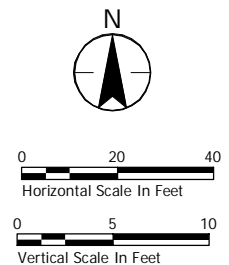
SURVEY	B.H.
DRAWN	C.W.L.
DESIGNED	C.W.L.
CHECKED	C.W.L.
APPROVED	C.W.L.
PROJ. NO.	193802816
SHEET NUMBER	C4.01

Plot Date: 11/02/2016 - 10:16am
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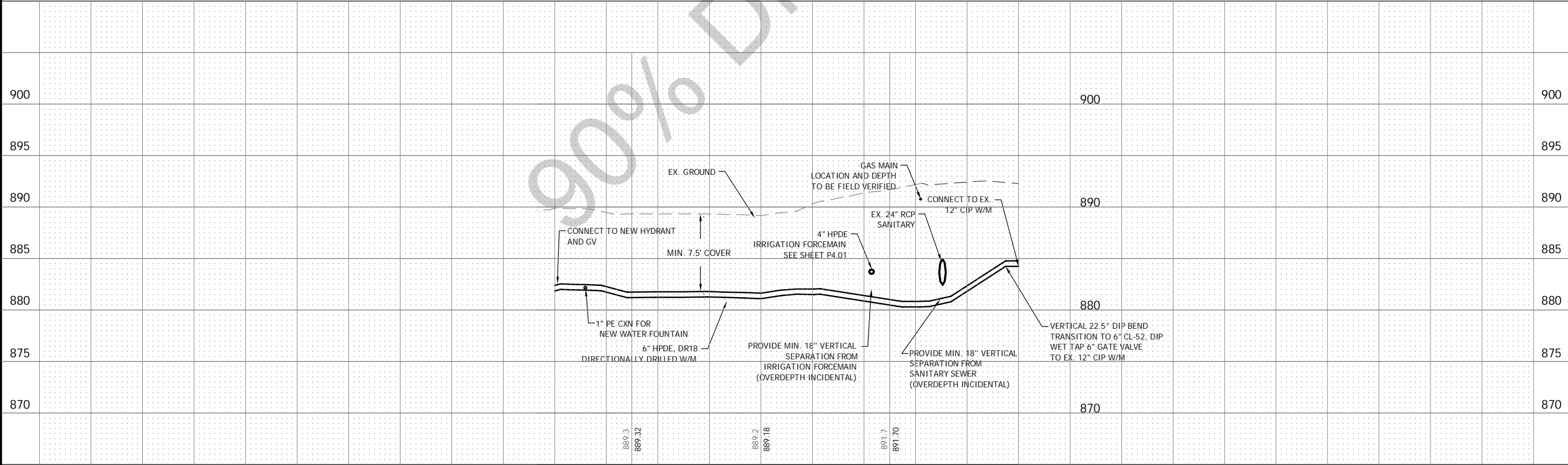
THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING. ANY ERRORS OR OMISSIONS SHALL BE REPERIODICALLY CORRECTED WITHOUT DELAY. FOR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.



- NOTES:**
1. TRAFFIC CONTROL PROVIDING SEPARATION BETWEEN TWO-WAY TRAFFIC AND DRILLING PIT SHALL BE IN PLACE PRIOR TO DRILLING STAGING AREA BEING EXCAVATED. MIN. ALLOWED LANE WIDTH IS 12-FEET.
 2. PROVIDE J-BARRIER ON NORTH, SOUTH AND WEST SIDES OF DRILLING PIT.
 3. MAINTAIN 18" SEPARATION AT SANITARY SEWER CROSSING - COORDINATE ALL DEVIATIONS WITH ENGINEER.



NORTHWOOD PARK/ BOONE AVE N



Plot Date: 10/21/2016 - 2:09pm
 Drawing Name: \\1938\active\193802816\CAD\DWG\193802816_C4.01.dwg
 User: 193802816_BORDER
 193802816_SXT
 193802816_CONCEPT A
 193802816_SCH
 193802816_SNO



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.
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 DATE: _____ LIC. NO. _____

NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 WATERMAIN IMPROVEMENTS

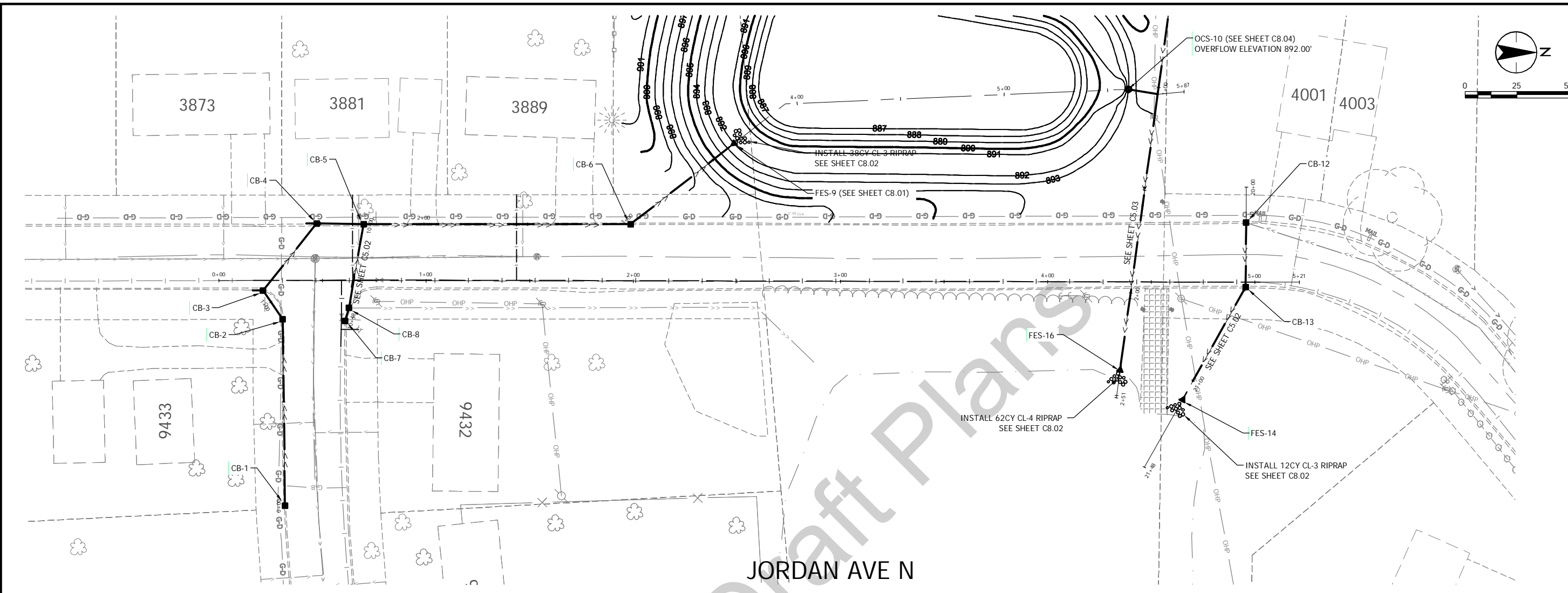
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DRAWN	CWL
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816

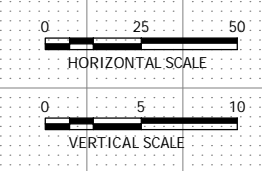
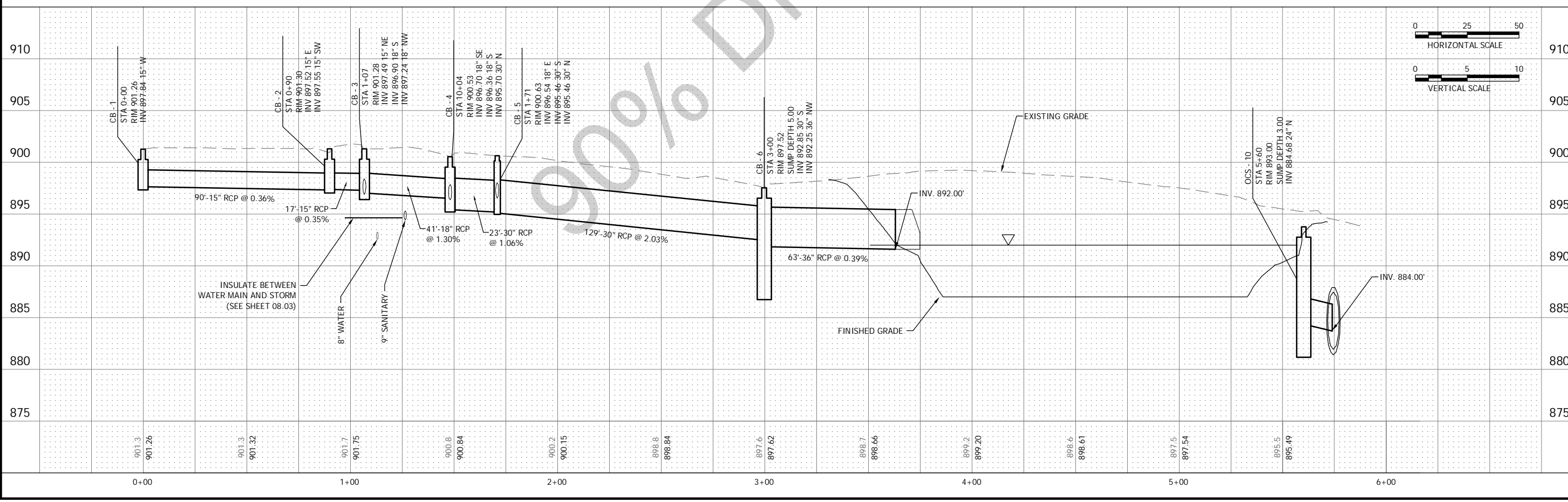
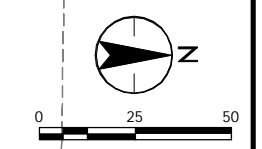
SHEET NUMBER
C4.01

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Plot Date: 11/02/2016 - 10:54am
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JORDAN AVE N



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 DATE: _____ LIC. NO. _____

NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 STORM IMPROVEMENTS

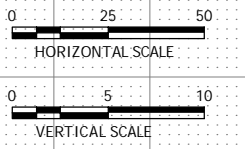
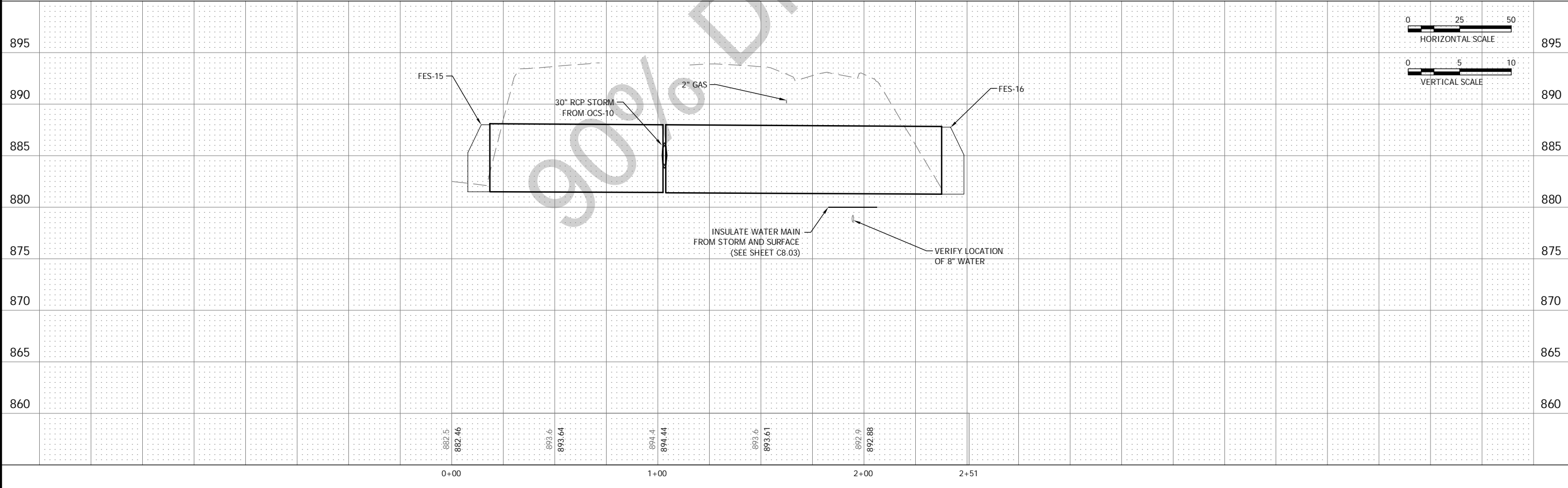
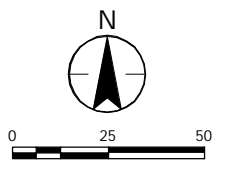
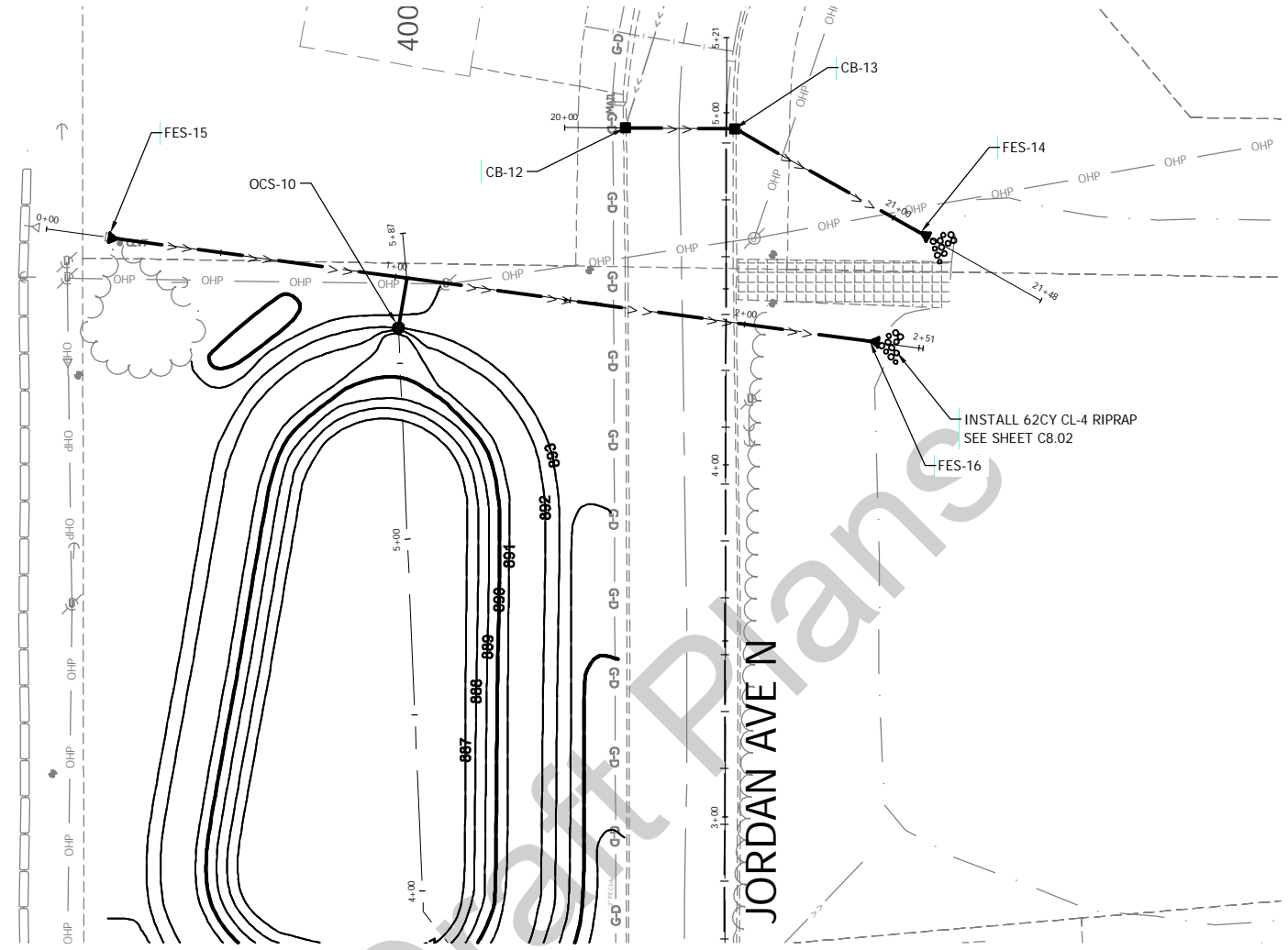
NO.	REVISION	DATE

SURVEY	B.H.	
DRAWN	C.W.L.	
DESIGNED	C.W.L.	
CHECKED	C.W.L.	
APPROVED	C.W.L.	
PROJ. NO.	1938202816	

SHEET NUMBER
C5.01

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Plot Date: 11/02/2016 11:18am
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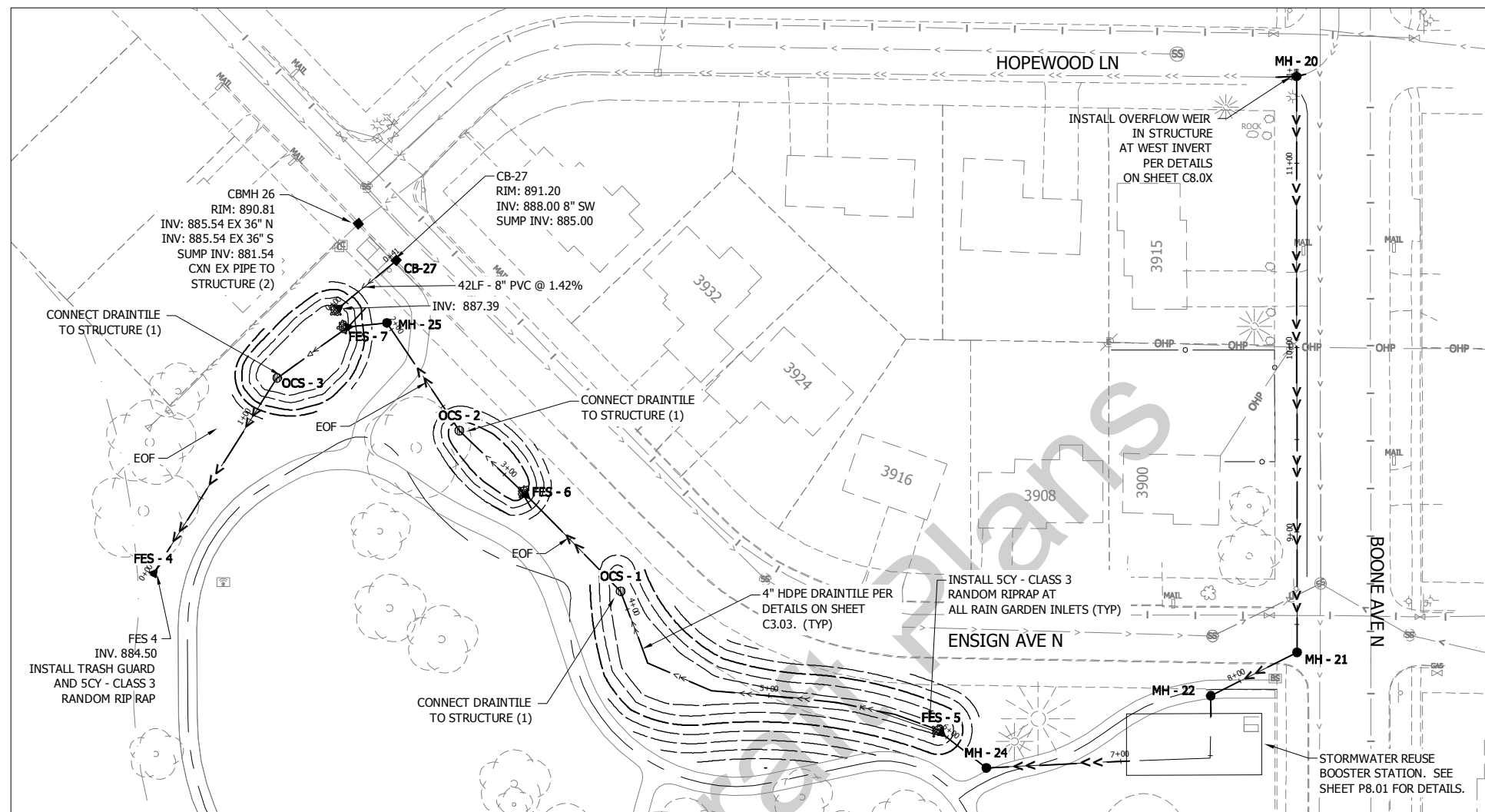
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: _____ LIC. NO. _____
 SIGNATURE: _____ DATE: _____

NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 STORM IMPROVEMENTS

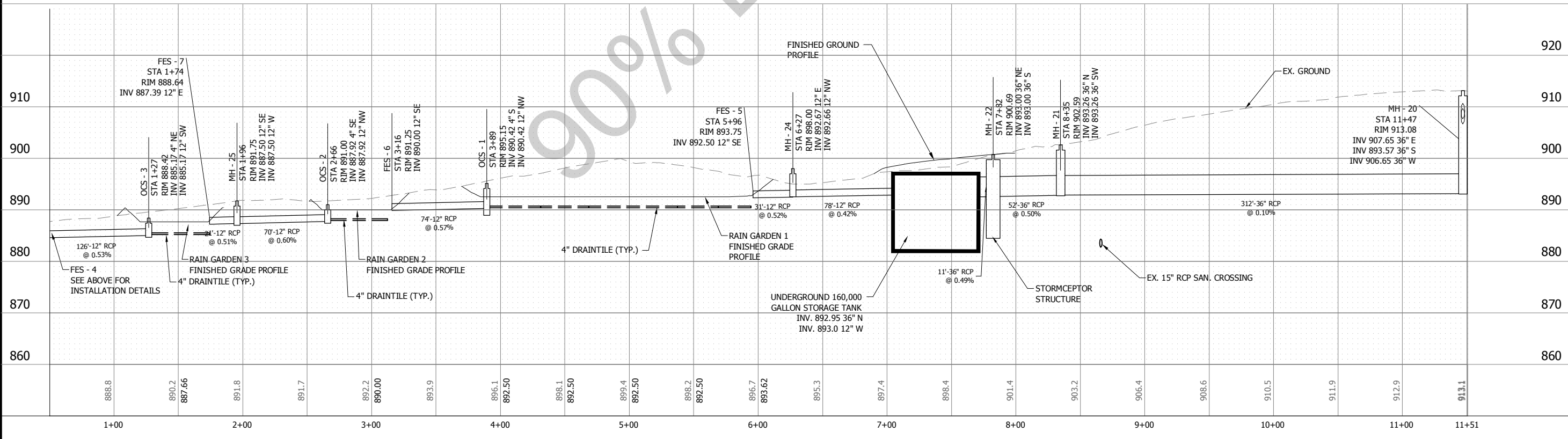
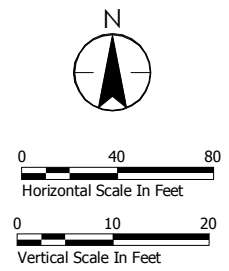
NO.	REVISION	DATE

SURVEY	B.J.H.
DRAWN	C.W.L.
DESIGNED	C.W.L.
CHECKED	C.W.L.
APPROVED	C.W.L.
PROJ. NO.	193802816
SHEET NUMBER	C5.03

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Plot Date: 11/02/2015 - 12:33pm
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 User: 193802816_30X1
 Project: 193802816_C5.04
 Date: 11/02/2015 12:33 PM

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PRINT NAME: _____
 SIGNATURE: _____
 DATE: _____
 LIC. NO. _____

NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 STORM IMPROVEMENTS

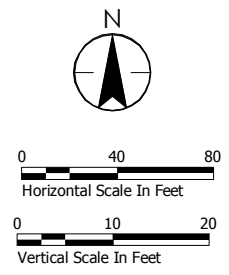
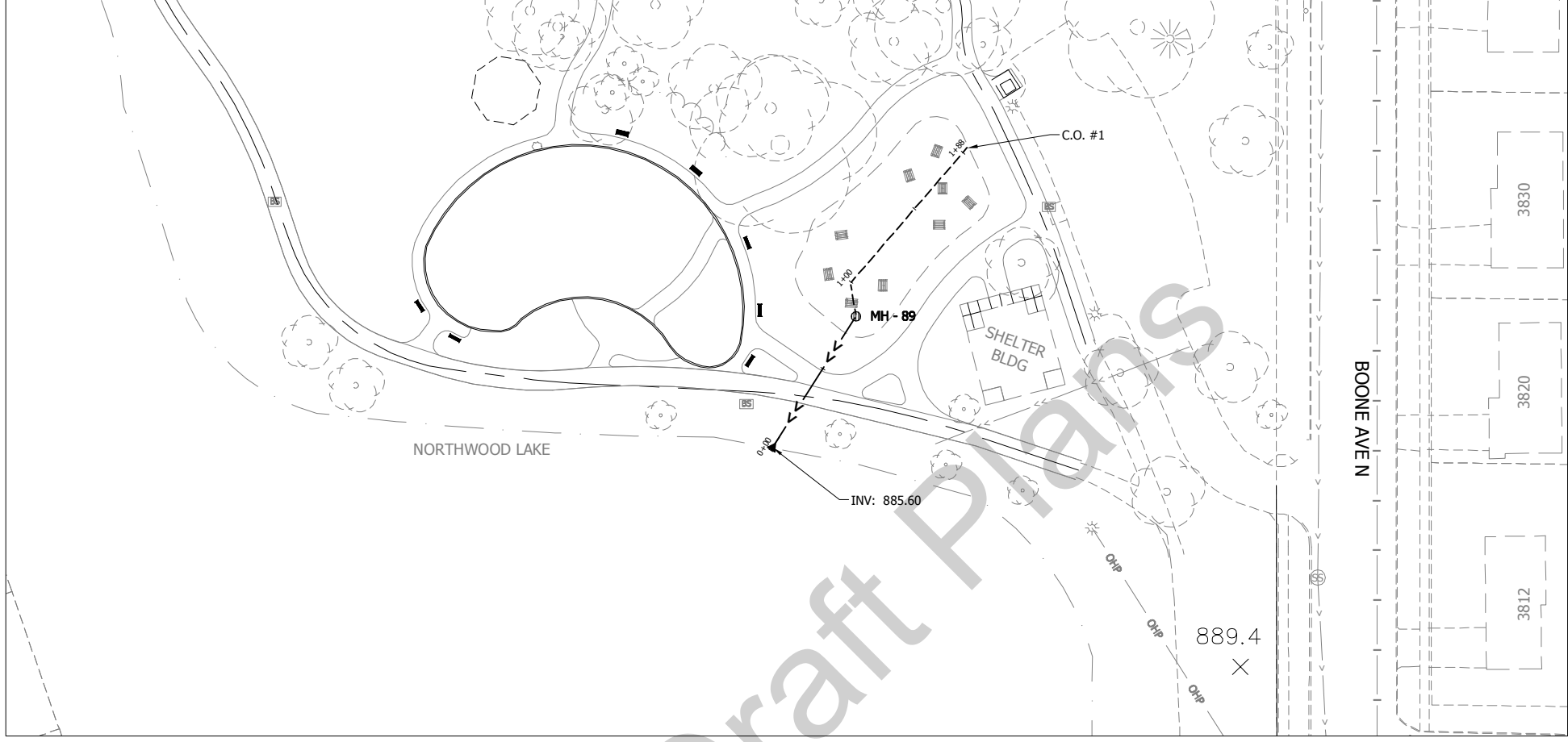
NO.	REVISION	DATE

SURVEY	ACD
DRAWN	CWL
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816

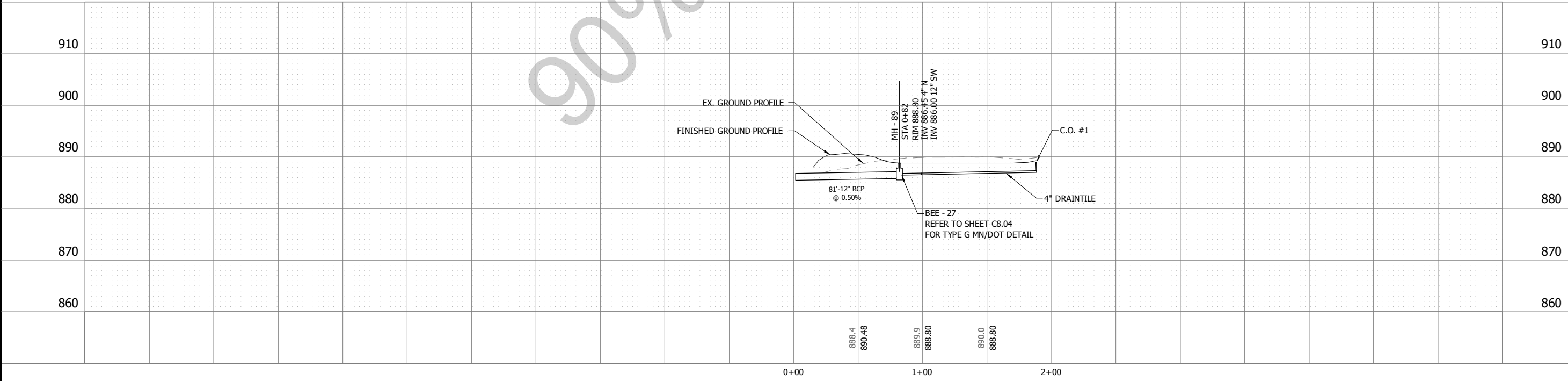
SHEET NUMBER
C5.04

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Plot Date: 11/02/2015 - 11:15am
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User: 193802816_30XT 193802816_C501C1P1.A 193802816_30XT 193802816_30XT



NORTHWOOD PARK/ BOONE AVE N



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PRINT NAME: _____
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DATE: _____ LIC. NO. _____



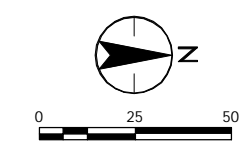
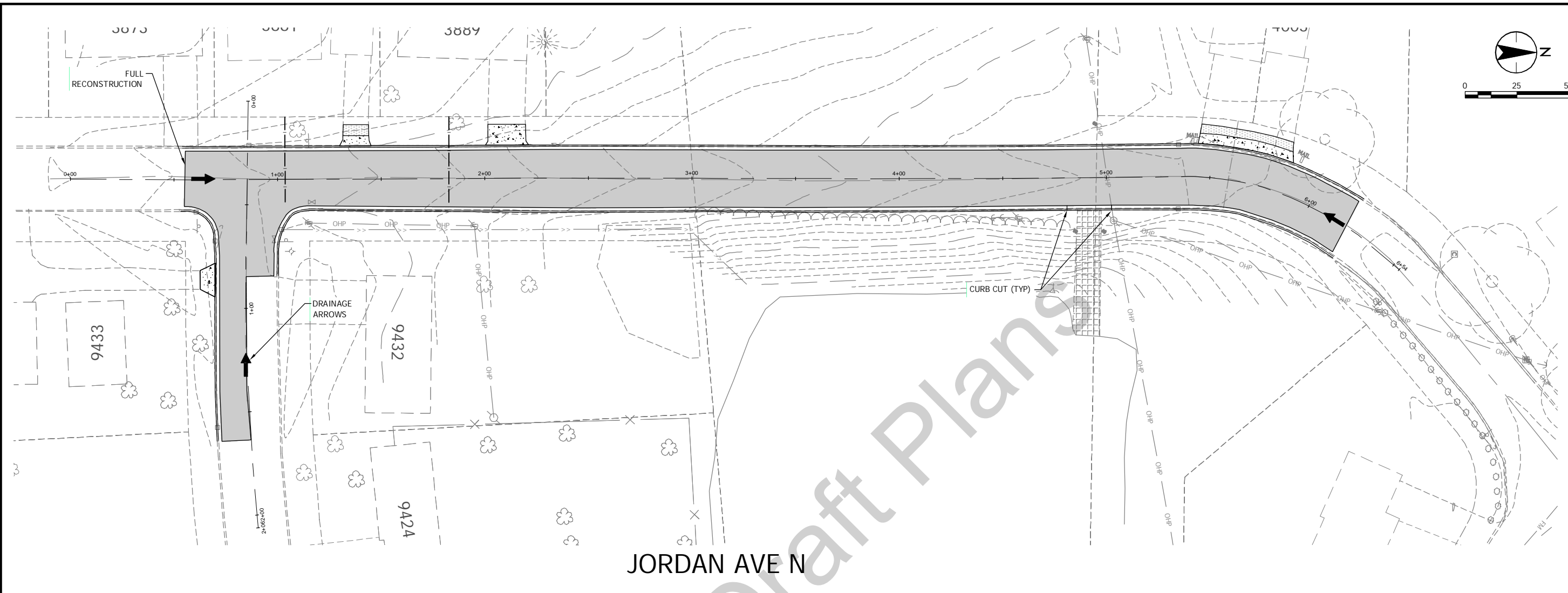
NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
STORM IMPROVEMENTS

NO.	REVISION	DATE

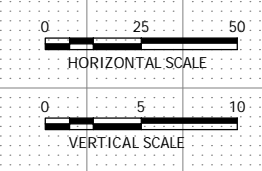
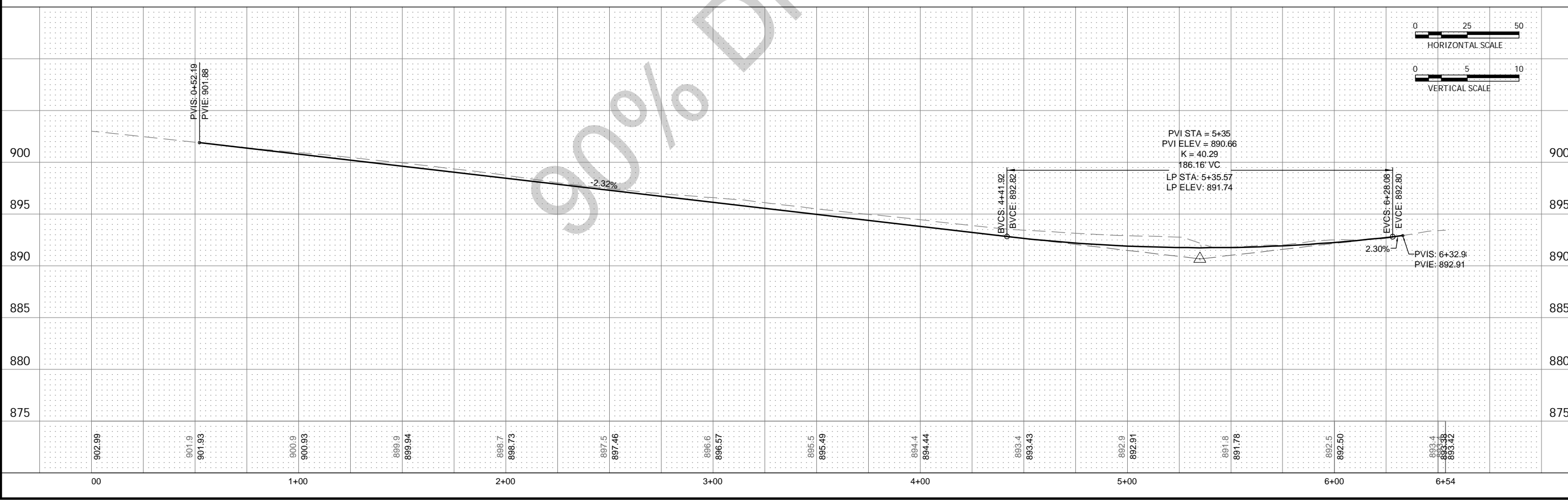
SURVEY	
DRAWN	ACD
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816

SHEET NUMBER
C5.05

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Plot Date: 11/02/2016 - 11:36am
 Drawing Name: V:\193802816\CAD\Drawings\193802816_C601.dwg
 User: jstewart
 Plotter: HP DesignJet 5000 Series
 Scale: 1/8"=1'-0"

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PRINT NAME: _____ LIC. NO. _____
 SIGNATURE: _____
 DATE: _____

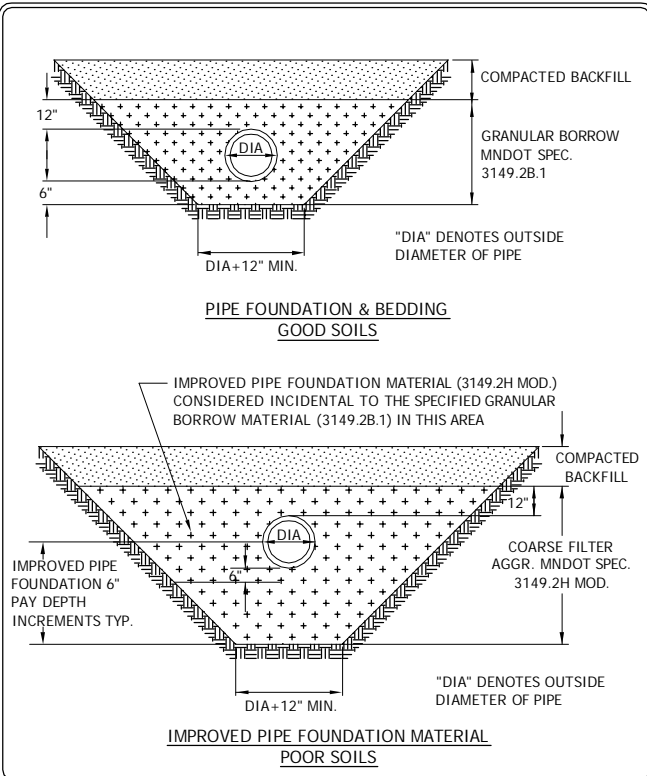
NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 STREET IMPROVEMENTS

NO.	REVISION	DATE

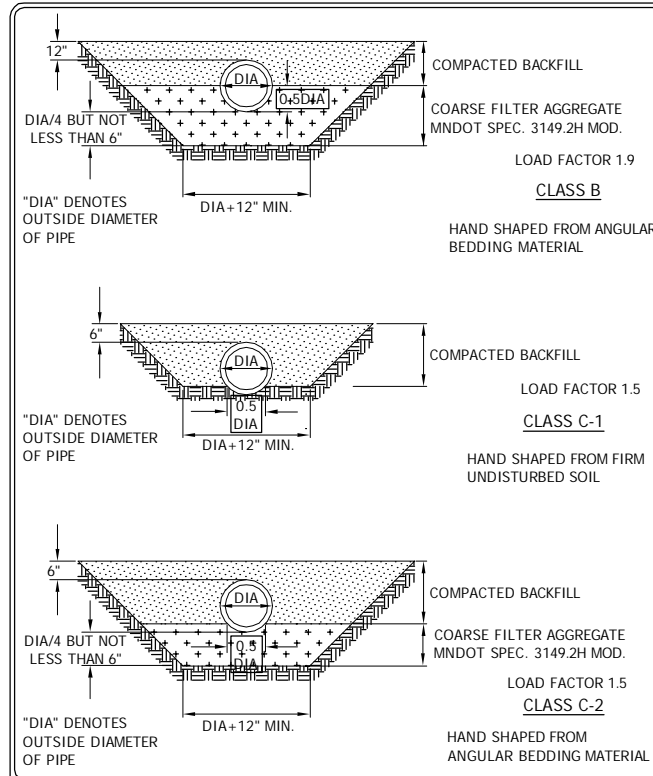
SURVEY	B.H.
DRAWN	CWL
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816

SHEET NUMBER
C6.01

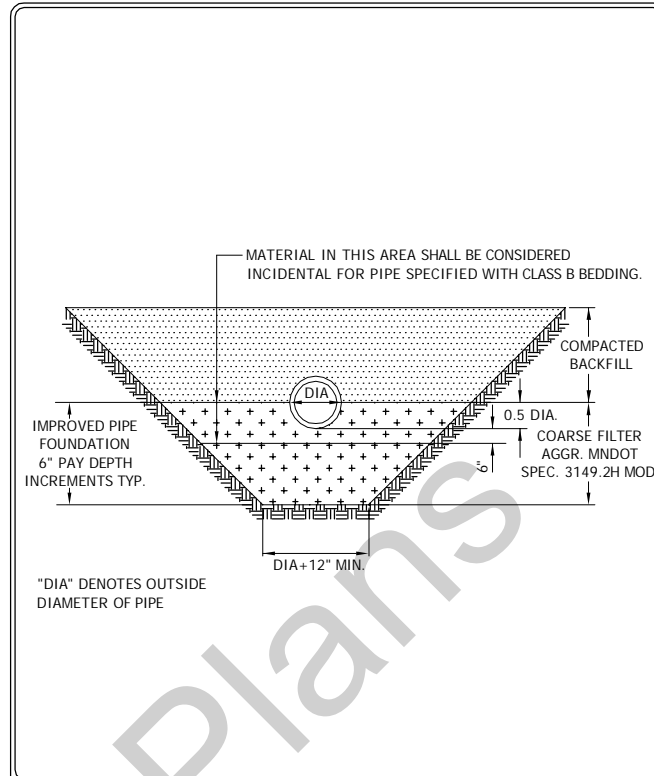
THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING. ANY ERRORS OR OMISSIONS SHALL BE REFERRED TO STANTEC WHOULDBE RESPONSIBLE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC'S PERMISSION.



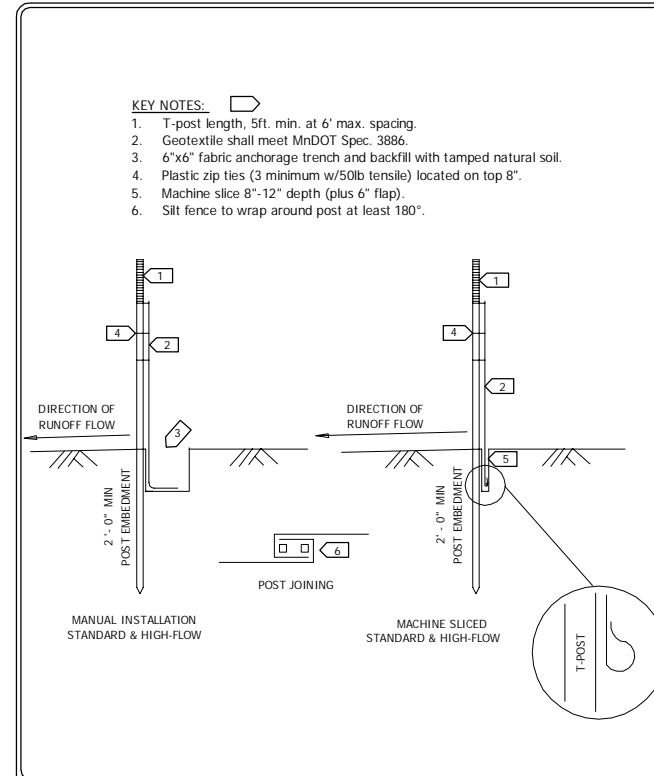
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	CITY OF NEW HOPE, MN	PLATE NO. BED-1



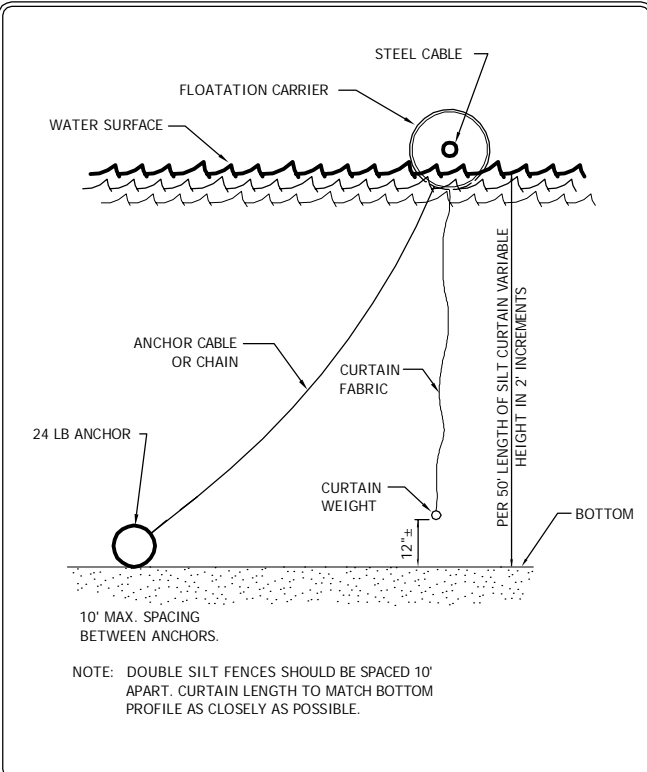
	PIPE FOUNDATION & BEDDING METHODS FOR RCP OR DIP	LAST REVISION: March 2002
	CITY OF NEW HOPE, MN	PLATE NO. BED-2



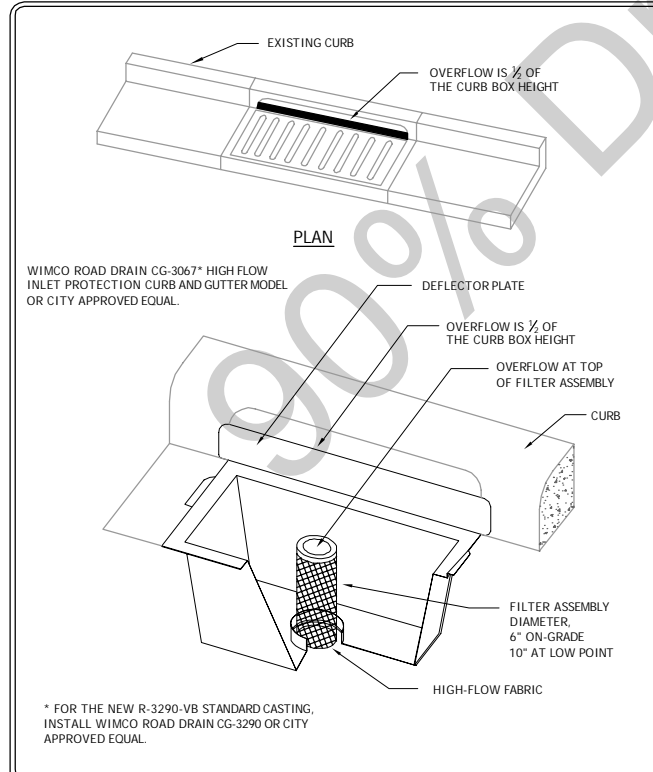
	IMPROVED PIPE FOUNDATION FOR RCP AND DIP	LAST REVISION: March 2002
	CITY OF NEW HOPE, MN	PLATE NO. BED-3



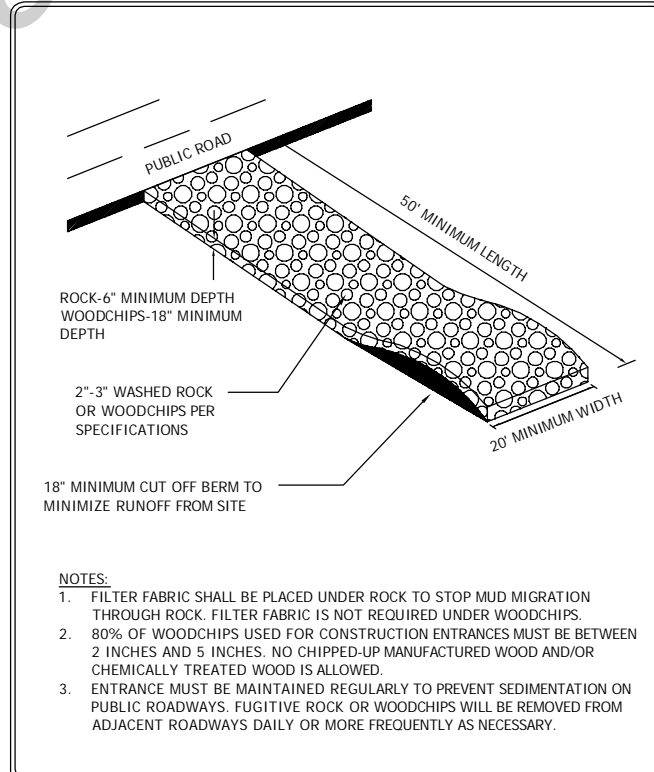
	SILT FENCE INSTALLATION	LAST REVISION: Jan. 2005
	CITY OF NEW HOPE, MN	PLATE NO. ERO-1



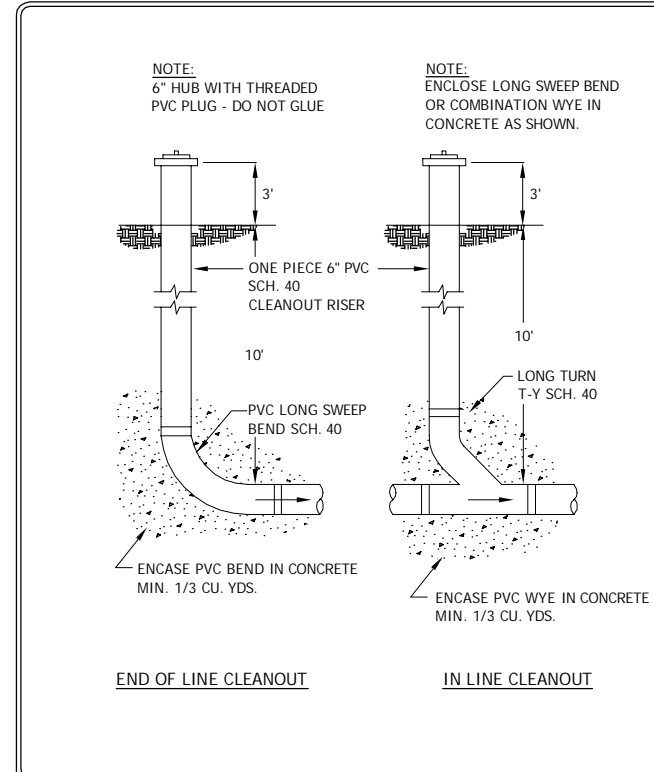
	FLOATING SILT FENCE	LAST REVISION: Feb. 2013
	CITY OF NEW HOPE, MN	PLATE NO. ERO-3



	INLET PROTECTION CATCH BASIN INSERT AFTER PAVING	LAST REVISION: Jan. 2005
	CITY OF NEW HOPE, MN	PLATE NO. ERO-4C



	ROCK CONSTRUCTION ENTRANCE	LAST REVISION: Jan 2015
	CITY OF NEW HOPE, MN	PLATE NO. ERO-7

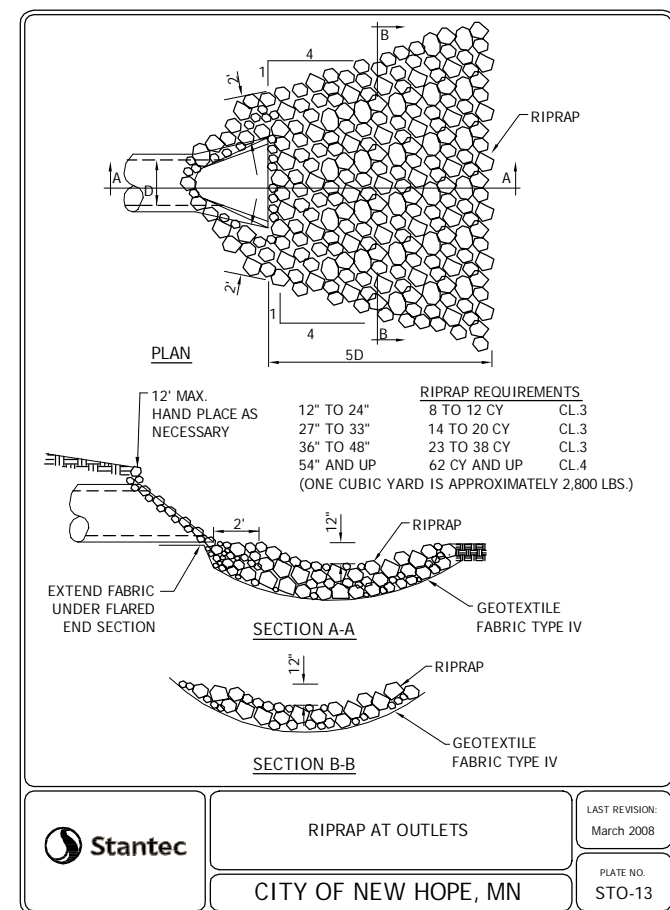
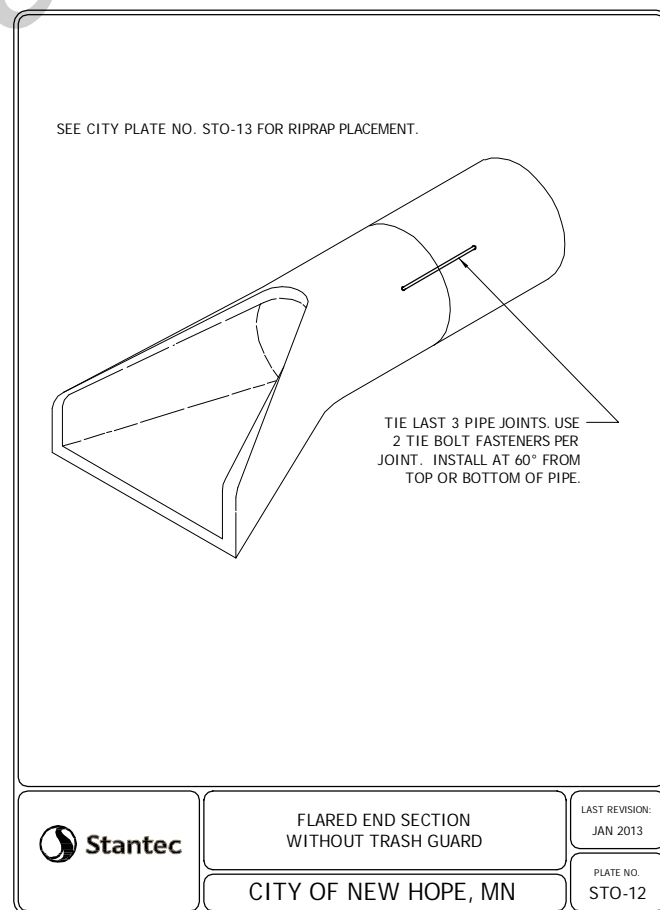
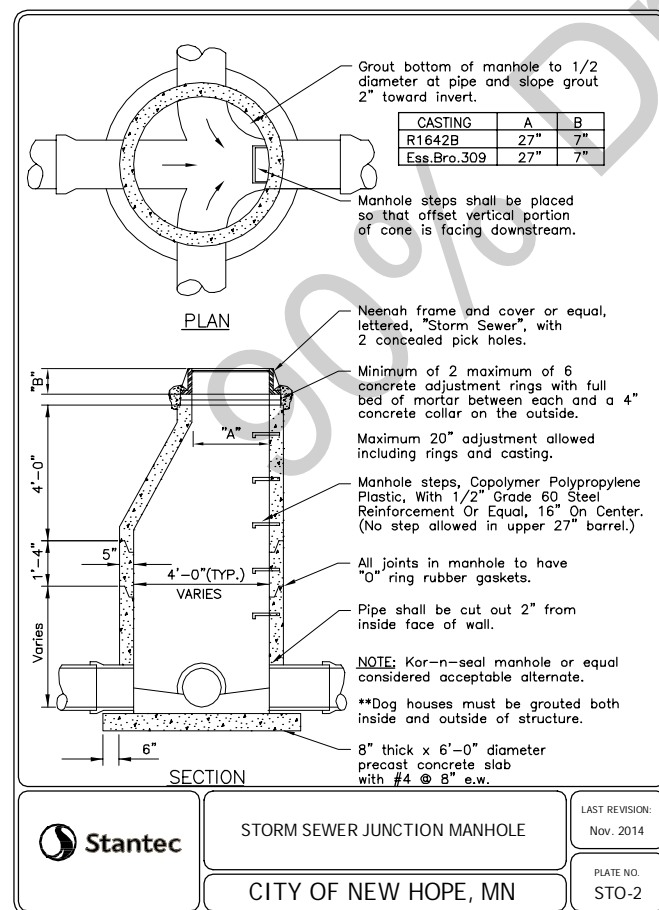
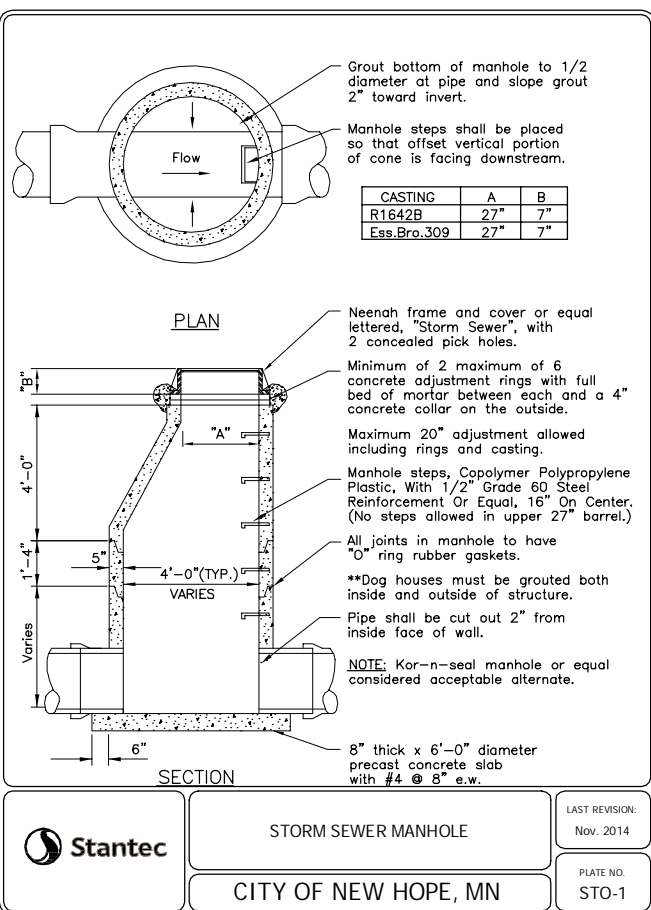
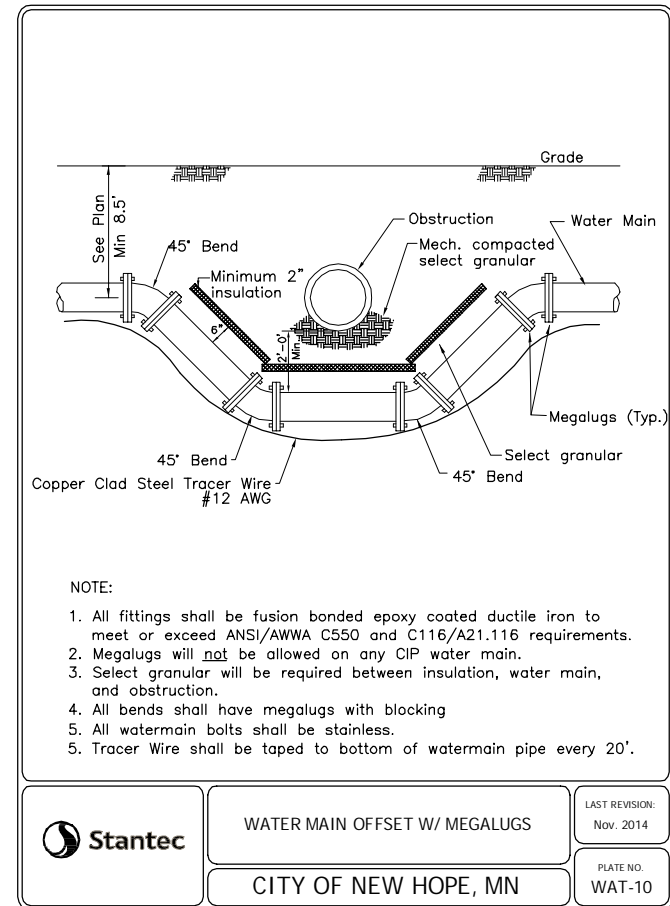
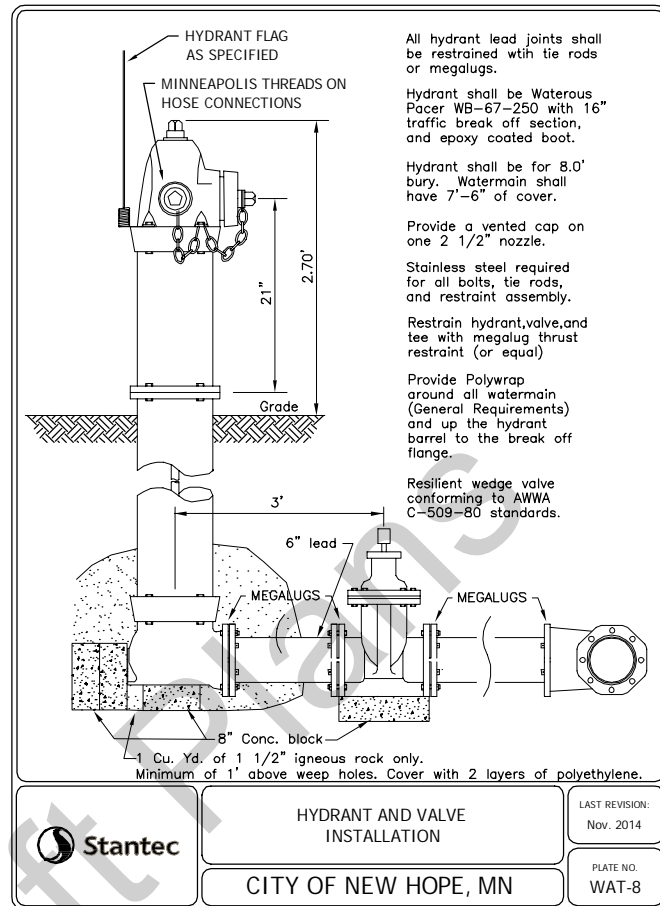
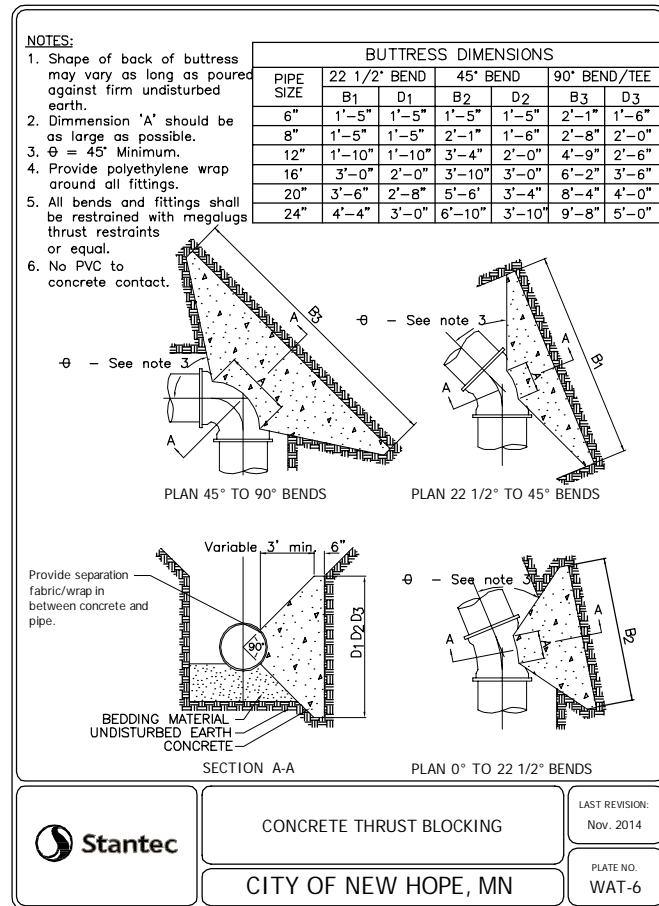
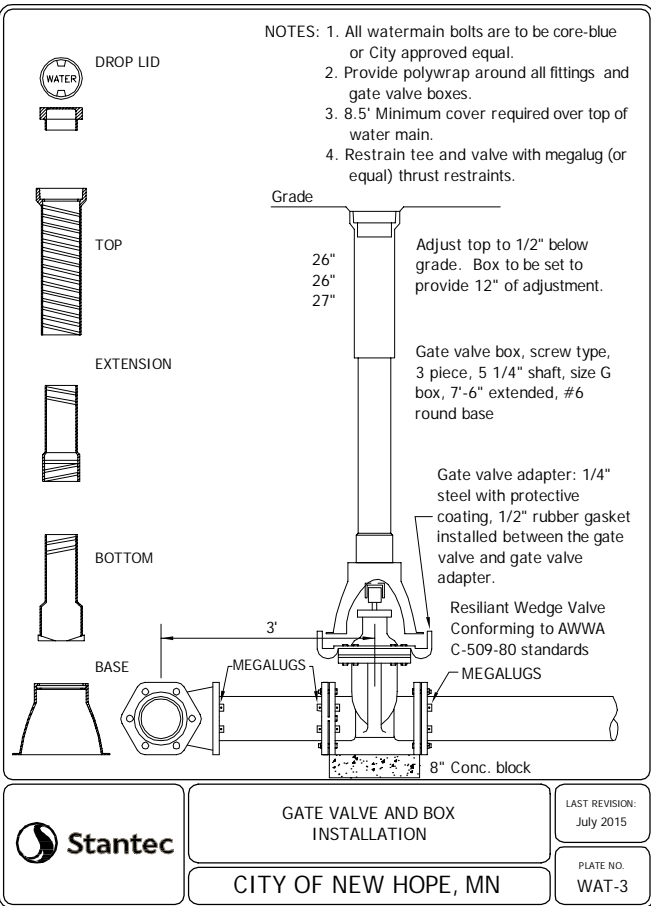


	PVC SERVICE LINE CLEANOUTS	LAST REVISION: April 2000
	CITY OF NEW HOPE, MN	PLATE NO. SER-3

Plot Date: 11/02/2015 - 10:06am
Drawing name: V:\198\active\193802816\CAD\DWG\19802816_C801.dwg
User: jstankovic

		2355 Highway 35 W St. Paul, MN 55113 www.stantec.com
NEW HOPE, MINNESOTA 2016 NORTHWOOD LAKE IMPROVEMENTS CITY PROJECT NO. 938 CONSTRUCTION DETAILS		
NO REVISION	DATE	
SURVEY	ACD	
DRAWN	CWL	
CHECKED	CWL	
APPROVED	CWL	
PROJ. NO.	193802816	
SHEET NUMBER		C8.01

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Plot Date: 11/02/2016 - 10:08am
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User: j392276.jordan

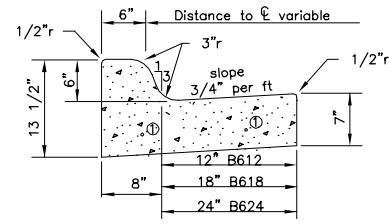
2355 Highway 36 W
St. Paul, MN 55113
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NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
CONSTRUCTION DETAILS

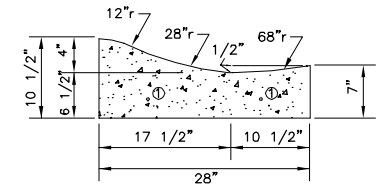
NO	REVISION	DATE

SURVEY	ACD
DRAWN	ACD
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816
SHEET NUMBER	C8.02

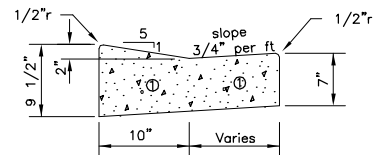
THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING. ANY ERRORS OR OMISSIONS SHALL BE REPERED TO THE DESIGNER WHOSE OFFICE IS LOCATED AT 1500 W. WASHINGTON ST. ST. PAUL, MN 55113. FOR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.



MnDOT B612
MnDOT B618
MnDOT B624



MOUNTABLE



STANDARD SECTION THROUGH DRIVEWAY

NOTE: Place #4 rebar as shown, where curb crosses utility trenches with 1 1/2\"/>

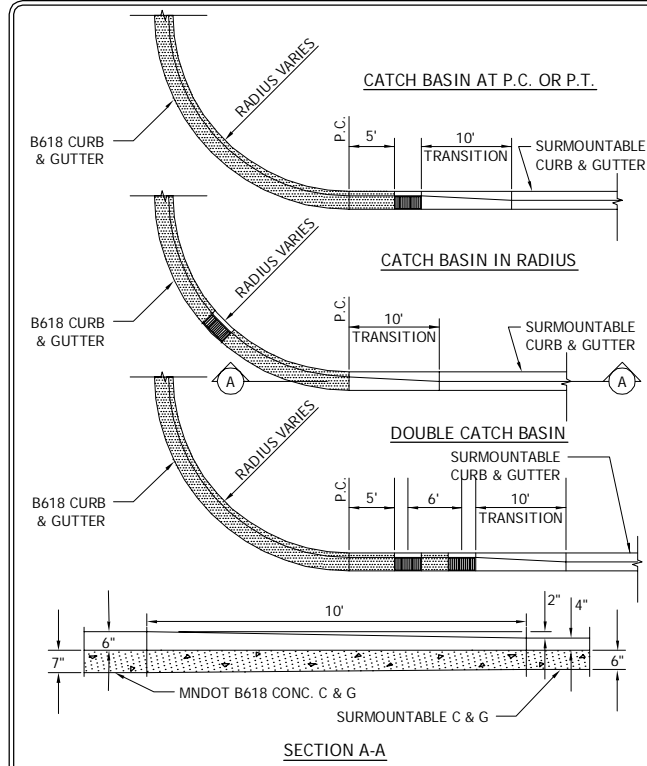


CURB AND GUTTER

LAST REVISION:
Feb. 2004

CITY OF NEW HOPE, MN

PLATE NO.
STR-1

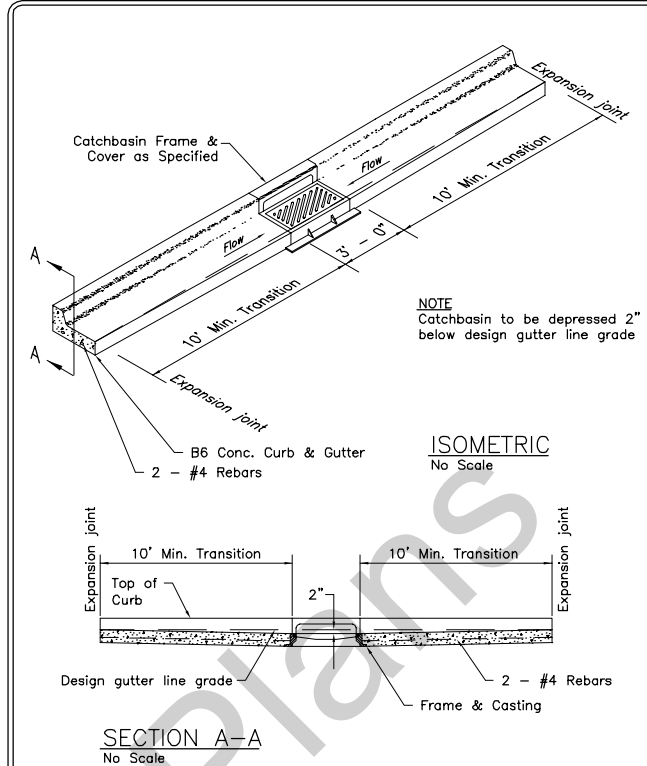


CONCRETE CURB & GUTTER TRANSITION

LAST REVISION:
April 2010

CITY OF NEW HOPE, MN

PLATE NO.
STR-2

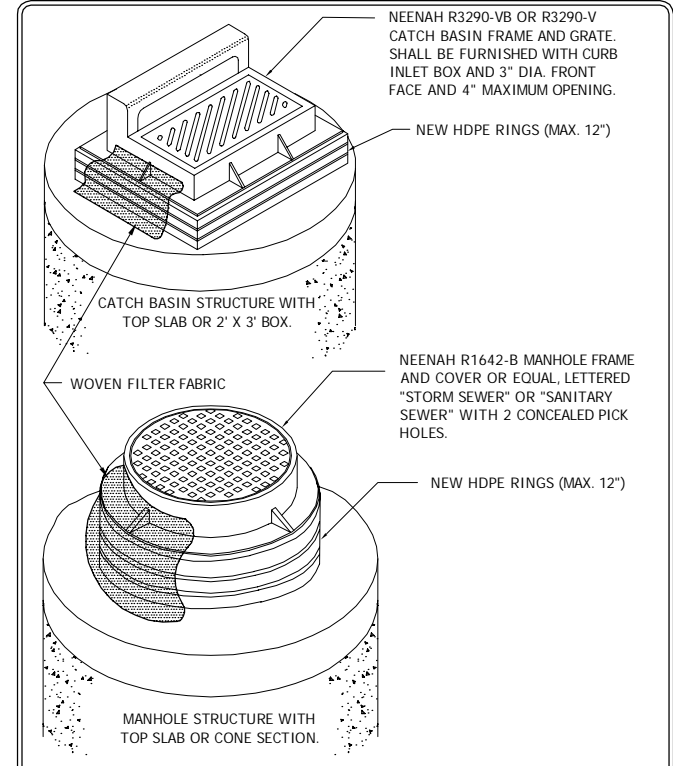


B6 CURB & GUTTER CONSTRUCTION AT CATCH BASIN

LAST REVISION:
JAN 2013

CITY OF NEW HOPE, MN

PLATE NO.
STR-4

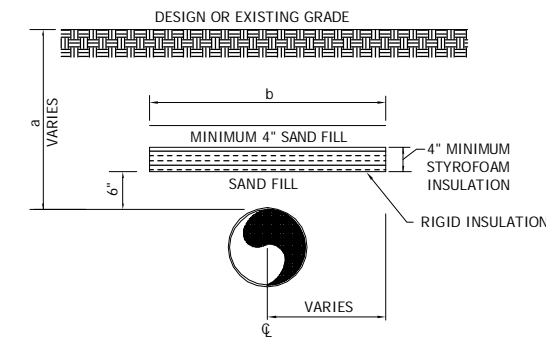


CATCH BASIN & MANHOLE ADJUSTMENT

LAST REVISION:
JAN. 2013

CITY OF NEW HOPE, MN

PLATE NO.
STR-18



NOTE: PIPE SHALL BE CENTERED UNDER INSULATION UNLESS OTHERWISE SPECIFIED. ENGINEER MAY REQUIRE INSULATION AT OTHER LOCATIONS. BID UNIT PRICE PER SQUARE YARD SHALL INCLUDE INSULATION, SAND FILL, AND ALL WORK AND INCIDENTALS TO INSTALL THE INSULATION AS DIRECTED.

COVER OVER PIPE - a WIDTH OF INSULATING BOARD - b

2'	11'
3'	9'
4'	7'
5'	5'
6'	3'

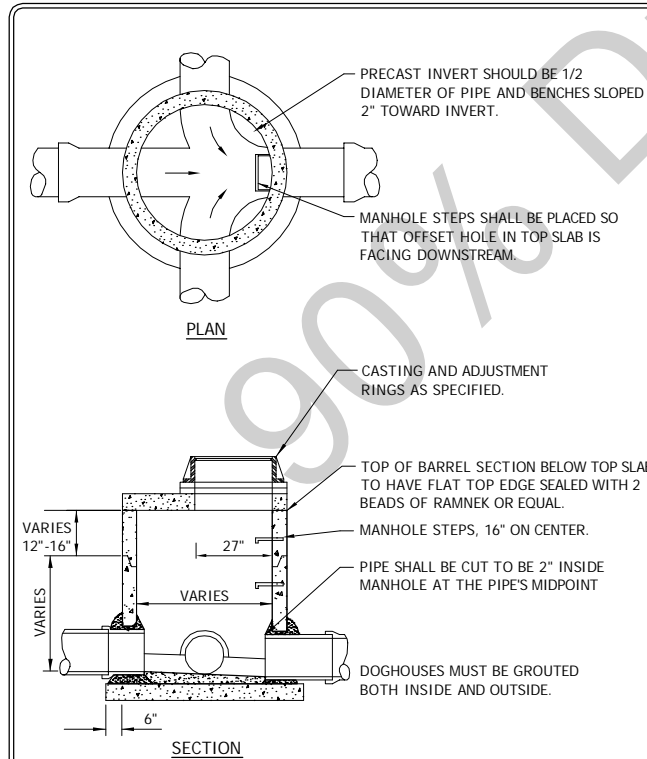


INSULATION DETAIL

LAST REVISION:
JAN 2013

CITY OF NEW HOPE, MN

PLATE NO.
SAN-6

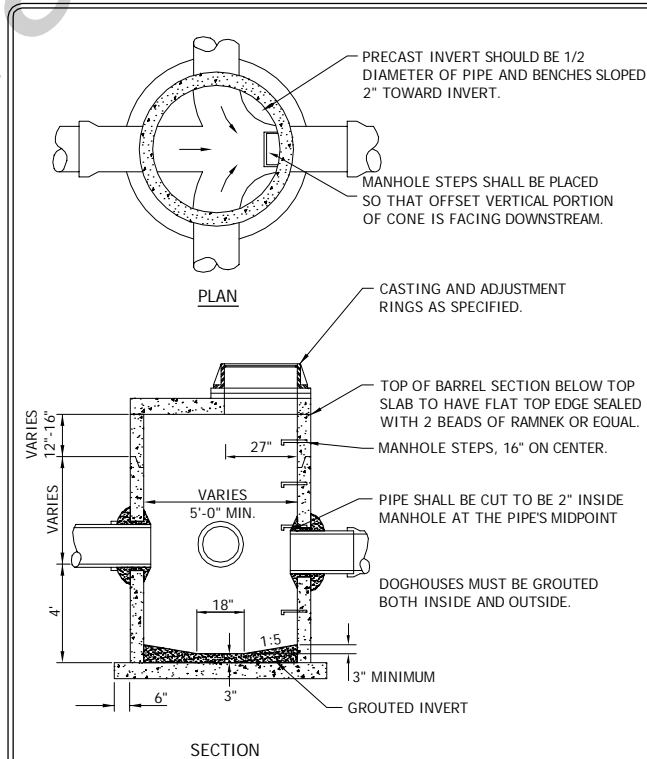


STORM SEWER JUNCTION MANHOLE WITH REINFORCED TOP SLAB

LAST REVISION:
March 2008

CITY OF NEW HOPE, MN

PLATE NO.
STO-3

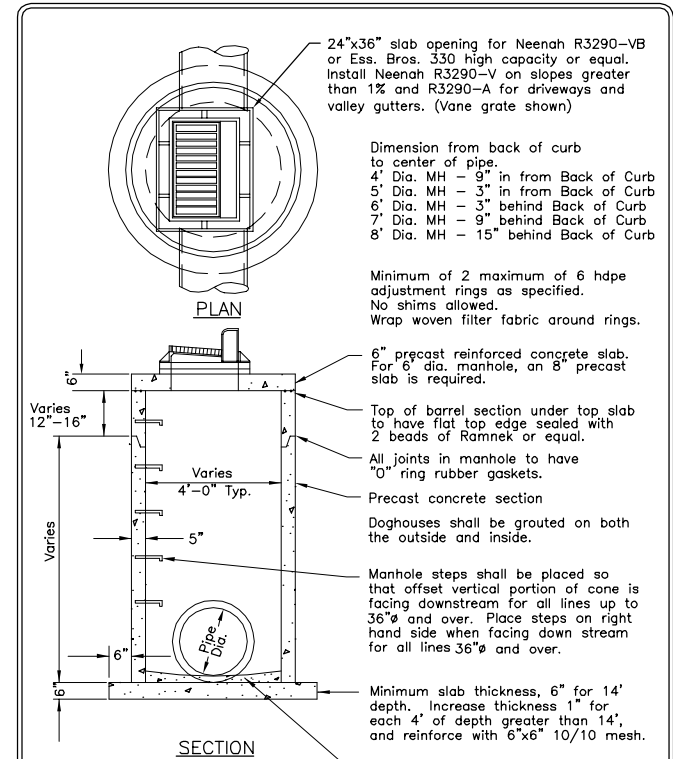


STORM SEWER JUNCTION MANHOLE WITH REINFORCED TOP SLAB & SUMP

LAST REVISION:
March 2008

CITY OF NEW HOPE, MN

PLATE NO.
STO-4



TYPE II CATCH BASIN MANHOLE

LAST REVISION:
March 2008

CITY OF NEW HOPE, MN

PLATE NO.
STO-5

Plot Date: 11/02/2016 - 10:10am
 Drawing name: V:\1938\active\16\CAD\DWG\193802816_C803.dwg
 User: jstancik

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NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 CONSTRUCTION DETAILS

NO	REVISION	DATE

24"x36" SLAB OPENING FOR CASTING AS SPECIFIED.

DIMENSION FROM BACK OF CURB TO CENTER OF STRUCTURE:
 4' DIA. MH - 9" IN FROM BACK OF CURB
 5' DIA. MH - 3" IN FROM BACK OF CURB
 6' DIA. MH - 3" BEHIND BACK OF CURB
 7' DIA. MH - 9" BEHIND BACK OF CURB
 8' DIA. MH - 15" BEHIND BACK OF CURB

CASTING AND ADJUSTMENT RINGS AS SPECIFIED.

TOP OF BARREL SECTION UNDER TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.

DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE.

MANHOLE STEPS, 16" ON CENTER

PIPE DIA.

SECTION

4'-0"

6"

VARIABLES: 12"-16"

5'-0" MIN.

STANTEC

CATCHBASIN MANHOLE WITH SUMP

CITY OF NEW HOPE, MN

LAST REVISION: March 2008

PLATE NO. STO-6

Variable (see plan)

3'-0"

PERFORATED PIPE DRAIN

CAP DRAINTILE

6"

2'-0"

6"

6"

6"

Face of Curb

Direction of Flow

NOTE:
Vane Grate Shown

PLAN

Catchbasin casting Neenah R3290-VB or equal at sump locations or slopes less than 1% and R3290-V on slopes greater than 1%. Vane grate and 3" radius curb box required. Install R3290-A casting in driveways and valley gutters.

Grate to be 2" below gutter grade. 10' transition each side of catch basin.

Min. of 2 max. of 6 hdp adjustment rings as specified. No shims allowed. Wrap woven filter fabric around rings.

Top of Curb

Variable

6 1/2"

24" x 36" Precast

5"

3" Grout

3 1/2" Min.

6"

4"

3"

3"

SECTION

DOGHOUSES SHALL BE GROUTED ON BOTH THE INSIDE AND OUTSIDE.

Maximum 20" adjustment allowed including rings and casting.

DOGHOUSES shall be grouted on both the outside and the inside.

STANTEC

2'X3' CATCH BASIN

CITY OF NEW HOPE, MN

LAST REVISION: March 2015

PLATE NO. STO-7

NOTE:
VANE GRATE SHOWN

3'-0"

6"

2'-0"

6"

DIRECTION OF FLOW

PLAN

CASTING AND ADJUSTMENT RINGS AS SPECIFIED.

GRATE TO BE 1" BELOW GUTTER GRADE. 10' TRANSITION EACH SIDE OF CATCH BASIN.

24" x 36" PRECAST

18"

1.5"

VARIABLES: 4'-0"

6"

3" MINIMUM

4"

3"

GROUTED INVERT

SECTION

DOGHOUSES SHALL BE GROUTED ON BOTH THE INSIDE AND OUTSIDE.

STANTEC

CATCHBASIN WITH SUMP

CITY OF NEW HOPE, MN

LAST REVISION: April 2010

PLATE NO. STO-8

PROVIDE 6-1/2" SS ANCHOR BOLTS W/CLIPS

1 1/2"x3/8" OUTER RING

1 1/2"x3/8" STEEL BARS @ 4" O.C.

1-1/4"

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET HOLE IN TOP SLAB IS FACING DOWNSTREAM.

1/4"x1/4" STEEL BAR, WELD TO EACH MEMBER

HOT-DIPPED GALVANIZED GRATE IN 2 SECTIONS

NO BLOCK STRUCTURES ARE ALLOWED.

ELEV. = 894.0

ELEV. = 893.0

VARIABLES: 12"-16"

ELEV. = 892.0

ELEV. = 891.0

1"

TOP OF BARREL SECTION BELOW TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.

MANHOLE STEPS, NEENAH R1981J OR EQUAL, 16" ON CENTER. ALUMINUM STEPS APPROVED.

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS.

PIPE SHALL BE CUT OUT FLUSH WITH INSIDE FACE OF WALL.

DOGHOUSES MUST BE GROUTED BOTH INSIDE AND OUTSIDE.

RCP

RCP

6'-0"

SECTION

STANTEC

STANDARD DETAILS
STANDARD OVERFLOW STRUCTURE

NEW HOPE, MINNESOTA

CITY OF NEW HOPE, MN

LAST REVISION: JAN 2014

PLATE NO. STO-21

FLOW Inlet

FLOW Outlet

3 MANHOLE CASTINGS EVENLY SPACED OVER

PLAN

N.E.E.

NEENAH R-1642 CASTINGS (2 M.I.D.) 2" CONCRETE ADJUSTING RINGS W/WRAPPED IN FABRIC 888-899-164

FRAME & COVER (CHECKED TYPE)

Adjusting Rings As Required

Grouted Connection Typ

36" RCP 100-893.00

MANHOLE STEPS, 15" ON CENTER, M.I.D. CENTERED OVER STEPS

10'-0"

10'-0"

12'-0"

SECTION A-A

N.E.E.

DO NOT TO BE INTEGRALLY CAST OR SEALED w/Bitumatic sealant.

STANTEC

PRE-TREATMENT MANHOLE

CITY OF NEW HOPE, MN

LAST REVISION: March 2008

PLATE NO. STO-9

Precast concrete structure

R-1642 FRAME w/ TYPE "C" GRATE

Reinforced concrete pipe

27"

5"

VARIABLES: 4'-0"

40" dia. x 5" thick precast reinforced concrete base slab.

SECTION

STANTEC

PRECAST 27" YARD DRAIN (YD)

CITY OF NEW HOPE, MN

LAST REVISION: March 2008

PLATE NO. STO-9

CONTRACTOR TO INSTALL CHICAGO COUPLER CONNECTION (AIR TIGHT) TO END OF COPPER LINE (INCIDENTAL)

PROVIDE SLEEVES IF PIPES PASS THROUGH CONCRETE SLAB (INCIDENTAL)

IRRIGATION BOX

1/2" CURB STOP & BOX

VARIABLES

CURB STOP & BOX

EXISTING WATER MAIN

TEE FITTING

TO DRINKING FOUNTAIN

WINTER BLOWOUT LINE 1/2" COPPER PIPE

EXISTING SERVICE TO FOUNTAIN

PLACE FULL SIZE CONCRETE BLOCK

NOTES:

1. SLEEVES FOR PIPES IN CONCRETE SLABS SHALL BE 4" DIAMETER PVC OR SIMILAR

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DRINKING FOUNTAIN SERVICE

CITY OF NEW HOPE, MN

LAST REVISION: March 2008

PLATE NO. A

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NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 CONSTRUCTION DETAILS

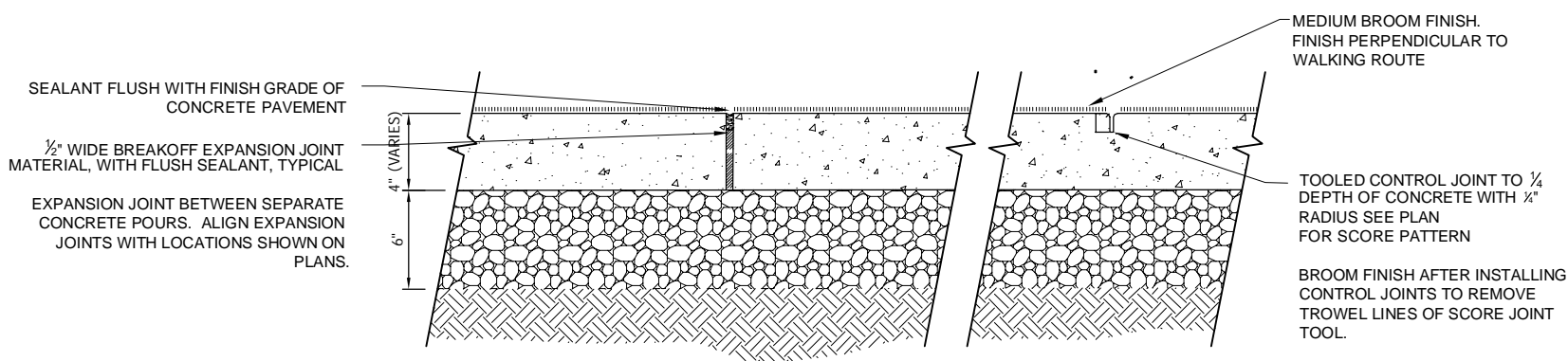
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 APPROVED: CWL
 PROJ. NO. 193802816

SHEET NUMBER
C8.04

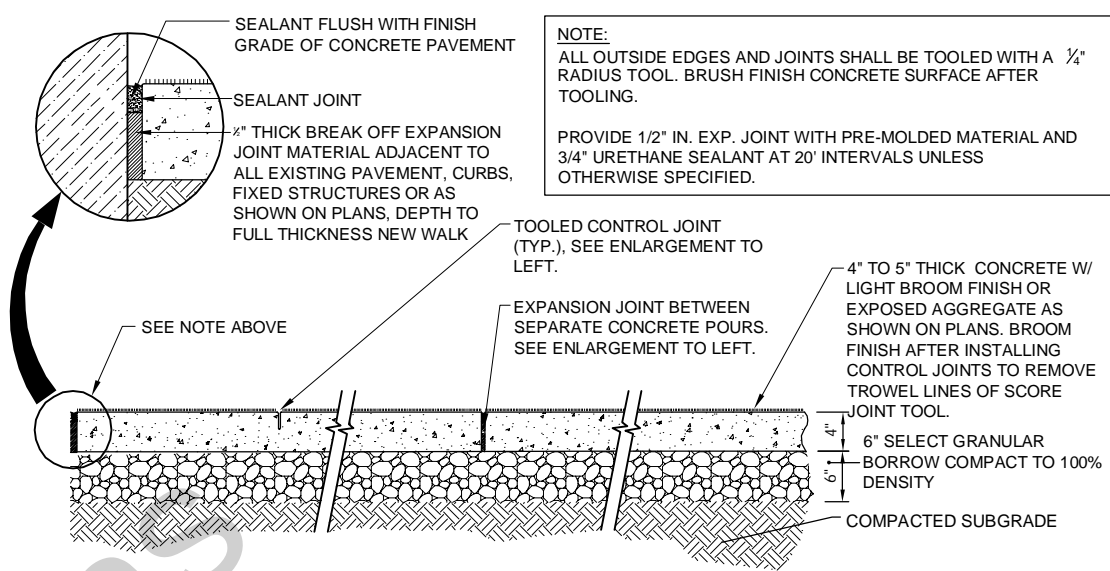
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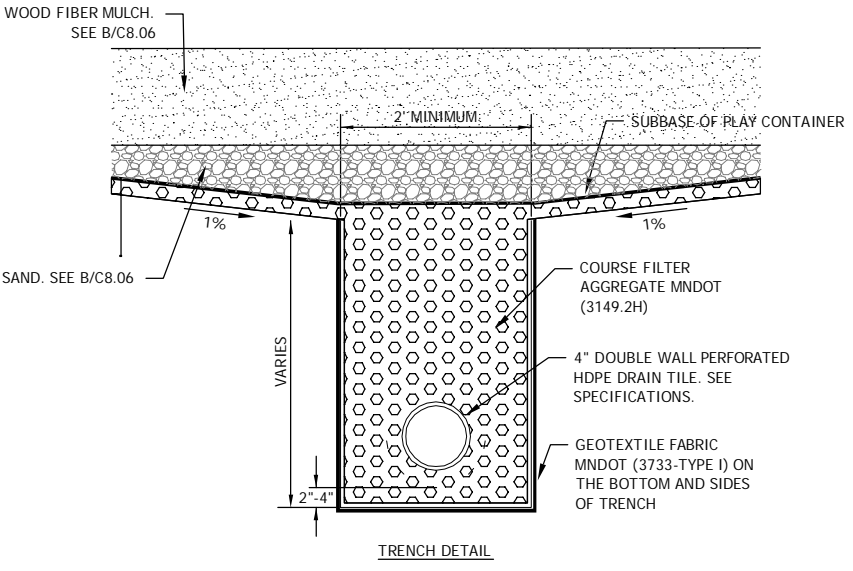


NOTE:
AROUND WARMING HOUSE - ALIGN FINISH WITH CENTER OF WALK PANEL SO THAT BROOM LINES RADIATE OUTWARD.
CONCRETE IS GENERALLY 4" THICK, EXCEPT FOR BENCH AND WASTE RECEPTACLE PADS WHICH ARE 5" THICK.

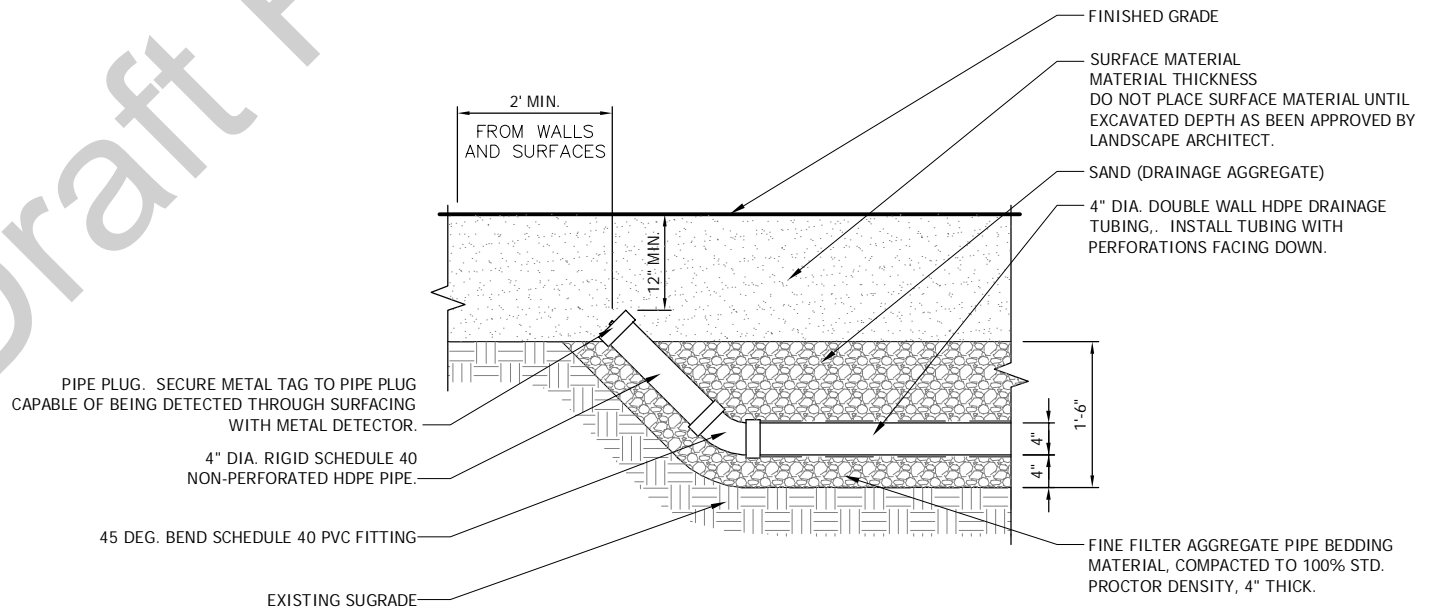
A 4" CONCRETE WALK (5" IN SELECT AREAS)



NOTE:
ALL OUTSIDE EDGES AND JOINTS SHALL BE TOOLED WITH A 1/4" RADIUS TOOL. BRUSH FINISH CONCRETE SURFACE AFTER TOOLING.
PROVIDE 1/2" IN. EXP. JOINT WITH PRE-MOLDED MATERIAL AND 3/4" URETHANE SEALANT AT 20' INTERVALS UNLESS OTHERWISE SPECIFIED.



B 4" PERFORATED DRAIN TILE



E DRAIN TILE CLEANOUT

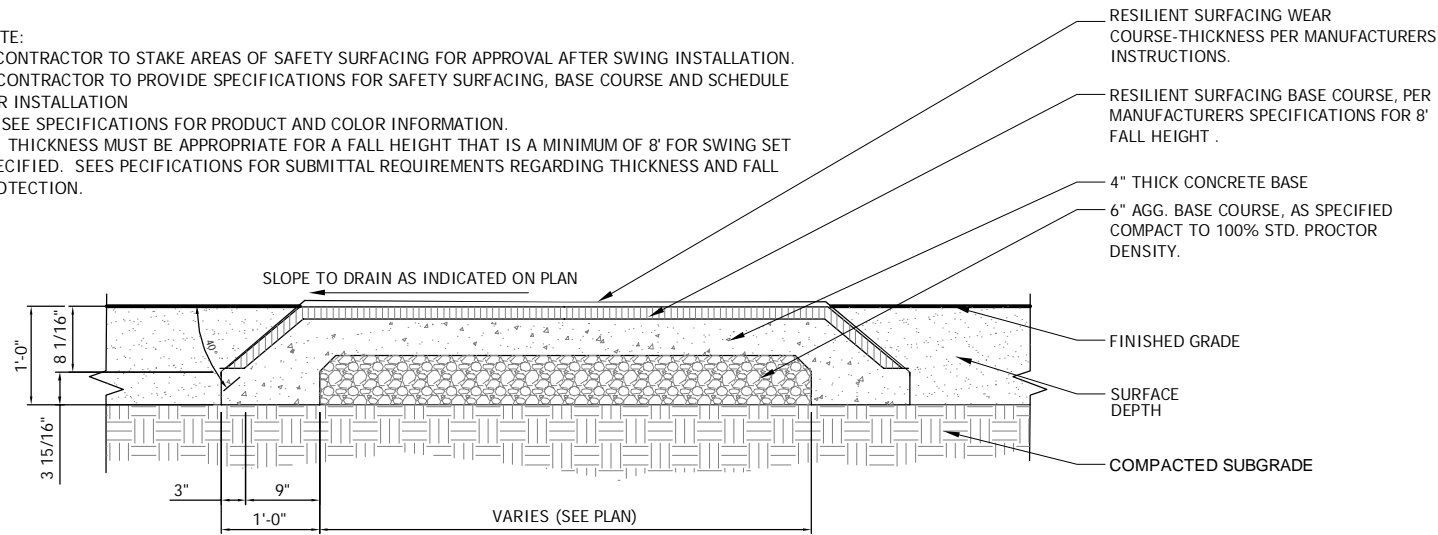
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SURVEY		
DRAWN	ACD	
DESIGNED	CWL	
CHECKED	CWL	
APPROVED	CWL	
PROJ. NO.	193802816	
SHEET NUMBER	C8.05	

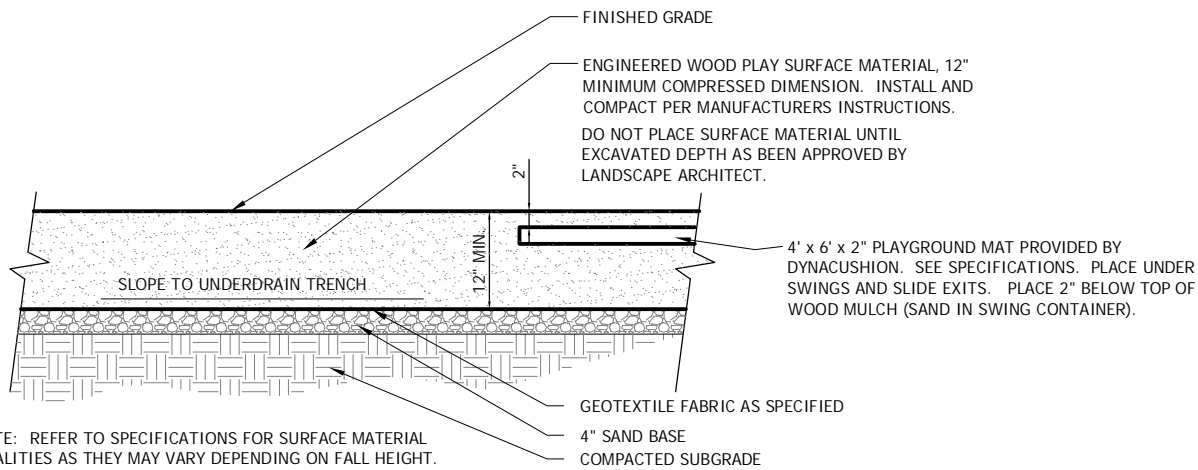
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NOTE:

1. CONTRACTOR TO STAKE AREAS OF SAFETY SURFACING FOR APPROVAL AFTER SWING INSTALLATION.
2. CONTRACTOR TO PROVIDE SPECIFICATIONS FOR SAFETY SURFACING, BASE COURSE AND SCHEDULE FOR INSTALLATION.
3. SEE SPECIFICATIONS FOR PRODUCT AND COLOR INFORMATION.
4. THICKNESS MUST BE APPROPRIATE FOR A FALL HEIGHT THAT IS A MINIMUM OF 8' FOR SWING SET SPECIFIED. SEE PECIFICATIONS FOR SUBMITTAL REQUIREMENTS REGARDING THICKNESS AND FALL PROTECTION.

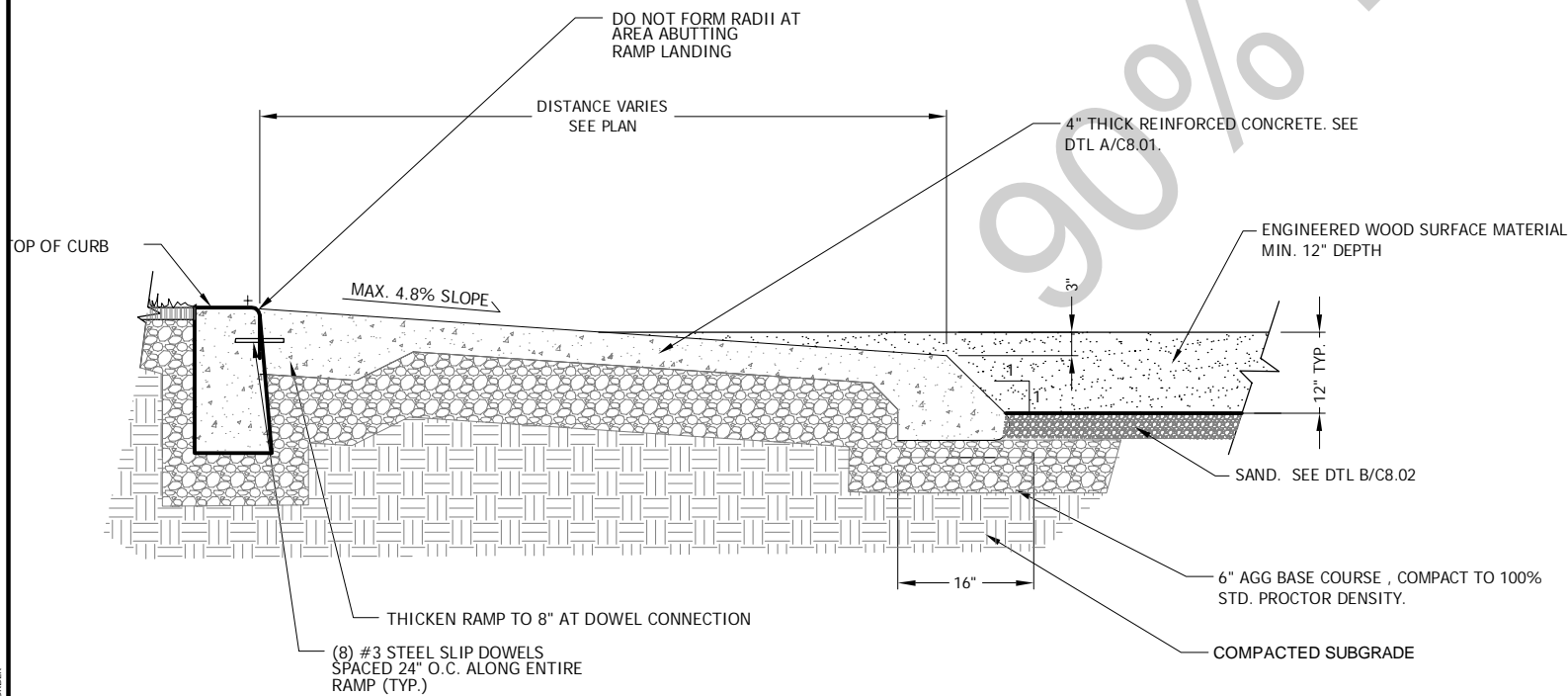


A SYNTHETIC RESILIENT SURFACING
NOT TO SCALE



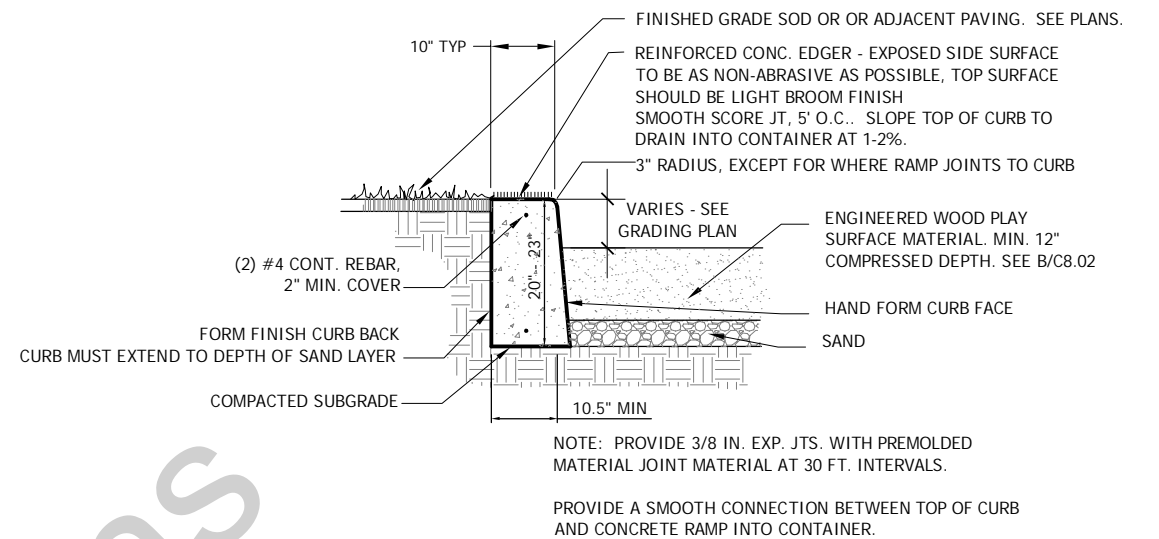
NOTE: REFER TO SPECIFICATIONS FOR SURFACE MATERIAL QUALITIES AS THEY MAY VARY DEPENDING ON FALL HEIGHT.

B PLAY EQUIPMENT SURFACING - ENGINEERED WOOD FIBER
NOT TO SCALE



NOTE:
1. CONTRACTOR TO VERIFY ALL EXISTING SPOT GRADES IN PLAYGROUND AREA FOR VERIFICATION
2. CONCRETE RAMP IS DESIGNED TO EXTEND A MINIMUM OF 3" BELOW THE TOP SURFACE OF THE ENGINEERED WOOD FIBER MULCH BEFORE TRANSITIONING DOWN TO THE BASE COURSE. RAMP MUST NOT POSE A TRIPPING HAZARD OR FAIL TO PROVIDE AN ACCESSIBLE ROUTE INTO THE PLAY EQUIPMENT CONTAINER.

C CONCRETE RAMP (PLAY EQUIPMENT CONTAINER)



NOTE: PROVIDE 3/8 IN. EXP. JTS. WITH PREMOLDED MATERIAL JOINT MATERIAL AT 30 FT. INTERVALS.

PROVIDE A SMOOTH CONNECTION BETWEEN TOP OF CURB AND CONCRETE RAMP INTO CONTAINER.

D PLAYGROUND CURB
NOT TO SCALE

Plot Date: 11/02/2016 - 10:54am
Drawing Name: V:\193802816\CAD\DWG\193802816_C800.dwg
User: jporter

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NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
CONSTRUCTION DETAILS

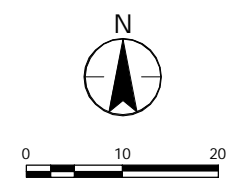
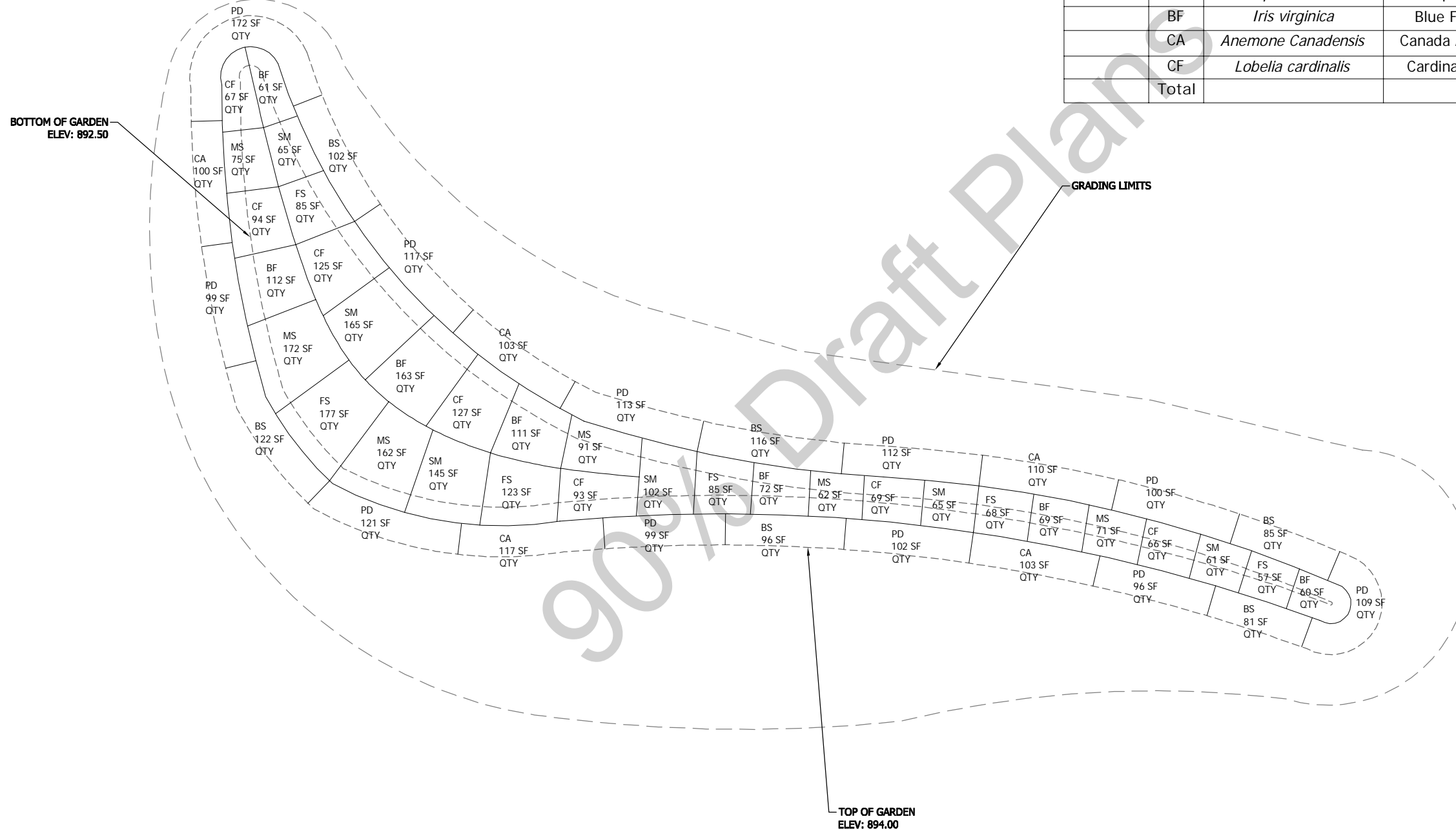
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SURVEY	
DRAWN	ACD
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816

RAIN GARDEN 1: DIPPER

PLANTING LEGEND

RAIN GARDEN 1: DIPPER					
Quantity	Key	Scientific Name	Common Name	Size	Spacing o.c
GRASS					
	FS	<i>Carex vulpinoidea</i>	Fox Sedge	4" cont.	18"
	PD	<i>Sporobolus heterolepis</i>	Prairie Dropseed	4" cont.	
FORBS					
	BS	<i>Rudbeckia goldstrum</i>	Black-eyed susan	4" cont.	18"
	MS	<i>Liatris spicata</i>	Marsh Blazing Star	4" cont.	18"
	SM	<i>Asclepias incarnata</i>	Swamp Milkweed	4" cont.	18"
	BF	<i>Iris virginica</i>	Blue Flag Iris	4" cont.	18"
	CA	<i>Anemone Canadensis</i>	Canada Anemone	4" cont.	18"
	CF	<i>Lobelia cardinalis</i>	Cardinal Flower	4" cont.	18"
	Total				



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Drawing name: V:\193802816\CAD\DWG\193802816_L5.01.dwg
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NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
RAIN GARDEN 1 - PLANTING PLAN

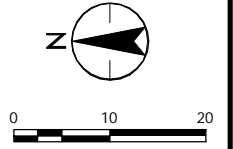
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SURVEY	ACD
DRAWN	ACD
DESIGNED	CWL
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APPROVED	CWL
PROJ. NO.	193802816
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RAIN GARDEN 2: OPEN NATURAL GRASS

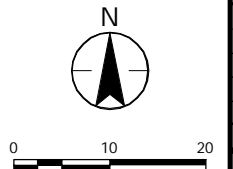
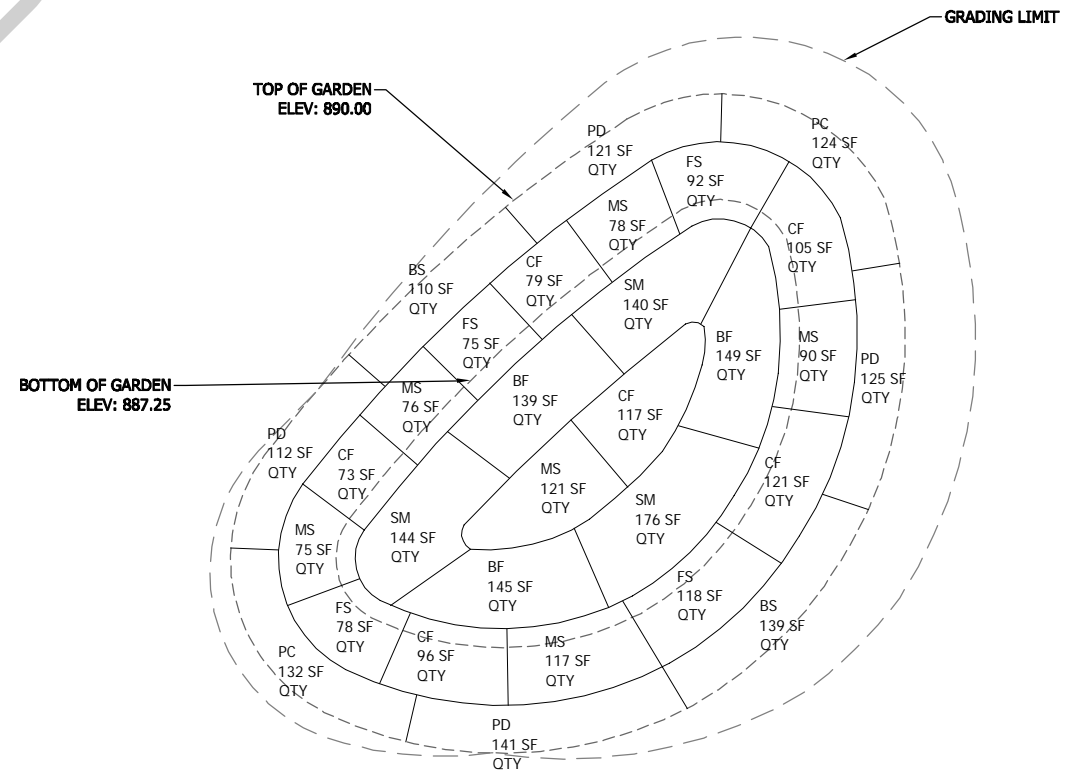
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PLANTING LEGEND

RAIN GARDEN 3: EGG					
Quantity	Key	Scientific Name	Common Name	Size	Spacing o.c.
GRASS					
	FS	<i>Carex vulpinoidea</i>	Fox Sedge	4" cont.	18"
	PD	<i>Sporobolus heterolepis</i>	Prairie Dropseed	4" cont.	
FORBS					
	PC	<i>Enchinacea angustifolia</i>	Purple Coneflower	4" cont.	18"
	BS	<i>Rudbeckia goldstrum</i>	Black-eyed susan	4" cont.	18"
	MS	<i>Liatris spicata</i>	Marsh Blazing Star	4" cont.	18"
	SM	<i>Asclepias incarnata</i>	Swamp Milkweed	4" cont.	18"
	BF	<i>Iris virginica</i>	Blue Flag Iris	4" cont.	18"
	CA	<i>Anemone Canadensis</i>	Canada Anemone	4" cont.	18"
	CF	<i>Lobelia cardinalis</i>	Cardinal Flower	4" cont.	18"
Total					

RAIN GARDEN 3: EGG



NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 RAIN GARDEN 2 & 3 - PLANTING PLAN

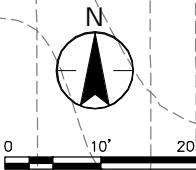
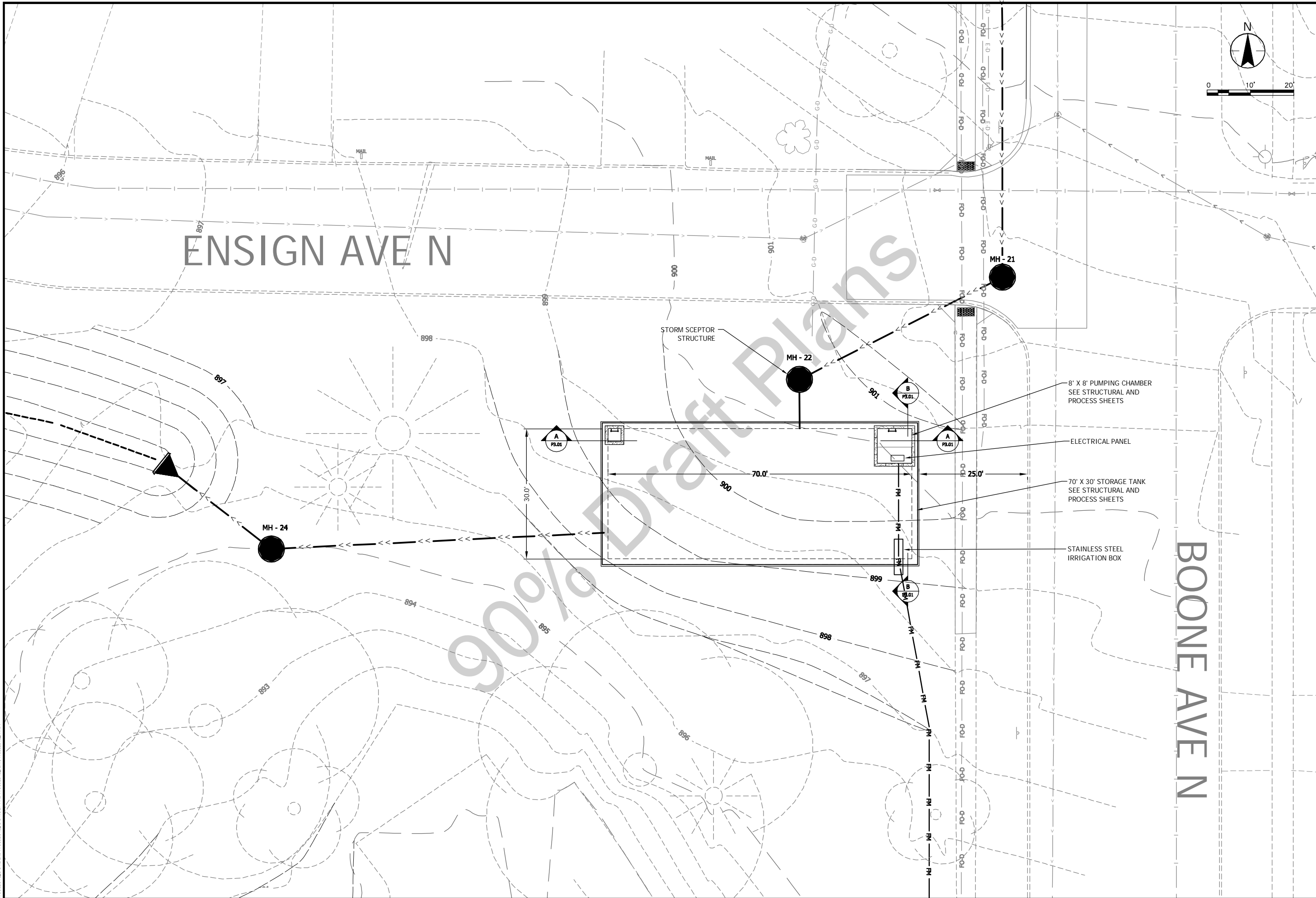
NO.	REVISION	DATE

SURVEY	ACD
DRAWN	ACD
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
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L5.02

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 User: 193802816_BORDEN, 193802816_CONCEPT_1, 193802816_KMA



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NEW HOPE, MINNESOTA
 2016 NORTHWOOD LAKE IMPROVEMENTS
 CITY PROJECT NO. 938
 STORMWATER STORAGE TANK SITE PLAN

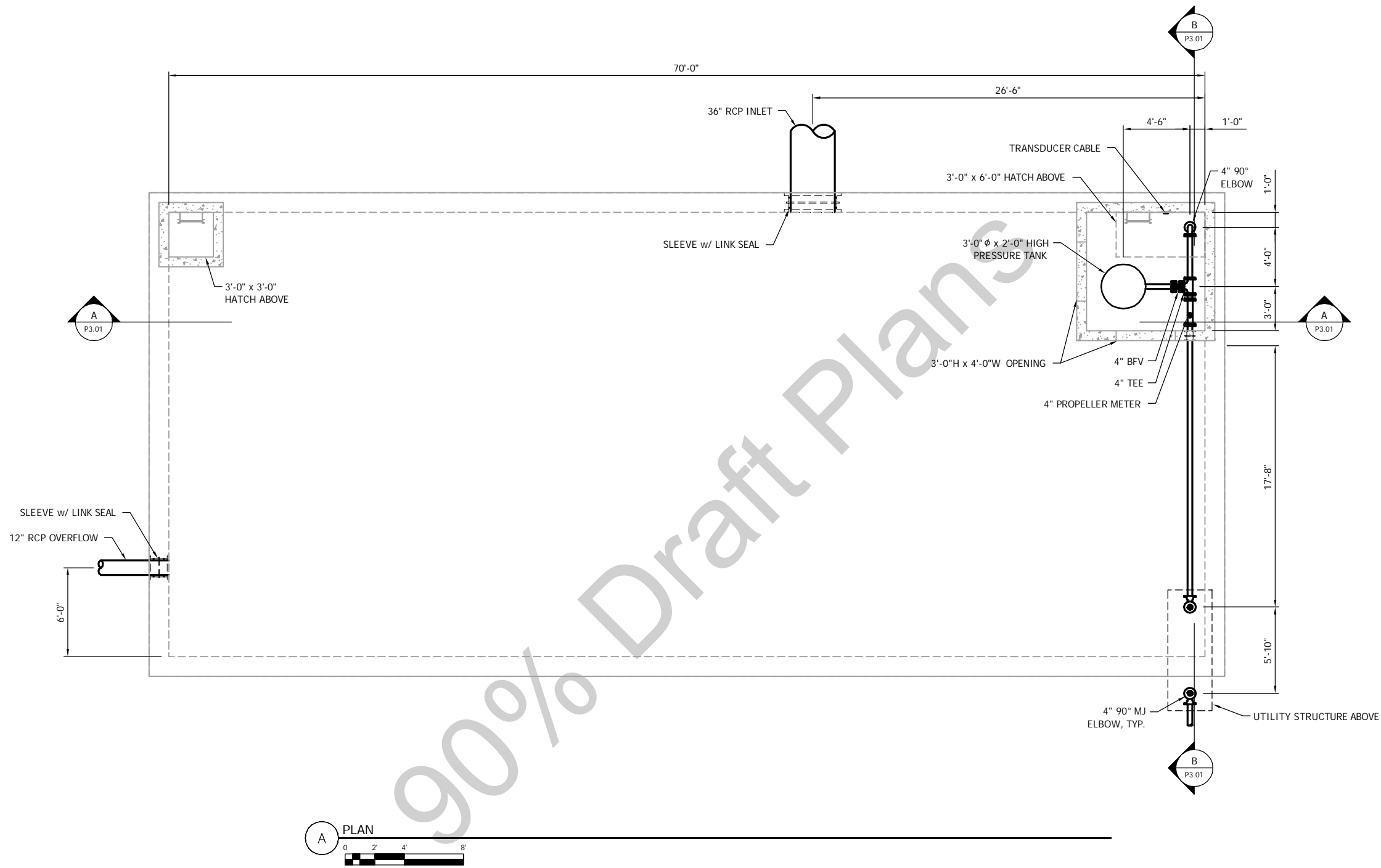
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SURVEY	
DRAWN	ACD
DESIGNED	CWL
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APPROVED	CWL
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P1.01

SEE SHEET P4.01

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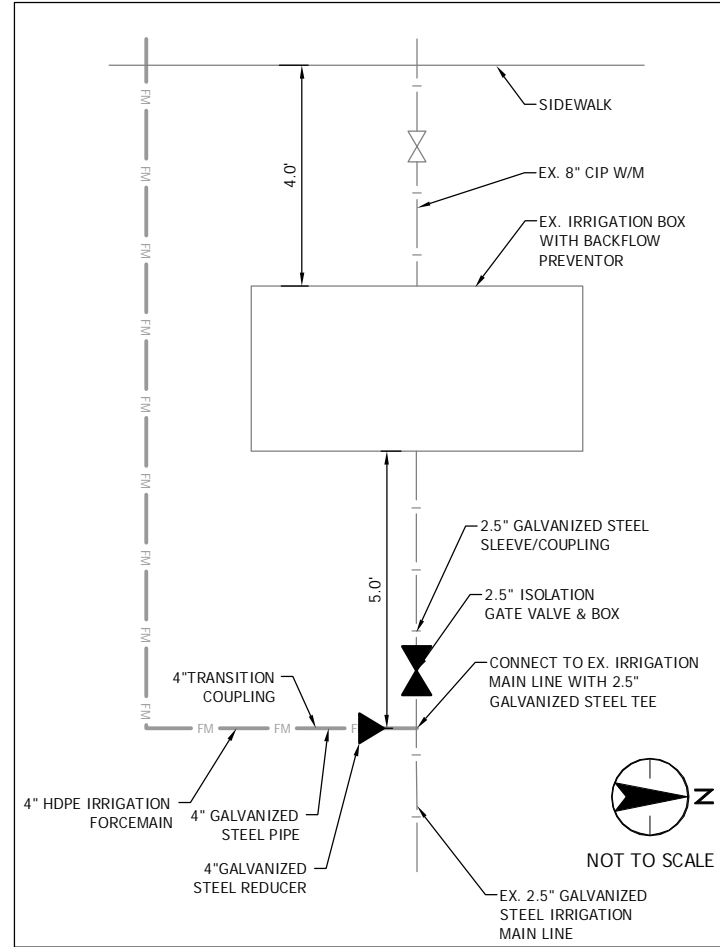
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NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
STORM WATER REUSE BOOSTER STATION PLAN

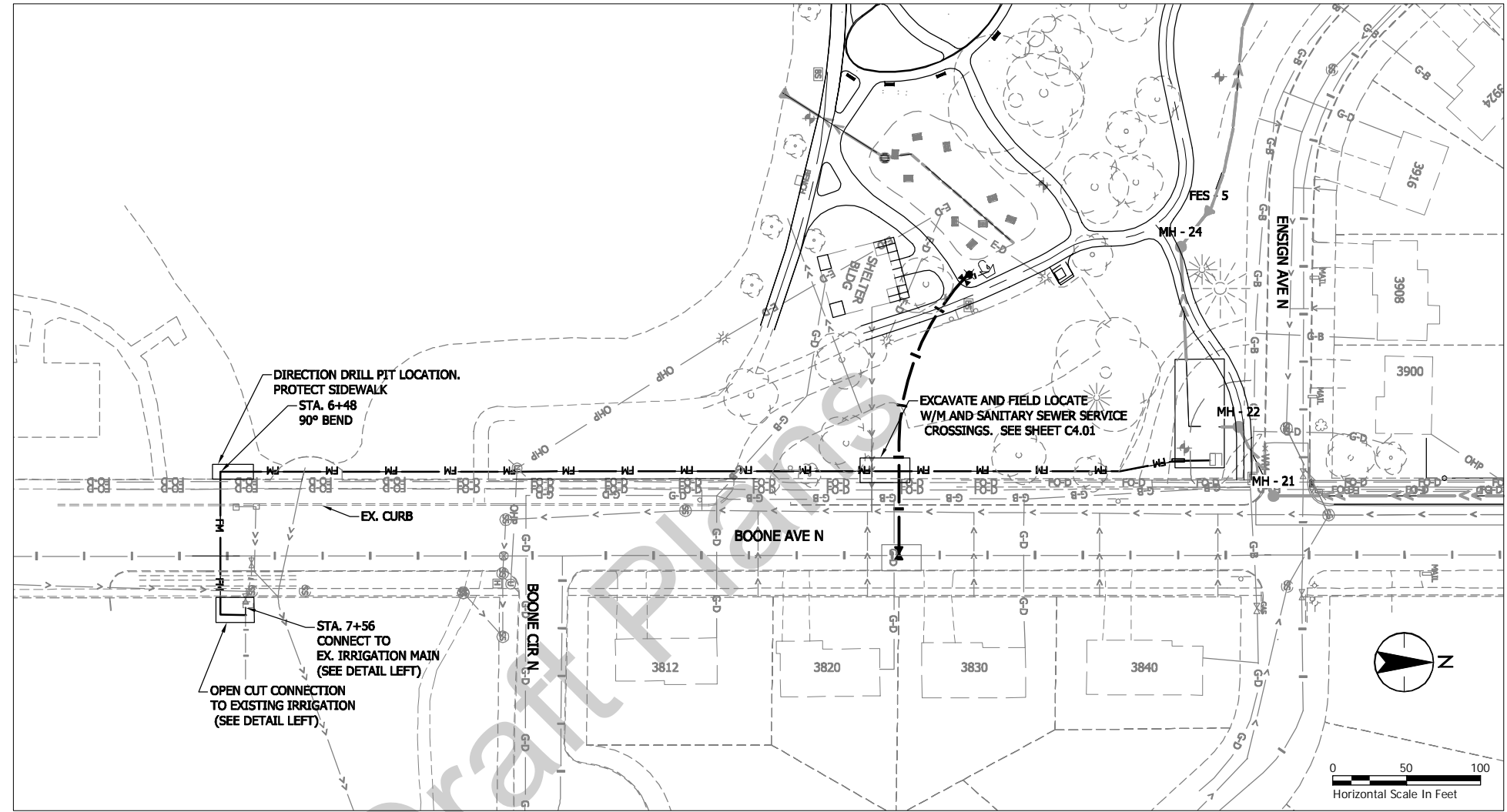
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SURVEY
DRAWN MHL
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CHECKED MRR
APPROVED TLG
PROJ. NO. 193802816

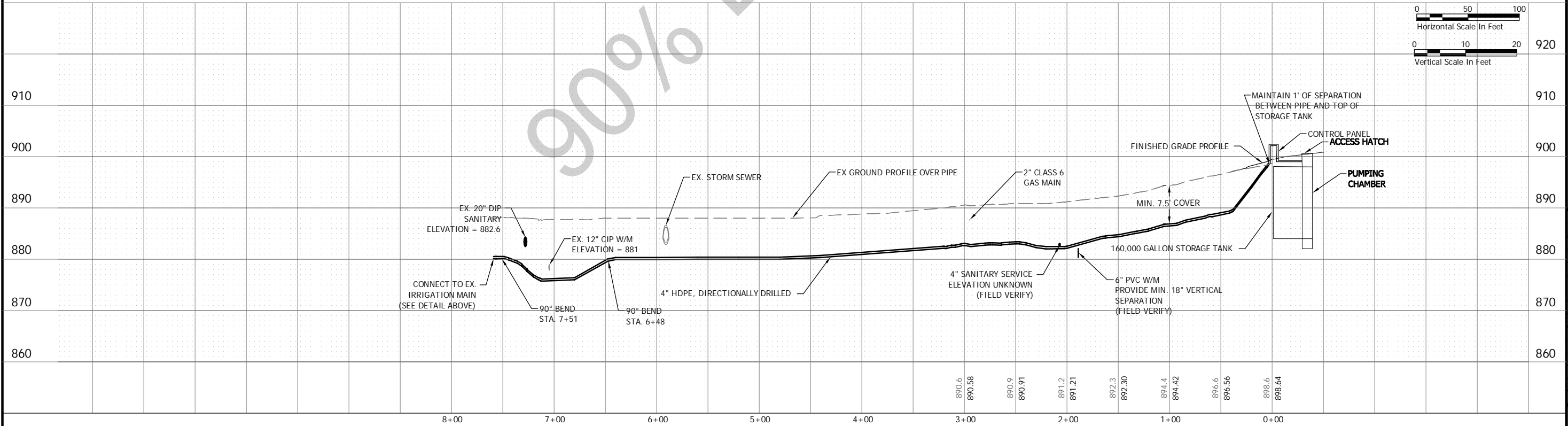
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IRRIGATION CONNECTION DETAIL



NORTHWOOD PARK/ BOONE AVE N



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Drawing Name: V:\1938\active\193802816\CAD\DWG\193802816_P401.dwg
User: 193802816_BORDER
Scale: 1/8"=1'-0"

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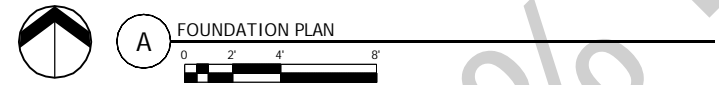
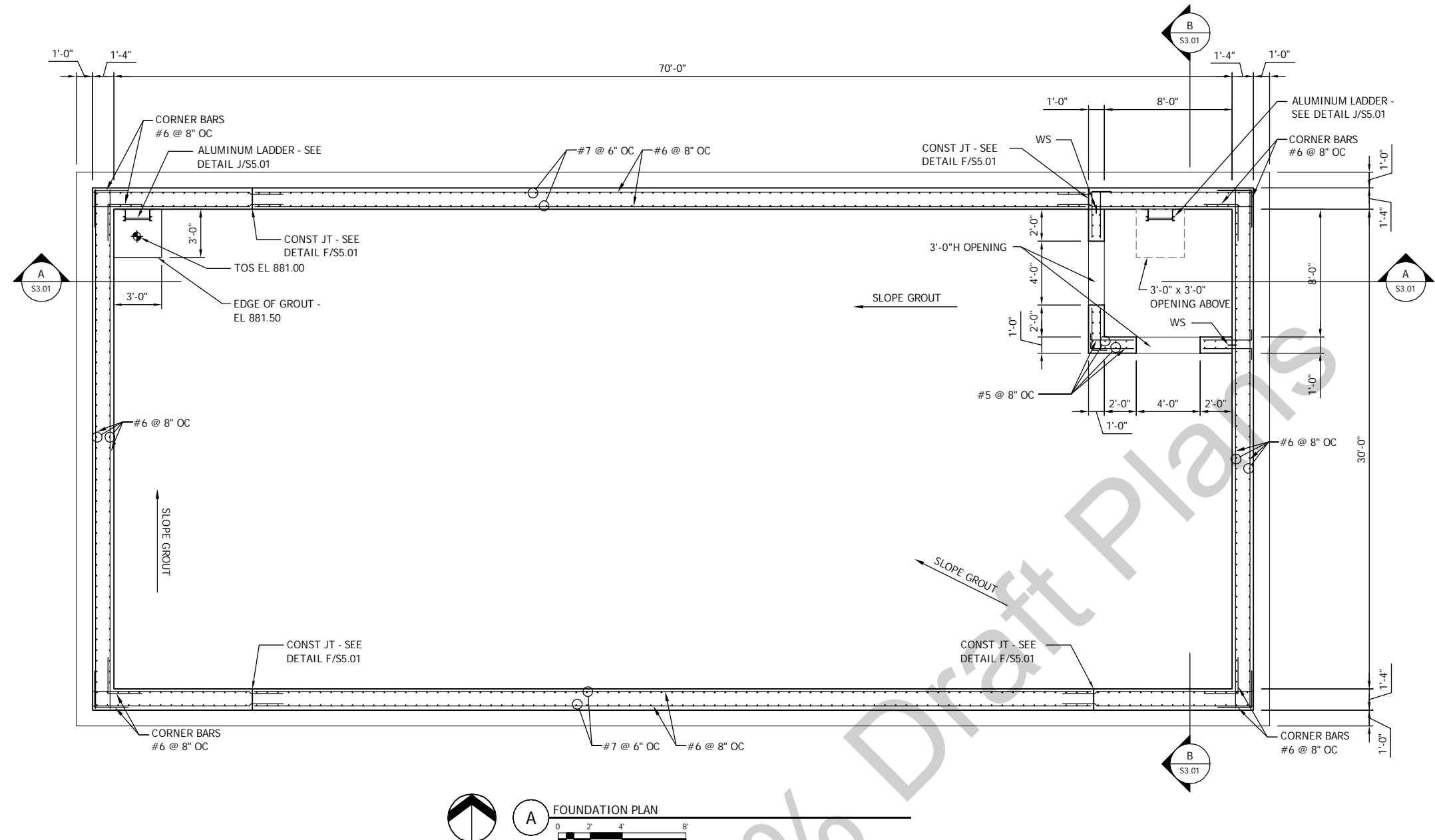
NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
STORM RE-USE FORCEMAIN PLAN AND PROFILE

NO.	REVISION	DATE

SURVEY	
DRAWN	ACD
DESIGNED	CWL
CHECKED	CWL
APPROVED	CWL
PROJ. NO.	193802816
SHEET NUMBER	P4.01

THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS DO NOT SCALE THE DRAWING. ANY ERRORS OR OMISSIONS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER. NO USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.

Plot Date: 10/30/2016 12:57pm
Drawing Name: V:\1938\active\193802816\CAD\DWG\193802816_5101.dwg
User: 193802816_BORNER 193802816_XTAD 193802816_XTAD



STRUCTURAL NOTES (CONT):

CONSTRUCTION NOTES:

1. EXCAVATION
 - A. CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TEMPORARY SHORING AND BRACING NECESSARY TO PROTECT PERSONNEL AND PROPERTY FROM INJURY OR DAMAGE DURING CONSTRUCTION OPERATION.
2. CONCRETE
 - A. LAP SPLICES AND 90 DEGREE END HOOKS SHALL BE AS SHOWN BELOW UNLESS NOTED.

REINF BAR SIZE	SLAB, WALL, COLUMN		BEAMS		90 DEG END HOOK
	BAR LAP	TOP BAR *	BAR LAP	TOP BAR *	
#3	19 IN	24 IN	28 IN	36 IN	6 IN
#4	25 IN	32 IN	37 IN	48 IN	8 IN
#5	31 IN	40 IN	46 IN	60 IN	10 IN
#6	37 IN	48 IN	56 IN	72 IN	12 IN
#7	54 IN	70 IN	81 IN	105 IN	14 IN

* TOP BAR LAP SPLICES ARE HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 12 IN. OF CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE.

- B. REINFORCING BARS SHALL HAVE THE FOLLOWING CONC. COVER UNLESS NOTED.
 1. CONCRETE CAST AGAINST EARTH 3"
 2. ALL OTHER CONCRETE EXPOSED TO WEATHER OR WATER 2"
 3. INTERIOR SLAB, WALLS AND JOISTS 3/4"
- C. CONCRETE SHALL BE PLACED WITHOUT CONSTRUCTION JOINTS EXCEPT WHERE SPECIFICALLY SHOWN ON THE DRAWINGS OR AS APPROVED BY THE ENGINEER.
- D. BEVEL ALL EXPOSED CORNERS OF CONCRETE 3/4" x 3/4".

FOUNDATION NOTES:

1. PLACE AND COMPACT STRUCTURAL FILL 1'-0" THICK MIN. BELOW FOUNDATION SOILS PRIOR TO PLACING CONCRETE.
2. PROVIDE EMBEDDED DOWELS IN FOOTINGS TO MATCH ALL VERTICAL COLUMN REINFORCING. SECURELY TIE DOWELS PRIOR TO PLACING CONCRETE, UNO.

STRUCTURAL NOTES:

CODES:
IBC 2012, ASCE 7-10, ACI 318-11, ACI 350-06

DESIGN LOADS:

1. DEAD LOADS
 - CONCRETE 150 PSF
2. LIVE LOADS
 - GROUND 250 PSF
3. FLUIDS 62.4 PCF
4. LATERAL LOADS

DESIGN WATER TABLE EL 884.00
SOIL UNIT WT., DRY 120 PCF
φ 30 DEGREES
SURFACE SURCHARGE 250 PSF
SOIL BELOW WATER TABLE 90 PSF/FT

NET ALLOWABLE BEARING PRESSURE 2000 PSF

MATERIAL:

1. CONCRETE 4,000 PSI AT 28 DAYS, TYPE I
2. REINFORCEMENT BARS ASTM A615, GRADE 60
3. STRUCTURAL FILL COURSE AGGREGATE PER ASTM C33 #67 GRADATION REQUIREMENTS

REQUIRED SPECIAL INSPECTIONS

DESCRIPTION OF WORK IBC SECTION 1704	INSPECTION		TESTING		N/A	REMARKS
	YES	NO	YES	NO		
1. CONCRETE	•		•			
2. BOLTS INSTALLED IN CONCRETE	•			•		
3. DUCTILE MOMENT-RES CONCRETE FRAME					•	
4. REINF STEEL AND PRESTRESSING STEEL	•		•			
5. WELDING					•	
6. HIGH-STRENGTH BOLTING					•	
7. STRUCTURAL MASONRY					•	
8. REINFORCED GYPSUM CONC					•	
9. INSULATING-CONCRETE FILL					•	
10. SPRAY-APPLIED FIREPROOFING					•	
11. PILING, DRILLED PIERS AND CAISSONS					•	
12. SHOTCRETE					•	
13. SPECIAL GRADING EXC AND FILLING					•	
14. SPECIAL CASES					•	
15. WOOD					•	



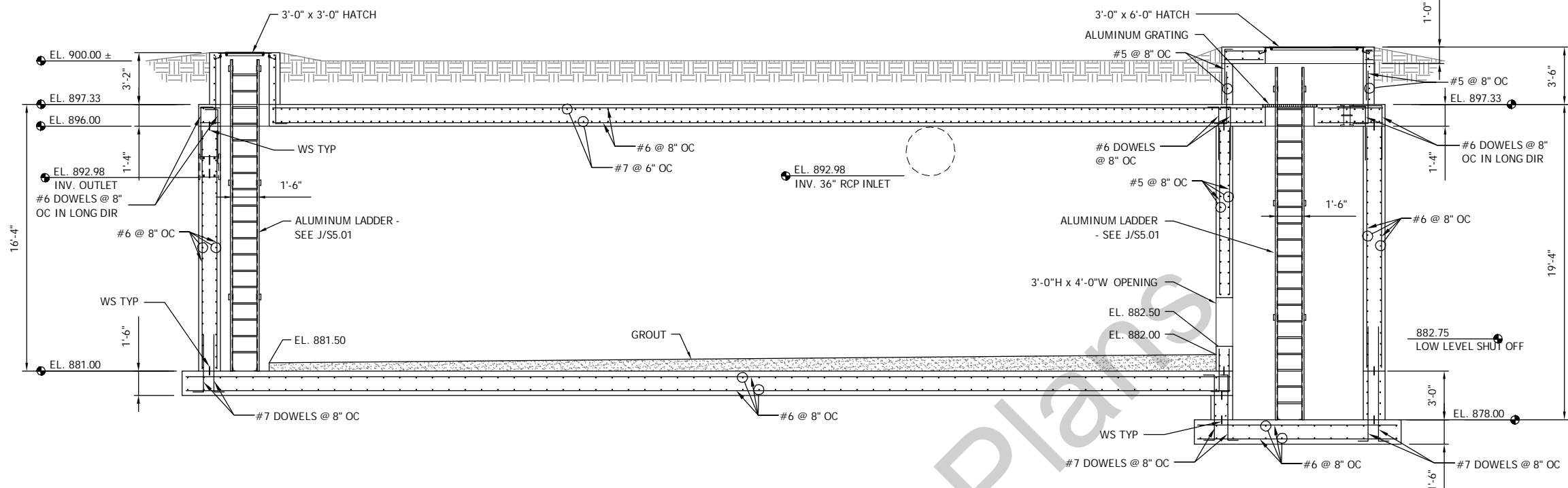
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PRINT NAME: BRIAN G. BELLEMAIRE
SIGNATURE: _____
DATE: _____ LIC. NO. 5637B

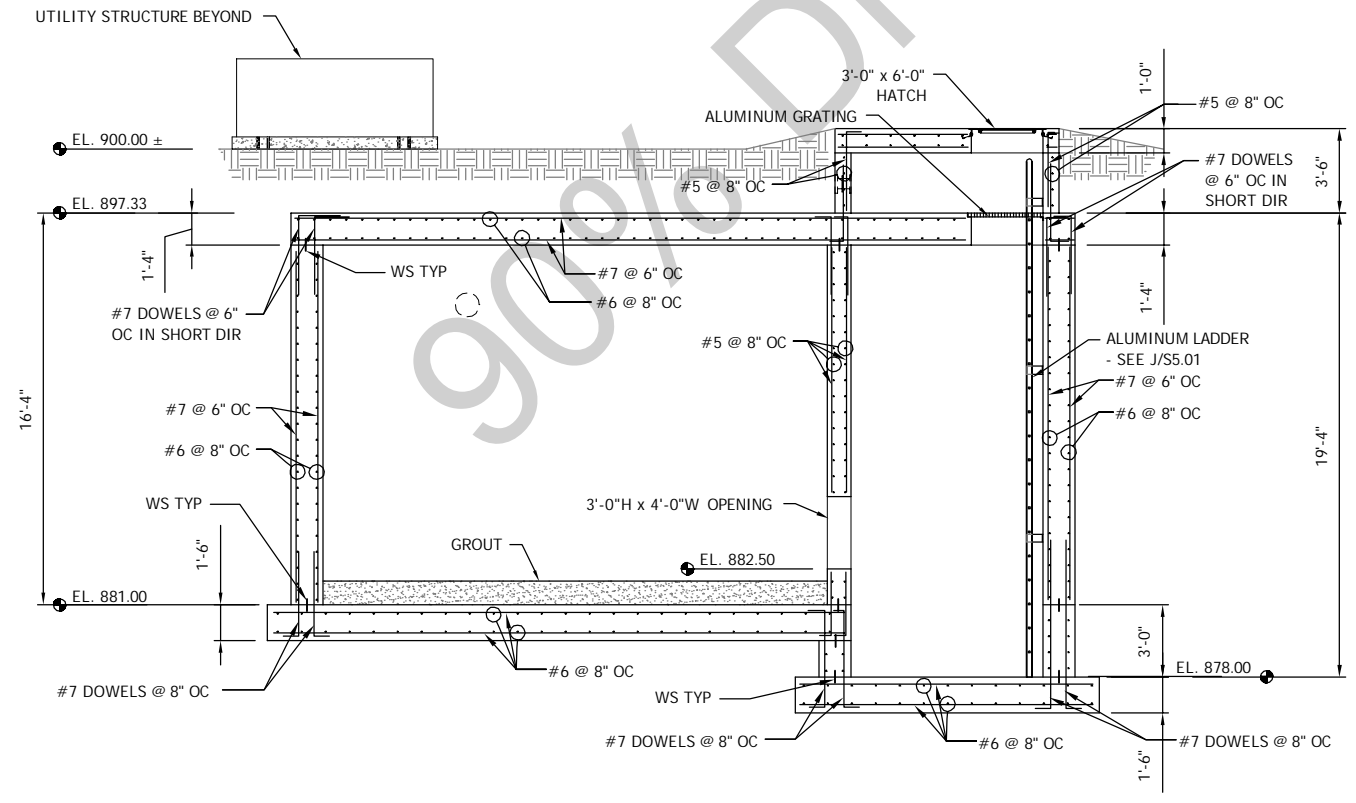
NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
STORM WATER REUSE BOOSTER STATION STRUCTURAL FOUNDATION PLAN AND NOTES

NO	REVISION	DATE
SURVEY _____		
DRAWN TRJ		
DESIGNED BGB		
CHECKED PJC		
APPROVED BGB		
PROJ. NO. 193802816		
SHEET NUMBER		
S1.01		

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A SECTION
0 2 4 8



B SECTION
0 2 4 8

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PRINT NAME: BRIAN G. BELLEMAIRE
SIGNATURE: _____
DATE: _____ LIC. NO. 58378

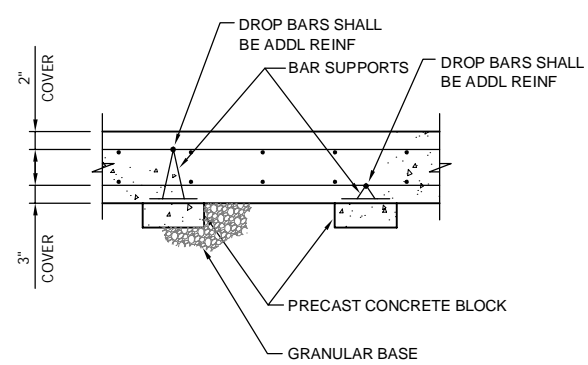
NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
STORM WATER REUSE BOOSTER STATION STRUCTURAL SECTIONS

NO	REVISION	DATE

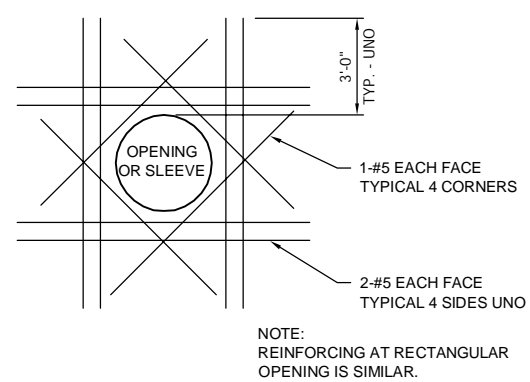
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APPROVED BGB
PROJ. NO. 193802816

SHEET NUMBER
S3.01

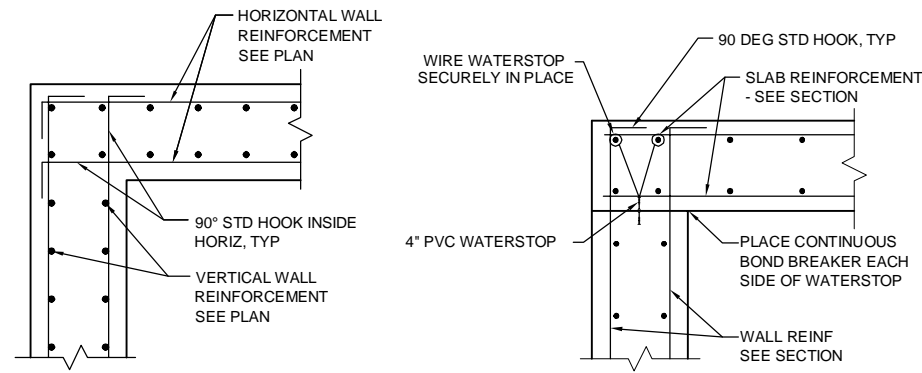
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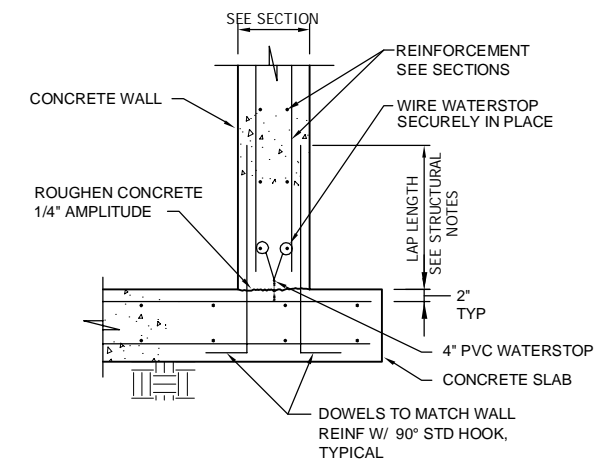
A REINFORCING SUPPORT
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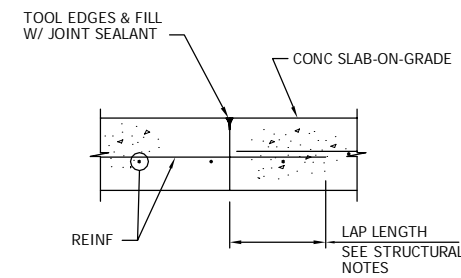
B EXTRA REINFORCING AT OPENINGS
NO SCALE



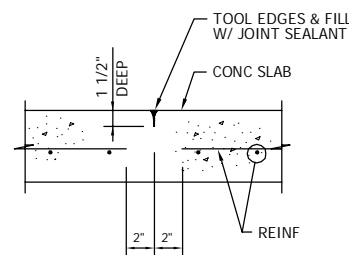
C REINFORCING - WALL CORNER
NO SCALE



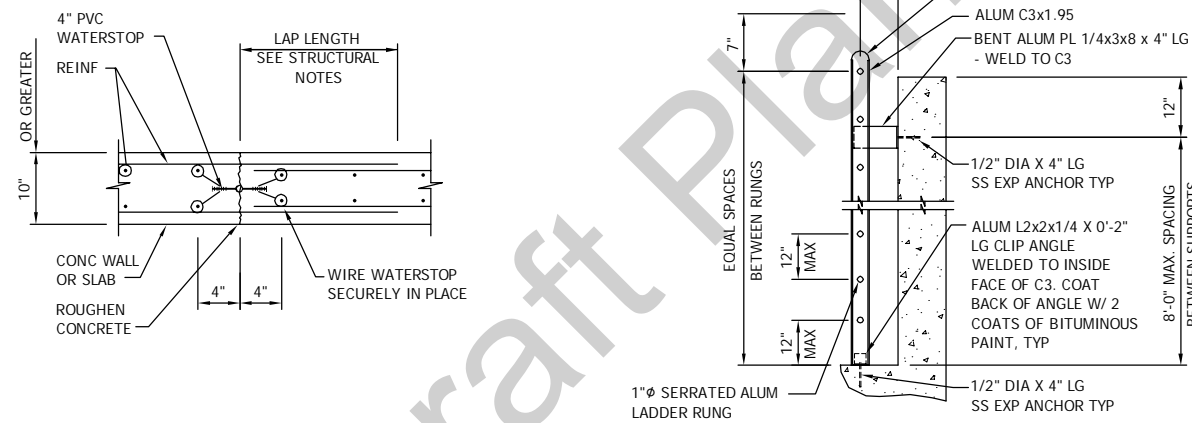
E JOINT
NO SCALE



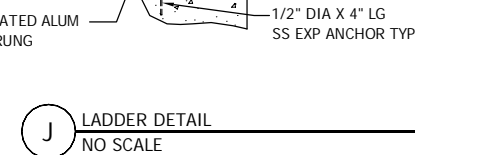
F CONSTRUCTION JOINT
NO SCALE



G CONTROL JOINT
NO SCALE



H CONSTRUCTION JOINT AT BASE SLAB
NO SCALE



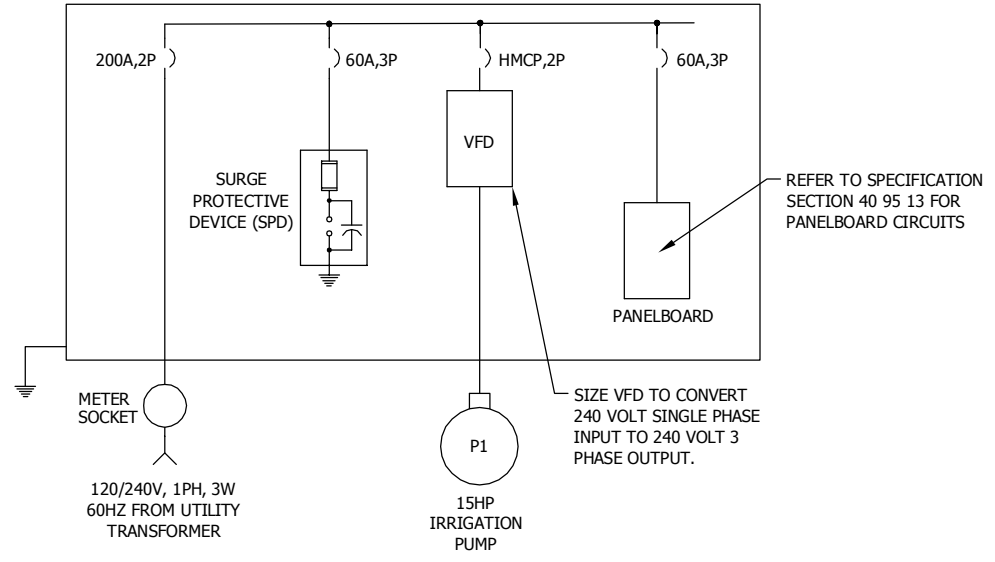
J LADDER DETAIL
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90% Draft Plans

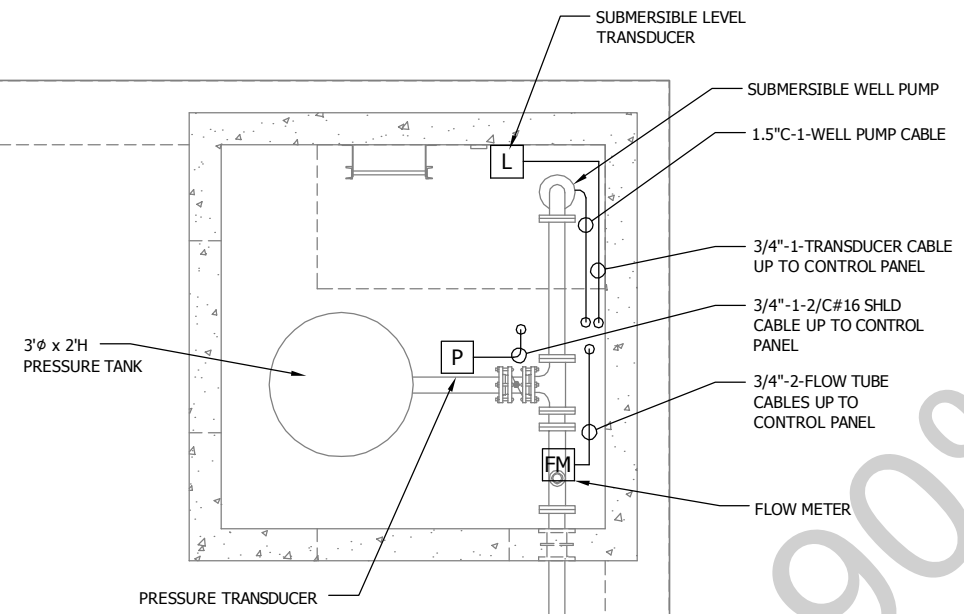
NO	REVISION	DATE

SURVEY	TRJ
DRAWN	TRJ
DESIGNED	BGB
CHECKED	PJC
APPROVED	BGB
PROJ. NO.	193802816

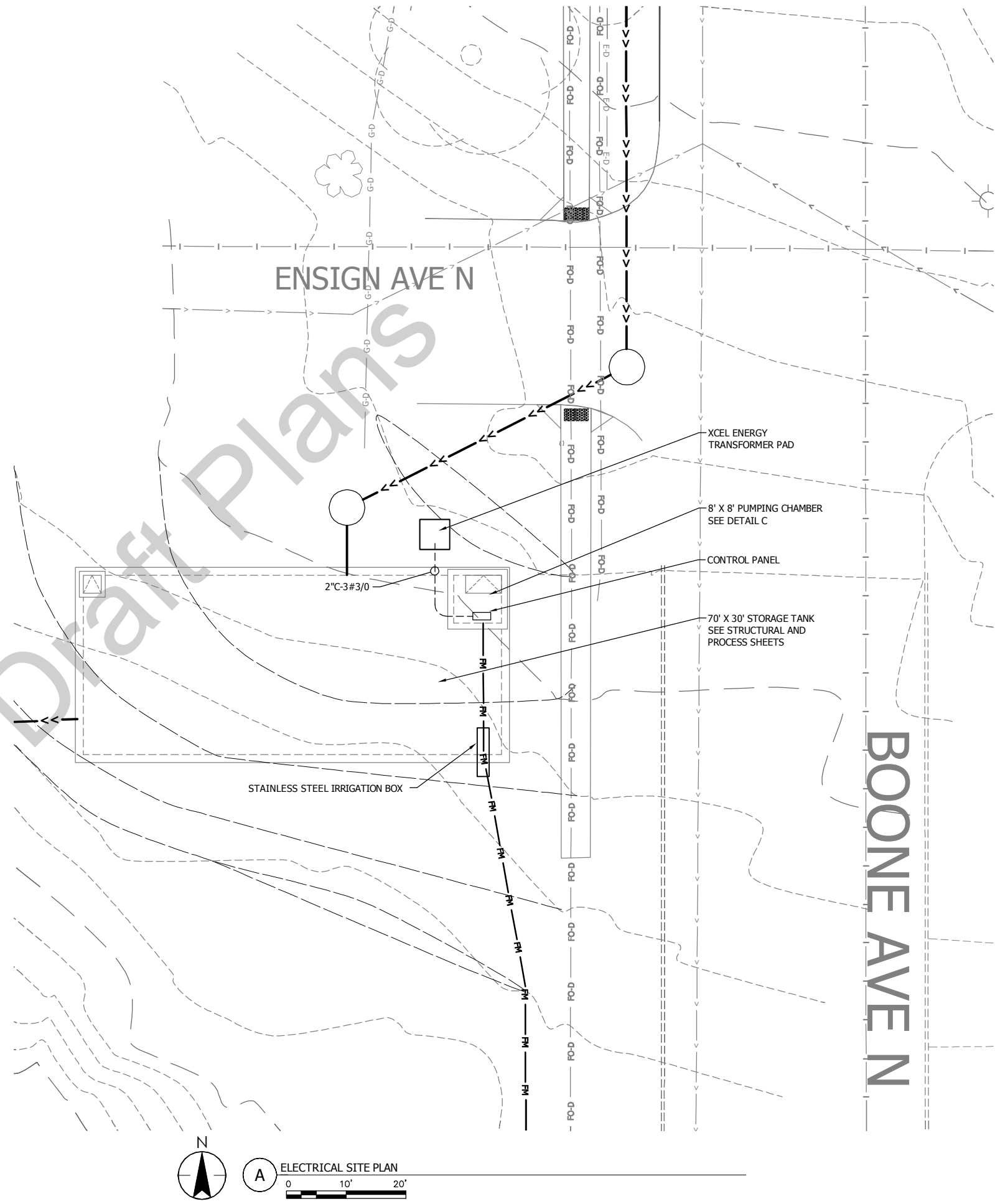
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B ONE LINE DIAGRAM
NO SCALE



C PUMPING CHAMBER ELECTRICAL PLAN
0 2 4 8



A ELECTRICAL SITE PLAN
0 10' 20'

Plot Date: 10/30/2015 - 12:34pm
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User: 193802816\BORDER_193802816_CONCEPT_A_193802816.XSMT_193802816_XINA_193802816_XINA

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PRINT NAME: BEYON S. SCHMIDT
SIGNATURE: _____
DATE: _____ LIC. NO. 51544

NEW HOPE, MINNESOTA
2016 NORTHWOOD LAKE IMPROVEMENTS
CITY PROJECT NO. 938
STORMWATER STORAGE TANK ELECTRICAL PLAN AND DETAILS

NO	REVISION	DATE

SURVEY
DRAWN TRJ
DESIGNED CMWD
CHECKED CMWS
APPROVED CMWS
PROJ. NO. 193802816
SHEET NUMBER
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