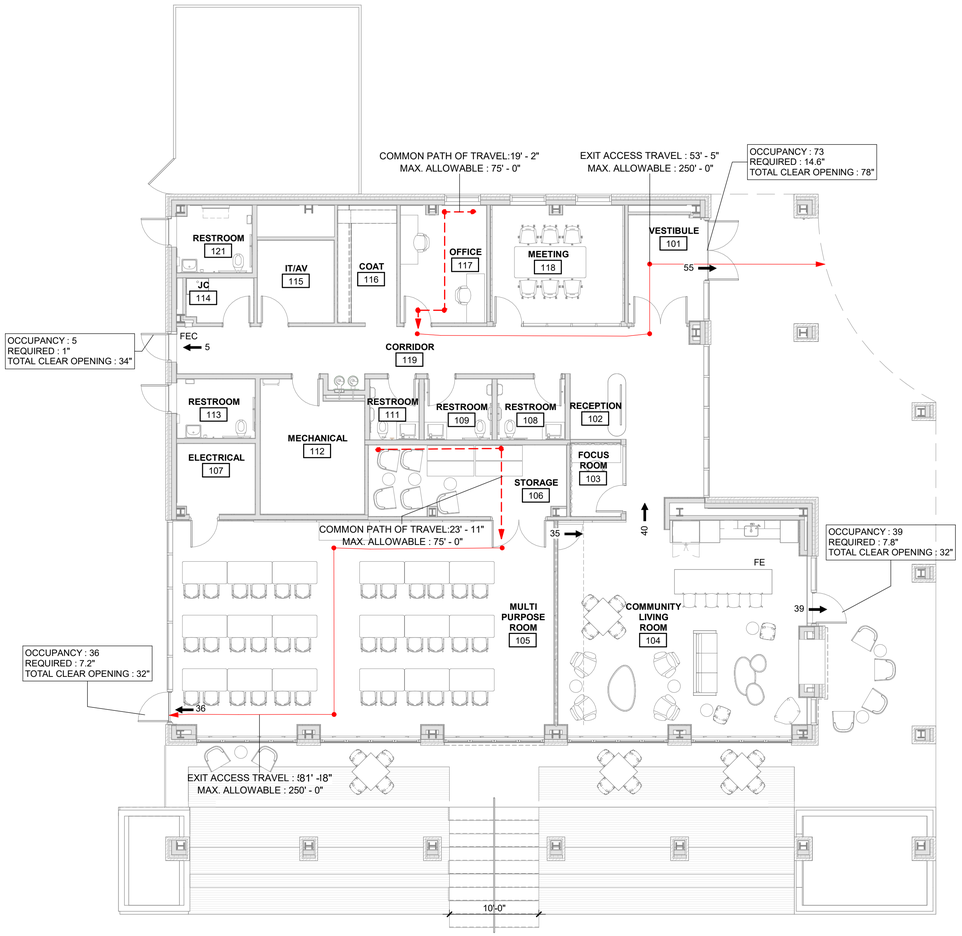


NORTH

LAKE HOUSE

LIFE SAFETY PLAN - AREA A

SCALE: 1/8" = 1'-0"

CODE LEGEND

# →	ROOM EXITS; # INDICATES OCCUPANT LOAD
FE	FIRE EXTINGUISHER (BRACKET MOUNTED)
FEC	FIRE EXTINGUISHER CABINET
OCCUPANCY : ## REQUIRED : ##" TOTAL CLEAR OPENING : ##"	NUMBER OF OCCUPANTS IN SPACE REQUIRED EGRESS WIDTH (0.15", 0.2", 0.3") TOTAL CLEAR OPENING WIDTH PROVIDED
COMMON PATH OF TRAVEL:X'-X" MAX. ALLOWABLE : X'-X"	COMMON PATH OF TRAVEL : DISTANCE TO REACH A POINT WHERE TWO SEPARATE PATHS TO EXITS ARE AVAILABLE. MAXIMUM ALLOWABLE DISTANCE PER CODE
EXIT ACCESS TRAVEL : X'-X" MAX. ALLOWABLE : X'-X"	EXIT ACCESS TRAVEL : DISTANCE FROM THE MOST REMOTE POINT TO AN EXIT (INCLUDES COMMON PATH OF TRAVEL) MAXIMUM ALLOWABLE DISTANCE PER CODE

BUILDING CODE INFORMATION

APPLICABLE CODES AND STANDARDS

2021 MICHIGAN BUILDING CODE
2021 MICHIGAN PLUMBING CODE
2021 MICHIGAN MECHANICAL CODE
2023 NATIONAL ELECTRICAL CODE (WITH MICHIGAN AMENDMENTS PART 8 RULES)
2021 MICHIGAN COMMERCIAL ENERGY CODE
2019 ANSI/ASHRAE/IES STANDARD 90.1
2021 INTERNATIONAL FIRE CODE
2017 ICC A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
2019 NFPA 72, NATIONAL FIRE ALARM CODE

DESCRIPTION / CLASSIFICATION OF WORK

THE INTENT OF THIS PROJECT IS TO DEVELOP A NEW PUBLIC SPACE AT BELLEVILLE LAKE WITHIN VAN BUREN TOWNSHIP. THE PROJECT INCLUDES THE CONSTRUCTION OF TWO NEW BUILDINGS AND ASSOCIATED SITE IMPROVEMENTS TO SUPPORT COMMUNITY USE AND PUBLIC ACCESS.

LAKE HOUSE IS A NEW ONE-STORY BUILDING DESIGNED TO ACCOMMODATE PUBLIC GATHERINGS AND COMMUNITY EVENTS.

ITEM				CODE REFERENCE
MBC CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION				
USE GROUP: A3 ASSEMBLY (LECTURE HALLS)				302 & 303.4
B BUSINESS (ACCESSORY < 10%)				302 & 304.1
CONSTRUCTION TYPE				
TYPE IIB NONCOMBUSTIBLE, SPRINKLERED				602.2
MBC CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS				
ALLOWABLE HEIGHT:	75 FEET	3 STORIES		TABLE 504.3
ACTUAL HEIGHT:	21 FEET	1 STORY		& 504.4
ALLOWABLE AREA (PER STORY):				TABLE 506.2
A3 ASSEMBLY	38,000 SF			
ACTUAL AREA (SF):	4,044 SF FIRST FLOOR			
	3,644 SF COVERED EXTERIOR PATIO			
	7,688 SF TOTAL			
MIXED USE AND OCCUPANCY				508
NO SEPARATION REQUIRED FOR ACCESSORY OCCUPANCIES				508.2
AGGREGATE < 10% OF FLOOR AREA OF STORY WHERE LOCATED				508.2.3

MBC CHAPTER 6 - TYPES OF CONSTRUCTION

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HRS)

ITEM	RATING	PROVIDED	UL NO.	REMARKS
PRIMARY STRUCTURAL FRAME	0	0	--	TABLE 601
BEARING WALLS - EXTERIOR	0	0	--	TABLE 601
BEARING WALLS - INTERIOR	0	0	--	TABLE 601
NONBEARING WALLS - EXTERIOR (X>30)	0	0	--	TABLE 705.5
NONBEARING WALLS - INTERIOR	0	0	--	TABLE 601
FLOOR CONSTRUCTION	0	0	--	TABLE 601
ROOF CONSTRUCTION	0	0	--	TABLE 601

COMBUSTIBLE MATERIAL IN TYPE II CONSTRUCTION (WOOD MULLIONS, INTERIOR TRIM) SHALL BE CLASS C AND SHALL NOT EXCEED 10% OF SPECIFIC WALL TO WHICH IT IS ATTACHED — 603.1.8 & 806.7

MBC CHAPTER 9 - FIRE PROTECTION SYSTEMS

AUTOMATIC SPRINKLER SYSTEMS — 903
THIS BUILDING IS EQUIPPED WITH AN AUTOMATIC SPRINKLERED SYSTEM — 903.1.1

MBC CHAPTER 10 - MEANS OF EGRESS

DESIGN OCCUPANT LOAD — TABLE
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT — 1004.1.2

FUNCTION OF SPACE	TOTAL AREA GROSS/NET	AREA PER OCCUPANT	OCCUPANT LOAD
ASSEMBLY, UNCONCENTRATED	1,950	15 GROSS	130
BUSINESS AREAS (RECEPTION/OFFICE/FOCUS)	234	150 GROSS	2
ACCESSORY STORAGE, MECH EQUIPMENT	694	300 GROSS	3
TOTALS	2,878 GSF		135 OCC

MEANS OF EGRESS COMPONENTS (SPRINKLERED*) — 1005.3.1 & 1005.3.2

COMPONENT	OCCUPANTS	WIDTH	REQUIRED	PROVIDED
EXTERIOR EXIT DOORS	135	0.2"	27"	176" CLEAR

MBC CHAPTER 29 - PLUMBING SYSTEMS

2021 MICHIGAN PLUMBING CODE — TABLE 403.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

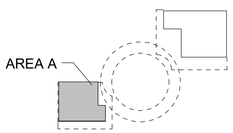
TOTAL OCCUPANTS: 133 = 67 EACH GENDER

TWO SINGLE-OCCUPANT EXTERIOR RESTROOMS ARE EXCLUDED FROM THE REQUIRED FIXTURE COUNT CALCULATION.

TOTAL FIXTURES

	REQUIRED		PROVIDED	
MALE	1 WC	1 LAV	0 WC + 0 UR	0 LAV
FEMALE	2 WC	1 LAV	0 WC	0 LAV
SINGLE-OCCUPANT RESTROOM			3 WC	3 LAV
TOTAL	3 WC	2 LAV	3 WC + 0 UR	3 LAV
	1 DF		1 DF	
	1 SS		1 SS	

KEY PLAN



NORTH

fishbeck
Engineers | Architects | Scientists | Constructors

Van Buren Charter Township
Van Buren Township, MI

The Lakeside Park

REVISIONS

10/12/2026	BIDS & PERMIT
09/21/2026	CD PEER REVIEW
09/09/2026	CD TEAM REVIEW
08/10/2026	CD 50% PROGRESS
06/22/2026	DD OWNER REVIEW
06/15/2026	DD PEER REVIEW
06/08/2026	DD 90 % PROGRESS
05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	IOLKHOVESKA
Designer	IOLKHOVETSKA
Reviewer	WLRAPSON
Manager	CKRETOVIC

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PROJECT NO.
2500281

SHEET NO.
G201

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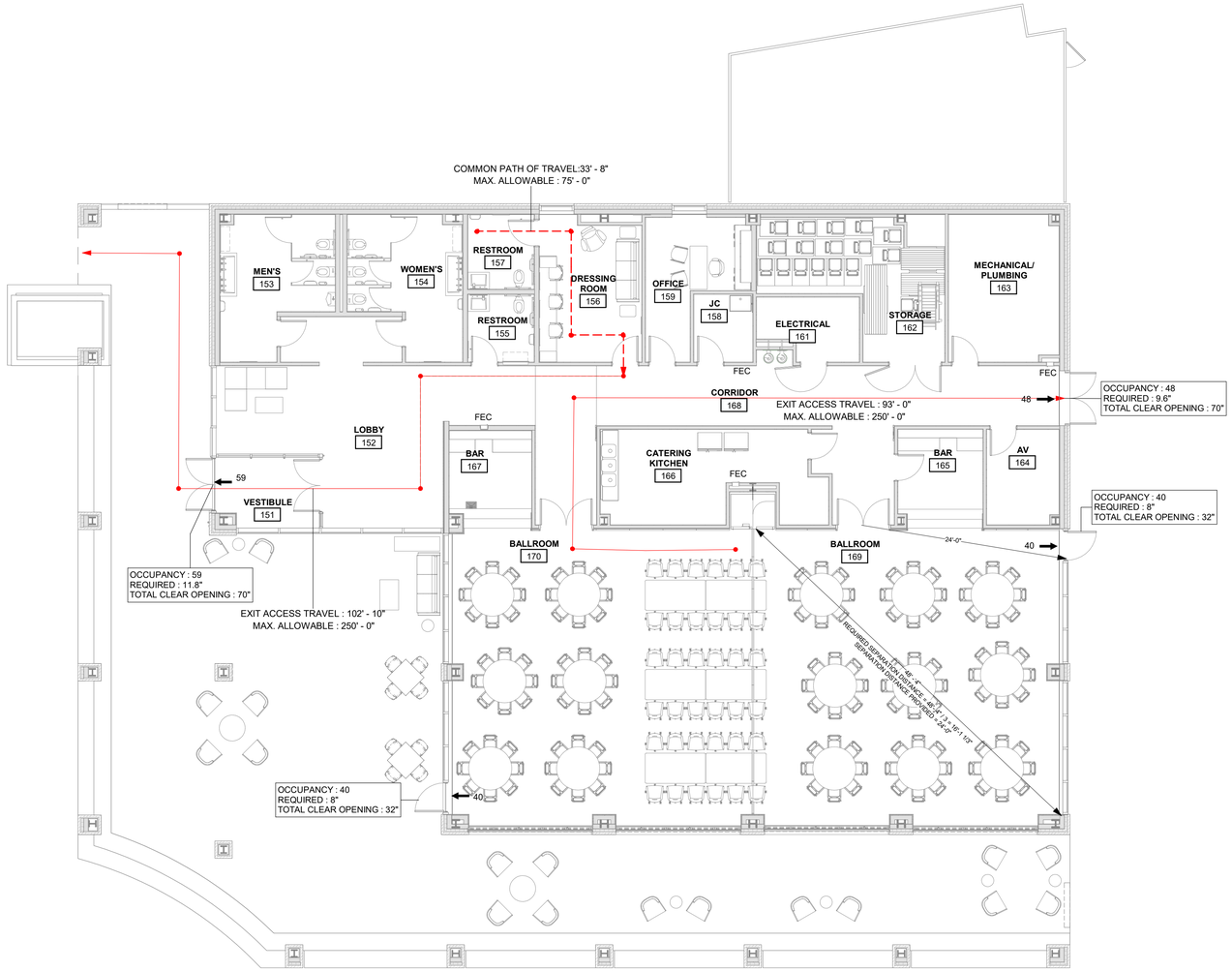

LAKE HALL

LIFE SAFETY PLAN - AREA B

SCALE: 1/8" = 1'-0"

NORTH

CODE LEGEND

# →	ROOM EXITS; # INDICATES OCCUPANT LOAD
FE	FIRE EXTINGUISHER (BRACKET MOUNTED)
FEC	FIRE EXTINGUISHER CABINET
OCCUPANCY : ## REQUIRED : ##" TOTAL CLEAR OPENING : ##"	NUMBER OF OCCUPANTS IN SPACE REQUIRED EGRESS WIDTH (0.15", 0.2", 0.3") TOTAL CLEAR OPENING WIDTH PROVIDED
COMMON PATH OF TRAVEL:X'-X" MAX. ALLOWABLE : X'-X"	COMMON PATH OF TRAVEL : DISTANCE TO REACH A POINT WHERE TWO SEPARATE PATHS TO EXITS ARE AVAILABLE. MAXIMUM ALLOWABLE DISTANCE PER CODE
EXIT ACCESS TRAVEL : X'-X" MAX. ALLOWABLE : X'-X"	EXIT ACCESS TRAVEL : DISTANCE FROM THE MOST REMOTE POINT TO AN EXIT (INCLUDES COMMON PATH OF TRAVEL) MAXIMUM ALLOWABLE DISTANCE PER CODE

BUILDING CODE INFORMATION

APPLICABLE CODES AND STANDARDS

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2019 ANSI/ASHRAE/IES STANDARD 90.1
2021 INTERNATIONAL FIRE CODE
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LAKE HALL IS A NEW ONE-STORY BUILDING DESIGNED TO ACCOMMODATE PRIVATE GATHERINGS AND LARGER PUBLIC EVENTS.

ITEM — CODE REFERENCE

MBC CHAPTER 6 - TYPES OF CONSTRUCTION

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HRS)

ITEM	RATING	PROVIDED	UL NO.	REMARKS
PRIMARY STRUCTURAL FRAME	0	0	--	TABLE 601
BEARING WALLS - EXTERIOR	0	0	--	TABLE 601
BEARING WALLS - INTERIOR	0	0	--	TABLE 601
NONBEARING WALLS - EXTERIOR (X>30)	0	0	--	TABLE 705.5
NONBEARING WALLS - INTERIOR	0	0	--	TABLE 601
FLOOR CONSTRUCTION	0	0	--	TABLE 601
ROOF CONSTRUCTION	0	0	--	TABLE 601

CONSTRUCTION TYPE
TYPE IIB NONCOMBUSTIBLE, SPRINKLERED — 602.2

COMBUSTIBLE MATERIAL IN TYPE II CONSTRUCTION (WOOD MULLIONS, INTERIOR TRIM) SHALL BE CLASS C AND SHALL NOT EXCEED 10% OF SPECIFIC WALL TO WHICH IT IS ATTACHED — 603.1.8 & 806.7

MBC CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION

USE GROUP: A2 ASSEMBLY (BANQUET HALLS) — 302 & 303.3
B BUSINESS (ACCESSORY < 10%) — 302 & 304.1

MBC CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

ALLOWABLE HEIGHT: 75 FEET 3 STORIES — TABLE 504.3
ACTUAL HEIGHT: 24 FEET 1 STORY — & 504.4

ALLOWABLE AREA (PER STORY): — TABLE 506.2
A2 ASSEMBLY 38,000 SF

ACTUAL AREA (SF): 6,213 SF FIRST FLOOR
3,638 SF COVERED EXTERIOR PATIO
9,851 SF TOTAL

MIXED USE AND OCCUPANCY — 508
NO SEPARATION REQUIRED FOR ACCESSORY OCCUPANCIES — 508.2
AGGREGATE < 10% OF FLOOR AREA OF STORY WHERE LOCATED — 508.2.3

MBC CHAPTER 9 - FIRE PROTECTION SYSTEMS

AUTOMATIC SPRINKLER SYSTEMS — 903
THIS BUILDING IS EQUIPPED WITH AN AUTOMATIC SPRINKLERED SYSTEM — 903.1.1

MBC CHAPTER 10 - MEANS OF EGRESS

DESIGN OCCUPANT LOAD — TABLE
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT — 1004.1.2

FUNCTION OF SPACE	TOTAL AREA GROSS/NET	AREA PER OCCUPANT	OCCUPANT LOAD
ASSEMBLY, UNCONCENTRATED	2,422	15 GROSS	162
KITCHEN (BAR/CATERING KITCHEN)	499	200 GROSS	3
BUSINESS AREAS, CONCENTRATED (OFFICE)	150	150 GROSS	1
LOCKER ROOM (DRESSING ROOM)	223	50 GROSS	5
GALLERY (LOBBY)	374	30 NET	13
ACCESSORY STORAGE, MECH EQUIPMENT	743	300 GROSS	3
TOTALS	4,411 GSF		187 OCC

MEANS OF EGRESS COMPONENTS (SPRINKLERED*) — 1005.3.1 & 1005.3.2

COMPONENT	OCCUPANTS	WIDTH	REQUIRED	PROVIDED
EXTERIOR EXIT DOORS	187	0.2"	37.4"	204" CLEAR

MBC CHAPTER 29 - PLUMBING SYSTEMS

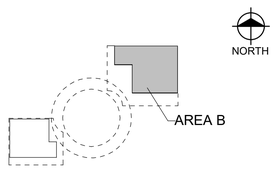
2021 MICHIGAN PLUMBING CODE — TABLE 403.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

TOTAL OCCUPANTS: 187 = 94 EACH GENDER

TOTAL FIXTURES

	REQUIRED		PROVIDED	
MALE	2 WC	1 LAV	2 WC + 1 UR	2 LAV
FEMALE	2 WC	1 LAV	3 WC	2 LAV
SINGLE-OCCUPANT RESTROOM			2 WC	2 LAV
TOTAL	4 WC	2 LAV	7 WC + 1 UR	6 LAV
	1 DF		1 DF	
	1 SS		1 SS	

KEY PLAN



fishbeck
Engineers | Architects | Scientists | Constructors

Van Buren Charter Township
Van Buren Township, MI
The Lakeside Park

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10/12/2026	BIDS & PERMIT
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08/10/2026	CD 50% PROGRESS
06/22/2026	DD OWNER REVIEW
06/15/2026	DD PEER REVIEW
06/08/2026	DD 90 % PROGRESS
05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	IOLKHOVESKA
Designer	IOLKHOVETSKA
Reviewer	WLRAPSON
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2500281

SHEET NO.
G202

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PARCEL ID: 83081990019002
OWNER OF RECORD: HOWELL, PRENTIS
ZONE: R-1B

PARCEL ID: 83081990010002
OWNER OF RECORD: HELD, GARY
ZONE: R-1B

PARCEL ID: 83081990010003
OWNER OF RECORD: HELD, GARY
ZONE: R-1B

PARCEL ID: 83081990009701
OWNER OF RECORD: BRAMLETT, JEFFREY-DEBRA TRUST
ZONE: R-1B

PARCEL ID: 83081990022702
OWNER OF RECORD: PEREZ, ALEJANDRO
ZONE: R-1B

PARCEL ID: 83081990021701
OWNER OF RECORD: HURAIBI, SAMEER
ZONE: R-1B

PARCEL ID: 83081990014002
OWNER OF RECORD: BELLEVILLE APARTMENTS
ZONE: R-1B

PARCEL ID: 83081990006000
OWNER OF RECORD: BELLEVILLE UNITED PRESB
ZONE: R-1B

PARCEL ID: 83086010034000
OWNER OF RECORD: ENNIS, LANCE
ZONE: R-1B

PARCEL ID: 83081990008000
OWNER OF RECORD: VAN BUREN CHARTER TOWNSHIP
ZONE: R-1B

PARCEL ID: 83086010046004
OWNER OF RECORD: VUYYURU, SRINIVAS
ZONE: R-1B

PARCEL ID: 83086010046005
OWNER OF RECORD: BELLEHARBOR CIVIC ASSOC
ZONE: R-1B

PARCEL ID: 83081990020001
OWNER OF RECORD: VAN BUREN CHARTER TOWNSHIP
ZONE: C-1

PARCEL ID: 83082990012701
OWNER OF RECORD: VAN BUREN CHARTER TOWNSHIP
ZONE: NA

BELLEVILLE ROAD

QUIRK ROAD

MONUMENT BENT 52472

MH50270
RIM 680.24
INV. N 18" 670.54
INV. E 18" 670.54

MH50615
RIM 676.7

MH50616
RIM 676.7

MH10780
RIM 673.88
INV. E 12" 667.13
INV. SW 12" 665.13

MH10783
RIM 671.85
INV. NE 12" 663.70
INV. SW 15" 663.00
INV. W 12" 663.40

MH10784
RIM 669.18
INV. E 12" 663.75

MH10480
RIM 674.12
INV. WSW 12" 669.12

MH10481
RIM 673.94
INV. ENE 12" 668.94
INV. WNW 12" 668.94

MH10442
RIM 669.42
INV. SW 12" 664.27

MH10443
RIM 669.21
INV. NE 12" 664.11
INV. NW 12" 664.11

MH10528
RIM 666.95
INV. NE 15" 660.80
INV. SE 12" 658.75
INV. SW 18" 658.25
INV. NNE 12" 660.80

MH10390
RIM 664.80
INV. SW 12" 659.95

MH10389
RIM 664.49
INV. NE 12" 659.39
INV. NW 12" 659.34

STORM CB
RIM 660.41
12" RCP WNW 653.62
6" CPP E 655.77
6" CPP S 655.70

BM 200
BM 201
BM 202

N86°26'00"E 56.36' (R)
N84°21'48"E 56.72' (M)
N03°32'00"E (R)
N05°36'12"W (M)
20.00' (R&M)
BM 202 56.72' (M)
CH=S51°06'48" 489.18' (M)
L=517.75' (M) 520.30' (R)
R=446.10' (R&M)
S08°36'42"E (M)
S07°32'30"E (R)
344.90' (R&M)
S83°16'48"W (M)
S85°21'00"W (R)
221.02' (R&M)
N19°56'00"E (R)
N17°51'48"E (M)
70.00' (R&M)
197.07'(R&M)
N89°53'42"W (M)
N87°49'00"W (R)
103.38' (R&M)
S71°00'48"W (M)
S73°05'00"W (R)

WETLAND FLAGGED BY FISHBECK ON 4/4/2025

WATER WILLOWS SURVEYED BY FISHBECK ON 9/9/2026

BELLEVILLE LAKE
WATER ELEV. 649.47 (5/21/2026)

ORNAMENTAL DECIDUOUS TREE

LANDSCAPE AREA

STATUE

TRASH BIN

BENCH

CAPPED IRON

SCULPTURE

EAGLE SIGNAL BOX

ELECTRIC HAND HOLE

10" PVC PIPE WITH ELECTRIC

ELECTRIC BOX WITH OUTLET

3" PIPE

10" PVC PIPE

ELECTRIC BOX

BARRIER BLOCKS

PROPERTY LINE

B-01 B-02 B-03 B-04 B-05 B-06 B-07 B-08 B-09 B-10 B-11

NORTH

0 20 40 80

EXISTING CONDITIONS PLAN

SCALE: 1" = 40'

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17
ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

SYMBOL LEGEND

- BENCH MARK
- PROPERTY LINE
- ROW LINE
- EDGE OF WATERBODY
- SOIL BORING
- SHRUBS
- STUMP
- CONIFEROUS TREE
- DECIDUOUS TREE
- TREE LINE
- WETLAND
- EDGE OF WATER
- CONTOUR MAJOR
- CONTOUR MINOR
- LIGHT
- SIGN
- PAVED SURFACE
- EXISTING CURB
- EXISTING CURB & GUTTER
- 8" SAN — SANITARY SEWER & MANHOLE
- 12" STM — STORM SEWER & MANHOLE
- CATCH BASIN CURB AND LAWN TYPE
- 6" WTR — WATER MAIN
- HYDRANT
- 2" GAS — GAS MAIN
- ELEC — UNDERGROUND ELECTRIC
- TEL — UNDERGROUND TELEPHONE
- WATER WILLOWS

SURVEY NOTES

1. TOPOGRAPHIC SURVEY WAS COMPLETED BY FISHBECK IN 10/2025 AND REFLECTS CONDITIONS AT THAT TIME. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE PRIOR TO BIDDING TO CONFIRM EXISTING CONDITIONS AS SHOWN ON THE PLANS. REPORT ALL DISCREPANCIES TO THE ENGINEER.
2. THE HORIZONTAL AND VERTICAL INFORMATION PROVIDED IS BASED ON THE MICHIGAN STATE PLANE COORDINATE SYSTEM (SOUTH ZONE, INTERNATIONAL FEET) WITH NAD83 HORIZONTAL AND NAVD88 VERTICAL DATUM, RESPECTIVELY.
3. UNDERGROUND UTILITIES ARE SHOWN BASED ON SURFACE MANHOLE AND VALVE LOCATIONS, RECORD DRAWINGS, AND OWNER PROVIDED UTILITY MAPS AND MAY NOT BE ACCURATE. CONTRACTOR SHALL CONTACT MISS DIG PRIOR TO ANY EXCAVATION. CONTACT ENGINEER IF UTILITIES ARE FOUND IN DIFFERENT CONDITIONS THAN SHOWN ON THESE PLANS.

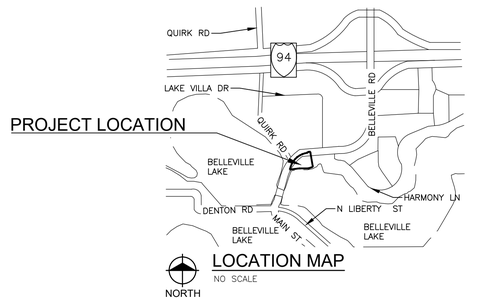
GEOTECHNICAL NOTES

1. GEOTECHNICAL FIELD INVESTIGATION AND REPORT PREPARED BY G2 CONSULTING IN JULY 2026 AND REFLECT CONDITIONS AT THAT TIME.
2. USCS SOIL CLASSIFICATION: CL LEAN CLAY

LEGAL DESCRIPTION

PARCEL ID: 83081990008000
A PARCEL OF LAND BEING PART OF THE NORTHEAST 1/4 OF SECTION 21, TOWN 3 SOUTH, RANGE 8 EAST, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHEAST CORNER OF SECTION 21; THENCE SOUTH 00°06'30" WEST, 1,365.64 FEET; THENCE NORTH 89°45'30" WEST, 5.82 FEET; THENCE ALONG A CURVE CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 499.10 FEET AND AN ARC LENGTH OF 671.33 FEET; THENCE SOUTH 86°26'00" WEST, 579.90 FEET; THENCE SOUTH 01°21'00" WEST, 60.22 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 01°21'00" WEST, APPROXIMATELY 480 FEET TO THE 655-FOOT CONTOUR LINE (USGS DATUM); THENCE NORTHWESTERLY AND SOUTHWESTERLY ALONG SAID 655-FOOT CONTOUR LINE, APPROXIMATELY 890 FEET; THENCE NORTH 07°32'30" WEST, APPROXIMATELY 333 FEET; THENCE NORTH 86°26'00" EAST, 293.58 FEET TO THE POINT OF BEGINNING. CONTAINING 1.86 ACRES, MORE OR LESS.

PARCEL ID: 83081990020001
A PARCEL OF LAND BEING PART OF THE NORTHEAST 1/4 OF SECTION 21, TOWN 3 SOUTH, RANGE 8 EAST, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHEAST 1/4 CORNER OF SECTION 21; THENCE SOUTH 01°04'30" WEST, 1,818.39 FEET; THENCE SOUTH 86°26'00" WEST, 344.13 FEET; THENCE SOUTH 07°32'30" EAST, 33.08 FEET; THENCE NORTH 86°26'00" EAST, 56.36 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 07°32'30" EAST, 344.90 FEET TO THE 655-FOOT CONTOUR LINE; THENCE SOUTH 73°05'00" WEST, 103.38 FEET; THENCE NORTH 87°49'00" WEST, 197.07 FEET; THENCE SOUTH 85°21'00" WEST, 221.02 FEET TO THE EASTERLY RIGHT-OF-WAY LINE OF BELLEVILLE ROAD; THENCE NORTH 19°56'00" EAST, 70.00 FEET ALONG SAID EASTERLY RIGHT-OF-WAY LINE; THENCE NORTHEASTERLY ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 446.10 FEET, AN ARC DISTANCE OF 520.30 FEET; THENCE NORTH 03°32'00" WEST, 20.00 FEET; THENCE NORTH 86°26'00" EAST, 56.36 FEET TO THE POINT OF BEGINNING. CONTAINING 3.02 ACRES, MORE OR LESS.



PROJECT LOCATION

LOCATION MAP

NO SCALE

NORTH

fishbeck
Engineers | Architects | Scientists | Constructors

Van Buren Charter Township

Van Buren Township, MI

The Lakeside Park

REVISIONS

10/12/2026	BIDS & PERMITS
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09/09/2026	CD TEAM REVIEW
08/10/2026	CD 50% PROGRESS
06/22/2026	DD OWNER REVIEW
06/15/2026	DD PEER REVIEW
06/08/2026	DD 90 % PROGRESS
05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	DRHOTON
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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PROJECT NO.
2500281

SHEET NO.
C101

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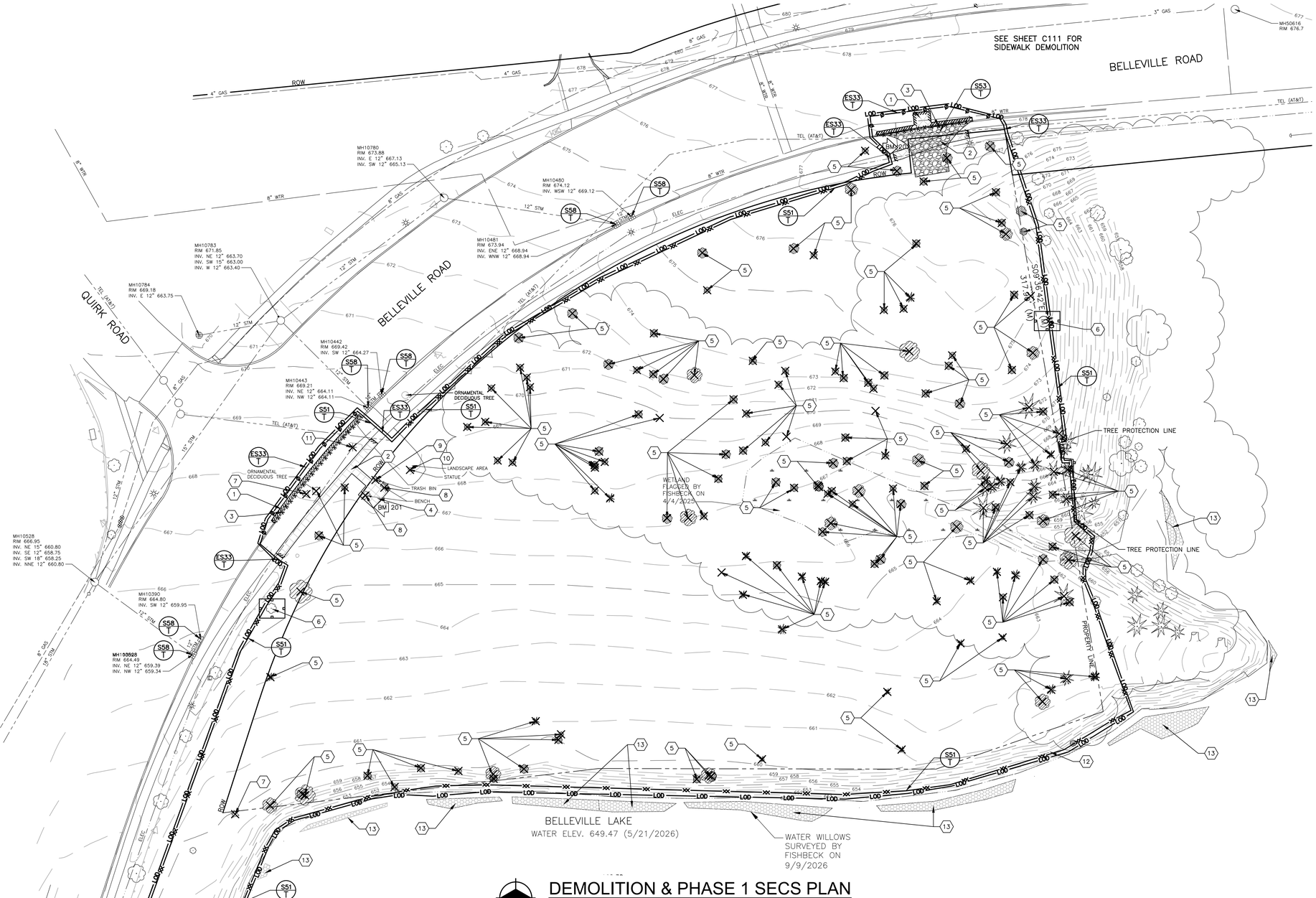
PLOT INFO: Z:\2025\2500281\CAD\CD\C101_2500281.DWG LAYOUT: C101 DATE: 10/12/2026 TIME: 4:20:58 PM USER: DRHOTON



DEMOLITION & PHASE 1 SECS PLAN

SCALE: 1" = 30'

0 15 30 60

NORTH

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

KEY	DESCRIPTION	DETAIL	CHARACTERISTICS
ES33	FILTER SOCKS		In areas requiring immediate protection of slopes against surface erosion and gully formation and for perimeter sediment control. (Bioengineering)
S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.
S53	STABILIZED CONSTRUCTION ACCESS		Used at every point where construction traffic enters or leaves a construction site.
S58	INLET PROTECTION FABRIC DROP		Use at stormwater inlets, especially at construction sites.

(XX T) TEMPORARY MEASURE

(XX P) PERMANENT MEASURE

SECS NOTES

1. MAINTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ON THE SITE FOR THE DURATION OF CONSTRUCTION, IF REQUIRED. ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
2. MAINTAIN AND REPAIR ALL SESC BEST MANAGEMENT PRACTICES BMPS DURING CONSTRUCTION UNTIL ALL VEGETATION IS ESTABLISHED. (ALL DISTURBED SOIL SURFACES ARE UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR AS DEFINED BY PERMIT.)
3. PERFORM ALL EARTH-DISTURBING CONSTRUCTION ACTIVITIES WITHIN THE LIMITS OF DISTURBANCE AS INDICATED ON THE DRAWINGS.
4. REVIEW THE LIMITS OF DISTURBANCE SHOWN ON THE DRAWINGS AND FIELD-STAKING THE LIMIT OF DISTURBANCE LINE PRIOR TO THE START OF CONSTRUCTION AND/OR CONTRACTORS OPERATIONS AT NO ADDITIONAL COST TO OWNER.
5. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO THE START OF ANY LAND CLEARING OR GRADING ACTIVITIES.
6. APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THE DRAWINGS AND/OR AS REQUIRED BY SESC PERMIT AND IMPLEMENT ADDITIONAL MEASURES AS DICTATED BY SITE CONDITIONS.
7. ENSURE THAT ANY SEDIMENTATION RESULTING FROM WORK ON THIS SITE IS CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS.
8. LEAVE SLOPES IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
9. LOCATE LAY DOWN, STAGING AND STOCKPILE AREAS WITHIN THE PERMITTED LIMITS OF DISTURBANCE.
10. INSTALL SILT FENCE AROUND THE PERIMETER OF ON-SITE SOIL STOCKPILE AREAS IF RUNOFF CAN IMPACT A STABILIZED PART OF THE SITE, OR LEAVE THE SITE. ADDITIONALLY, INACTIVE PORTIONS OF THE STOCKPILE AREAS ARE TO BE STABILIZED AS REQUIRED BY PERMIT.
11. IMPLEMENT TEMPORARY STABILIZATION MEASURES ON ANY DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES WILL NOT RESUME FOR 14 DAYS OR MORE. IMPLEMENTATION OF TEMPORARY STABILIZATION MEASURES MUST BE INITIATED IMMEDIATELY AND COMPLETED WITHIN SEVEN (7) DAYS FROM WHEN CONSTRUCTION ACTIVITIES TEMPORARILY CEASED ON ANY PORTION OF THE SITE. APPLY 3-5 LBS/1000 SFT. TEMPORARY SEED AND STRAW MULCH OVER DISTURBED AREA.
12. TOPSOIL AND SEED ALL EXPOSED AREAS WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE CONCLUSION OF FINAL GRADING IN THAT AREA.
13. REGULARLY CHECK SEEDED AREAS TO SEE THAT A GOOD STAND OF VEGETATION IS "ESTABLISHED". VEGETATION WILL NOT BE CONSIDERED "ESTABLISHED" UNTIL 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED WITH PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER. FERTILIZE, WATER, RESEED AND MULCH AS NEEDED.
14. MINIMIZE TRACKING OF SOIL AND SEDIMENT ONTO OFF-SITE ROADWAYS THROUGH THE USE OF APPROPRIATE MEASURES. IMMEDIATELY REMOVE ANY SOIL OR SEDIMENT TRACKED ONTO THE ROADWAYS.
15. NO VEHICLES AND EQUIPMENT CLEANING IS ALLOWED AT LOCATIONS WHERE RUNOFF COULD FLOW DIRECTLY INTO A WATER COURSE OR DOWNSTREAM STORM SEWER.
16. CONTRACTOR TO USE APPROPRIATE MEASURES DURING CONSTRUCTION TO CONTROL AIRBORNE SEDIMENTATION INCLUDING WATERING EXPOSED SOILS, PLACING WIND FENCING, PLANTING TEMPORARY VEGETATION, ETC.
17. SITE SOILS: CL AND ML-CL
18. LIMITS OF DISTURBANCE: 3.61
19. PROXIMITY TO NEAREST BODY OF WATER: < 500 FEET

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17
ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

DEMOLITION SYMBOL LEGEND

- SAWCUT
- CURB REMOVAL
- REMOVE PIPE
- REMOVE OBJECT
- REMOVE CONCRETE PAVEMENT
- TREE PROTECTION
- TREE REMOVAL

SECS SYMBOL LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- SILT FENCE
- EROSION EEL OR FILTER LOG
- LOD LIMITS OF DISTURBANCE

DEMOLITION NOTES

1. FIELD VERIFY THE EXTENT OF REMOVALS AND DEMOLITION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DEVIATIONS FROM INFORMATION SHOWN.
2. PRIOR TO CONSTRUCTION ALL FENCING, BARRICADES, ENCLOSURES, ETC., MUST BE INSTALLED AND APPROVED BY OWNER OR CONSTRUCTION MANAGER.
3. DISPOSE OF DEMOLITION AND EXCAVATION MATERIALS IN ACCORDANCE WITH CONTRACT DOCUMENTS.
4. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES MUST BE IN PLACE PRIOR TO STARTING REMOVALS AND DEMOLITION.
5. UNLESS SPECIFICALLY NOTED FOR REMOVAL ON THE PLANS, PROTECT ALL SIDEWALKS, DRIVES, CULVERTS, DRAINAGE STRUCTURES, AND ABOVE AS WELL AS BELOW GRADE UTILITIES. REMOVE AND REPLACE ALL SUCH ITEMS DAMAGED OR DESTROYED DURING CONSTRUCTION WITH NEW AT NO ADDITIONAL COST TO THE OWNER.
6. PROTECT EXISTING TREES TO REMAIN WITH TEMPORARY FENCING AT THE DRIP LINE. NO GROUND DISTURBANCE OR STORAGE OF MATERIAL/EQUIPMENT SHALL OCCUR WITHIN THE DRIP LINE LIMITS.
7. COORDINATE REMOVAL OR REPLACEMENT OF ELECTRICAL, TELEPHONE, CABLE TV, WATER, FIBER OPTIC CABLE AND/OR GAS LINES WITH THE AFFECTED UTILITY COMPANY. PROVIDE ADEQUATE TIME FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY AS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN THE CONSTRUCTION LIMITS. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK.
8. PERFORM CLEARING, GRUBBING, TREE AND STUMP REMOVAL, TOPSOIL REMOVAL AND STOCKPILING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. BEFORE REMOVING OR ABANDONING ANY UTILITY PIPES, VERIFY NEW UTILITY PIPE HAS BEEN INSTALLED, TESTED AND IS OPERATIONAL.
10. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS DRAWING HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. VERIFY CRITICAL INVERT INFORMATION PRIOR TO BEGINNING CONSTRUCTION.
11. SAWCUT AND REPLACE DAMAGE CAUSED TO SURROUNDING AREA PAVEMENT OUTSIDE THE CONSTRUCTION LIMITS AT NO ADDITIONAL COST TO THE OWNER.
12. COORDINATE SEQUENCING AND PHASING OF DEMOLITION WITH CONSTRUCTION MANAGER.
13. SAWCUT CURB AND GUTTER AND SIDEWALKS TO NEAREST JOINT.
14. PICK UP DEBRIS WITHIN PROPERTY LIMITS WEEKLY OR AS NEEDED.

(#) DEMOLITION KEY NOTES

1. SAWCUT AND REMOVE CONCRETE PAVING FULL DEPTH.
2. SAWCUT AND REMOVE CONCRETE SIDEWALK TO NEAREST JOINT.
3. REMOVE CONCRETE CURB AND GUTTER.
4. REMOVE CONCRETE PAD.
5. REMOVE TREE.
6. PROTECT TREE.
7. REMOVE SIGN.
8. REMOVE AND SALVAGE BENCH.
9. REMOVE AND SALVAGE TRASH BIN.
10. REMOVE AND SALVAGE STATUE.
11. REMOVE AND SALVAGE LIGHT POST.
12. REMOVE RIP-RAP AS NEEDED FOR INSTALLATION OF BOARDWALK/DOCKS.
13. DO NOT DISTURB WATER WILLOWS.

fishbeck
Engineers | Architects | Scientists | Constructors

Van Buren Charter Township
Van Buren Township, MI

The Lakeside Park

REVISIONS

10/12/2026	BIDS & PERMITS
09/21/2026	CD PEER REVIEW
09/09/2026	CD TEAM REVIEW
08/10/2026	CD 50% PROGRESS
06/22/2026	DD OWNER REVIEW
06/15/2026	DD PEER REVIEW
06/08/2026	DD 90 % PROGRESS
05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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PROJECT NO.
2500281

SHEET NO.
C102

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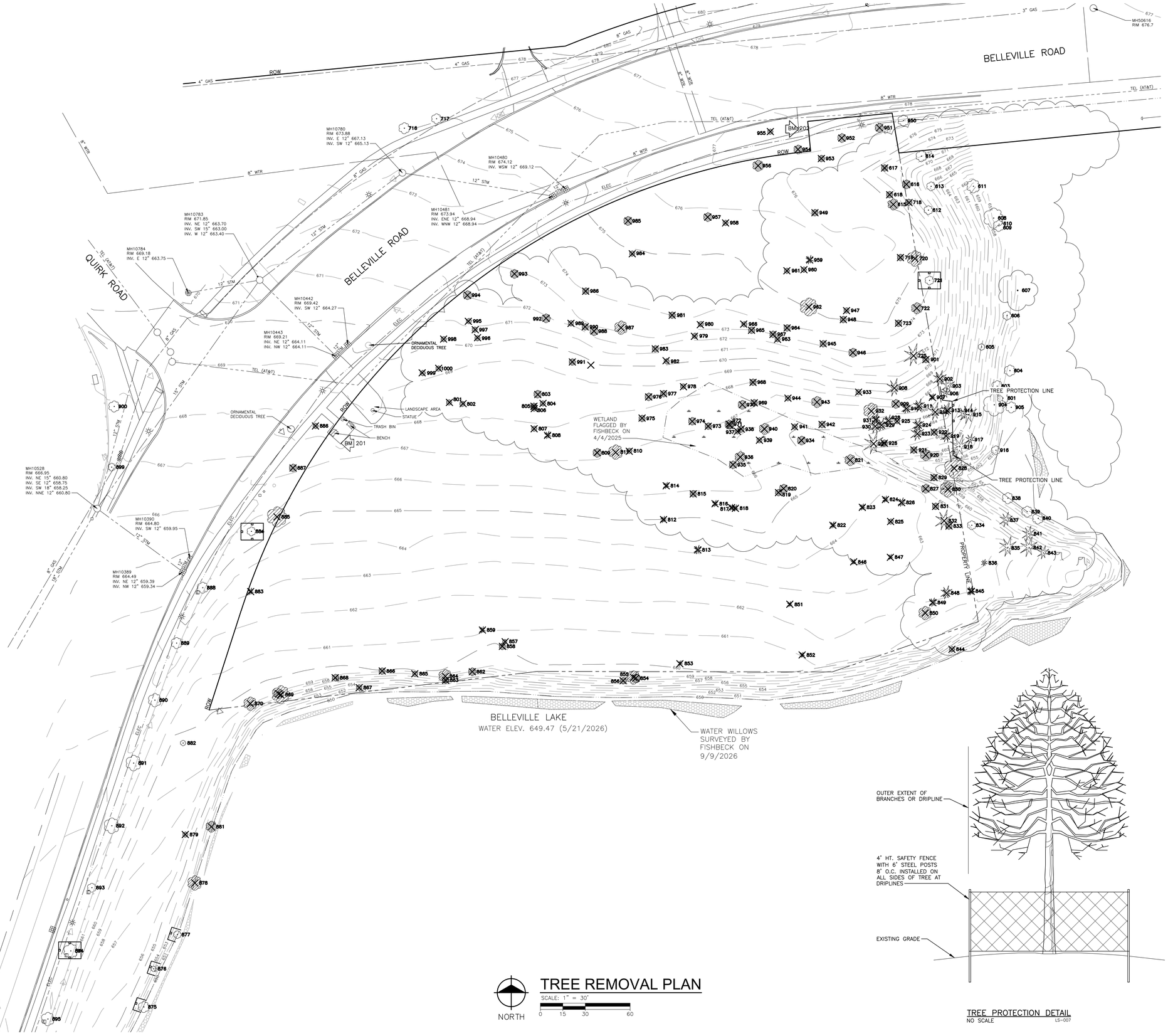
PLOT INFO: Z:\2025\2500281\CAD\CDC\102_2500281.DWG LAYOUT: C102 DATE: 10/12/2026 TIME: 3:14:27 PM USER: ARAMIREZ



TREE REMOVAL PLAN

SCALE: 1" = 30'

NORTH

0 15 30 60

TREE PROTECTION DETAIL

NO SCALE LS-007

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38

MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17

ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

SYMBOL LEGEND

TREE PROTECTION

TREE REMOVAL

NOTES

1. FIELD VERIFY THE EXTENT OF REMOVALS AND DEMOLITION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DEVIATIONS FROM INFORMATION SHOWN.
2. PROTECT EXISTING TREES TO REMAIN WITH TEMPORARY FENCING AT THE DRIP LINE. NO GROUND DISTURBANCE OR STORAGE OF MATERIAL/EQUIPMENT SHALL OCCUR WITHIN THE DRIP LINE LIMITS.
3. PERFORM CLEARING, GRUBBING, TREE AND STUMP REMOVAL, TOPSOIL REMOVAL AND STOCKPILING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

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Engineers | Architects | Scientists | Constructors

Van Buren Charter Township

Van Buren Township, MI

The Lakeside Park

REVISIONS

10/12/2026	BIDS & PERMITS
09/21/2026	CD PEER REVIEW
09/09/2026	CD TEAM REVIEW
08/10/2026	CD 50% PROGRESS
06/22/2026	DD OWNER REVIEW
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05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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PROJECT NO.

2500281

SHEET NO.

C103

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PLOT INFO: Z:\2025\2500281\CAD\CD\C103_2500281.DWG LAYOUT: C103 DATE: 10/12/2026 TIME: 2:14:03 PM USER: ARAMIREZ

Tree Tag No.	Scientific Name	Common Name	Tree DBH	Tree Condition	Comments	To Be Removed
601	*Tilia americana*	Basswood	7.1	Good		N
602	*Ulmus americana*	American Elm	6	Dangerous/Dead		N
603	*Ulmus americana*	American Elm	7.2	Poor		N
604	*Tilia americana*	Basswood	9	Good		N
605	*Celtis occidentalis*	Hackberry	5.6	Good		N
605	*Celtis occidentalis*	Hackberry	5	Good		N
606	*Celtis occidentalis*	Hackberry	8.2	Fair		N
607	*Tilia americana*	Basswood	23.2	Fair		N
608	*Acer platanoides*	Norway Maple	6.4	Fair		N
609	*Carya glabra*	Pignut Hickory	9	Fair		N
610	*Celtis occidentalis*	Hackberry	16.7	Fair		N
611	*Quercus macrocarpa*	Bur Oak	11.6	Fair		N
612	*Juglans nigra*	Black Walnut	9.5	Good		N
613	*Quercus macrocarpa*	Bur Oak	8.5	Fair		N
614	*Juglans nigra*	Black Walnut	10.5	Good		N
615	*Juglans nigra*	Black Walnut	6.5	Good		Y
616	*Ulmus americana*	American Elm	8.2	Good		Y
617	*Fraxinus pennsylvanica*	Green Ash	7.8	Fair		Y
618	*Ulmus americana*	American Elm	7.4	Fair	Tree location are approx. 1-3 ft of each other	Y
618	*Celtis occidentalis*	Hackberry	5.5	Fair	Tree location are approx. 1-3 ft of each other	Y
624	*Pinus resinosa*	Red Pine	6.2	Fair		Y
716	*Acer rubrum*	Red Maple	10.5	Good		N
717	*Acer rubrum*	Red Maple	10.4	Good		N
718	*Juglans nigra*	Black Walnut	9	Fair		Y
719	*Fraxinus pennsylvanica*	Green Ash	7.3	Fair		Y
720	*Juglans nigra*	Black Walnut	15.2	Good		Y
721	*Celtis occidentalis*	Hackberry	10	Fair		N
722	*Juglans nigra*	Black Walnut	10.6	Fair		Y
723	*Juglans nigra*	Black Walnut	7.3	Fair		Y
725	*Juglans nigra*	Black Walnut	6.3	Fair		Y
801	*Fraxinus nigra*	Black Ash	Two trunks: 5 and 4.6	Good		Y
802	Malus sp.	Apple/Crabapple	6.3	Good		Y
803	*Ulmus americana*	American Elm	6.8	Fair		Y
804	*Ulmus americana*	American Elm	5.7	Dangerous/Dead		Y
805	*Juglans nigra*	Black Walnut	6.7	Good		Y
806	*Juglans nigra*	Black Walnut	6.6	Good		Y
807	*Ulmus americana*	American Elm	6.3	Fair		Y
808	*Pinus resinosa*	Red Pine	6.1	Fair		Y
809	Malus sp.	Apple/Crabapple	Four trunks: 6.5, 4, 4, 3.8	Good		Y
810	*Ulmus americana*	American Elm	5.5	Fair		Y
811	*Fraxinus pennsylvanica*	Green Ash	14.9	Fair		Y
812	*Juniperus virginiana*	Redcedar	6.5	Good		Y
813	*Juniperus virginiana*	Redcedar	6.7	Fair		Y
814	*Juniperus virginiana*	Redcedar	6.8	Fair		Y
815	*Ulmus americana*	American Elm	Four trunks: 5.2, 5, 4.6, 3.8	Fair		Y
816	Malus sp.	Apple/Crabapple	5.3	Poor		Y
817	*Juniperus virginiana*	Redcedar	6.6	Fair		Y
818	*Juniperus virginiana*	Redcedar	6.1	Fair		Y
819	*Pinus resinosa*	Red Pine	7.6	Good		Y
820	*Fraxinus pennsylvanica*	Green Ash	9.8	Good		Y
821	*Quercus alba*	White Oak	12.3	Good		Y
822	*Pinus banksiana*	Jack Pine	6	Fair		Y
823	*Juniperus virginiana*	Redcedar	5.7	Fair		Y
825	Malus sp.	Apple/Crabapple	6.1	Good		Y
826	*Pinus resinosa*	Red Pine	5.2	Fair	Tree location are approx. 1-3 ft of each other	Y
826	*Pinus resinosa*	Red Pine	9.7	Fair	Tree location are approx. 1-3 ft of each other	Y
827	*Ulmus americana*	American Elm	8.1	Good		Y
828	*Carya glabra*	Pignut Hickory	14.2	Good		Y
829	*Prunus serotina*	Black Cherry	Three trunks: 6.5, 6.3, 5.5	Fair		Y
830	*Ulmus americana*	American Elm	12.6	Good		Y
831	*Carya glabra*	Pignut Hickory	5.6	Good		Y
832	*Pinus resinosa*	Red Pine	20	Fair	Estimate DBH due to tons of poison ivy	Y
833	*Juglans nigra*	Black Walnut	7.2	Fair		Y
834	*Juglans nigra*	Black Walnut	8.5	Good		N
835	*Pinus resinosa*	Red Pine	15.1	Fair		N
836	*Pinus resinosa*	Red Pine	6.7	Fair		N
837	*Pinus banksiana*	Jack Pine	9.4	Poor		N
838	*Quercus macrocarpa*	Bur Oak	8.3	Fair		N
839	*Quercus macrocarpa*	Bur Oak	7.7	Poor		N
840	*Ulmus americana*	American Elm	8.5	Fair		N
841	*Pinus banksiana*	Jack Pine	8.3	Dangerous/Dead		N
842	*Pinus resinosa*	Red Pine	15.1	Fair		N
843	*Pinus resinosa*	Red Pine	14.8	Fair		N
844	*Juniperus virginiana*	Redcedar	6.4	Good		Y
845	*Pinus resinosa*	Red Pine	8.6	Fair		Y
846	*Pinus banksiana*	Jack Pine	5.5	Good		Y
847	*Pinus resinosa*	Red Pine	5.6	Fair		Y
848	*Pinus resinosa*	Red Pine	11.6	Good		Y

Tree Tag No.	Scientific Name	Common Name	Tree DBH	Tree Condition	Comments	To Be Removed
849	*Pinus resinosa*	Red Pine	9.1	Good		Y
850	*Pinus resinosa*	Red Pine	8.9	Good		Y
851	*Juniperus virginiana*	Redcedar	6.2	Good		Y
852	*Juniperus virginiana*	Redcedar	5.9	Good		Y
853	*Juniperus virginiana*	Redcedar	5	Good		Y
854	*Ulmus pumila*	Siberian Elm	Two trunks: 15.8 and 14.3	Poor		Y
855	*Morus alba*	White Mulberry	5	Fair		Y
856	*Morus alba*	White Mulberry	Two trunks: 5.4 and 3.8	Poor		Y
857	*Morus alba*	White Mulberry	Two trunks: 4.7 and 4.2	Poor	1 dead limb	Y
858	*Ulmus americana*	American Elm	5.9	Fair		Y
859	*Juniperus virginiana*	Redcedar	5.2	Good		Y
862	Malus sp.	Apple/Crabapple	Three trunks: 7.6, 4.1, 3.8	Fair		Y
863	*Ulmus pumila*	Siberian Elm	Two trunks: 5.2 and 4.6	Poor		Y
864	*Ulmus pumila*	Siberian Elm	Two trunks: 14 and 10.1	Poor		Y
865	Malus sp.	Apple/Crabapple	5.1	Good		Y
866	*Fraxinus americana*	White Ash	6.2	Good		Y
867	*Morus alba*	White Mulberry	5.1	Fair		Y
868	*Morus alba*	White Mulberry	Two trunk: 7and 3.6	Poor		Y
869	*Ulmus pumila*	Siberian Elm	Two trunks: 18.3 and 10	Poor		Y
870	*Ulmus pumila*	Siberian Elm	11.9	Poor		Y
871	*Ulmus americana*	American Elm	Three trunk: 7.7, 5.5, 5	Fair	Tree location are approx. 1-3 ft of each other	N
871	*Ulmus pumila*	Siberian Elm	26	Poor	Tree location are approx. 1-3 ft of each other	N
872	*Ulmus pumila*	Siberian Elm	5.1	Poor	Outside limits of disturbance, no affected by demolition	N
873	*Salix alba*	White Willow	Five trunk: 8.2, 8, 7.8, 6.7, 6.5	Fair	Outside limits of disturbance, no affected by demolition	N
874	*Ulmus pumila*	Siberian Elm	26	Poor	Outside limits of disturbance, no affected by demolition	N
875	*Ulmus americana*	American Elm	12.9	Fair		N
876	*Juniperus virginiana*	Redcedar	Two trunk: 5.3 and 4.2	Good		N
877	*Morus alba*	White Mulberry	Two trunk: 10.2 and 5.8	Poor		N
878	*Populus deltoides*	Cottonwood	12.3	Fair		Y
879	Malus sp.	Apple/Crabapple	5.6	Poor		Y
881	*Ulmus americana*	American Elm	10.6	Fair		Y
882	*Morus alba*	White Mulberry	Two trunk: 6.5 and 3.5	Fair		N
883	*Juniperus virginiana*	Redcedar	5.9	Good		Y
884	*Acer compestre*	Hedge Maple	9.2	Good		N
885	*Ulmus pumila*	Siberian Elm	19.5	Poor	Tree location are approx. 1-3 ft of each other	Y
885	*Juniperus virginiana*	Redcedar	Two trunk: 4 and 3.8	Fair	Tree location are approx. 1-3 ft of each other	Y
886	*Acer compestre*	Hedge Maple	6.2	Fair		Y
887	*Acer compestre*	Hedge Maple	8	Good		N
888	*American sycamore*	Sycamore	10.8	Good		N
889	*American sycamore*	Sycamore	10.4	Good		N
890	*American sycamore*	Sycamore	12.9	Good		N
891	*American sycamore*	Sycamore	14.2	Good		N
892	*American sycamore*	Sycamore	14.6	Good		N
893	*American sycamore*	Sycamore	9	Good		N
894	*American sycamore*	Sycamore	12.8	Good		N
895	*American sycamore*	Sycamore	11.7	Good		N
896	*American sycamore*	Sycamore	9.7	Good	Outside limits of disturbance, no affected by demolition	N
897	*American sycamore*	Sycamore	9.1	Good	Outside limits of disturbance, no affected by demolition	N
898	*American sycamore*	Sycamore	9.5	Good	Outside limits of disturbance, no affected by demolition	N
899	*Acer platanoides*	Norway Maple	13	Good		N
900	*Acer rubrum*	Red Maple	5.7	Good		N
901	*Pinus resinosa*	Red Pine	19.8	Poor		Y
902	*Ulmus americana*	Red Pine	14	Fair		Y
903	*Pinus resinosa*	Red Pine	17.2	Fair		N
904	*Juglans nigra*	Black Walnut	16.9	Fair		N
905	*Fraxinus pennsylvanica*	Green Ash	5.1	Dangerous/Dead		N
906	*Pinus resinosa*	Red Pine	12	Poor		N
907	*Pinus resinosa*	Red Pine	6.8	Poor		Y
908	*Pinus resinosa*	Red Pine	16.8	Poor		Y
909	*Ulmus americana*	American Elm	9.8	Dangerous/Dead		Y
910	*Pinus resinosa*	Red Pine	10	Fair		Y
911	*Pinus resinosa*	Red Pine	16.1	Fair		Y
912	*Pinus resinosa*	Red Pine	17.1	Fair		Y
913	*Pinus resinosa*	Red Pine	10.6	Fair		Y
914	*Pinus resinosa*	Red Pine	8.6	Dangerous/Dead		N
915	*Pinus resinosa*	Red Pine	12	Dangerous/Dead		N
916	*Acer saccharum*	Sugar Maple	8.7	Poor		N
917	*Pinus resinosa*	Red Pine	8.9	Poor		N
918	*Pinus resinosa*	Red Pine	11.3	Fair		N
919	*Pinus resinosa*	Red Pine	11.2	Fair		Y
920	*Celtis occidentalis*	Hackberry	9.7	Fair		Y
921	*Ulmus americana*	American Elm	8.3	Fair		Y
922	*Ulmus americana*	American Elm	6.4	Fair		Y
923	*Pinus resinosa*	Red Pine	15.9	Fair		Y
924	*Pinus resinosa*	Red Pine	13.7	Fair		Y
925	*Ulmus americana*	American Elm	10.2	Fair		Y
926	*Ulmus americana*	American Elm	6.7	Fair		Y
927	*Pinus resinosa*	Red Pine	16.9	Fair		Y

Tree Tag No.	Scientific Name	Common Name	Tree DBH	Tree Condition	Comments	To Be Removed
928	*Pinus resinosa*	Red Pine	15.2	Fair		Y
929	*Pinus resinosa*	Red Pine	15.7	Fair		Y
930	*Pinus resinosa*	Red Pine	15.5	Fair		Y
931	*Pinus resinosa*	Red Pine	9.1	Fair		Y
932	*Ulmus americana*	American Elm	14.5	Fair		Y
933	*Prunus serotina*	Black Cherry	5.1	Fair		Y
934	*Ulmus americana*	American Elm	9.1	Fair		Y
935	*Ulmus americana*	American Elm	Four trunks: 8.2, 8.1, 7, 4.5	Dangerous/Dead		Y
936	*Quercus alba*	White Oak	10.2	Fair		Y
937	*Ulmus americana*	American Elm	7	Poor		Y
938	*Fraxinus pennsylvanica*	Green Ash	6.3	Poor		Y
939	*Fraxinus pennsylvanica*	Green Ash	9.9	Dangerous/Dead		Y
940	*Ulmus americana*	American Elm	6.4	Fair		Y
941	*Rhamnus cathartica*	Common Buckthorn	5.3	Fair		Y
942	*Ulmus americana*	American Elm	5.5	Fair		Y
943	*Juglans nigra*	Black Walnut	11.2	Fair		Y
944	*Ulmus americana*	American Elm	5.4	Fair		Y
945	*Ulmus americana*	American Elm	6.8	Dangerous/Dead		Y
946	*Fraxinus pennsylvanica*	Green Ash	7.6	Fair		Y
947	*Ulmus americana*	American Elm	7	Good		Y
948	*Ulmus americana*	American Elm	5.3	Fair		Y
949	*Robinia pseudoacacia*	Black Locust	6.9	Fair		Y
950	*Morus alba*	White Mulberry	8.3	Poor		N
951	*Acer campestre*	Hedge Maple	8.5	Good		Y
952	*Acer campestre*	Hedge Maple	8.7	Fair		Y
953	*Ulmus pumila*	Siberian Elm	Two trunk: 5.1 and 4	Poor	Tree location are approx. 1-3 ft of each other	Y
953	*Juniperus virginiana*	Redcedar	5	Good	Tree location are approx. 1-3 ft of each other	Y
954	*Acer campestre*	Hedge Maple	8.9	Fair		Y
955	*Acer platanoides*	Norway Maple	5.5	Fair		Y
956	*Acer campestre*	Hedge Maple	9.9	Fair		Y
957	*Robinia pseudoacacia*	Black Locust	8.7	Good		Y
958	*Ulmus americana*	American Elm	5.1	Good		Y
959	*Pinus banksiana*	Jack Pine	8.9	Fair		Y
960	*Ulmus americana*	American Elm	5.1	Fair		Y
961	*Ulmus americana*	American Elm	6.1	Fair		Y
962	*Robinia pseudoacacia*	Black Locust	19.8	Fair		Y
963	*Morus alba*	White Mulberry	5.1	Poor		Y
964	*Fraxinus pennsylvanica*	Green Ash	6.2	Poor		Y
965	*Ulmus americana*	American Elm	5.2	Fair		Y
966	*Ulmus americana*	American Elm	7	Fair	Tree location are approx. 1-3 ft of each other	Y
966	*Ulmus americana*	American Elm	6.5	Fair	Tree location are approx. 1-3 ft of each other	Y
966	*Ulmus americana*	American Elm	5	Fair	Tree location are approx. 1-3 ft of each other	Y
967	*Juniperus virginiana*	Redcedar	8.1	Poor		Y
968	*Morus alba*	White Mulberry	Four trunks: 5.6, 4.6, 4.6, 3.8	Fair		Y
969	*Ulmus americana*	American Elm	7.8	Fair		Y
970	*Fraxinus pennsylvanica*	Green Ash	6.1	Fair	Tree location are approx. 1-3 ft of each other	Y
970	*Fraxinus pennsylvanica*	Green Ash	5.1	Good	Tree location are approx. 1-3 ft of each other	Y
971	*Ulmus americana*	American Elm	6.8	Poor		Y
972	*Ulmus americana*	American Elm	5	Poor		Y
973	*Ulmus americana*	American Elm	6.7	Dangerous/Dead		Y
974	*Ulmus americana*	American Elm	5.8	Dangerous/Dead		Y
975	*Prunus serotina*	Black Cherry	6.9	Fair		Y
976	*Ulmus americana*	American Elm	6.3	Dangerous/Dead		Y
977	*Ulmus americana*	American Elm	5.5	Dangerous/Dead		Y
978	*Ulmus americana*	American Elm	5.2	Fair		Y
979	*Ulmus americana*	American Elm	5.2	Fair		Y
980	*Populus deltoides*	Cottonwood	5.4	Fair		Y
981	*Morus alba*	White Mulberry	6	Fair		Y
982	Malus sp.	Apple/Crabapple	5.9	Fair		Y
983	*Fraxinus pennsylvanica*	Green Ash	6	Poor		Y
984	*Ulmus americana*	American Elm	5	Fair		Y
985	*Populus deltoides*	Cottonwood	9	Fair		Y
986	*Robinia pseudoacacia*	Black Locust	Two trunks: 6.7 and 4.7	Fair		Y
987	*Ulmus americana*	American Elm	10.6	Fair		Y
988	*Fraxinus pennsylvanica*	Green Ash	6.1	Fair		Y
989	*Ulmus americana*	American Elm	5.3	Fair		Y
990	*Fraxinus pennsylvanica*	Green Ash	5.7	Fair		Y
991	*Ulmus americana*	American Elm	9.8	Poor		Y
992	Malus sp.	Apple/Crabapple	Four trunks: 6.5, 5.4, 4.5, 3.4	Fair		Y
993	*Acer compestre*	Hedge Maple	8.6	Good		Y
994	*Acer compestre*	Hedge Maple	8.9	Good		Y
995	*Ulmus pumila*	Siberian Elm	5	Poor		Y
996	*Juniperus virginiana*	Redcedar	7.7	Fair		Y
997	Malus sp.	Apple/Crabapple	7	Good		Y
998	Malus sp.	Apple/Crabapple	Four trunks: 3.8, 3.6, 3, 2.5	Good		Y
999	Malus sp.	Apple/Crabapple	Two trunks: 8.5 and 5.3	Fair		Y
1000	*Ulmus pumila*	Siberian Elm	7.6	Poor		Y

TREE REMOVAL SCHEDULE

SCALE: NONE

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Van Buren Township, MI

The Lakeside Park

REVISIONS

10/12/2026	BIDS & PERMITS
09/21/2026	CD PEER REVIEW
09/09/2026	CD TEAM REVIEW
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06/15/2026	DD PEER REVIEW
06/08/2026	DD 90 % PROGRESS
05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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2500281

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C104

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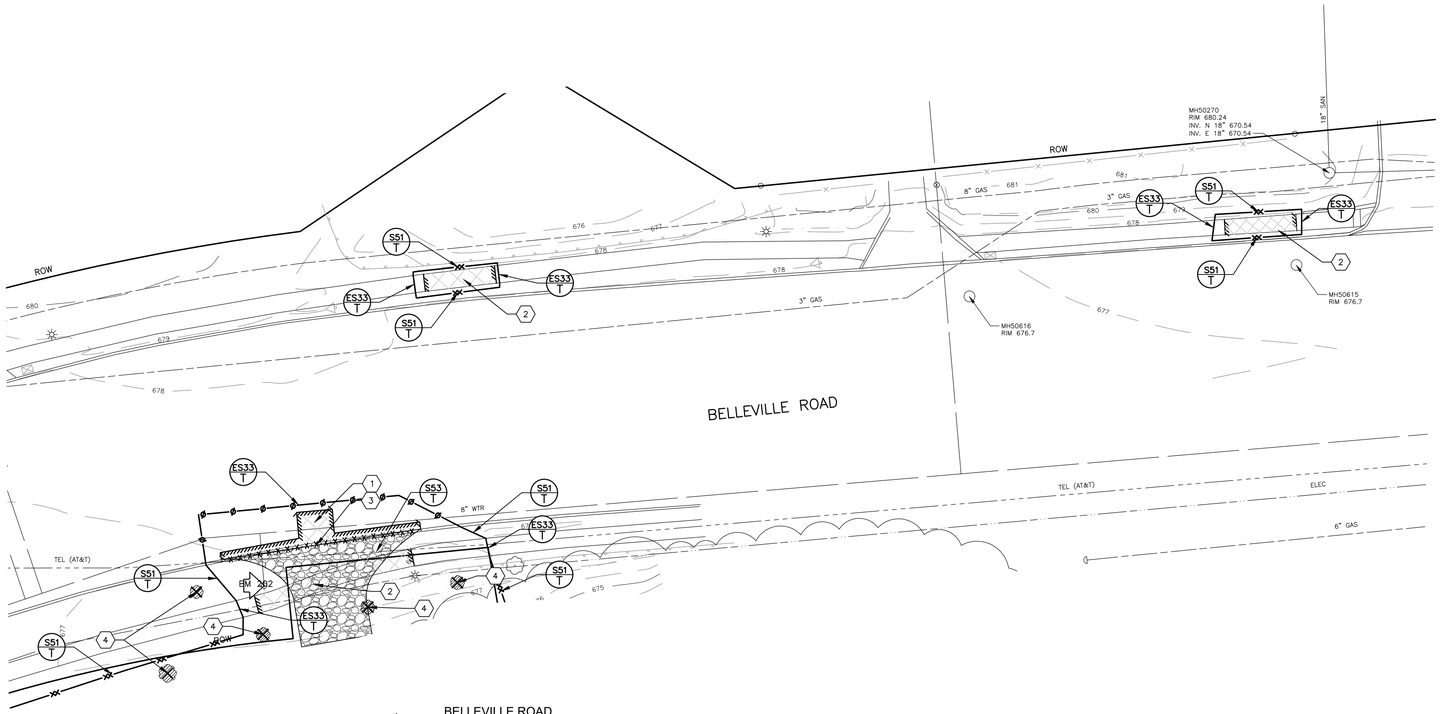

BELLEVILLE ROAD
EXISTING CONDITIONS, DEMOLITION, & PHASE 1 SESC PLAN

SCALE: 1" = 20'

NORTH 0 10 20 40

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17
ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

EXISTING SYMBOL LEGEND

- BENCH MARK
- PROPERTY LINE
- ROW LINE
- TREE LINE
- CONTOUR MAJOR
- CONTOUR MINOR
- LIGHT
- UTILITY POLE
- SIGN
- MAIL BOX
- GUARD RAIL
- FENCE LINE
- PAVED SURFACE
- EXISTING CURB
- EXISTING CURB & GUTTER
- 8" SAN — SANITARY SEWER & MANHOLE
- 12" STM — STORM SEWER & MANHOLE
- CATCH BASIN CURB AND LAWN TYPE
- VALVE
- HYDRANT
- 6" WTR — WATER MAIN
- 2" GAS — GAS MAIN
- ELEC — UNDERGROUND ELECTRIC

DEMOLITION SYMBOL LEGEND

- SAWCUT
- CURB REMOVAL
- REMOVE CONCRETE PAVEMENT
- TREE PROTECTION
- TREE REMOVAL

SURVEY NOTES

1. SEE C101

GEOTECHNICAL NOTES

1. SEE C101

DEMOLITION NOTES

1. SEE C102

SECS NOTES

1. SEE C102

DEMOLITION KEY NOTES

1. SAWCUT AND REMOVE CONCRETE PAVING FULL DEPTH.
2. SAWCUT AND REMOVE CONCRETE SIDEWALK TO NEAREST JOINT, AS NEEDED FOR DIRECTIONAL BORE.
3. REMOVE CONCRETE CURB AND GUTTER.
4. REMOVE TREE.

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

KEY	DESCRIPTION	DETAIL	CHARACTERISTICS
ES33	FILTER ROLLS		In areas requiring immediate protection of slopes against surface erosion and gully formation and for perimeter sediment control. (Bioengineering)
S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.
S53	STABILIZED CONSTRUCTION ACCESS		Used at every point where construction traffic enters or leaves a construction site.

XX T TEMPORARY MEASURE

XX P PERMANENT MEASURE

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Van Buren Township, MI

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10/12/2026	BIDS & PERMITS
09/21/2026	CD PEER REVIEW
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Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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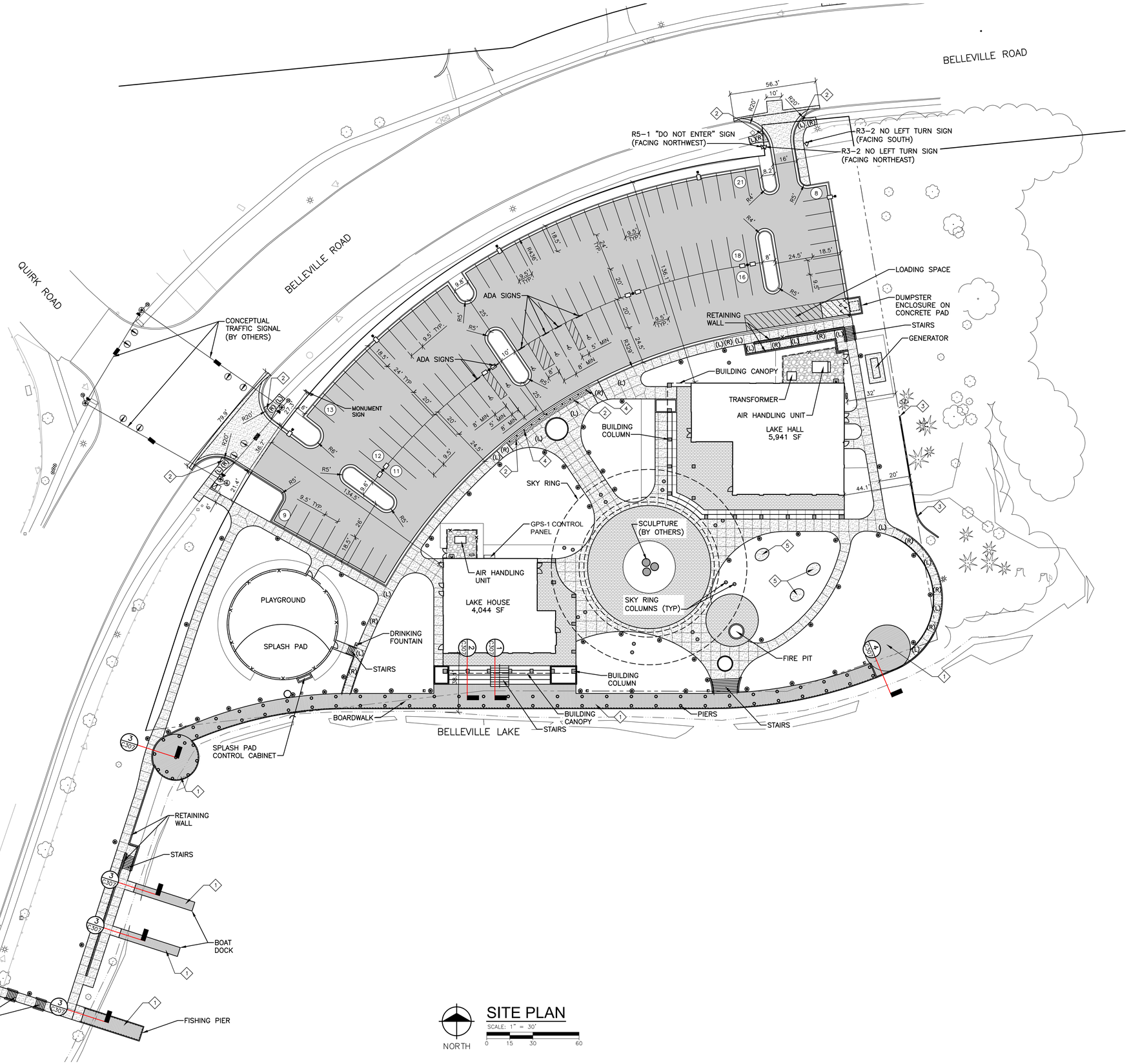

NORTH

SITE PLAN

SCALE: 1" = 30'

0 15 30 60

SYMBOL LEGEND

- SPECIAL PAVEMENT (SEE LANDSCAPE)
- COMPOSITE DECKING (SEE STRUCTURAL)
- 4" THICK CONCRETE SIDEWALK
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- GRAVEL PAVEMENT
- DETECTABLE WARNING STRIP
- STANDARD CURB AND GUTTER
- STANDARD CURB PAN
- (6) PARKING SPACE COUNT
- SITE LIGHT POLE OR LIGHT BOLLARD
- BOARDWALK PIERS (SEE STRUCTURAL)
- FENCE (SEE LANDSCAPE)
- SIGN

NOTES

1. DIMENSIONS ARE TO BACK OF CURB, OUTSIDE FACE OF BUILDING, AND EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
2. KEEP THE APPROVED AND/OR MOST CURRENT SET OF PROJECT DRAWINGS ON SITE AT ALL TIMES. CONTRACTOR TO CONFIRM THEY ARE IN POSSESSION OF THE MOST CURRENT DRAWING FILES.
3. SEE LANDSCAPE FOR LAYOUT OF SIDEWALK AND SPECIAL PAVEMENT.
4. SEE STRUCTURAL FOR LAYOUT OF DECKING.
5. PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES AND SURFACES SHALL BE MAINTAINED IN A SAFE, ATTRACTIVE CONDITION AS ORIGINALLY DESIGNED AND CONSTRUCTED. PARKING LOT STRIPING AND MARKINGS SHALL BE MAINTAINED IN CLEARLY VISIBLE CONDITION.

PARKING QUANTITIES

MAXIMUM OCCUPANCY:
LAKE HOUSE: 133 PEOPLE
LAKE HALL: 187 PEOPLE

REQUIRED PARKING:
321 PEOPLE X 1 SPACE PER / 3 PEOPLE = 107 SPACES

PROVIDED PARKING:
102 STANDARD SPACES
6 BARRIER FREE SPACES (5 REQUIRED)
108 TOTAL SPACES

KEY NOTES

1. BOARDWALK. SEE STRUCTURAL.
2. DETECTABLE WARNING STRIP.
3. RETAINING WALL WITH GUARDRAIL.
4. BOLLARDS (11).
5. CONCRETE SLAB FOR TABLE.

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The Lakeside Park

REVISIONS

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Drawn By	DRHOTON
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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PROJECT NO.
2500281

SHEET NO.
C201

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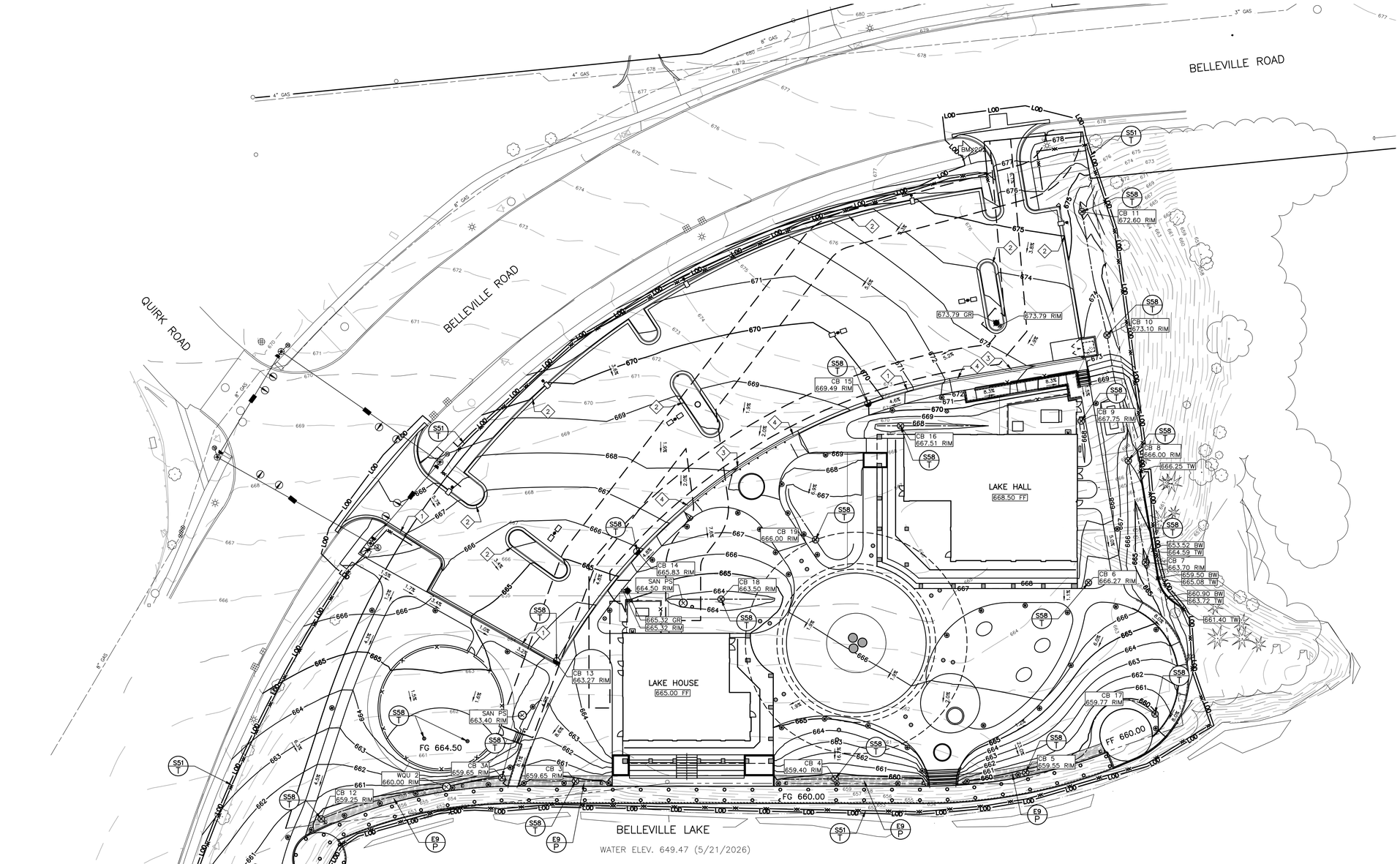


GRADING PLAN & PHASE 2 SECS PLAN

SCALE: 1" = 30'

0 15 30 60

NORTH

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

KEY	DESCRIPTION	DETAIL	CHARACTERISTICS
E9	MULCH BLANKETS		On exposed slopes, newly seeded areas, new ditch bottoms, or areas subject to erosion.
ES33	FILTER SOCKS		In areas requiring immediate protection of slopes against surface erosion and gully formation and for perimeter sediment control. (Bioengineering)
S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.
S58	INLET PROTECTION FABRIC DROP		Use at stormwater inlets, especially at construction sites.

(XX T) TEMPORARY MEASURE

(XX P) PERMANENT MEASURE

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17
ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

GRADING SYMBOL LEGEND

725	EXISTING MAJOR CONTOUR
724	EXISTING MINOR CONTOUR
725	PROPOSED MAJOR CONTOUR
724	PROPOSED MINOR CONTOUR
724.50 XX	SPOT ELEVATION
EM	EDGE OF METAL
EW	EDGE OF WALK
FF	FINISH FLOOR
GR	GRADE ELEVATION
GU	GUTTER
HP	HIGH POINT
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TW	TOP OF WALL

SECS SYMBOL LEGEND

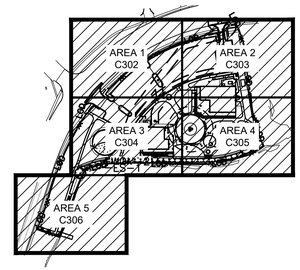
725	EXISTING MAJOR CONTOUR
724	EXISTING MINOR CONTOUR
	SILT FENCE
	EROSION EEL OR FILTER LOG
LOD	LIMITS OF DISTURBANCE
	MULCH BLANKET

GRADING NOTES

1. FINISH GRADE OF SOIL EDGES ALONG PAVEMENT TO MATCH EDGE OF PAVEMENT.
2. STRIP AND STOCKPILE TOPSOIL FROM GRADING AREAS. USE STOCKPILED TOPSOIL AND IMPORTED TOPSOIL AS NECESSARY FOR SURFACE RESTORATION.
3. GRADES SHOWN ARE FINAL SURFACE GRADES AFTER COMPLETION OF SURFACE IMPROVEMENTS AND PLACEMENT OF TOPSOIL.
4. ADA PARKING AREAS NOT TO EXCEED 2.0% SLOPE IN ALL DIRECTIONS.
5. GRADE AREAS AT SITE PERIMETER TO MATCH GRADES OF ADJACENT PARCELS.
6. REMOVE EXCESS SOIL FROM SITE AND DISPOSE OF PROPERLY IN ACCORDANCE WITH APPLICABLE REGULATIONS.
7. PROVIDE TEMPORARY GRADING FEATURES SUCH AS BERMS, SWALES, SUMPS AND BASINS TO MANAGE INTERIM STORM WATER RUNOFF DURING CONSTRUCTION PROCESS. STORM WATER RUNOFF LEAVING THE SITE SHALL MEET ALL FEDERAL, STATE AND LOCAL QUALITY REQUIREMENTS.

KEY NOTES

1. STANDARD CURB AND GUTTER.
2. INVERTED CURB AND GUTTER.
3. GUTTER PAN.
4. CURB TYPE TRANSITION, 5' MIN. LENGTH



ENLARGED
GRADING KEYPLAN

SCALE: NONE

SECS NOTES

1. MAINTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ON THE SITE FOR THE DURATION OF CONSTRUCTION, IF REQUIRED. ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
2. MAINTAIN AND REPAIR ALL SESC BEST MANAGEMENT PRACTICES BMPS DURING CONSTRUCTION UNTIL ALL VEGETATION IS ESTABLISHED. (ALL DISTURBED SOIL SURFACES ARE UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR AS DEFINED BY PERMIT.)
3. PERFORM ALL EARTH-DISTURBING CONSTRUCTION ACTIVITIES WITHIN THE LIMITS OF DISTURBANCE AS INDICATED ON THE DRAWINGS.
4. REVIEW THE LIMITS OF DISTURBANCE SHOWN ON THE DRAWINGS AND FIELD-STAKING THE LIMIT OF DISTURBANCE LINE PRIOR TO THE START OF CONSTRUCTION AND/OR CONTRACTORS OPERATIONS AT NO ADDITIONAL COST TO OWNER.
5. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO THE START OF ANY LAND CLEARING OR GRADING ACTIVITIES.
6. APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THE DRAWINGS AND/OR AS REQUIRED BY SESC PERMIT AND IMPLEMENT ADDITIONAL MEASURES AS DICTATED BY SITE CONDITIONS.
7. ENSURE THAT ANY SEDIMENTATION RESULTING FROM WORK ON THIS SITE IS CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS.
8. LEAVE SLOPES IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
9. LOCATE LAY DOWN, STAGING AND STOCKPILE AREAS WITHIN THE PERMITTED LIMITS OF DISTURBANCE.
10. INSTALL SILT FENCE AROUND THE PERIMETER OF ON-SITE SOIL STOCKPILE AREAS IF RUNOFF CAN IMPACT A STABILIZED PART OF THE SITE, OR LEAVE THE SITE. ADDITIONALLY, INACTIVE PORTIONS OF THE STOCKPILE AREAS ARE TO BE STABILIZED AS REQUIRED BY PERMIT.
11. IMPLEMENT TEMPORARY STABILIZATION MEASURES ON ANY DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES WILL NOT RESUME FOR 14 DAYS OR MORE. IMPLEMENTATION OF TEMPORARY STABILIZATION MEASURES MUST BE INITIATED IMMEDIATELY AND COMPLETED WITHIN SEVEN (7) DAYS FROM WHEN CONSTRUCTION ACTIVITIES TEMPORARILY CEASED ON ANY PORTION OF THE SITE. APPLY 3-5 LBS/1000 SFT. TEMPORARY SEED AND STRAW MULCH OVER DISTURBED AREA.
12. TOPSOIL AND SEED ALL EXPOSED AREAS WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE CONCLUSION OF FINAL GRADING IN THAT AREA.
13. REGULARLY CHECK SEEDED AREAS TO SEE THAT A GOOD STAND OF VEGETATION IS "ESTABLISHED". VEGETATION WILL NOT BE CONSIDERED "ESTABLISHED" UNTIL 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED WITH PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER. FERTILIZE, WATER, RESEED AND MULCH AS NEEDED.
14. MINIMIZE TRACKING OF SOIL AND SEDIMENT ONTO OFF-SITE ROADWAYS THROUGH THE USE OF APPROPRIATE MEASURES. IMMEDIATELY REMOVE ANY SOIL OR SEDIMENT TRACKED ONTO THE ROADWAYS.
15. NO VEHICLES AND EQUIPMENT CLEANING IS ALLOWED AT LOCATIONS WHERE RUNOFF COULD FLOW DIRECTLY INTO A WATER COURSE OR DOWNSTREAM STORM SEWER.
16. CONTRACTOR TO USE APPROPRIATE MEASURES DURING CONSTRUCTION TO CONTROL AIRBORNE SEDIMENTATION INCLUDING WATERING EXPOSED SOILS, PLACING WIND FENCING, PLANTING TEMPORARY VEGETATION, ETC.
17. SITE SOILS: CL AND ML-CL
18. LIMITS OF DISTURBANCE: 3.61
19. PROXIMITY TO NEAREST BODY OF WATER: < 500 FEET

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REVISIONS

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09/21/2026	CD PEER REVIEW
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Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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PROJECT NO.
2500281

SHEET NO.
C301

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BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17
ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

SYMBOL LEGEND

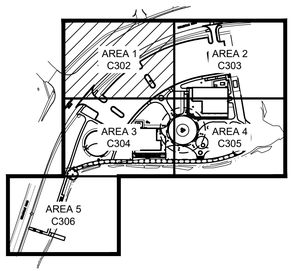
-725-	EXISTING MAJOR CONTOUR
-724-	EXISTING MINOR CONTOUR
725	PROPOSED MAJOR CONTOUR
724	PROPOSED MINOR CONTOUR
724.50 XX	SPOT ELEVATION
EM	EDGE OF METAL
EW	EDGE OF WALK
FF	FINISH FLOOR
GR	GRADE ELEVATION
GU	GUTTER
HP	HIGH POINT
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TW	TOP OF WALL

NOTES

1. SEE C301.

KEY NOTES

1. STANDARD CURB AND GUTTER.
2. INVERTED CURB AND GUTTER.
3. GUTTER PAN.



ENLARGED
GRADING KEYPLAN
SCALE: NONE

AREA 1
ENLARGED GRADING PLAN
SCALE: 1" = 10'

NORTH

0 5 10 20

PLOT INFO: Z:\2025\2500281\CAD\CD\C302_2500281.DWG LAYOUT: C302 DATE: 10/12/2026 TIME: 2:54:01 PM USER: CMAYER

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Van Buren Township, MI

The Lakeside Park

REVISIONS

10/12/2026	BIDS & PERMITS
09/21/2026	CD PEER REVIEW
09/09/2026	CD TEAM REVIEW
08/10/2026	CD 50% PROGRESS
06/22/2026	DD OWNER REVIEW
06/15/2026	DD PEER REVIEW
06/08/2026	DD 90 % PROGRESS
05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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PROJECT NO.
2500281

SHEET NO.
C302

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SEE C302

BELLEVILLE ROAD

677.13 EM
677.01 EM
677.46 TC
676.96 GU
677.97 TC
677.47 GU
677.26 EW
BM 201
677.35 EW
677.32 EW
677.47 EW
677.39 EW
677.33 EW
677.31 EW
677.72 TC
677.22 GU
677.51 TC
677.01 GU
677.32 EX
676.18 TC
675.68 GU
675.84 TC
675.34 GU
675.76 TC
675.26 GU
675.63 TC
675.13 GU
675.93 TC
675.43 GU
675.58 EW
675.58 GU
675.44 EW
675.43 GU
675.66 EW
675.46 EW
675.45 GU
677.25 EM
677.31 EM
677.85 TC
677.35 GU
677.90 TC
677.40 GU
677.35 EW
677.39 EW
677.99 EW
678.02 EW
677.47 EW
677.39 EW
678.00 EX
676.50 GR
677.01 EW
676.94 GU
676.94 EW
675.18 EM
675.89 GR
674.44 GR
672.95 GR
671.93 GR
673.20 GR
672.85 GR
671.59 GR
CB 11
672.60 RIM
673.04 GR
674.30 GR
674.05 GR
674.78 TC
674.28 GU
674.64 TC
674.14 GU
674.56 TC
674.06 GU
674.25 GR
675.75 GR
674.50 GR
673.95 TC
673.45 GU
673.17 TP
674.10 TC
673.60 GU
673.79 GR
673.87 TC
673.37 GU
673.72 TC
673.22 GU
673.79 RIM
673.70 TC
673.20 GU
674.08 TC
674.58 GU
674.50 GR
CB 10
673.10 RIM
673.64 EM
673.56 EM
673.48 EM
674.00 GR
673.30 GR
673.35 EM
673.42 EM
673.36 GU
673.19 EM
673.13 GU
673.19 EW
673.42 EW
673.51 EW
673.44 EW
668.66 EW
668.59 EW
668.57 EW
668.53 EW
668.44 EW
668.38 GR
669.00 GR
668.00 TP
667.82 GR
667.87 TP
672.14 EM
672.19 GU
672.53 EM
672.47 GU
672.53 EW
672.21 EW
672.30 EW
672.62 EW
672.70 EW
670.71 EW
670.62 EW
670.64 EW
670.55 EW
668.46 EW
668.47 EW
668.45 EW
668.43 EW
668.36 EW
668.27 EW
668.23 EW
668.27 EW
668.20 EW
668.27 EW
CB 9
667.75 RIM
668.33 EW
668.50 EW
668.50 EW
668.00 GR
667.87 GR
667.85 TP
667.77 TP
666.34 GR
667.05 GR
668.38 EW
668.30 EW
668.28 EW
CB 8
666.00 RIM
666.25 TW
668.00 GR
668.43 EW
668.50 EW
668.25 EW
665.58 GR
668.23 EW
668.37 EW
668.31 EW
669.63 TP
CB 15
669.49 GU
669.99 RIM
669.44 TC
668.94 GU
669.36 TC
668.86 GU
670.08 EW
669.53 EW
669.45 TP
669.45 EW
667.63 GR
CB 16
667.51 RIM
668.50 EW
669.27 EW
669.08 EW
668.42 EW
668.42 EW
668.42 EW
668.42 EW
669.08 EW
669.19 EW
669.03 EW
666.96 EW
668.42 EW
SLOT DRAIN
668.32 RIM
LAKE HALL
668.50 FF

MATCH LINE
MATCH LINE

SEE C305

NORTH

AREA 2
ENLARGED GRADING PLAN
SCALE: 1" = 10'
0 5 10 20

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17
ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

SYMBOL LEGEND

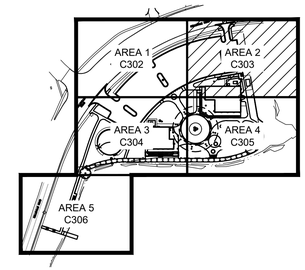
-725-	EXISTING MAJOR CONTOUR
-724-	EXISTING MINOR CONTOUR
725	PROPOSED MAJOR CONTOUR
724	PROPOSED MINOR CONTOUR
724.50 XX	SPOT ELEVATION
EM	EDGE OF METAL
EW	EDGE OF WALK
FF	FINISH FLOOR
GR	GRADE ELEVATION
GU	GUTTER
HP	HIGH POINT
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TW	TOP OF WALL

NOTES

1. SEE C301.

KEY NOTES

1. STANDARD CURB AND GUTTER.
2. INVERTED CURB AND GUTTER.
3. GUTTER PAN.
4. CURB TYPE TRANSITION, 5' MIN. LENGTH



ENLARGED
GRADING KEYPLAN
SCALE: NONE

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The Lakeside Park

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Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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MATCH LINE

SEE C302

SEE C305

BELLEVILLE ROAD

LAKE HOUSE
665.00 FF

CB 13
663.27 RIM
663.77 TC

CB 14
665.83 RIM
666.33 TC

CB 18
663.50 RIM

CB 12
659.25 RIM

CB 3A
659.65 RIM

CB 3
659.65 RIM

SAN PS
663.40 RIM

SAN PS
664.50 RIM

WQU 2
660.00 RIM

SLOT DRAIN
664.35 RIM

FG 660.00 (BOARDWALK)

SEE STRUCTURAL DRAWINGS FOR TOP OF PIER ELEVATIONS, U.N.O.

MATCH LINE

SEE C306

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17
ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

NOTES

1. SEE C301.

KEY NOTES

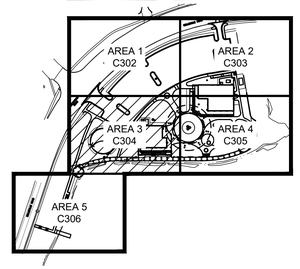
1. STANDARD CURB AND GUTTER.
2. INVERTED CURB AND GUTTER.
3. GUTTER PAN.
4. CURB TYPE TRANSITION, 5' MIN. LENGTH

SYMBOL LEGEND

-725-	EXISTING MAJOR CONTOUR	EM	EDGE OF METAL
-724-	EXISTING MINOR CONTOUR	EW	EDGE OF WALK
725	PROPOSED MAJOR CONTOUR	FF	FINISH FLOOR
724	PROPOSED MINOR CONTOUR	GR	GRADE ELEVATION
724.50 XX	SPOT ELEVATION	GU	GUTTER
		HP	HIGH POINT
		TC	TOP OF CURB
		TP	TOP OF PAVEMENT
		TW	TOP OF WALL

NORTH

AREA 3
ENLARGED GRADING PLAN
SCALE: 1" = 10'
0 5 10 20



ENLARGED
GRADING KEYPLAN
SCALE: NONE

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Van Buren Township, MI

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02/09/2026	SD PROGRESS REVIEW

Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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C304

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MATCH LINE

SEE C304

SEE C303

LAKE HALL

668.50 FF

BELLEVILLE LAKE

MATCH LINE

FG 660.00 (BOARDWALK)

FF 660.00

AREA 4
ENLARGED GRADING PLAN
SCALE: 1" = 10'

NORTH

0 5 10 20

ENLARGED
GRADING KEYPLAN
SCALE: NONE

AREA 1 C302
AREA 2 C303
AREA 3 C304
AREA 4 C305
AREA 5 C306

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17
ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

NOTES

1. SEE C301.

SYMBOL LEGEND

725	EXISTING MAJOR CONTOUR
724	EXISTING MINOR CONTOUR
725	PROPOSED MAJOR CONTOUR
724	PROPOSED MINOR CONTOUR
724.50 XX	SPOT ELEVATION
EM	EDGE OF METAL
EW	EDGE OF WALK
FF	FINISH FLOOR
GR	GRADE ELEVATION
GU	GUTTER
HP	HIGH POINT
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TW	TOP OF WALL

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Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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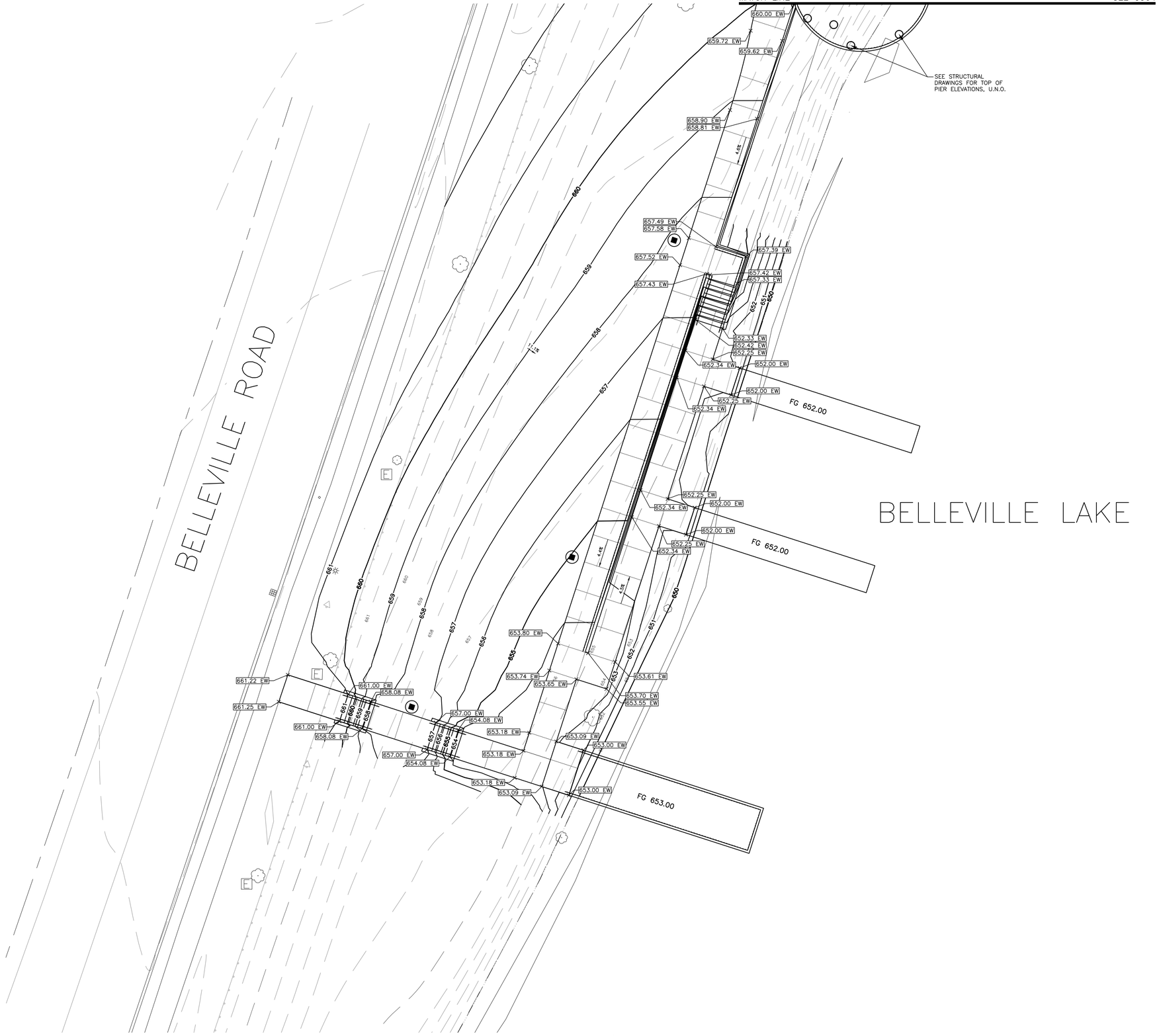

AREA 5
ENLARGED GRADING PLAN
SCALE: 1" = 10'

NORTH

0 5 10 20

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

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ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

SYMBOL LEGEND

725	EXISTING MAJOR CONTOUR
724	EXISTING MINOR CONTOUR
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724.50 XX	SPOT ELEVATION
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GU	GUTTER
HP	HIGH POINT
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TP	TOP OF PAVEMENT
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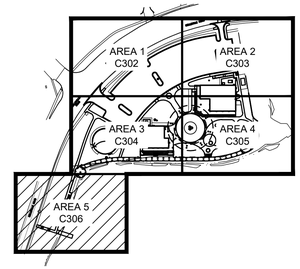
NOTES

1. SEE C301.



ENLARGED
GRADING KEYPLAN
SCALE: NONE

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Van Buren Township, MI

The Lakeside Park

REVISIONS

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Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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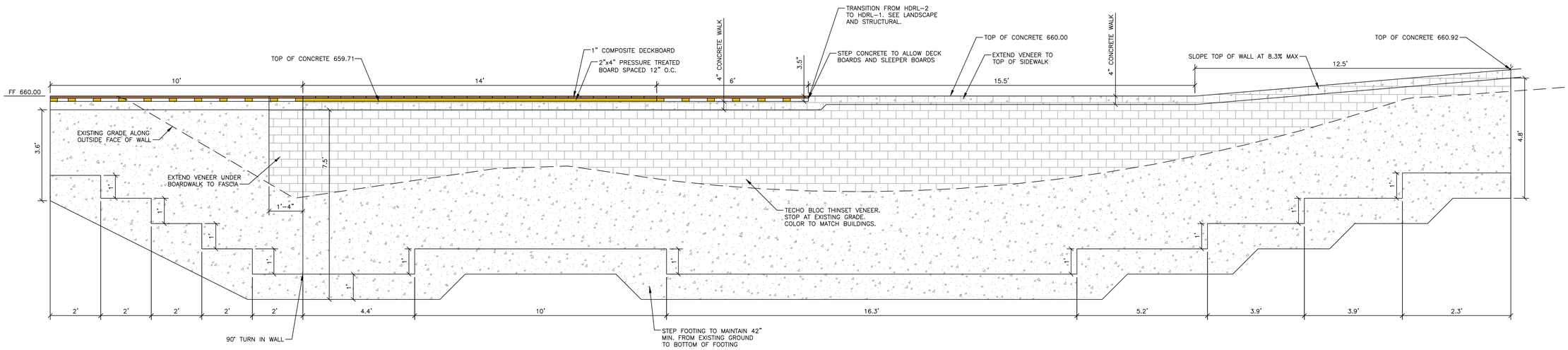
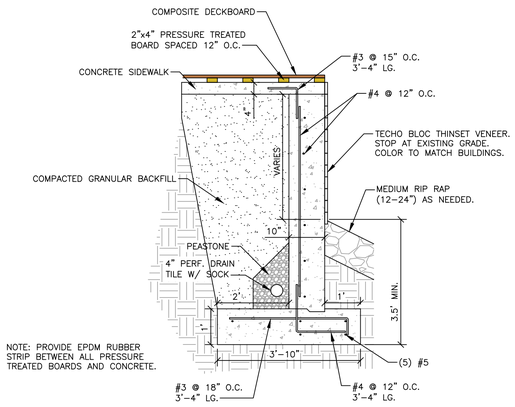
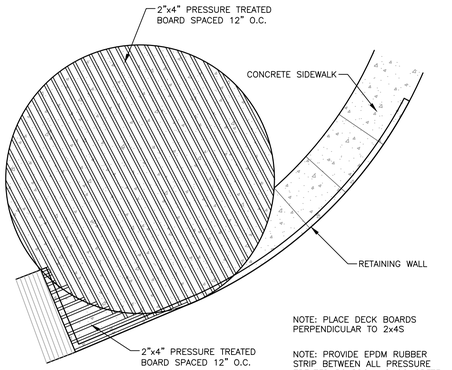


EAST TERMINUS RETAINING WALL ELEVATION
NO SCALE



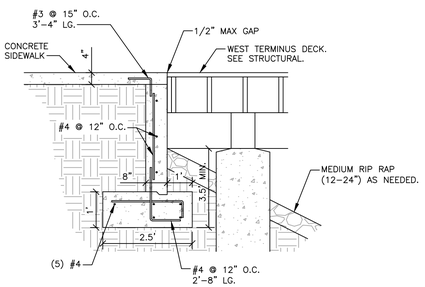
4 EAST TERMINUS RETAINING WALL SECTION
NO SCALE



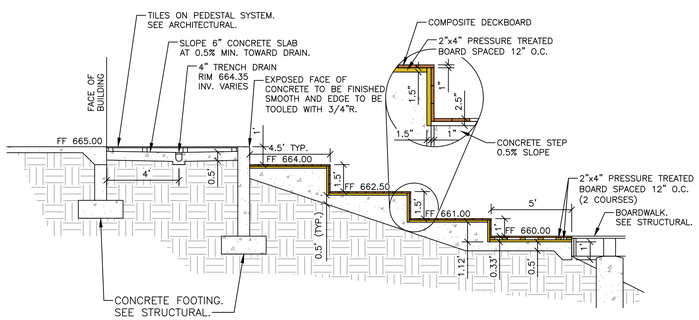
EAST TERMINUS PLAN VIEW
NO SCALE

LAKE HOUSE TIERED SEATING/STEP ELEVATION
NO SCALE

NOTE: PROVIDE EPDM RUBBER STRIP BETWEEN ALL PRESSURE TREATED BOARDS AND CONCRETE.

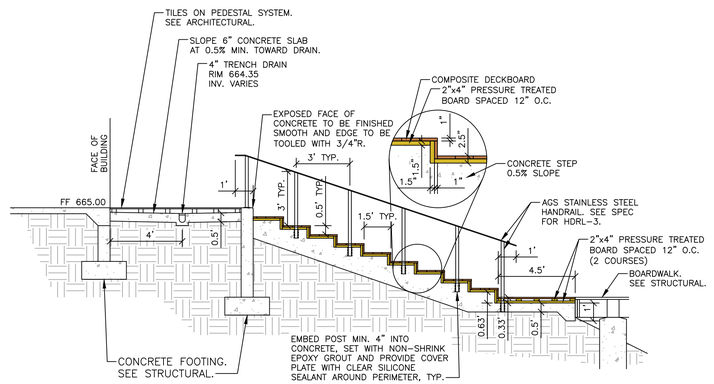


3 BOARDWALK/SIDEWALK JUNCTION RETAINING WALL
NO SCALE



2 LAKE HOUSE TIERED SEATING SECTION
NO SCALE

NOTE: PROVIDE EPDM RUBBER STRIP BETWEEN ALL PRESSURE TREATED BOARDS AND CONCRETE.



NOTE: PROVIDE EPDM RUBBER STRIP BETWEEN ALL PRESSURE TREATED BOARDS AND CONCRETE.

1 LAKE HOUSE STAIR SECTION
NO SCALE

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Reviewer	ERANDOLPH
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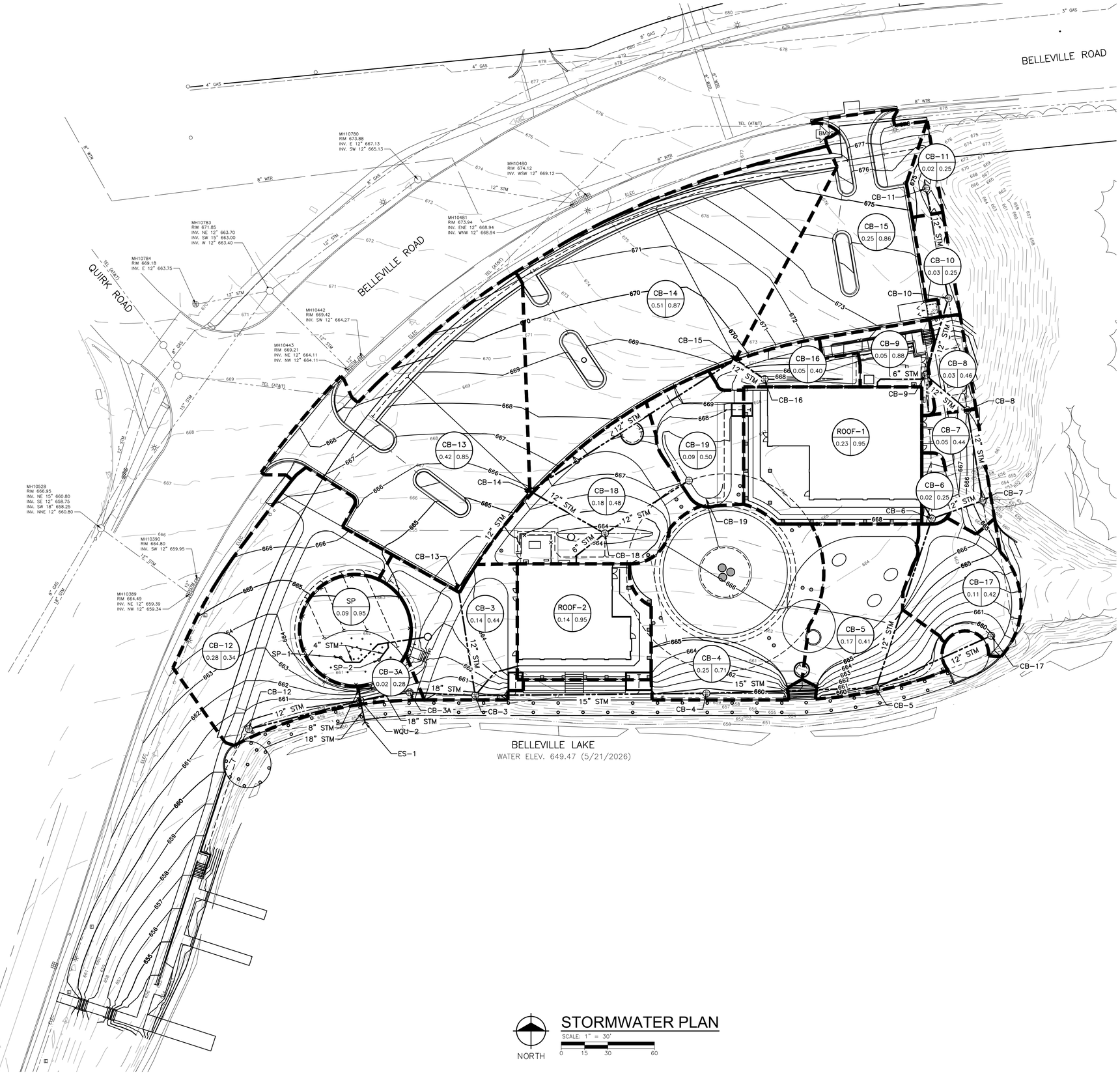

BENCH MARKS

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ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

SYMBOL LEGEND

- 12" STM — STORM SEWER & MANHOLE
- CATCH BASIN
- UNDERDRAIN
- DRAINAGE AREA BOUNDARY
- AREA / ACRE "C" — DRAINAGE AREA TAG

STORM WATER BASIS OF DESIGN

DETENTION REQUIREMENTS FOR THE SITE HAVE BEEN WAIVED BY WAYNE COUNTY DRAIN COMMISSION AND VAN BUREN TOWNSHIP. ONLY WATER QUALITY WILL BE REQUIRED. WATER QUALITY DESIGN FOLLOWS WAYNE COUNTY STORMWATER ENGINEERING DESIGN STANDARDS MANUAL. WATER QUALITY IS TREATED THROUGH ARCADIA AR4PC UNIT. SEE C312 FOR DETAIL.

NORTH

STORMWATER PLAN

SCALE: 1" = 30'

0 15 30 60

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Van Buren Township, MI

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ARCADIA SPECIFICATIONS

MATERIALS AND DESIGN

CONCRETE STRUCTURES: DESIGNED FOR H-20 AND/OR HS-20 TRAFFIC LOADING AND APPLICABLE SOIL LOADS OR AS OTHERWISE DETERMINED BY A LICENSED PROFESSIONAL ENGINEER. THE MATERIALS AND STRUCTURAL DESIGN OF THE DEVICES SHALL BE PER ASTM C857 AND ASTM C858.

HP MANHOLE STRUCTURES: MADE FROM AN IMPACT MODIFIED COPOLYMER POLYPROPYLENE MEETING THE MATERIAL REQUIREMENTS OF ASTM F2764. THE ECCENTRIC CONE REDUCER SHALL BE MANUFACTURED FROM POLYETHYLENE MATERIAL MEETING ASTM D3350 CELL CLASS 213320C. GASKETS SHALL BE MADE OF MATERIAL MEETING THE REQUIREMENTS OF ASTM F477.

PERFORMANCE

THE STORMWATER TREATMENT UNIT SHALL BE AN INLINE UNIT CAPABLE OF CONVEYING 100% OF THE DESIGN PEAK FLOW. IF PEAK FLOW RATES EXCEED MAXIMUM HYDRAULIC RATE, THE UNIT SHALL BE INSTALLED OFFLINE.

THE STORMWATER TREATMENT UNIT INTERNALS SHALL CONSIST OF (1) SEPARATOR ASSEMBLY,

THE ARCADIA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 80% OF THE SUSPENDED SOLIDS ON AN ANNUAL AGGREGATE REMOVAL BASIS. SAID REMOVAL SHALL BE BASED ON FULL-SCALE THIRD PARTY TESTING USING OK-110 MEDIA GRADATION OR EQUIVALENT AND 300 mg/L INFLUENT CONCENTRATION. SAID FULL SCALE TESTING SHALL HAVE INCLUDED SEDIMENT CAPTURE BASED ON ACTUAL TOTAL MASS COLLECTED BY THE STORMWATER TREATMENT UNIT.

-OR -

THE ARCADIA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS USING A MEDIA MIX WITH d50=75 MICRON AND 200 MG/L INFLUENT CONCENTRATION.

-OR -

THE ARCADIA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS PER CURRENT NJDEP/NJCAT HDS PROTOCOL.

MANUFACTURER

EACH STORMWATER TREATMENT SYSTEM SHALL BE AN ARCADIA SYSTEM AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS™, 2650 HAMILTON-EATON RD., HAMILTON, OH, 45011.

ARCADIA MAINTENANCE

ARCADIA SYSTEMS MUST BE INSPECTED AND MAINTAINED PERIODICALLY. INSPECTION IS MADE BY CHECKING THE DEPTH OF SEDIMENT IN EACH MANHOLE WITH A GRADE STICK OR SIMILAR DEVICE. MAINTENANCE IS REQUIRED WHEN THE SEDIMENT DEPTH EXCEEDS 18 INCHES. MINIMUM INSPECTION IS RECOMMENDED TWICE A YEAR TO MAINTAIN OPERATION AND FUNCTION OF THE UNIT.

MAINTENANCE INSTRUCTIONS

1. REMOVE THE MANHOLE COVER TO PROVIDE ACCESS TO THE POLLUTANT STORAGE. POLLUTANTS ARE STORED IN THE SUMP, BELOW THE BOWL ASSEMBLY VISIBLE FROM THE SURFACE. YOU'LL ACCESS THIS AREA THROUGH THE CENTER ACCESS CYLINDER.
2. USE A VACUUM TRUCK OR OTHER SIMILAR EQUIPMENT TO REMOVE ALL WATER, DEBRIS, OILS AND SEDIMENT.
3. USE A HIGH PRESSURE HOSE TO CLEAN THE MANHOLE OF ALL THE REMAINING SEDIMENT AND DEBRIS. THEN, USE THE VACUUM TRUCK TO REMOVE THE WATER.
4. FILL THE CLEANED MANHOLE WITH WATER UNTIL THE LEVEL REACHES THE INVERT OF THE OUTLET PIPE.
5. REPLACE THE MANHOLE COVER.
6. DISPOSE OF THE POLLUTED WATER, OILS, SEDIMENT AND TRASH AT AN APPROVED FACILITY.
   - LOCAL REGULATIONS PROHIBIT THE DISCHARGE OF SOLID MATERIAL INTO THE SANITARY SYSTEM. CHECK WITH THE LOCAL SEWER AUTHORITY FOR AUTHORITY TO DISCHARGE THE LIQUID.
   - SOME LOCALITIES TREAT THE POLLUTANTS AS LEACHATE. CHECK WITH LOCAL REGULATORS ABOUT DISPOSAL REQUIREMENTS.
   - ADDITIONAL LOCAL REGULATIONS MAY APPLY TO THE MAINTENANCE PROCEDURE.

ARCADIA INSTALLATION NOTES

INSTALLATION OF THE STORMWATER TREATMENT UNIT(S) SHALL BE PERFORMED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. SUCH INSTRUCTIONS CAN BE OBTAINED BY CALLING ADVANCED DRAINAGE SYSTEMS AT (800) 821-6710 OR BY LOGGING ON TO WWW.ADSPIPE.COM.

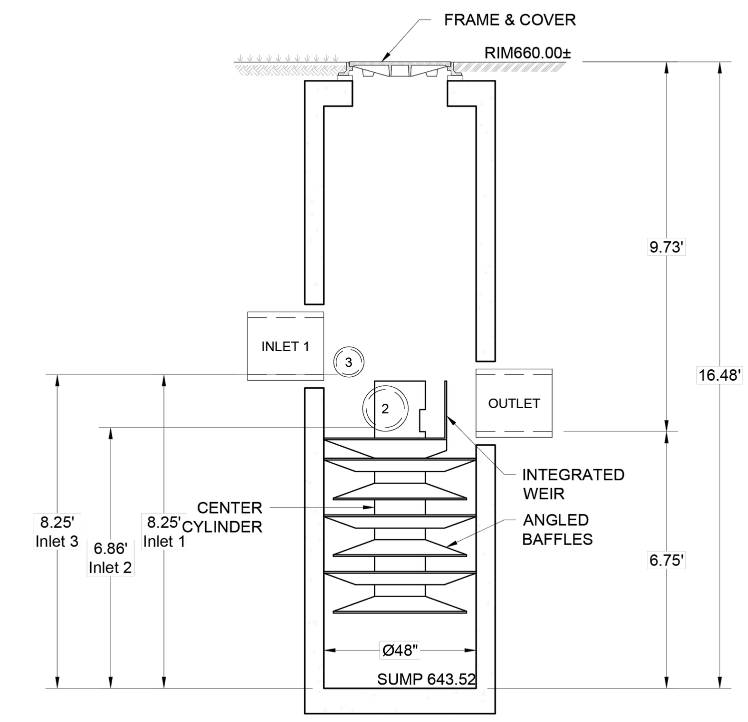
ARCADIA AR4PC				WQU-2
TREATMENT RATE (OK-110 80% REMOVAL)				2.75 CFS
BYPASS RATE				7.12 CFS (10 YR)
		DIAMETER	PIPE MATERIAL	INVERT
INLET	1	18"	RCP	651.77
INLET	2	12"	RCP	650.38
INLET	3	8"	HDPE	651.77
INLET	4			
OUTLET		18"	RCP	650.27

PRODUCT SPECIFICATIONS

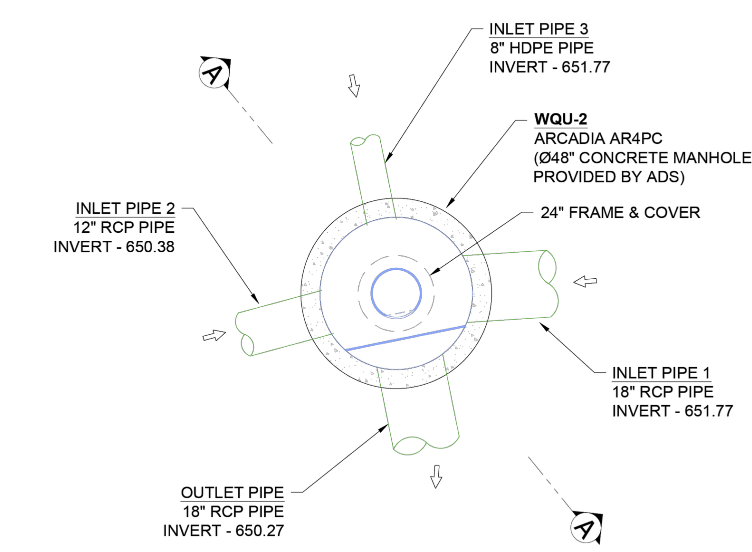
- THE STORMWATER TREATMENT UNIT SHALL BE AN INLINE UNIT CAPABLE OF CONVEYING 100% OF THE DESIGN PEAK FLOW. IF PEAK FLOW RATES EXCEED MAXIMUM HYDRAULIC RATE, THE UNIT SHALL BE INSTALLED OFFLINE.
- THE ARCADIA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 80% OF THE SUSPENDED SOLIDS ON AN ANNUAL AGGREGATE REMOVAL BASIS. SAID REMOVAL SHALL BE BASED ON FULL-SCALE THIRD PARTY VERIFIED TESTING USING OK-110 MEDIA GRADATION OR EQUIVALENT AND 300 MG/L INFLUENT CONCENTRATION. FULL SCALE TESTING SHALL HAVE INCLUDED SEDIMENT CAPTURE BASED ON ACTUAL TOTAL MASS COLLECTED BY THE STORMWATER TREATMENT UNIT.

  -OR -

  THE ARCADIA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS USING A MEDIA MIX WITH D50=75 MICRON AND 200 MG/L INFLUENT CONCENTRATION PER CURRENT NJDEP/NJCAT HDS PROTOCOL.



PROFILE VIEW
NTS



SITE SPECIFIC PLAN VIEW
SCALE : 1/4"=1'

THE LAKESIDE PARK
VAN BUREN TWP, MI
DATE: 09-09-2026 DRAWN: MDV
PROJECT #: S546018 CHECKED: -

DATE	DWN	CHK

ARCADIA
Stormwater Separator

ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026

AS NOTED

SHEET 2 OF 2

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS/STORMTECH UNDER THE DIRECTION OF THE PROJECT'S ENGINEER OF RECORD ("EOR") OR OTHER PROJECT REPRESENTATIVE. THIS DRAWING IS NOT INTENDED FOR USE IN BIDDING OR CONSTRUCTION WITHOUT THE EOR'S PRIOR APPROVAL. EOR SHALL REVIEW THIS DRAWING PRIOR TO BIDDING AND/OR CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE EOR TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

LOCATION / AREA / CA / TIME

UPSTREAM	DOWNSTREAM	GRASS	ASPHALT	OTHER	INCR.	TOTAL	WEIGHTED C	INCR. C*A	CUM. C*A	TO INLET	IN PIPE	TOTAL
		acres	acres	acres	acres	acres				min	min	min
		0.25	0.95	0.80	A	A_T	C_{AVG}	C*A		T_i	T_p	$T_c=T_i+T_p$
CB-11	CB-10	0.02	0.00		0.02	0.02	0.25	0.00	0.00	10	0.00	10.00
CB-10	CB-9	0.03	0.00		0.03	0.05	0.25	0.01	0.01	0	0.48	10.48
CB-9	CB-8	0.01	0.05		0.05	0.33	0.88	0.05	0.28	0	0.11	10.58
CB-8	CB-7	0.02	0.01		0.03	0.36	0.46	0.02	0.29	0	0.10	10.69
CB-7	CB-6	0.04	0.01		0.05	0.41	0.44	0.02	0.31	0	0.13	10.82
CB-6	CB-5	0.02	0.00		0.02	0.43	0.25	0.00	0.32	0	0.08	10.90
CB-5	CB-4	0.13	0.04		0.17	0.71	0.41	0.07	0.43	0	0.23	11.13
CB-4	CB-3	0.09	0.17		0.25	0.96	0.71	0.18	0.61	0	0.72	11.85
CB-3	CB-3A	0.10	0.04		0.14	2.75	0.44	0.06	1.98	0	0.98	12.83
CB-3A	WQU-2	0.01	0.00		0.02	2.76	0.28	0.00	1.98	0	0.07	11.91
WQU-2	ES-1	0.00	0.09		0.09	3.13	0.95	0.09	2.16	0	0.05	11.96
CB-12	WQU-2	0.25	0.03		0.28	0.28	0.34	0.09	0.09	10	0.00	10.00
CB-16	CB-15	0.04	0.01		0.05	0.05	0.40	0.02	0.02	10	0.00	10.00
CB-15	CB-14	0.03	0.22		0.25	0.30	0.86	0.21	0.23	0	0.15	10.15
CB-14	CB-13	0.06	0.45		0.51	1.22	0.87	0.44	0.94	0	0.61	10.77
CB-13	CB-3	0.06	0.36		0.42	1.65	0.85	0.36	1.30	0	0.51	11.28
CB-17	CB-5	0.08	0.03		0.11	0.11	0.42	0.05	0.05	10	0.00	10.00
CB-19	CB-18	0.06	0.03		0.09	0.09	0.50	0.05	0.05	10	0.00	10.00
CB-18	CB-14	0.12	0.06		0.18	0.42	0.48	0.09	0.27	0	0.13	10.13
ROOF-1	CB-9		0.23		0.23	0.23	0.95	0.22	0.22	10	0.00	10.00
ROOF-2	CB-18		0.14		0.14	0.14	0.95	0.13	0.13	10	0.00	10.00

INTENSITY / DISCHARGE

UPSTREAM	DOWNSTREAM	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR
		in/hr	in/hr	in/hr	in/hr	in/hr	in/hr	cfs	cfs	cfs	cfs	cfs	cfs
		i_2	i_5	i_{10}	i_{25}	i_{50}	i_{100}	$Q_2=C*i_2*A$	$Q_5=C*i_5*A$	$Q_{10}=C*i_{10}*A$	$Q_{25}=C*i_{25}*A$	$Q_{50}=C*i_{50}*A$	$Q_{100}=C*i_{100}*A$
CB-11	CB-10	2.82	3.48	3.96	4.56	5.04	5.52	0.01	0.02	0.02	0.02	0.02	0.03
CB-10	CB-9	2.79	3.43	3.91	4.50	4.97	5.45	0.03	0.04	0.05	0.05	0.06	0.06
CB-9	CB-8	2.78	3.42	3.90	4.49	4.96	5.43	0.76	0.94	1.07	1.23	1.36	1.49
CB-8	CB-7	2.77	3.41	3.89	4.47	4.94	5.42	0.80	0.99	1.13	1.30	1.43	1.57
CB-7	CB-6	2.76	3.40	3.87	4.45	4.92	5.39	0.87	1.06	1.21	1.40	1.54	1.69
CB-6	CB-5	2.75	3.39	3.86	4.44	4.90	5.38	0.87	1.08	1.23	1.41	1.56	1.71
CB-5	CB-4	2.74	3.37	3.84	4.41	4.87	5.34	1.19	1.46	1.66	1.91	2.11	2.32
CB-4	CB-3	2.68	3.29	3.75	4.31	4.76	5.22	1.64	2.01	2.30	2.64	2.91	3.20
CB-3	CB-3A	2.61	3.19	3.65	4.18	4.61	5.07	5.15	6.30	7.21	8.26	9.12	10.02
CB-3A	WQU-2	2.68	3.28	3.75	4.30	4.75	5.22	5.30	6.50	7.42	8.52	9.41	10.33
WQU-2	ES-1	2.67	3.28	3.74	4.29	4.74	5.21	5.78	7.09	8.09	9.29	10.26	11.27
CB-12	WQU-2	2.82	3.48	3.96	4.56	5.04	5.52	0.27	0.33	0.37	0.43	0.47	0.52
CB-16	CB-15	2.82	3.48	3.96	4.56	5.04	5.52	0.05	0.07	0.08	0.09	0.10	0.11
CB-15	CB-14	2.81	3.46	3.94	4.54	5.02	5.50	0.65	0.80	0.92	1.05	1.16	1.28
CB-14	CB-13	2.76	3.40	3.88	4.46	4.93	5.40	2.61	3.21	3.66	4.21	4.65	5.09
CB-13	CB-3	2.73	3.35	3.82	4.39	4.85	5.32	3.55	4.37	4.98	5.72	6.32	6.94
CB-17	CB-5	2.82	3.48	3.96	4.56	5.04	5.52	0.13	0.16	0.18	0.21	0.23	0.25
CB-19	CB-18	2.82	3.48	3.96	4.56	5.04	5.52	0.13	0.16	0.18	0.21	0.23	0.25
CB-18	CB-14	2.81	3.47	3.95	4.55	5.02	5.50	0.75	0.93	1.05	1.21	1.34	1.47
ROOF-1	CB-9	2.82	3.48	3.96	4.56	5.04	5.52	0.61	0.76	0.86	0.99	1.09	1.20
ROOF-2	CB-18	2.82	3.48	3.96	4.56	5.04	5.52	0.38	0.47	0.53	0.61	0.67	0.74

PROFILE / DESIGN / 100 YEAR HGL / HGL √

UPSTREAM	DOWNSTREAM	PIPE LENGTH	"Upstream" INVERT OUT	"Downstream" INVERT IN	"Upstream" RIM	"Upstream" Cover Depth	COMPUTED DIAMETER	PIPE DIAMETER	PIPE DIAMETER	n VALUE	SLOPE	SLOPE	V_{FULL}	PIPE CAPACITY	SLOPE	HEADLOSS IN PIPE	"Upstream" HGL ELEV.	Dist. Between Water Level and Rim
		ft	ft	ft	ft	ft	in	in	ft		ft/ft	%	ft/s	cfs	ft/ft	ft	ft	ft
		L					D_{COMP}	D	D	n	S		V_{FULL}	Q_{FULL}	S_F	H	HGL	
CB-11	CB-10	72	668.85	668.63	672.60	2.50	2.08	12	1.00	0.013	0.0031	0.31%	2.53	1.98	0.0000	0.0000	669.85	2.75
CB-10	CB-9	51	665.58	664.00	673.10	6.27	1.90	12	1.00	0.013	0.0309	3.09%	7.97	6.26	0.0000	0.0002	666.58	6.52
CB-9	CB-8	35	662.80	662.25	667.75	3.70	7.04	12	1.00	0.013	0.0156	1.56%	5.67	4.45	0.0018	0.0619	663.80	3.95
CB-8	CB-7	59	662.25	660.70	666.00	2.50	6.51	12	1.00	0.013	0.0263	2.63%	7.36	5.78	0.0019	0.1150	663.25	2.75
CB-7	CB-6	35	660.70	659.79	663.70	1.75	6.70	12	1.00	0.013	0.0260	2.60%	7.31	5.74	0.0023	0.0788	661.70	2.00
CB-6	CB-5	115	659.79	655.80	666.27	5.23	6.37	12	1.00	0.013	0.0347	3.47%	8.45	6.64	0.0023	0.2643	660.79	5.48
CB-5	CB-4	109	655.52	655.27	659.55	2.53	11.88	15	1.25	0.013	0.0023	0.23%	2.52	3.10	0.0013	0.1402	656.77	2.78
CB-4	CB-3	149	654.60	654.26	659.40	3.30	13.41	15	1.25	0.013	0.0023	0.23%	2.52	3.10	0.0025	0.3652	655.92	3.48
CB-3	CB-3A	42	654.06	652.76	659.40	3.59	12.66	18	1.50	0.013	0.0308	3.08%	10.43	18.42	0.0091	0.3824	655.56	3.84
CB-3A	WQU-2	32	652.76	651.77	659.65	5.14	12.81	18	1.50	0.013	0.0307	3.07%	10.41	18.39	0.0097	0.3095	654.26	5.39
WQU-2	ES-1	15	650.27	650.00	660.00	7.98	14.62	18	1.50	0.013	0.0180	1.80%	7.98	14.09	0.0115	0.1726	651.77	8.23
CB-12	WQU-2	75	650.61	650.38	659.53	7.67	6.41	12	1.00	0.013	0.0031	0.31%	2.53	1.98	0.0002	0.0159	651.79	7.74
CB-16	CB-15	23	663.76	663.69	667.51	2.50	3.54	12	1.00	0.013	0.0031	0.31%	2.53	1.98	0.0000	0.0002	664.76	2.75
CB-15	CB-14	157	663.59	662.20	669.49	4.65	7.38	12	1.00	0.013	0.0088	0.88%	4.27	3.35	0.0013	0.2012	664.59	4.90
CB-14	CB-13	78	659.04	658.80	665.95	5.66	15.10	12	1.00	0.013	0.0031	0.31%	2.53	1.98	0.0204	1.5950	661.39	4.56
CB-13	CB-3	70	658.07	655.90	663.80	4.48	11.01	12	1.00	0.013	0.0310	3.10%	7.99	6.27	0.0379	2.6536	659.55	4.25
CB-17	CB-5	81	656.02	655.77	659.77	2.50	4.87	12	1.00	0.013	0.0031	0.31%	2.53	1.98	0.0000	0.0040	657.02	2.75
CB-19	CB-18	64	661.73	659.75	666.00	3.02	3.17	12	1.00	0.013	0.0310	3.10%	7.99	6.27	0.0001	0.0032	662.73	3.27
CB-18	CB-14	55	659.31	659.14	663.50	2.94	9.47	12	1.00	0.013	0.0031	0.31%	2.53	1.98	0.0017	0.0936	661.49	2.01
ROOF-1	CB-9	30	663.50	663.20	-		7.04	6	0.50	0.013	0.0100	1.00%	2.86	0.56	0.0457	1.3699	665.17	
ROOF-2	CB-18	29	660.00	659.71	-		5.87	6	0.50	0.013	0.0100	1.00%	2.86	0.56	0.0173	0.5023	661.99	

STORMWATER CALCULATIONS

fishbeck
Engineers | Architects | Scientists | Constructors

Van Buren Charter Township
Van Buren Township, MI

The Lakeside Park

REVISIONS

10/12/2026	BIDS & PERMITS
09/21/2026	CD PEER REVIEW
09/09/2026	CD TEAM REVIEW
08/10/2026	CD 50% PROGRESS
06/22/2026	DD OWNER REVIEW
06/15/2026	DD PEER REVIEW
06/08/2026	DD 90 % PROGRESS
05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	DRHOTON
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

Hard copy is intended to be 24"x36" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.
2500281

SHEET NO.
C312

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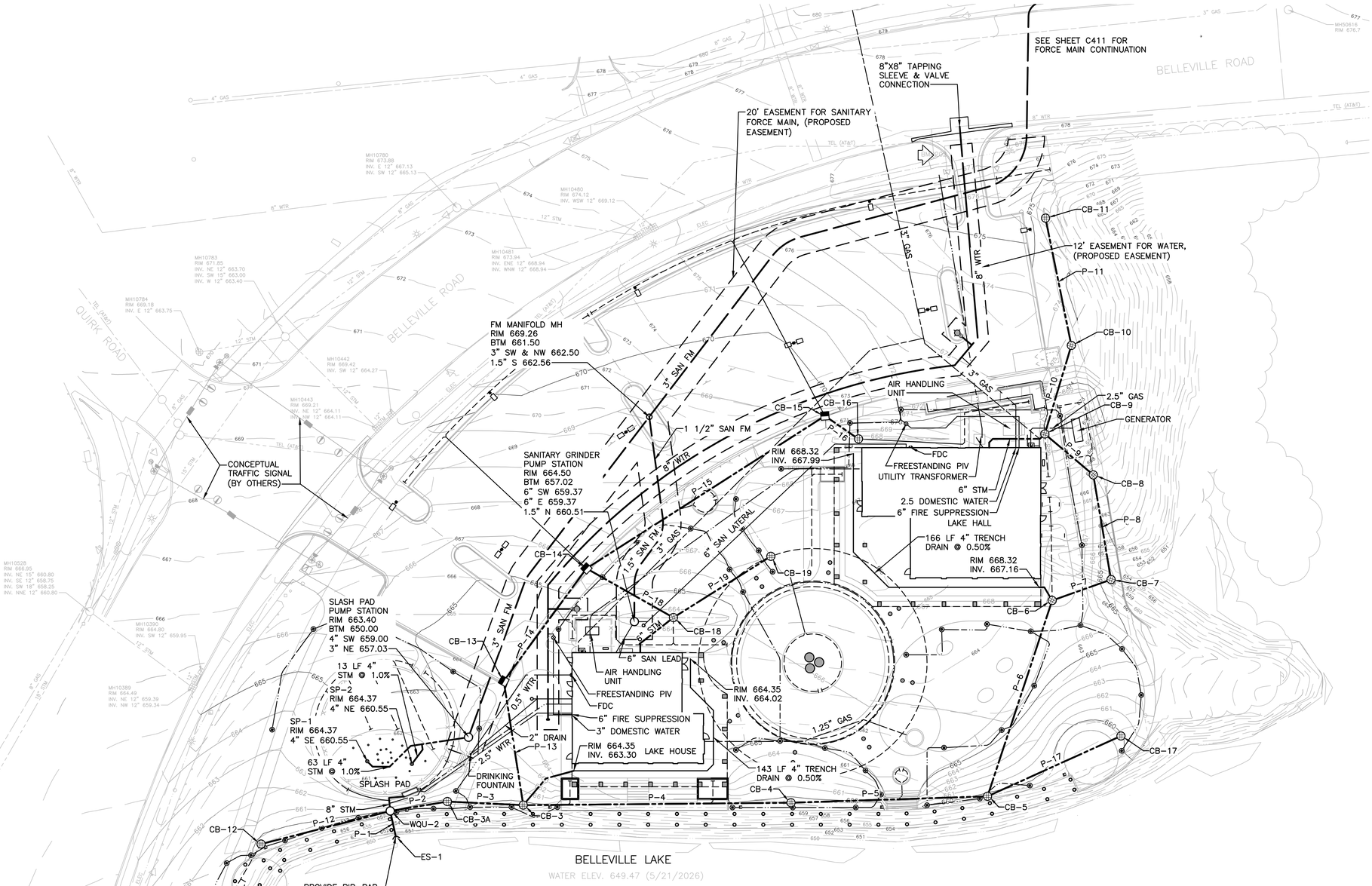
PLOT INFO: Z:\2025\2500281\CAD\CD\C312_2500281.DWG LAYOUT: C312 DATE: 10/12/2026 TIME: 2:15:12 PM USER: ARAMIREZ



NORTH

UTILITY PLAN

SCALE: 1" = 30'

0 15 30 60

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17
ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

SYMBOL LEGEND

- 8" SAN — SANITARY SEWER & MANHOLE
- 4" FM — SANITARY FORCE MAIN
- WYE & LEAD
- RISER & LEAD
- STANDARD SEWER CLEANOUT
- 12" STM — STORM SEWER & MANHOLE
- CATCH BASIN
- 8" WTR — WATER MAIN
- GAS MAIN
- ELECTRIC
- TELEPHONE/FIBER OPTIC
- UNDERDRAIN
- IRRIGATION SLEEVE. SEE LANDSCAPE.

NOTES

1. EXISTING UTILITIES LOCATIONS SHOWN ARE APPROXIMATE.
2. VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES PRIOR TO EXCAVATION WHERE NECESSARY.
3. PROTECT AND MAINTAIN SERVICE OF OTHER UTILITIES AT CROSSINGS.
4. DO NOT CONNECT ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER SERVICES TO THE SANITARY SEWER.
5. END SECTIONS ARE INCLUDED IN PIPE LENGTHS SHOWN.
6. PROVIDE RIPRAP AT ALL END SECTIONS UNLESS OTHERWISE NOTED.
7. PROVIDE AND MAINTAIN INLET FILTERS AT ALL CATCH BASIN INLETS, DURING CONSTRUCTION.
8. WATER MAIN TO HAVE A MINIMUM OF 6 FEET OF COVER.
9. FIRE HYDRANTS LOCATED IN CURB ISLAND OR GREEN SPACE SHALL BE LOCATED 5' FROM BACK OF CURB OR EDGE OF PAVEMENT (TYP.).
10. PROVIDE A MINIMUM OF EIGHTEEN (18) INCHES OF VERTICAL SEPARATION AND TEN (10) FEET OF HORIZONTAL SEPARATION BETWEEN THE WATER MAIN AND ALL SANITARY AND STORM SEWERS.
11. FACE NOZZLES OF SITE FIRE HYDRANTS TOWARD BUILDING.
12. ADJUST ALL CASTINGS TO FINISH GRADES.
13. PIPE LENGTHS ARE TO CENTER OF STRUCTURES UNLESS NOTED OTHERWISE. ALL PIPE LENGTHS ARE FOR THE CONVENIENCE OF THE CONTRACTOR.
14. UTILITY ELEVATIONS INDICATED REPRESENT INVERT ELEVATIONS UNLESS OTHERWISE NOTED.

STORM SEWER PIPE DATA

PIPE NAME	Connection	SIZE	LENGTH	SLOPE
P-1	WQU-2 -> ES-1	18"	15 LF	1.80%
P-2	CB-3A -> WQU-2	18"	32 LF	3.07%
P-3	CB-3 -> CB-3A	18"	42 LF	3.08%
P-4	CB-4 -> CB-3	15"	149 LF	0.23%
P-5	CB-5 -> CB-4	15"	109 LF	0.23%
P-6	CB-6 -> CB-5	12"	115 LF	3.47%
P-7	CB-7 -> CB-6	12"	35 LF	2.63%
P-8	CB-8 -> CB-7	12"	59 LF	2.63%
P-9	CB-9 -> CB-8	12"	35 LF	1.56%
P-10	CB-10 -> CB-9	12"	51 LF	3.09%
P-11	CB-11 -> CB-10	12"	72 LF	0.31%
P-12	CB-12 -> WQU-2	12"	74 LF	0.31%
P-13	CB-13 -> CB-3	12"	70 LF	3.10%
P-14	CB-14 -> CB-13	12"	78 LF	0.31%
P-15	CB-15 -> CB-14	12"	157 LF	0.88%
P-16	CB-16 -> CB-15	12"	23 LF	0.31%
P-17	CB-17 -> CB-5	12"	81 LF	0.31%
P-18	CB-18 -> CB-14	12"	56 LF	0.31%
P-19	CB-19 -> CB-18	12"	64 LF	3.10%

STORM SEWER STRUCTURES

STRUCTURE	RIM	SIZE	INVERT	ELEVATION
ES-1	651.61		18" N.	650.00
WQU-2	660.00	48"	18" S. 12" W. 18" E.	650.27 650.38 651.77
CB-3A	659.65	48"	18" W. 18" E.	652.76 652.76
CB-3	659.65	48"	12" N. 18" W. 15" E.	655.90 654.06 654.26
CB-4	659.40	48"	15" E. 15" W.	655.27 654.60
CB-5	659.55	48"	12" N. 15" W. 12" NE.	655.80 655.52 655.77
CB-6	666.27	48"	12" E. 12" S.	659.79 659.79
CB-7	663.70	48"	12" N. 12" W.	660.70 660.70
CB-8	666.00	48"	12" NW. 12" S.	662.25 662.25
CB-9	667.75	48"	12" N. 12" SE. 6" SW.	664.00 662.80 663.20
CB-10	673.10	48"	12" S. 12" N.	665.58 668.63
CB-11	672.60	48"	12" S.	668.85
CB-12	659.25	48"	12" E.	650.61
CB-13	663.32	48"	12" NE. 12" S.	658.80 658.07
CB-14	665.88	48"	12" NE. 12" SW. 12" SE.	662.20 659.04 659.14
CB-15	669.49	48"	12" SE. 12" SW.	663.69 663.59
CB-16	667.51	48"	12" NW.	663.76
CB-17	659.77	48"	12" SW.	656.02
CB-18	663.50	48"	12" NE. 6" SW. 12" NW.	659.75 659.71 659.31
CB-19	666.00	48"	12" SW.	661.73

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The Lakeside Park

REVISIONS

10/12/2026	BIDS & PERMITS
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06/22/2026	DD OWNER REVIEW
06/15/2026	DD PEER REVIEW
06/08/2026	DD 90 % PROGRESS
05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	DRHOTON
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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PROJECT NO.
2500281

SHEET NO.
C401

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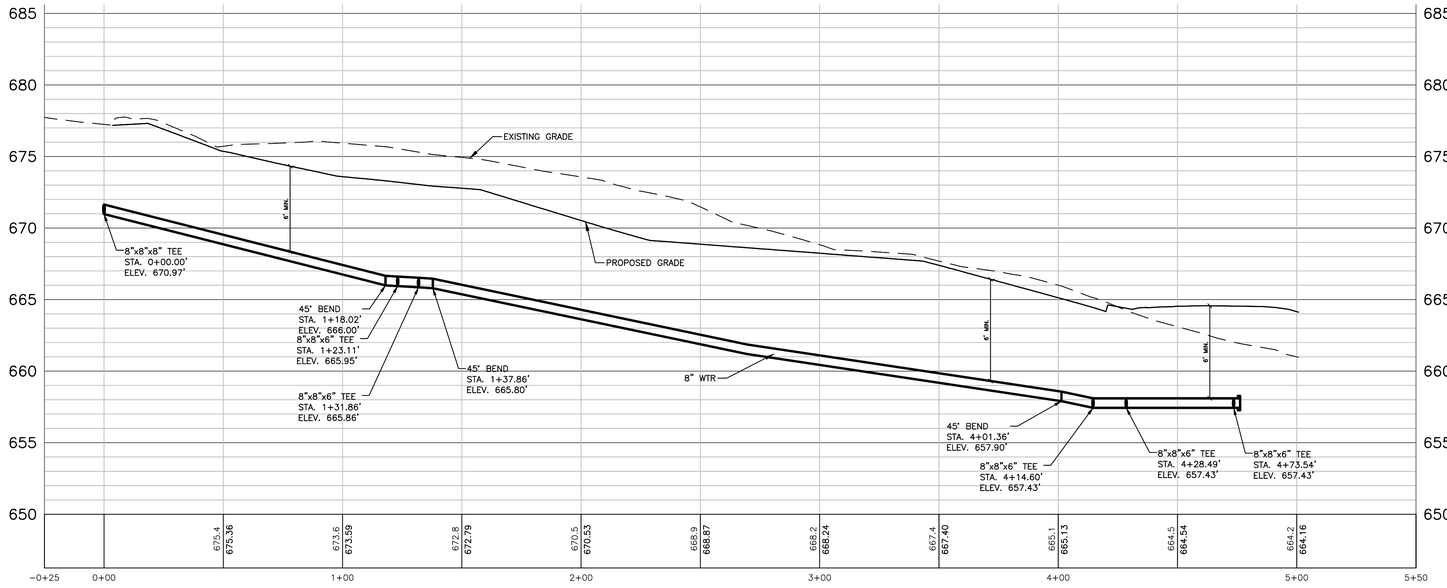
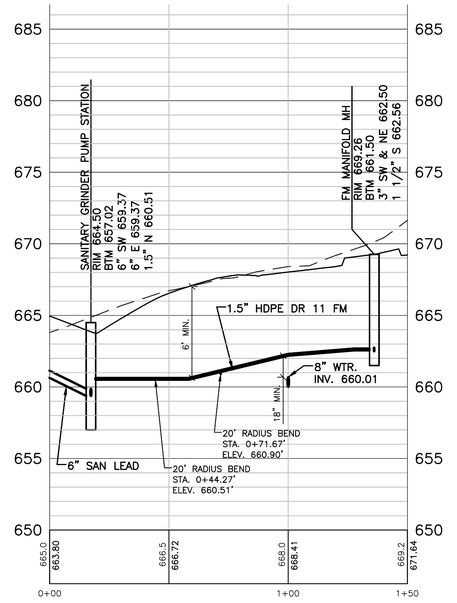


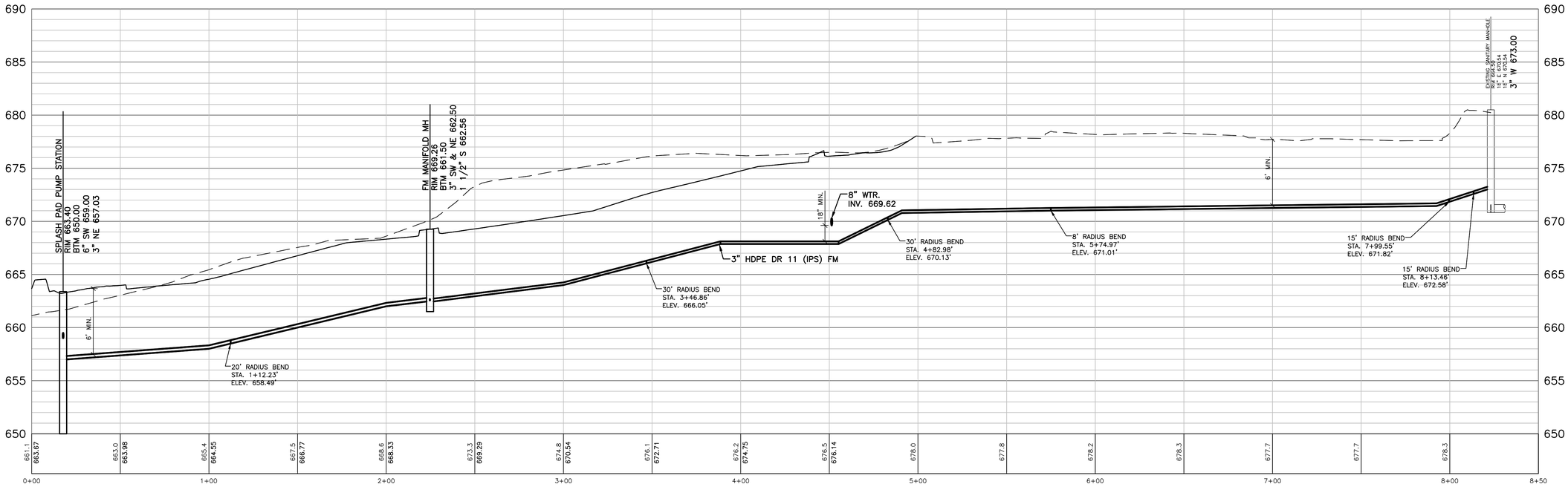
WATER MAIN

HORIZ SCALE: 1" = 30' | VERT SCALE: 1" = 6'



1 1/2-INCH FORCE MAIN

HORIZ SCALE: 1" = 30' | VERT SCALE: 1" = 6'



3-INCH FORCE MAIN

HORIZ SCALE: 1" = 30' | VERT SCALE: 1" = 6'

PLOT INFO: Z:\2025\2500281\CAD\CD\C402_2500281.DWG LAYOUT C402 DATE: 10/12/2026 TIME: 2:15:19 PM USER: ARAMIREZ

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The Lakeside Park

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06/15/2026	DD PEER REVIEW
06/08/2026	DD 90 % PROGRESS
05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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SHEET NO.

C402

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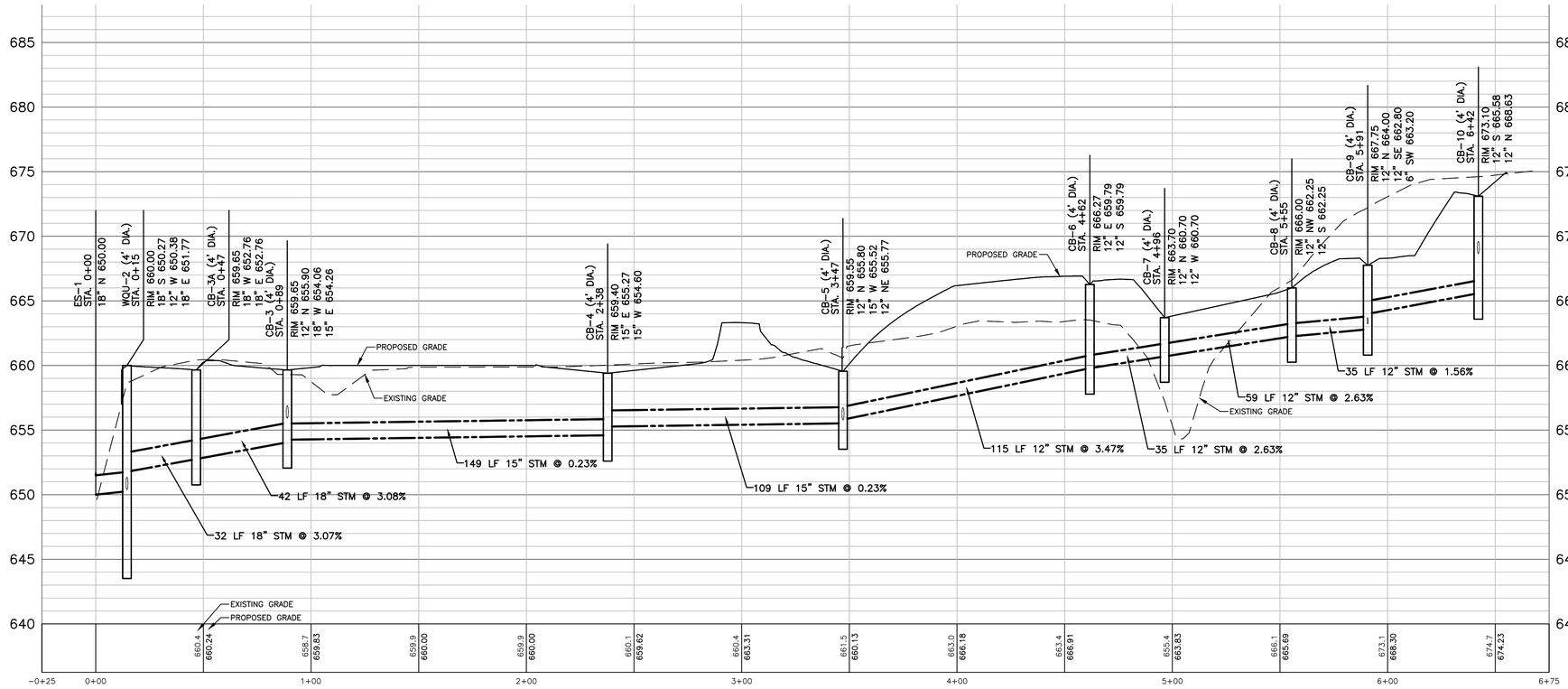
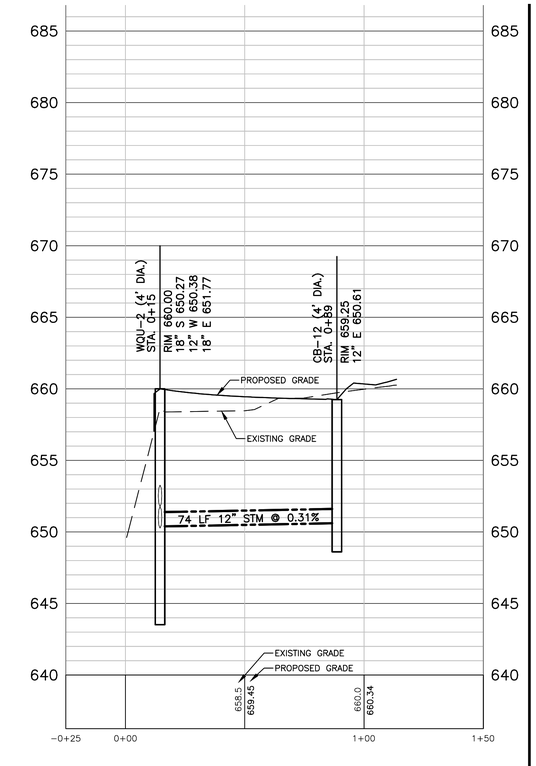


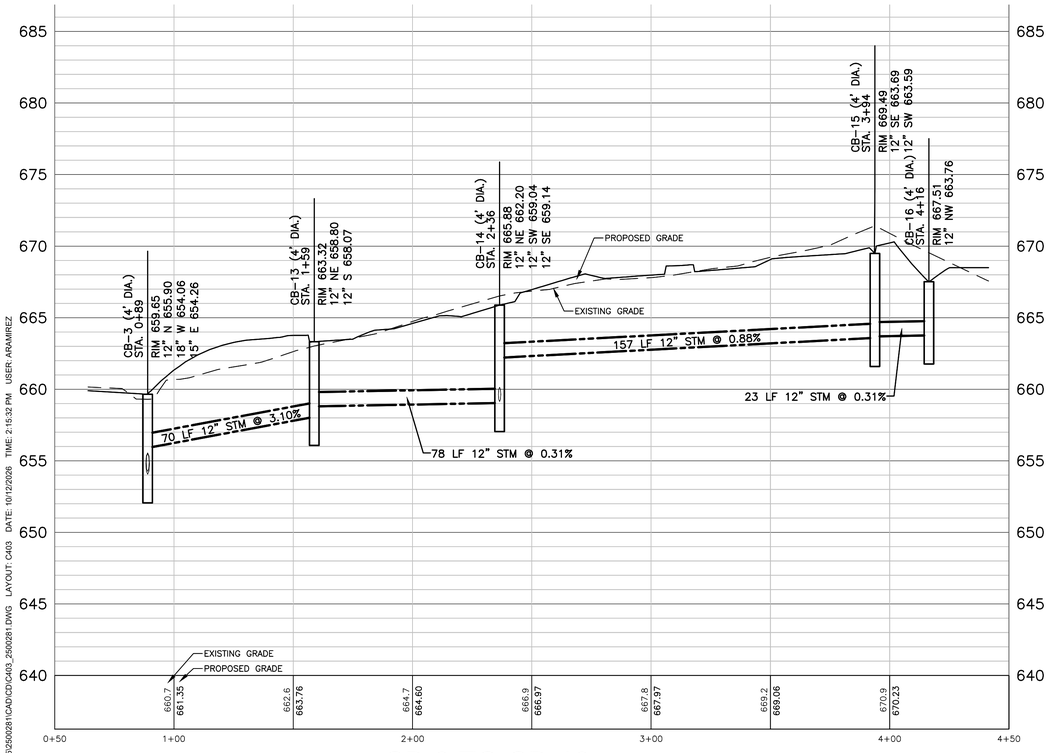
WQU-2 TO CB-10

HORIZ SCALE: 1" = 30' | VERT SCALE: 1" = 6'



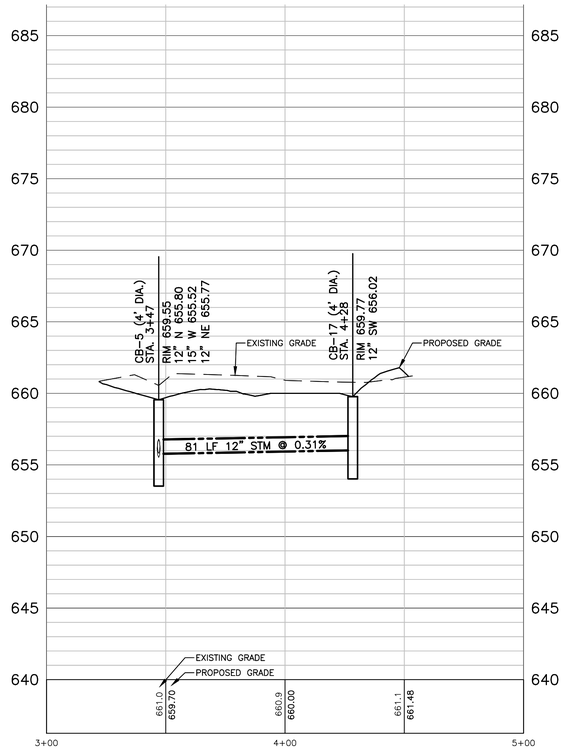
WQU-2 TO CB-12

HORIZ SCALE: 1" = 30' | VERT SCALE: 1" = 6'



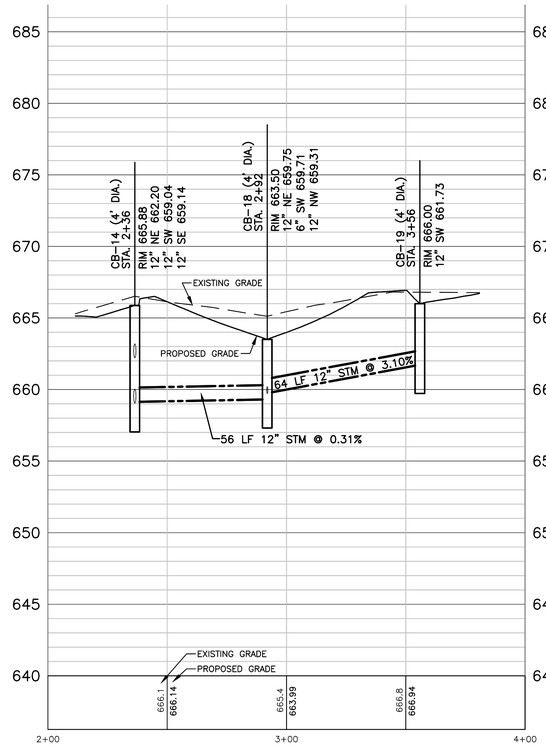
CB-3 TO CB-16

HORIZ SCALE: 1" = 30' | VERT SCALE: 1" = 6'



CB-5 TO CB-17

HORIZ SCALE: 1" = 30' | VERT SCALE: 1" = 6'



CB-14 TO CB-19

HORIZ SCALE: 1" = 30' | VERT SCALE: 1" = 6'

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REVISIONS

10/12/2026	BIDS & PERMITS
09/21/2026	CD PEER REVIEW
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05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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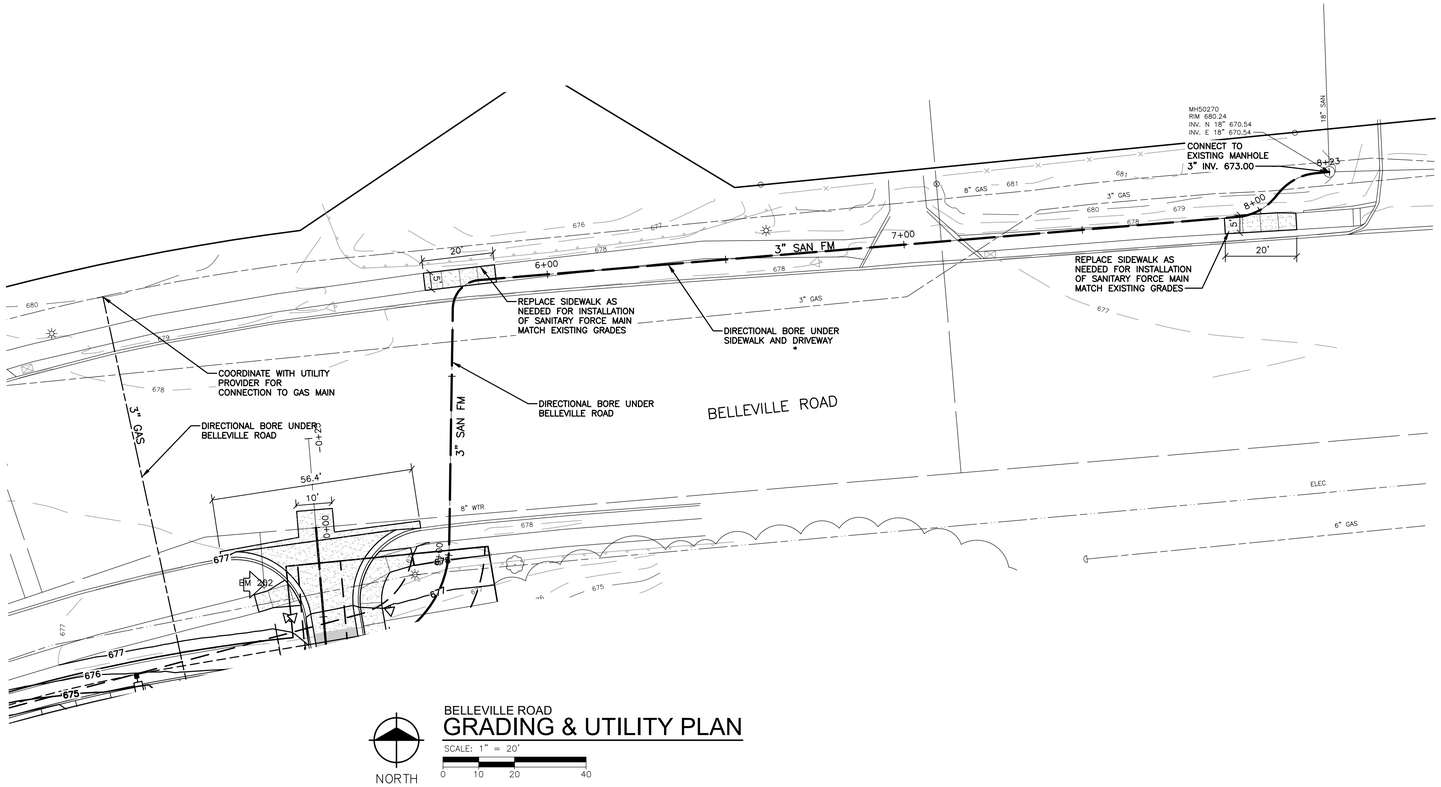

BELLEVILLE ROAD
GRADING & UTILITY PLAN

SCALE: 1" = 20'

NORTH 0 10 20 40

BENCH MARKS

BENCH MARK 201 ELEVATION: 668.38
MAG NAIL IN SOUTHEASTERLY CORNER OF CONCRETE PAD ON SOUTHERLY SIDE OF BELLEVILLE ROAD, DIRECTLY ACROSS FROM QUIRK ROAD (TO BE REMOVED)

BENCH MARK 202 ELEVATION: 679.17
ARROW ON HYDRANT ON SOUTHERLY SIDE OF BELLEVILLE ROAD 400' EAST OF INTERSECTION OF BELLEVILLE ROAD AND QUIRK ROAD

SYMBOL LEGEND

- 4" THICK CONCRETE SIDEWALK
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- STANDARD CURB AND GUTTER

GRADING SYMBOL LEGEND

- -725- EXISTING MAJOR CONTOUR
- -724- EXISTING MINOR CONTOUR
- 725 PROPOSED MAJOR CONTOUR
- 724 PROPOSED MINOR CONTOUR

UTILITY SYMBOL LEGEND

- 4" FM — SANITARY FORCE MAIN
- GAS MAIN
- 8" WTR — WATER MAIN

SITE NOTES

1. SEE SHEET C201.

GRADING NOTES

1. SEE SHEET C301.

UTILITY NOTES

1. SEE SHEET C401.

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Drawn By	ARAMIREZ
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Reviewer	ERANDOLPH
Manager	CKRETOVIC

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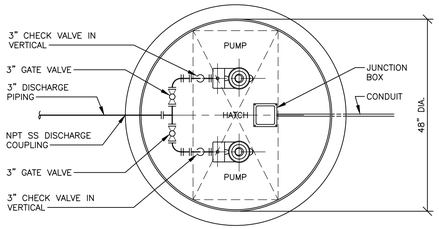
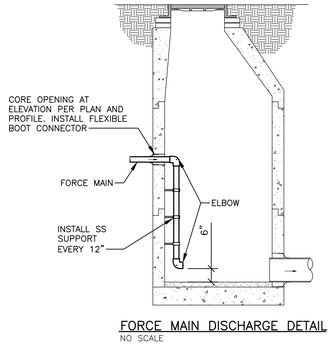
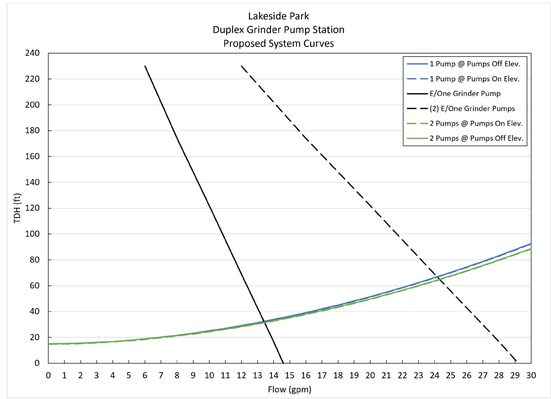




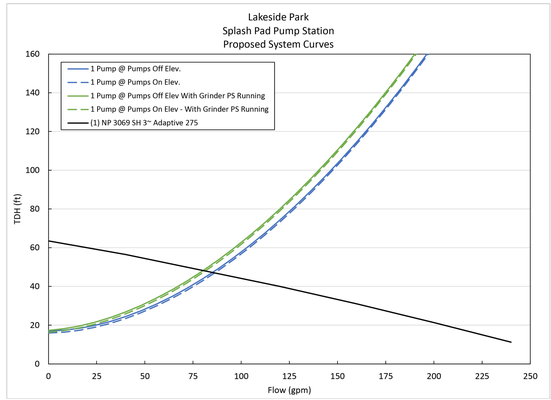
FORCE MAIN DISCHARGE DETAIL
NO SCALE



SANITARY GRINDER PS FLOW INFORMATION	
LAKE HOUSE FIXTURES	14
LAKE HALL FIXTURES	16
TOTAL FIXTURES	32
REU FACTOR	0.23 REUs PER FIXTURE
TOTAL REUs	8.74
PEOPLE FACTOR	3.2 PEOPLE PER REU
TOTAL PEOPLE	28
FLOW FACTOR	100 GPCD
TOTAL FLOW	2800 GPD
AVERAGE DAY FLOW	2 GPM
10 STATE STANDARDS PEAKING FACTOR	4.36
PEAK FLOW	9 GPM

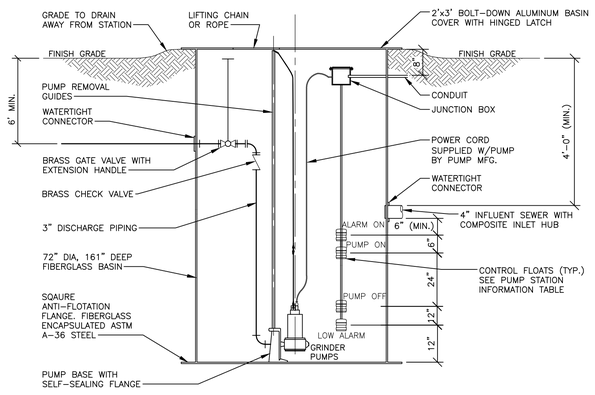
SANITARY GRINDER PUMP STATION INFORMATION		
PUMP CONTROL DESCRIPTION	ELEVATION	RELATIVE DEPTH OF BOTTOM OF WET WELL
COVER RIM ELEVATION	664.50	7.48
1-1/4" FM C/L ELEVATION	660.57	3.55
(2) 6" INFLUENT C/L ELEVATION	659.62	2.60
HIGH LEVEL ALARM / LAG PUMP ON	659.44	2.42
LEAD PUMP ON	658.77	1.75
PUMPS OFF	658.44	1.42
BOTTOM OF BASIN	657.02	0
FIRM CAPACITY: 13 GPM @ 32 FEET TDH		
WET WELL CAPACITY: 150 GALLONS		
STATION PIPING: 1-1/4 INCH 304 STAINLESS STEEL		
FORCE MAIN: 1-1/2 INCH HDPE DR 11		

NOTE: FIELD ADJUST COVER RIM ELEVATION SO IT IS 5 INCHES ABOVE SURROUNDING GRADE



SPLASH PAD PS FLOW INFORMATION	
AVERAGE FLOW	53 GPM
PEAK FLOW	76 GPM

SPLASH PAD PUMP STATION INFORMATION		
PUMP CONTROL DESCRIPTION	ELEVATION	RELATIVE DEPTH OF BOTTOM OF WET WELL
COVER RIM ELEVATION	663.40	13.40
4" INFLUENT C/L ELEVATION	659.17	9.17
3" FM C/L ELEVATION	657.15	7.15
HIGH LEVEL ALARM	657.00	7.00
PUMP ON	656.00	6.00
PUMPS OFF	654.00	4.00
LOW LEVEL ALARM	653.00	3.00
BOTTOM OF BASIN	650.00	0
FIRM CAPACITY: 76 GPM @ 45 FEET TDH		
6' DIA. WET WELL CAPACITY: 423 GALLONS		
STATION PIPING: 3 INCH SCH 80 PVC		
FORCE MAIN: 3 INCH HDPE DR 11 (IPS)		



SPLASH PAD PUMP STATION
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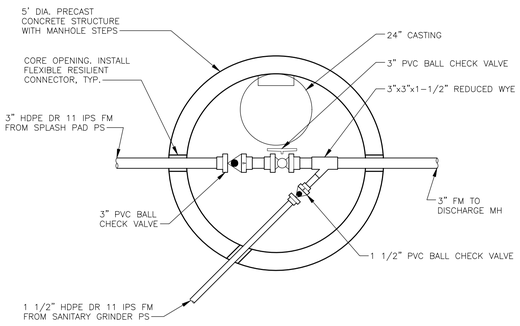
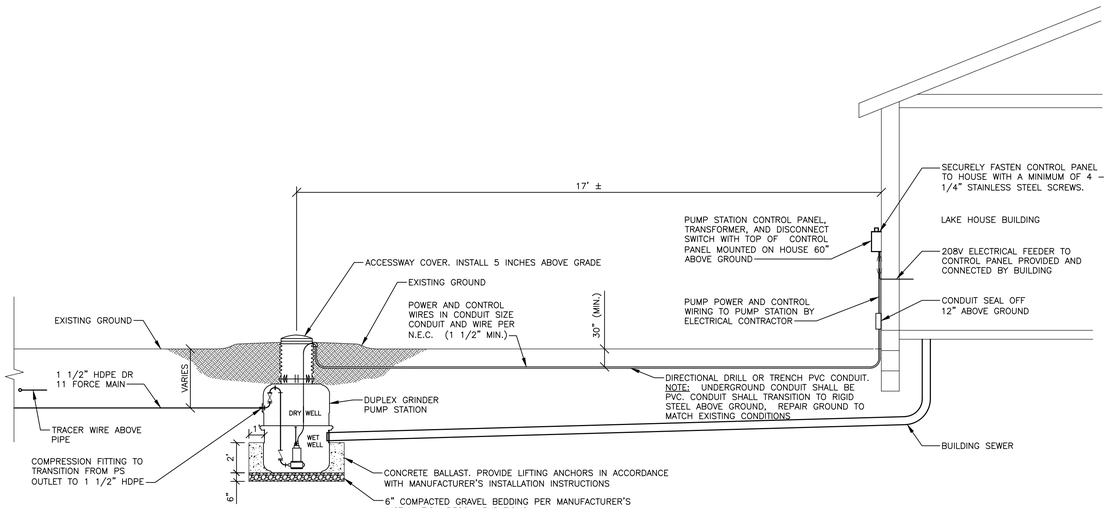
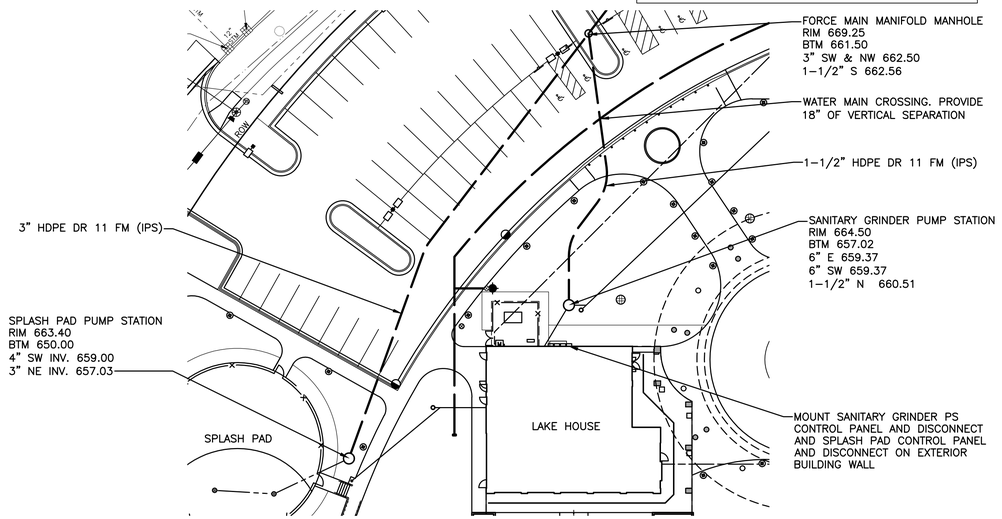


FORCE MAIN MANIFOLD MANHOLE
NO SCALE



GRINDER PUMP SCHEMATIC
NO SCALE



NORTH

PUMP STATION PLAN
SCALE: 1" = 30'
0 15 30 60

PLOT INFO: Z:\2025\2500281\CAD\CD\C412_2500281.DWG LAYOUT: C412 DATE: 10/12/2026 TIME: 2:15:38 PM USER: JREYES

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Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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SHEET NO.
C412

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R3-2

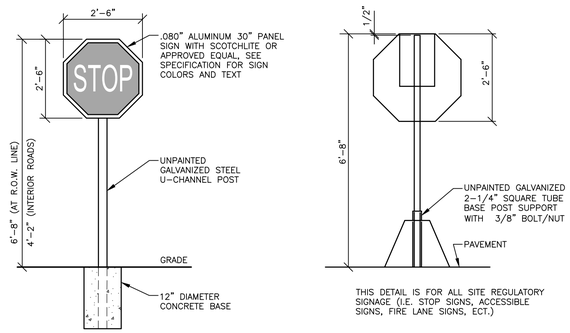
NO LEFT TURN SIGN
NO SCALE

R5-1

DO NOT ENTER SIGN
NO SCALE

INSTALLATION IN PAVED AREAS:
POSTS ARE TO BE LOCATED AS SHOWN ON DRAWINGS AND SET IN PRECAST REINFORCED CONCRETE SIGN POST BASE. MOUNT SIGN TO POST PER MANUFACTURER'S RECOMMENDATIONS.

NOTE: SIGN, POLE AND BASE FURNISHED AND INSTALLED BY CONTRACTOR.



STOP SIGNS AT DRIVE ENTRANCES SHALL BE LOCATED 12'-0" FROM R.O.W. LINE.

THIS DETAIL IS FOR ALL SITE REGULATORY SIGNAGE (I.E. STOP SIGNS, ACCESSIBLE SIGNS, FIRE LANE SIGNS, ECT.)

STOP SIGN DETAIL
NO SCALE SM-006

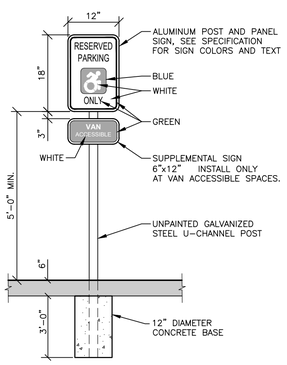
INSTALLATION IN LAWN AREAS:
POSTS ARE TO BE LOCATED 5'-0" FROM EDGE OF CURB. BURY POST 3'-0" DEEP AND AS SHOWN ON DRAWINGS. MOUNT SIGN TO POST PER MANUFACTURER'S RECOMMENDATIONS.

PARKING - FIRE LANE SIGNS:
12"x18", NON-REFLECTIVE

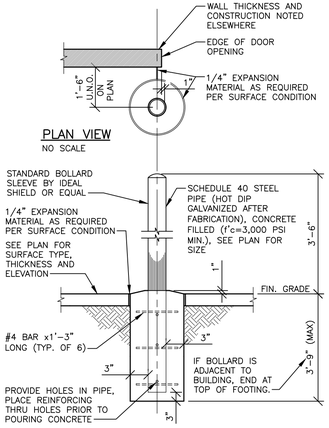
ACCESSIBLE PARKING SIGNS:
REFLECTIVE 0.080: ALUMINUM WITH SCOTCHLITE, OR APPROVED EQUAL.

SUPPLEMENTAL VAN ACCESSIBLE SIGNS:
REFLECTIVE 0.080: ALUMINUM WITH SCOTCHLITE, OR APPROVED EQUAL.

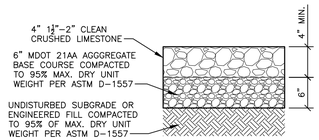
WRONG WAY SIGNS:
30"x18" UV SCREEN PRINTED ALUMINUM



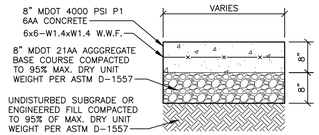
VAN ACCESSIBLE
BARRIER FREE PARKING SIGN DETAIL
NO SCALE SM-005



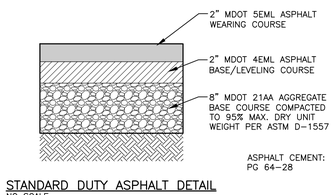
BOLLARD DETAIL
NO SCALE SM-007



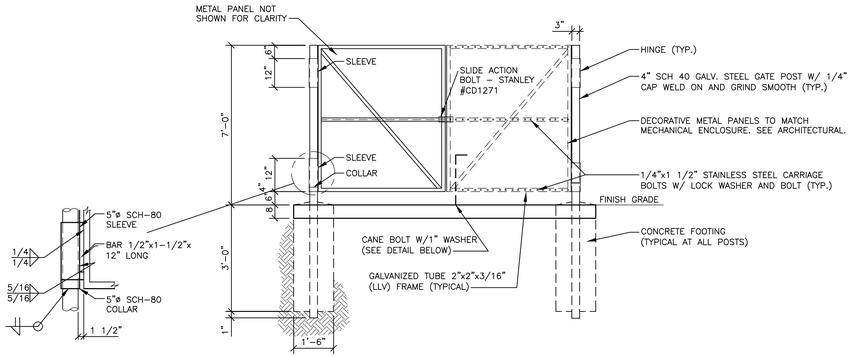
GRAVEL PAVEMENT DETAIL



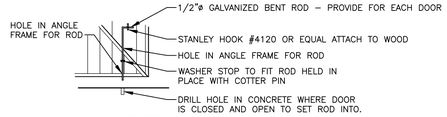
HEAVY DUTY CONCRETE DETAIL



STANDARD DUTY ASPHALT DETAIL
NO SCALE

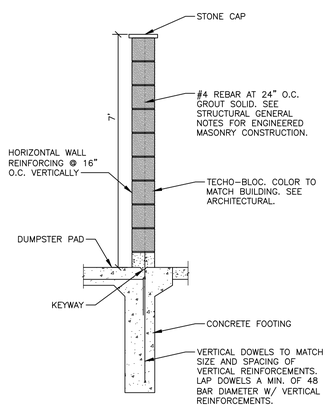


NOTE:
HOT DIP GALVANIZE ALL STEEL AFTER FABRICATION

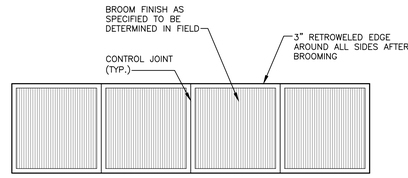


CANE BOLT DETAIL

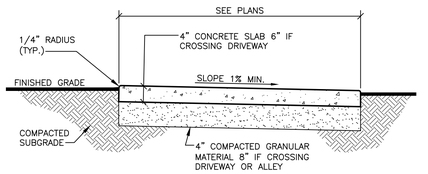
DUMPSTER GATE ELEVATION
NO SCALE



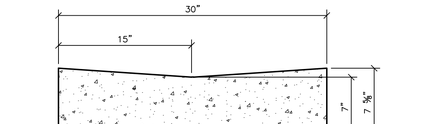
DUMPSTER WALL DETAIL
NO SCALE



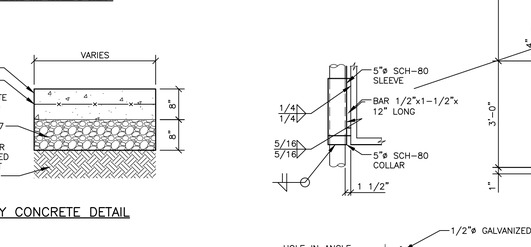
BROOM FINISH SIDEWALK DETAIL
NO SCALE CP-003



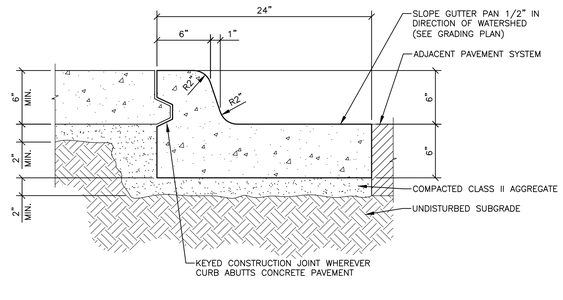
SIDEWALK DETAIL
NO SCALE CP-002



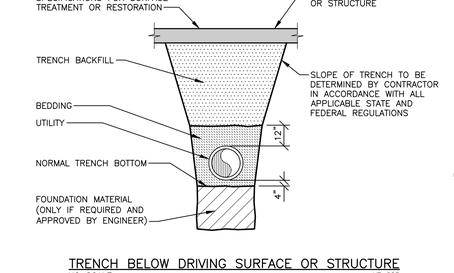
STANDARD GUTTER PAN
NO SCALE CG-005



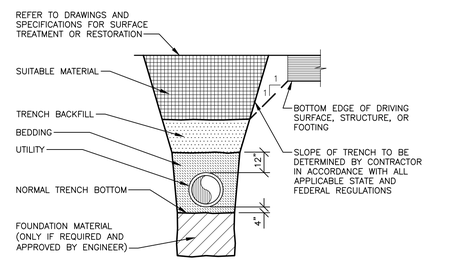
STANDARD CROWN CURB & GUTTER
NO SCALE CG-001



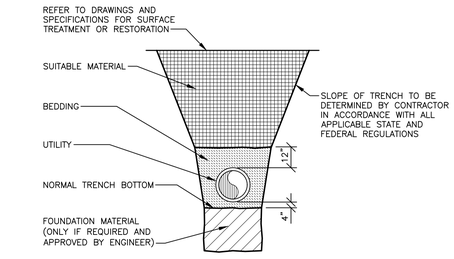
SIDEWALK KEYWAY SECTION
NO SCALE CG-010



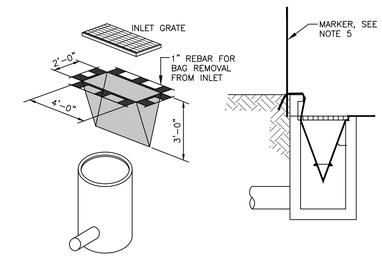
TRENCH BELOW DRIVING SURFACE OR STRUCTURE
NO SCALE UT-003



TRENCH ADJACENT TO DRIVING SURFACE OR STRUCTURE
NO SCALE UT-002



TRENCH NOT ADJACENT TO DRIVING SURFACE OR STRUCTURE
NO SCALE UT-001



ISOMETRIC VIEW

INSTALLATION DETAIL

NOTES:

1. PLACE FILTER FABRIC BAG INSIDE THE INLET BENEATH THE GRATE.
2. REPLACE GRATE, WHICH WILL HOLD BAG IN PLACE.
3. ANCHOR FILTER BAG SO IT WILL NOT DROP INTO CATCH BASIN.
4. EXTEND FLAPS OF BAG BEYOND THE BAG. BURY IN SOIL IN EARTH AREAS.
5. IF CATCH BASIN IS IN A LOW DEPRESSION - MARK CB LOCATION WITH A MARKER TO ASSIST LOCATING CATCH BASIN IF FLOODING OCCURS.
6. INSPECT DROP INLET FILTERS ROUTINELY AND AFTER EACH RAIN EVENT.
7. REPLACE DAMAGED FILTER BAGS IMMEDIATELY.
8. CLEAN AND/OR REPLACE FILTER BAG WHEN 1/2 FULL. REPLACE CLOGGED FABRIC IMMEDIATELY.
9. VACUUM OUT CATCH BASIN SUMP IF FILTER BAG TEARS.
10. REMOVE ENTIRE PROTECTIVE MECHANISM WHEN UP GRADIENT AREAS ARE STABILIZED AND STREETS HAVE BEEN SWEPT AND/OR DIRECTLY DETECTED BY ENGINEER/OWNER.

S58 INLET PROTECTION - FABRIC DROP
NO SCALE SE-056

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The Lakeside Park

REVISIONS

10/12/2026	BIDS & PERMITS
09/21/2026	CD PEER REVIEW
09/09/2026	CD TEAM REVIEW
08/10/2026	CD 50% PROGRESS
06/22/2026	DD OWNER REVIEW
06/15/2026	DD PEER REVIEW
06/08/2026	DD 90 % PROGRESS
05/18/2026	DD 50 % PROGRESS
02/23/2026	SD OWNER REVIEW
02/13/2026	SD PEER REVIEW
02/09/2026	SD PROGRESS REVIEW

Drawn By	ARAMIREZ
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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PROJECT NO.
2500281

SHEET NO.
C501

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PLOT INFO: Z:\2025\2500281\CAD\CDICS01_2500281.DWG LAYOUT: C501 DATE: 10/12/2026 TIME: 3:04:35 PM USER: DRHOTON

NORTH

MAINTENANCE OF TRAFFIC PLAN

SCALE: 1" = 200'

0 100 200 400

SYMBOL LEGEND

- CHANNELIZING DEVICES
- LIGHTED ARROW PANEL (CAUTION MODE)
- TRAFFIC FLOW
- TEMP CONSTRICTION SIGN

GENERAL NOTES

G1 DISTANCE BETWEEN SIGNS, "D", THE VALUES FOR WHICH ARE SHOWN IN TYPICAL GEN-KEY ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.

G2 THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.

G3 ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING MUST MEET NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP 350) TEST LEVEL 3, OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) TL-3 AS WELL AS THE CURRENT EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.

G4 DO NOT STORE EQUIPMENT, MATERIALS OR PERFORM WORK IN ESTABLISHED BUFFER AREAS.

SIGN NOTES

S1 ALL NON-APPLICABLE SIGNING WITHIN THE CIA MUST BE MODIFIED TO FIT CONDITIONS, COVERED, OR REMOVED. FOR GUIDANCE SEE THE WORK ZONE SAFETY AND MOBILITY MANUAL, SECTIONS 6.01.09 AND 6.01.10.

S2 5-18b SIGNS ARE ONLY REQUIRED ON FREEWAY PROJECTS WITH A DURATION OF 15 DAYS OR LONGER OR ON-FREEWAY PROJECTS WITH A DURATION OF 90 DAYS OR LONGER. TO APPLY THIS TYPICAL WITHOUT R5-18b SIGNS, REMOVE THE SIGNS AND CONSOLIDATE THE SEQUENCE AS APPROPRIATE THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.

S3 R5-18C IS ONLY REQUIRED IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. OMIT THIS SIGN IN SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE

S5 LACE ADDITIONAL SPEED LIMIT SIGNS REFLECTING THE WORK ZONE SPEED AFTER EACH MAJOR CROSSROAD THAT INTERSECTS THE WORK ZONE, OR AFTER EACH ENTRANCE RAMP THAT COMES ONTO THE FREEWAY WHERE THE REDUCED SPEED IS IN EFFECT. PLACE ADDITIONAL SPEED LIMIT SIGNS AT INTERVALS ALONG THE ROADWAY SUCH THAT NO SPEED LIMIT SIGNS ARE MORE THAN 2 MILES APART. WHEN REDUCED SPEED LIMITS ARE UTILIZED IN THE WORK AREA, PLACE ADDITIONAL SPEED LIMIT SIGNS RETURNING TRAFFIC TO ITS NORMAL SPEED BEYOND THE LIMITS OF THE WORK AREA AS INDICATED. IF PERMANENT SIGNS DISPLAYING THE CORRECT SPEED LIMIT ARE POSTED, OMIT ALL W3-5b AND R2-1 SIGNS AND REDUCE SPACING ACCORDINGLY.

S10 LACE REDUCED SPEED ZONE AHEAD SIGN (W3-5b) HERE WHEN USING A SPEED REDUCTION IN THIS DIRECTION.

S12 PLACE R2-1 SIGNS AS DETAILED IN NOTE S5 WHEN THERE IS A SPEED REDUCTION IN THIS DIRECTION.

TEMPORARY TRAFFIC CONTROL DEVICE NOTES

TCD1 THE MAXIMUM DISTANCE IN FEET BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD NOT EXCEED 1.0 TIMES THE WORK ZONE SPEED LIMIT IN MPH FOR ROADWAYS WITH A POSTED WORK ZONE SPEED LIMIT LESS THAN 45 MPH AND SHOULD NOT EXCEED 50 FEET ON ROADWAYS WITH A POSTED WORK ZONE SPEED LIMIT OF 45 MPH OR GREATER. THE SPACING FOR 42 INCH CHANNELIZING DEVICE TAPERS ARE NOT TO EXCEED 25 FEET AT NIGHT.

TCD2 THE MAXIMUM DISTANCE IN FEET BETWEEN CHANNELIZING DEVICES IN A TANGENT SHOULD NOT EXCEED TWICE THE WORK ZONE SPEED LIMIT IN MPH FOR ROADWAYS WITH A POSTED WORK ZONE SPEED LIMIT LESS THAN 45 MPH AND SHOULD NOT EXCEED 100 FEET ON ROADWAYS WITH A POSTED WORK ZONE SPEED LIMIT OF 45 MPH OR GREATER. THE SPACING FOR 42 INCH CHANNELIZING DEVICE TANGENTS ARE NOT TO EXCEED 50 FEET AT NIGHT.

TCD6 PLACE LIGHTED ARROW PANELS AS CLOSE TO THE BEGINNING OF TAPERS AS PRACTICAL, BUT NOT IN A MANNER THAT WILL OBSCURE OR CONFUSE APPROACHING MOTORISTS WHEN PHYSICAL LIMITATIONS RESTRICT PLACEMENT. IN CURBED SECTIONS, IF ARROW BOARD CANNOT BE PLACED BEHIND CURB, PLACE ARROW BOARD IN THE CLOSED LANE AS CLOSE TO THE BEGINNING OF TAPER AS POSSIBLE.

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The Lakeside Park

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Drawn By	DRHOTON
Designer	DRHOTON
Reviewer	ERANDOLPH
Manager	CKRETOVIC

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PROJECT NO.

2500281

SHEET NO.

C901

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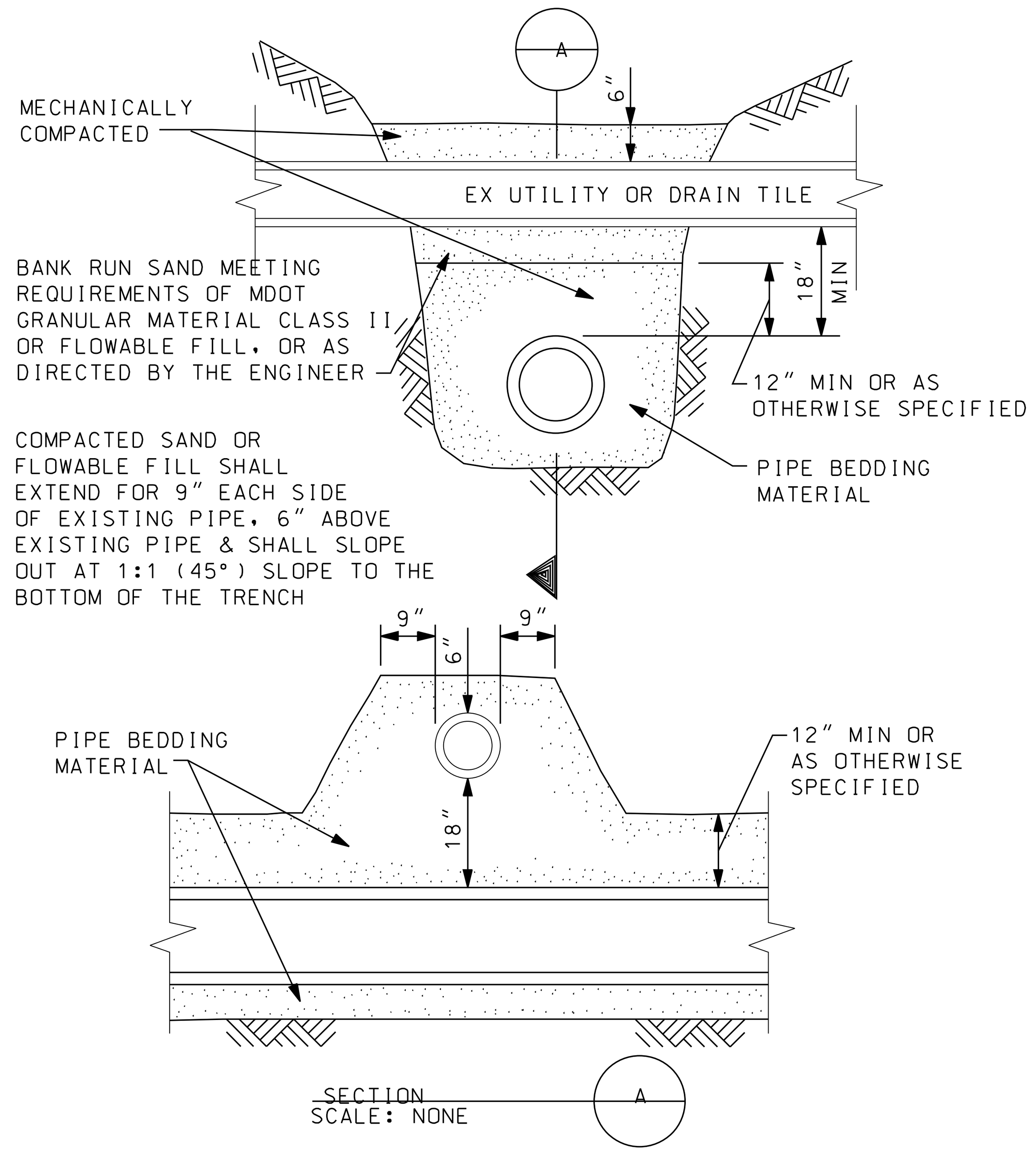
PLOT INFO: Z:\2026\2500281\CAD\CD\C901_2500281.DWG LAYOUT: C901 DATE: 10/12/2026 TIME: 2:15:41 PM USER: ARAMIREZ

NOTE:
WHERE CONCRETE ENCASEMENT IS SPECIFIED FOR NEW UTILITY A 6" MINIMUM LAYER OF MECHANICALLY COMPACTED SAND SHALL BE MAINTAINED BETWEEN EXISTING UTILITY & TOP OF CONCRETE ENCASEMENT.



STANDARD PIPE SUPPORT

N.T.S.

GENERAL NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION MEETING, AT A TIME AND PLACE AS ARRANGED BY THE COMMUNITY, IN WHICH VARIOUS UTILITY COMPANIES AND GOVERNMENTAL AGENCY REPRESENTATIVES WILL BE PRESENT.

2. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST HAVE IN HIS POSSESSION A COPY OF ALL PERMITS NECESSARY TO CONSTRUCT A CONNECTION TO, OR AN EXTENSION OF, THE WATER SUPPLY, SANITARY SEWER, OR STORM SEWER SYSTEMS.

3. THE CONTRACTOR SHALL MAINTAIN HIS CONSTRUCTION OPERATIONS WITHIN THE PRESENTLY EXISTING ROAD RIGHTS-OF-WAY AND EASEMENTS AS NOTED ON THE PLANS THROUGHOUT THE PROJECT. IN THE EVENT THAT THE CONTRACTOR DEEMS IT NECESSARY OR ADVISABLE TO OPERATE BEYOND THE LIMITS OF THE EXISTING RIGHTS-OF-WAY OR EASEMENTS, HE SHALL BE RESPONSIBLE FOR MAKING SPECIAL WRITTEN AGREEMENTS WITH THE PROPERTY OWNERS AND SHALL FURNISH SUCH COPIES OF AGREEMENTS TO THE COMMUNITY AND ENGINEER.

4. THE CONTRACTOR SHALL NOTIFY "MISS DIG" (800-482-7171) 3 DAYS (NOT INCLUDING HOLDAYS OR WEEKENDS) BEFORE STARTING CONSTRUCTION. HE SHALL MAKE ANY NECESSARY ARRANGEMENTS WITH UTILITY COMPANIES FOR RELOCATION OF EXISTING UTILITIES. THESE ARRANGEMENTS SHALL BE MADE IN SUFFICIENT TIME TO ALLOW THE RELOCATION WORK TO BE COMPLETED WITHOUT INTERFERING WITH OR DELAYING THE SEWER CONSTRUCTION.

5. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND THE ENGINEER 48 HOURS PRIOR TO UNCOVERING ANY EXISTING UTILITIES.

6. ON ALL WORK WITHIN THE WAYNE COUNTY RIGHT-OF-WAY, THE COMMUNITY 72 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.

7. THE CONTRACTOR SHALL MAINTAIN ALL TRAFFIC AT ALL TIMES AS PER THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

8. THE CONTRACTOR SHALL AT ALL TIMES PROVIDE EMERGENCY ACCESS TO PROPERTY IN THE VICINITY OF THE CONSTRUCTION FOR POLICE AND FIRE EQUIPMENT, AMBULANCES OR OTHER EMERGENCY VEHICLES TO PROTECT LIFE, HEALTH AND PROPERTY.

9. THE CONTRACTOR SHALL MAINTAIN PUBLIC ROADS AFFECTED BY THE CONSTRUCTION OPERATIONS IN A PASSABLE CONDITION UNTIL SUCH TIME AS FINAL RESTORATION OF THESE IMPROVEMENTS CAN BE MADE. IF THE PUBLIC SAFETY IS IN DANGER OR THE NECESSITY EXISTS FOR MAINTAINING TRAFFIC, BACKFILLING MUST BE COMPLETED IMMEDIATELY. IN THE EVENT THAT THE NECESSARY BACKFILL MATERIAL AND EQUIPMENT ARE NOT AVAILABLE WHEN DIRECTION IS GIVEN FOR IMMEDIATE BACKFILL, THE TRENCH SHALL BE BACKFILLED WITH NATIVE MATERIAL TO PROVIDE FOR THE NECESSARY MAINTENANCE OF TRAFFIC AND SAFETY; HOWEVER, THE NATIVE MATERIAL SHALL BE REMOVED WITHIN 48 HOURS AND THE TRENCH PROPERLY BACKFILLED.

GENERAL NOTES CONTINUED

10. NO STREET, ROAD OR SECTION THEREOF SHALL BE CLOSED TO THROUGH TRAFFIC UNLESS AUTHORIZED BY THE AGENCY WITH JURISDICTION OVER THE ROADS. PRIOR TO CLOSING A STREET, ROAD, OR SECTION THEREOF, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COPY OF A DETOUR PLAN APPROVED BY THE AGENCY HAVING JURISDICTION OVER THE ROADS.

11. IN THE EVENT ROADS ARE TO BE CLOSED, THE CONTRACTOR SHALL NOTIFY THE LOCAL FIRE DEPARTMENT, POLICE DEPARTMENT, LOCAL ROAD AUTHORITY, AMBULANCE AND EMERGENCY SERVICES, DEPARTMENT OF PUBLIC WORKS, PUBLIC TRANSIT AUTHORITY, PUBLIC SCHOOL SYSTEM, LOCAL TRASH PICKUP AUTHORITY, AND PUBLIC AND PRIVATE UTILITIES DAILY AS TO WHAT STREETS WILL BE PARTLY BLOCKED OR CLOSED, THE LENGTH OF TIME THE STREETS WILL BE BLOCKED OR CLOSED AND WHEN THE STREETS WILL BE REOPENED TO TRAFFIC.

12. PAVED STREETS AND DRIVEWAYS SHALL BE MAINTAINED IN A REASONABLE STATE OF CLEANLINESS AND THE CONTRACTOR SHALL REMOVE ACCUMULATIONS OF DEBRIS CAUSED BY HIS OPERATIONS. THE CONTRACTOR SHALL HAVE, AS A MINIMUM, AN OPERATING SWEEPER BROOM ON THE SITE AT ALL TIMES. THE PAVEMENT SHALL BE CLEANED AT THE CLOSE OF EACH DAYS OPERATION AND AS OFTEN AS NECESSARY BEFORE THAT TIME. FAILURE TO COMPLY SHALL BE CAUSE TO STOP CONSTRUCTION. CONTRACTOR SHALL ALSO COMPLY WITH THE LOCAL AIR POLLUTION CONTROL ORDINANCE.

13. ALL GRAVEL AND DIRT ROADS, STREETS OR DRIVEWAYS USED SHALL BE MAINTAINED BY GRADING, PLACING DUST PALLIATIVES, AND MAINTENANCE GRAVEL IN SUFFICIENT QUANTITIES TO ELIMINATE DUST AND MAINTAIN TRAFFIC AS DIRECTED BY THE AGENCY.

14. CONTRACTOR SHALL PROVIDE ALL NECESSARY SHEETING, SHORING, DEWATERING, BRACING, TRENCH BOXES, ETC., TO PERFORM WORK SAFELY AND PROTECT EXISTING UTILITIES AND IMPROVEMENTS.

15. THE FLOW IN THE EXISTING SEWERS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.16. CULVERTS, DITCHES, DRAIN TILES, TILE FIELD, DRAINAGE STRUCTURES, ETC., THAT ARE DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY RESTORED.

16. ALL PROPERTY IRONS AND MONUMENTS, IF DISTURBED OR DESTROYED BY THE CONTRACTOR'S OPERATION, SHALL BE REPLACED BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

17. AFTER ALL THE PIPE, STRUCTURES, ETC., HAVE BEEN LAID, CONSTRUCTED, AND BACKFILLED, THE SYSTEM SHALL BE TESTED AND FINAL INSPECTED. THE INSPECTION AND TESTING SHALL CONSIST OF A FIRST INSPECTION, TELEVISION INSPECTION (IF APPLICABLE) TESTING, AND FINAL INSPECTION AND MEASUREMENT. THE CONTRACTOR SHALL PROVIDE THE NECESSARY SUPERVISION, LABOR, TOOLS, EQUIPMENT, AND THE MATERIALS NECESSARY FOR THE TESTS WHICH SHALL BE CONDUCTED IN THE PRESENCE OF THE ENGINEER. HE ENGINEER SHALL BE NOTIFIED TWO (2) WORKING DAYS IN ADVANCE OF ALL TESTING.

GENERAL NOTES CONTINUED

18. THE FIRST INSPECTION SHALL BE COMPLETED AND ALL REPAIRS MADE IN AMPLE TIME SO THAT THE TELEVISION INSPECTION OF THE UNDERGROUND PORTION OF THE SYSTEM CAN BE COMPLETED WITHIN FOUR (4) WEEKS OF THE COMPLETION OF THE CONSTRUCTION. WHEN RE-TELEVISION IS NECESSARY, AN ADDITIONAL TWO (2) WEEKS WILL BE ALLOWED FOR COMPLETION. TESTING OF THE SYSTEM AS HEREIN DESCRIBED SHALL IMMEDIATELY FOLLOW THE TELEVISION INSPECTION AND SHALL BE COMPLETED WITHIN A TWO (2) WEEK PERIOD.

19. FAILURE TO MAINTAIN A SCHEDULE IN COMPLIANCE WITH THESE TERMS WILL AUTOMATICALLY CAUSE THE STOPPAGE OF OTHER WORK AT THE PARTICULAR SITE IN QUESTION UNTIL SUCH TIME AS THE FINAL INSPECTION OF THE COMPLETED UNDERGROUND PORTION OF THE SYSTEM HAS PROGRESSED TO ACCEPTABLE LIMITS.

20. THE CONTRACTOR SHALL HAVE THE UNDERGROUND PORTION OF THE SEWER SYSTEM READY FOR THE FIRST INSPECTION WITHIN TWO (2) WEEKS AFTER THE COMPLETION OF UTILITY.

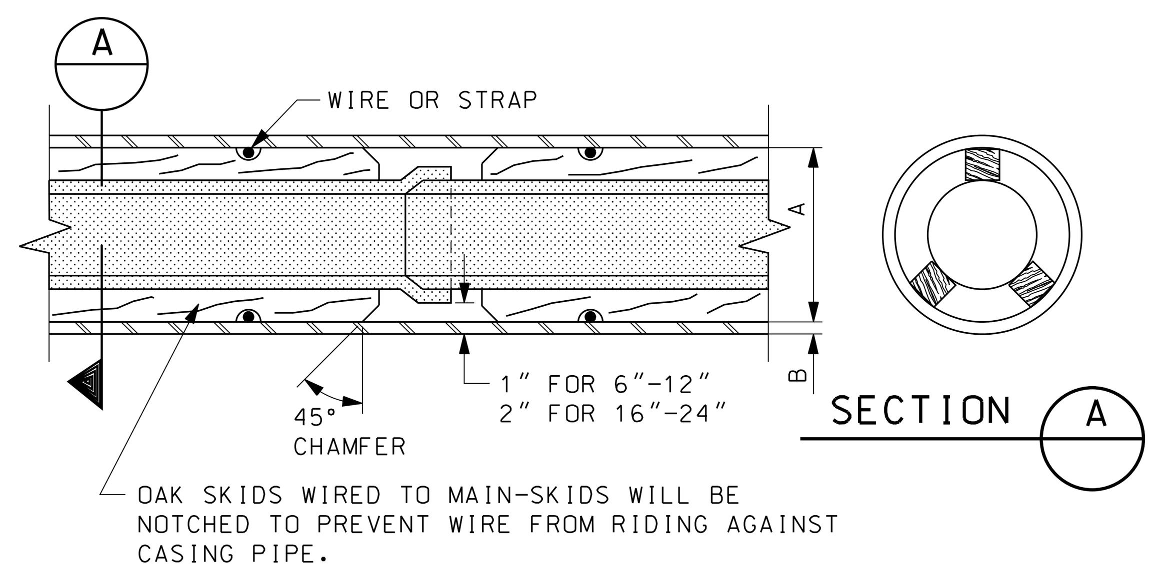
21. THE FIRST INSPECTION SHALL CONSIST OF A VISIBLE AND AUDIBLE CHECK OF SEWERS, MANHOLES, GATE WELLS, AND OTHER STRUCTURES TO ASCERTAIN THAT THE STRUCTURE STEPS HAVE BEEN PLACED, ALL LIFT HOLES PLUGGED, THE CHANNELING OF THE MANHOLE BOTTOMS COMPLETED, ALL VISIBLE OR AUDIBLE LEAKS STOPPED, ALL PIPE HAS BEEN PLACED STRAIGHT AND TRUE TO THE PROPER GRADES AND ELEVATION, THE REQUIRED ADJUSTING RINGS AND FRAME AND COVER PROPERTY INSTALLED, ALL TRENCHES AND STRUCTURES BACKFILLED IN AN ACCEPTABLE MANNER AND THAT THE SYSTEM HAS BEEN THOROUGHLY CLEANED.

22. THE FIRST INSPECTION SHALL BE CONSIDERED COMPLETED WHEN ALL TREE PAIRS HAVE BEEN MADE AND THE SYSTEM IS READY FOR A TELEVISION INSPECTION AND SUBSEQUENT TESTING.

23. TRENCH BACKFILL UNDER ROAD SURFACES, PAVEMENTS, CURBS, DRIVEWAY, SIDEWALK AND WHERE THE TRENCH EDGE IS WITHIN 3-FEET OF THE PAVEMENT SHALL BE TRENCH B (SAND) PER SPECIFICATIONS SECTION 312333, TRENCHING AND BACKFILLING.

24. AFTER ALL TESTING, TELEVISION INSPECTION, FINAL RESTORATION AND CLEAN-UP HAS BEEN COMPLETED, A FINAL INSPECTION AND MEASUREMENT WILL BE DONE. THE FINAL INSPECTION SHALL BE REQUESTED BY THE CONTRACTOR AND CONSIST OF, BUT IS NOT LIMITED TO, CHECKING FOR PROPER ALIGNMENT, PROPER GRADE, CLEANLINESS, LEAKS, CONFORMANCE TO THE PLANS AND SPECIFICATION, PROPER STRUCTURAL AND MECHANICAL ADJUSTMENTS, AND RESTORATION. FINAL MEASUREMENT INCLUDES STRUCTURE ELEVATIONS, DISTANCES BETWEEN STRUCTURES, AND CONFIRMATION UTILITIES ARE LOCATED WITHIN EASEMENT AND RIGHT-OF-WAY AREAS.

25. SUCCESSFUL COMPLETION OF ANY TEST OR INSPECTION SHALL NOT RELIEVE THE CONTRACTOR FROM THEIR RESPONSIBILITY TO CORRECT ANY DEFICIENCY OR NONCONFORMANCE TO THE PLANS OR SPECIFICATIONS WHICH MAY THEREAFTER BECOME KNOWN.

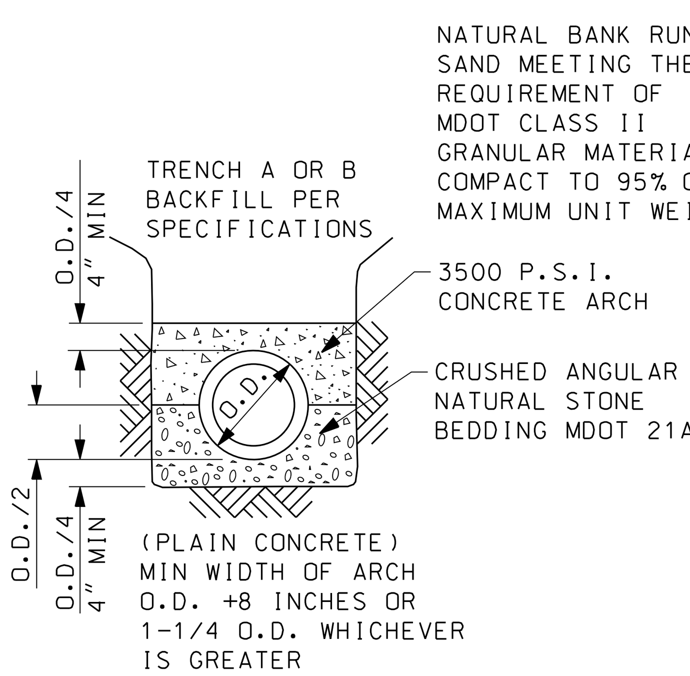


DIA OF SEWER	DIA OF MAIN	MIN "A"	ROAD CROSSING MIN "B"	RAILROAD CROSSING MIN "B"
	6"	16"	.375	.375
	8"	16"	.375	.375
	12"	20"	.375	.438
10"	16"	24"	.375	.500
12" & 15"	20"	30"	.375	.500
18"	24"	36"	.375	.500

CASING PIPE SHALL BE WELDED STEEL PIPE A.S.T.M. A-252, GR 2 UNLESS OTHERWISE SPECIFIED.

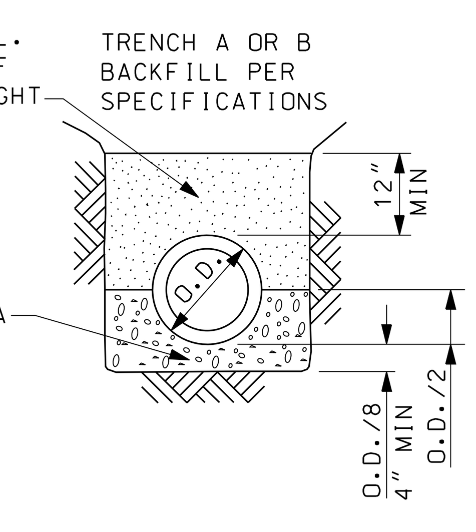
NOTES:
1. NO WATER SHALL BE USED IN BORING UNDER RAILROADS.
2. MAINTAIN MINIMUM OF 5'-6" OF COVER BETWEEN BASE OF RAIL AND TOP OF CASING.
3. THE ENDS OF THE CASING SHALL BE SUITABLY PROTECTED AGAINST THE ENTRANCE OF FOREIGN MATERIAL, BUT SHALL NOT BE TIGHTLY SEALED.
4. WHEN BORING ALL VOIDS OUTSIDE OF CASING PIPE SHALL BE FILLED BY MEANS OF PRESSURE GROUTING WITH 1:3 CEMENT-SAND MORTAR. THIS WORK MUST BE ACCOMPLISHED WITHIN 24 HOURS AFTER THE CROSSING HAS BEEN COMPLETED. BORING SHALL EXTEND A MINIMUN OF 10 FEET OUTSIDE THE EDGES OF THE PAVEMENT.
5. SKIDS ARE TO BE MINIMUM OF 80% OF PIPE LENGTH.
6. CASING SPACERS AS ALLOWED BY THE ENGINEER.

STANDARD CASING SECTON



LOAD FACTOR: 1.9

CLASS "R-A"



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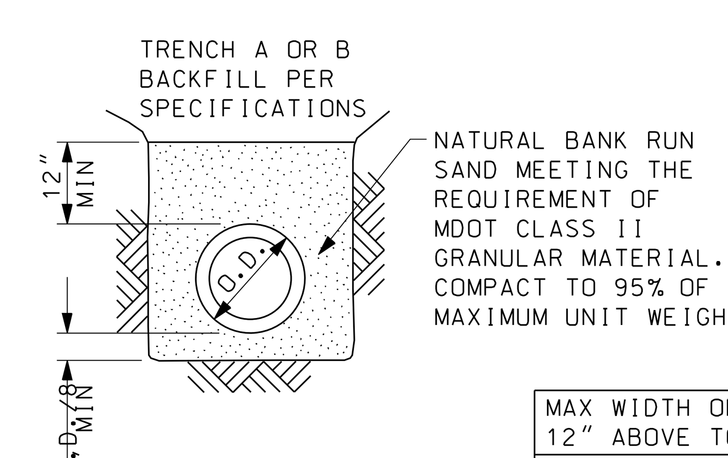
CLASS "R-B"



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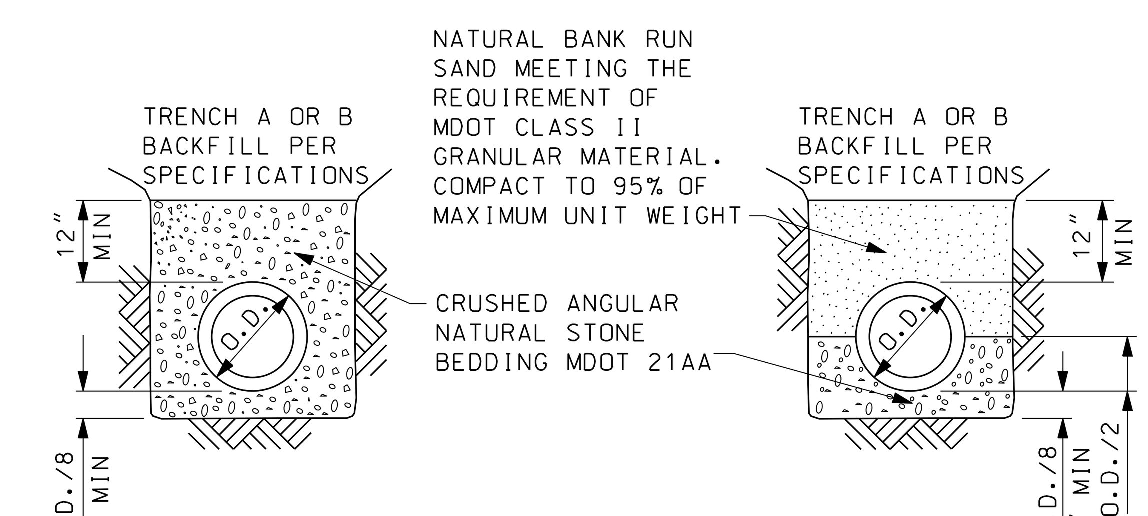
CLASS "R-C"

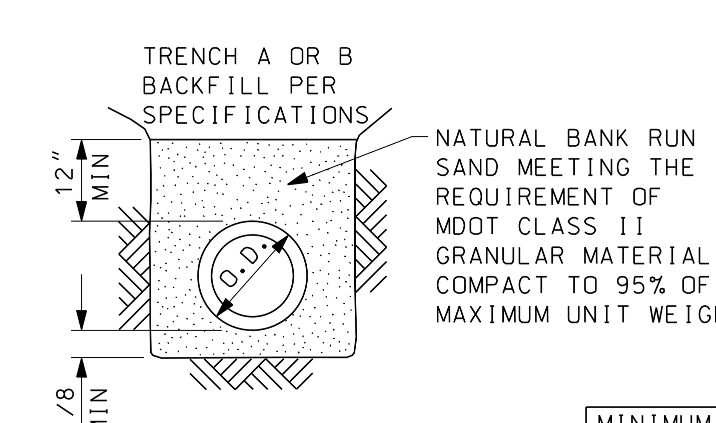
MAX WIDTH OF TRENCH AT 12" ABOVE TOP OF PIPE
6" THRU 12" PIPE - 30" WIDE
15" THRU 36" PIPE - O.D. +16"
42" THRU 60" PIPE - O.D. +20"
OVER 60" PIPE - OUTSIDE DIAMETER OF PIPE +24"
MIN WIDTH OF TRENCH 12" ABOVE THE TOP OF PIPE SHALL BE 6" ON EACH SIDE OF PIPE

RIGID PIPE BEDDING DETAILS



CLASS "F-I"

CLASS "F-II"



CLASS "F-III"

MINIMUM WIDTH OF TRENCH AT 12" ABOVE TOP OF PIPE	
PIPE O.D.	MINIMUM TRENCH WIDTH
UP TO 16"	O.D. + 16"
GREATER THAN 16"	O.D. x 1.25 PLUS 12"

FLEXIBLE PIPE BEDDING DETAILS

REV#	DATE	DESCRIPTION	BY

NOT VALID FOR CONSTRUCTION UNLESS SIGNED AND DATED:

WADETRIM
25251 Northline Rd., PO Box 10
Taylor, MI 48180
734.947.9700/800.482.2864
FAX: 734.947.9726
www.wadetrim.com
Building relationships on a foundation of excellence

VAN BUREN CHARTER TOWNSHIP

MISCELLANEOUS DETAILS (MD-1)

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