VERSA PITTSFIELD

12-07-100-027

FINAL SITE PLAN

A PART OF THE NORTH 1/2 CORNER OF SECTION 7, T-3-S, R-6-E
PITTSFIELD TOWNSHIP, WASHTENAW COUNTY, MICHIGAN

OWNER/APPLICANT
VERSA DEVELOPMENT
MR. STEVE ROBINSON
25900 WEST 11 MILE ROAD
SOUTHFIELD, MI 48034
(248) 352-2425

ENGINEER
GIFFELS-WEBSTER
MR. JOSEPH ANDERSON, PE, RLA
1025 E. MAPLE, SUITE 100
BIRMINGHAM, MI 48009
(248) 852-3100

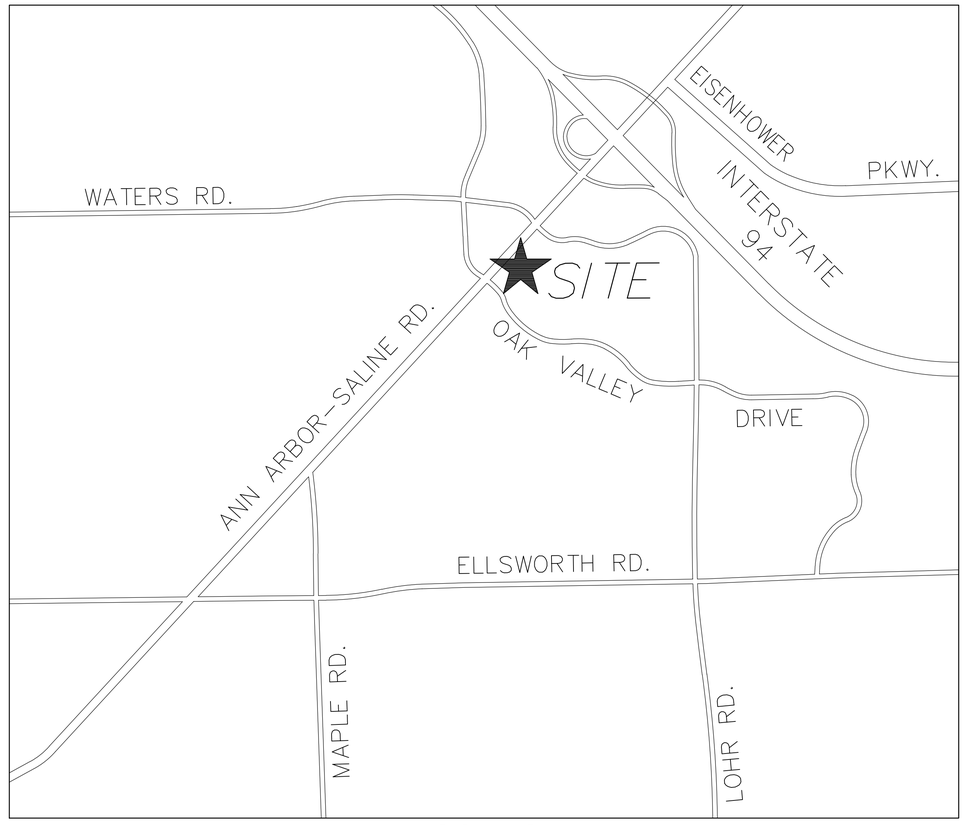
ARCHITECT
NORR
MR. BRIAN COLBURN
719 GRISWOLD, SUITE 1000
DETROIT, MI 48226
(313) 324-3119

LANDSCAPE ARCHITECT
ALLEN DESIGN
MR. JIM ALLEN, RLA
557 CARPENTER
NORTHVILLE, MI 48167
(248) 467-4668

ZONING DATA:	FB–FORM BASED
GROSS LOT AREA:	7.49 ACRES 326,264 SF
NET LOT AREA:	6.34 ACRES 276,170 SF
GROUND FLOOR AREA:	36,800 SF
TOTAL FLOOR AREA:	36,800 SF
LOT COVERAGE:	0.13
NET LOT COVERAGE	5.54 ACRES IMP. 87% IMPERVIOUS
FLOOR AREA RATIO	0.13
BUILDING HEIGHT #FLOORS BUILDING A – 10,800 SF, 1 STORY BUILDING B – 5,500 SF, 1 STORY PAD C – 1,800 SF, 1 STORY PAD D – 5,800 SF, 1 STORY PAD E – 9,900 SF, 1 STORY PAD F – 6,000 SF, 1 STORY	
NUMBER OF BUILDINGS:	6
REQUIRED YARDS:	
FRONT	10' MAX.
SIDE	0
REAR	30' MIN.
BUILDING HEIGHT (ALL BUILDINGS)	26'–8"

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT STANDARDS, SPECIFICATIONS AND GENERAL CONDITIONS OF THE CHARTER TOWNSHIP OF PITTSFIELD, AND ANY/OR OTHER AGENCIES HAVING JURISDICTION.
2. A WASHTENAW COUNTY ROAD COMMISSION PERMIT IS REQUIRED FOR WORK WITHIN THE OAK VALLEY DRIVE AND ANN ARBOR–SALINE ROAD RIGHT–OF–WAY AND THE LOHR ROAD HIGHWAY EASEMENT.
3. UTILITY INFORMATION SHOWN ON THESE PLANS WAS OBTAINED FROM UTILITY OWNERS AND THEREFORE MAY NOT BE ACCURATE OR COMPLETE. THE CONTRACTOR SHALL VERIFY AND OBTAIN ANY INFORMATION NECESSARY REGARDING THE PRESENCE OF UNDERGROUND UTILITIES WHICH MIGHT HAVE AN IMPACT ON THIS PROJECT, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY PUBLIC OR PRIVATE UTILITIES WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AT PROPOSED CONNECTIONS AND/OR CROSSINGS, AND TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES TO THESE PLANS.
5. THE CONTRACTOR SHALL CONTACT MISS DIG AT (800) 482–7171 FOR THE LOCATION OF UNDERGROUND FACILITIES, AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES NOT PART OF MISS DIG, BUT HAS FACILITIES LOCATED IN THE VICINITY OF THE WORK AT LEAST 72 HOURS PRIOR TO EXCAVATION.
6. ALL PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR. ALL PERMIT FEES, BONDS, AND INSURANCE REQUIRED BY THE ISSUING AGENCIES SHALL BE PROVIDED BY THE CONTRACTOR, AND MUST BE KEPT CURRENT. THE CONTRACTOR IS RESPONSIBLE FOR ALL OTHER FEES, INSPECTION COSTS, ETC., AND SHALL ADHERE TO ALL REQUIREMENTS SET FORTH IN SAID PERMITS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL WORK AREAS TO ENSURE THE SAFETY OF ALL OCCUPANTS, VISITORS, PEDESTRIANS, WORKERS, ETC. THE CONTRACTOR SHALL REPAIR AND MAINTAIN ALL CONSTRUCTION FENCING AS NECESSARY.
8. THE CONTRACTOR SHALL PROVIDE FOR CONTROLLED ACCESS TO THE SITE FOR USE BY THE VARIOUS WORK FORCES, EMERGENCY VEHICLES, OCCUPANTS, VISITORS, ETC. THROUGHOUT CONSTRUCTION. THIS ACCESS MUST PROVIDE FOR THE REMOVAL OF MUD FROM VEHICLES TIRES. ROADWAYS AND DRIVEWAYS SHALL BE MAINTAINED OPEN FOR EMERGENCY VEHICLES AT ALL TIMES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE RESIDENTS AND BUSINESSES WHOSE DRIVEWAYS ARE AFFECTED BY HIS SCHEDULE, 24 HOURS IN ADVANCE. CONTRACTOR SHALL SCHEDULE CONSTRUCTION AT NON–PEAK USE HOURS AND SHALL MINIMIZE DRIVEWAY CLOSURE BY EXPEDITING CONSTRUCTION.
9. THE CONTRACTOR SHALL PROVIDE NECESSARY SIGNS, BARRICADES, AND LIGHTS TO PROTECT THE TRAFFIC AND THE WORK AS DIRECTED BY THE PLANS OR BY THE AGENCY WITH JURISDICTION. ALL TRAFFIC CONTROLS SHALL BE IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD).
10. THE CONTRACTOR IS REQUIRED TO CONFINE CONSTRUCTION ACTIVITIES TO THE LIMITS OF THE SITE AS SHOWN ON THE CONSTRUCTION PLANS. ANY DAMAGE OR DISRUPTION TO ADJACENT SITES IS THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT IMMEDIATELY. NO OFF–SITE WORK SHALL BE PERFORMED OUTSIDE OF PUBLIC RIGHTS–OF–WAY OR DEDICATED EASEMENTS WITHOUT PRIOR WRITTEN APPROVAL OF THE PROPERTY OWNER.
11. GREAT CARE SHALL BE TAKEN TO AVOID DAMAGE TO VEGETATION OUTSIDE THE CLEARING AND GRUBBING LIMITS. NO DRIVING OR PARKING OF VEHICLES AND/OR STORAGE OF MATERIALS AND SUPPLIES SHALL BE PERMITTED OUTSIDE THE LIMITS OF CONSTRUCTION.
12. THE PROTECTION OF EXISTING TREES, AS REQUIRED, SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY.
13. ALL CONSTRUCTION SHALL HAVE INSPECTION PROVIDED BY PITTSFIELD CHARTER TOWNSHIP. THE CONTRACTOR SHALL CONTACT PITTSFIELD CHARTER TOWNSHIP 48 HOURS BEFORE THE START OF CONSTRUCTION.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL, AND SHALL PROVIDE ALL NECESSARY MATERIAL AND EQUIPMENT TO KEEP DUST IN CHECK AT ALL TIMES. THE CONTRACTOR SHALL RESPOND IMMEDIATELY TO ANY AND ALL COMPLAINTS. DUST CONTROL SHALL BE INCIDENTAL TO THE PROJECT.
15. DURING CONSTRUCTION, THE CONTRACTOR MAY ENCOUNTER SPRINKLER HEADS, PIPING, LIGHTING AND BURIED ELECTRICAL CABLE, MAILBOXES, FENCES, SIGNS, ETC., THAT MAY OR MAY NOT BE INDICATED ON THESE PLANS. THE CONTRACTOR SHALL REPLACE AND/OR RESTORE ALL COMPONENTS OF SUCH SYSTEMS. ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, MINIMUM STANDARD REQUIREMENTS, OR AS SPECIFIED HEREIN; WHICHEVER IS MORE STRINGENT.
16. ROADWAY, DRIVEWAY, AND PARKING AREA FINAL RESTORATION SHALL BE PERFORMED WITH SURFACE AND BASE MATERIALS MATCHING EITHER THE EXISTING MATERIALS IN QUALITY AND THICKNESS, PER MINIMUM REQUIREMENTS, OR PER THE FOLLOWING; WHICHEVER IS MORE STRINGENT:
    A. ASPHALT DRIVEWAYS – SEE SHEET 34 FOR DETAIL.
    B. CONCRETE ROADS – SEE SHEET 34 FOR DETAIL.
    C CONCRETE DRIVEWAYS – SEE SHEET 34 FOR DETAIL.
17. ALL LOT MARKERS AND MONUMENT POINTS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A REGISTERED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
18. FINAL CLEANUP AND RESTORATION SHALL CONSIST OF FINE GRADING OF CONSTRUCTION AREAS, REMOVAL OF CONSTRUCTION SIGNS, ETC. TOPSOIL SHALL BE SPREAD OVER ALL DISTURBED AREAS, FOLLOWED BY SEED, FERTILIZER AND EROSION MAT OR STRAW MULCH, OR AS FURTHER REQUIRED BY THE LANDSCAPING PLANS AND SPECIFICATIONS. ALL REQUIRED RESTORATION ITEMS NOT SPECIFICALLY IDENTIFIED AS A PAY ITEM SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
19. THE UTILITY POLES SHOWN ON THESE DRAWINGS ARE INTENDED TO SHOW ONLY THE LOCATION OF EXISTING POLES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE QUANTITY AND DIRECTION OF OVERHEAD LINES. THE COST FOR SUPPORTING AND RELOCATING POLES SHALL BE INCIDENTAL TO THE PROJECT.
20. THE MEANS AND METHODS OF CONTROLLING GROUNDWATER AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ALL COST ASSOCIATED WITH DEWATERING SHALL BE INCIDENTAL TO THE CONTRACT.
21. THIS PROJECT IS WITHIN 500 FEET OF A WATERCOURSE.



LOCATION MAP

NOT TO SCALE

APPROVALS AND PERMITS

NAME	SUBMITTAL DATE	REVISION DATE(S)	APPROVAL DATE	PERMIT NO.
TOWNSHIP ENGINEERING	10/17/2013	-	-	-
TOWNSHIP UTILITY CONST. PERMIT	-	-	-	-
TOWNSHIP SESC	-	-	-	-
MDEQ NPDES	-	-	-	-
TOWNSHIP SANITARY APPROVAL	-	-	-	-
MDEQ SANITARY PERMIT	-	-	-	-
TOWNSHIP WATERMAIN APPROVAL	-	-	-	-
YPSILANTI COMMUNITY UTILITIES AUTHORITY APPROVAL	-	-	-	-
DWSD WATERMAIN APPROVAL	-	-	-	-
MDEQ WATERMAIN PERMIT	-	-	-	-
WCRC COMMERCIAL APPROACH PERMIT	06/25/2013	09/23/2013, 11/20/2013	-	-
WCRC UTILITY WORK PERMIT	06/25/2013	09/23/2013, 11/20/2013	-	-
WCWRC SW SYSTEM APPROVAL	06/25/2013	09/23/2013, 11/12/2013	11/20/2013	APPROVAL

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PARKING CALCULATIONS: SEE SHEET 47-SP1

VERSA PITTSFIELD
CSPA #12-14

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Section:	7
	T-3-S R-6-E

Professional Seal:

DATE:	ISSUE:
12.14.2012	SUBMIT SITE PLAN
04.25.2013	RESUBMIT SITE PLAN
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01.13.2014	WCRC RESUBMITTAL
01.27.2014	WCRC RESUBMITTAL
01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

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COVER SHEET

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
Scale:	NA
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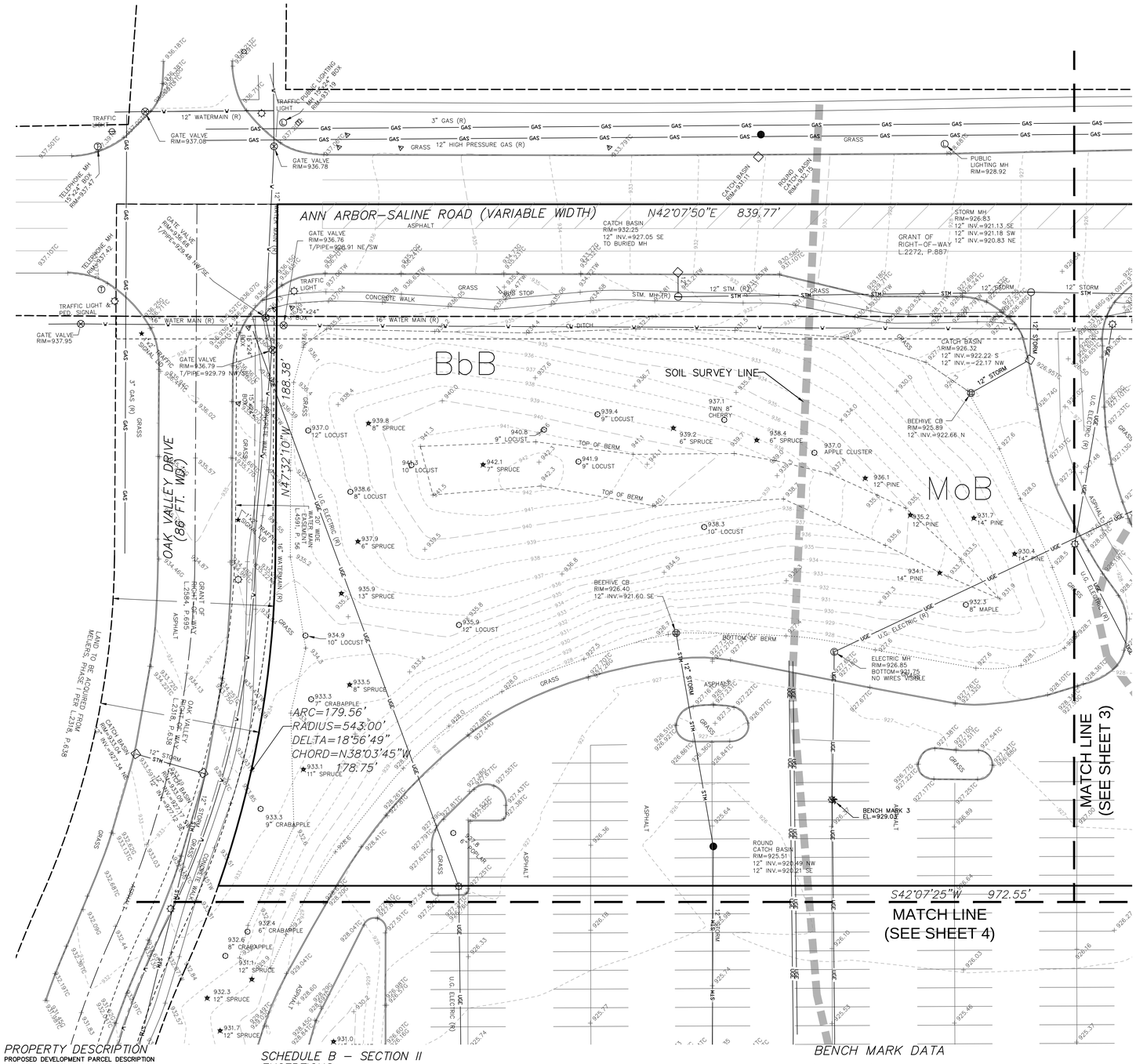

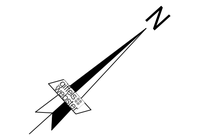

SCALE: 1"=30'

0 15 30 60 90

SOIL SURVEY
(FROM NATURAL RESOURCES CONSERVATION SERVICE)

BbB – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES

MoB – MORLEY LOAM, 2 TO 6 PERCENT SLOPES

LEGEND – EXISTING

- E/ PAVEMENT
- CURB
- E/ GRAVEL
- CL ROAD
- E/ WALK
- RAILROAD
- E/ BRICK
- MISC. LINE
- X FENCE
- GUARD RAIL
- WALL
- BLDG. LINE
- OH OVERHEAD WIRES
- RAILING
- OVERHANG LINE
- T/ BANK
- B/ BANK
- CL DITCH/STREAM
- SHRUB LINE
- TREE LINE
- WATER EDGE
- WETLAND LINE
- STM STORM LINE
- SAN. LINE
- W WATER LINE
- GAS GAS LINE
- UGE UG ELEC. LINE
- UGT UG TELE. LINE
- CTV UG CABLE TV LINE
- PAINT STRIPE
- COMBINED SEWER
- PLD PLD LINE
- STEAM STEAM LINE
- SECTION LINE
- SAN. MH
- C.O. SAN. CLEAN OUT
- SAN. RISER
- P.S. SAN. PUMP STATION
- GATE VALVE
- HYDRANT
- WATER VALVE
- WATER METER
- POST INDICATOR VALVE
- WELL HEAD
- FDC CONNECTION
- W IRRIGATION CONTROL BOX
- STORM MH
- CATCH BASIN
- BEEHIVE CB
- CULVERT E.S.
- ROOF/DOWN SPOUT
- OVERFLOW/OUTLET STRUCTURE
- C.O. STORM CLEAN OUT
- ROUND CB
- LIGHT POLE
- UTILITY POLE
- E ELEC. TRANS.
- AC AIR CONDITIONER
- E ELEC. MH
- E ELEC. METER
- ELEC. RISER
- C TRAFFIC CONTROL BOX
- L PUBLIC LIGHTING MH
- G GAS METER
- GAS RISER
- GAS GAS VALVE
- G GAS MH
- TELE. RISER
- T TELE. MH
- T TELE. CROSS BOX
- CABLE RISER
- PAY PHONE
- MANHOLE
- SIGN
- PROT. POST/GUARD POST
- GUY
- DECIDUOUS TREE
- CONIFEROUS TREE
- UTILITY FLAG
- BLDG. CORNER (FIELD LOCATED)
- HANDICAP PARKING
- WETLAND FLAG
- BUSH/SHRUB
- PARKING METER
- RESIDENTIAL MAILBOX
- U.S. MAILBOX
- 000.00+ 000.0 EXISTING ELEVATION
- SOILBORING
- MONITORING WELL
- LAWN IRRIG. HEAD
- CENTERLINE R.R. TRACK
- MISC. TOPO. SHOT
- SURVEY CONTROL POINT
- FOUND IRON
- FOUND NAIL
- F. CUT CROSS
- SECTION COR.
- FENCE POST
- BENCHMARK
- FOUND PIPE
- FOUND MON.
- ASPH. ASPHALT
- CONC. CONCRETE
- A.C. AIR CONDITIONER
- G.P. GUARD POST
- C.L.F. CHAIN-LINK FENCE
- D.L. DOOR LEDGE
- F.F. FINISHED FLOOR
- O.H. OVERHANG
- F.I. FOUND IRON
- S.I. SET IRON
- F.I.P. FOUND IRON PIPE
- M. MEASURED
- R. RECORD
- F.M. FOUND MONUMENT
- S.N. SET NAIL
- CMP CORREGATED METAL PIPE
- RCP REINFORCED CONCRETE PIPE

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TOPOGRAPHIC SURVEY SOUTHWEST

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
Scale:	1" = 30'
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PROPERTY DESCRIPTION

PROPOSED DEVELOPMENT PARCEL DESCRIPTION

PART OF THE NORTH 1/2 OF SECTION 7, TOWN 3 SOUTH, RANGE 6 EAST, PITTSFIELD TOWNSHIP, WASHTENAW COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT THE NORTH 1/4 CORNER OF SECTION 7; THENCE N.88°54'19"E., 782.23 FEET ALONG THE NORTH LINE OF SAID SECTION 7, TO A POINT ON THE CENTERLINE OF ANN ARBOR-SALINE ROAD (VARIABLE WDTH); THENCE S.42°07'50"W., 264.03 FEET ALONG SAID CENTERLINE; THENCE S.47°38'30"E., 60.00 FEET; THENCE S.42°07'50"W., 412.92 FEET TO THE POINT OF BEGINNING; THENCE S.47°52'10"E., 90.25 FEET; THENCE N.42°07'50"E., 24.26 FEET; THENCE S.47°52'10"E., 36.54 FEET; THENCE ALONG A TANGENT CURVE TO THE LEFT, 182.57 FEET, SAID CURVE HAVING A RADIUS OF 450.50 FEET, A CENTRAL ANGLE OF 23°13'09", AND A CHORD BEARING S.59°28'45"E., 181.32 FEET; THENCE S.42°07'25"W., 972.55 FEET; THENCE ALONG A NON-TANGENT CURVE TO THE LEFT, 179.56 FEET, SAID CURVE HAVING A RADIUS OF 543.00 FEET, A CENTRAL ANGLE OF 18°56'49", AND A CHORD BEARING N.38°03'45"W., 178.75 FEET; THENCE N.47°32'10"W., 188.38 FEET TO A POINT ON THE CENTERLINE OF ANN ARBOR-SALINE ROAD (VARIABLE WDTH); THENCE N.42°07'50"E., 839.77 FEET ALONG SAID CENTERLINE; THENCE S.47°52'10"E., 60.00 FEET; THENCE N.42°07'50"E., 40.48 FEET TO THE POINT OF BEGINNING AND CONTAINING 7.53 ACRES.

SUBJECT TO THE RIGHTS OF THE PUBLIC IN ANN ARBOR-SALINE ROAD.

SCHEDULE B – SECTION II EXCEPTIONS

(PER TITLE COMMITMENT NO. N-107335, PREPARED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY AND ITS UNDERWRITER FIDELITY NATIONAL TITLE INSURANCE COMPANY, DATED MAY 7, 2012.)

7. EASEMENTS TO THE BOARD OF COUNTY ROAD COMMISSIONERS OF THE COUNTY OF WASHTENAW FOR HIGHWAY PURPOSES, AS RECORDED IN LIBER 2272, PAGE 887, LIBER 2584, PAGE 695, AND LIBER 3076, PAGE 231. –SHOWN GRAPHICALLY

8. EASEMENT AND THE TERMS, CONDITIONS AND PROVISIONS WHICH ARE RECITED IN JOINT ROADWAY AGREEMENT RECORDED IN LIBER 2318, PAGE 638. –SHOWN GRAPHICALLY.

9. EASEMENT TO PITTSFIELD CHARTER TOWNSHIP FOR WATER MAINS AND SANITARY SEWERS, ALONG WITH OTHER SERVICES IN THE PUBLIC UTILITIES SYSTEM RECORDED IN LIBER 4591, PAGE 56.

–WATER MAIN EASEMENT SHOWN GRAPHICALLY.
–SANITARY SEWER EASEMENT NOT ON SUBJECT PROPERTY.
–UTILITY EASEMENT SHOWN GRAPHICALLY

NOTES:

- SURVEY IN ACCORDANCE WITH TITLE COMMITMENT NO. N-107335, PREPARED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY AND ITS UNDERWRITER FIDELITY NATIONAL TITLE INSURANCE COMPANY, DATED MAY 7, 2012.
- TELEPHONE AND ELECTRIC UTILITY MAPS WERE NOT AVAILABLE AT TIME OF SURVEY.
- PLEASE SEE SHEET 2 FOR COMMENCEMENT DETAIL.
- TREE SIZES AND SPECIES ARE THE BEST ESTIMATION OF THE FIELD SURVEYOR. SPECIFIC QUESTIONS REGARDING INDIVIDUAL TREES SHOULD BE DIRECTED TO A QUALIFIED FORESTER.
- MEASURED BEARINGS BASED UPON THE STATE PLANE COORDINATE SYSTEM.

BENCH MARK DATA

(N.G.V.D. 1929) DATUM

REFERENCE BENCH MARK NO. 1
TOP OF NORTH FLANGE BOLT ON HYDRANT.
ELEVATION=926.36'
(OUT OF SCOPE OF DRAWING.)

SITE BENCH MARK NO. 2
CUT "+" IN SOUTHWEST LIGHT POLE BASE IN PARKING LOT OF MEIJER STORE, +/– 340 FEET SOUTHWEST OF LOHR ROAD AND +/– 300 FEET SOUTHEAST OF ANN ARBOR-SALINE ROAD.
ELEVATION=928.45'

SITE BENCH MARK NO. 3
CUT "+" IN NORTHEAST LIGHT POLE BASE IN PARKING LOT OF MEIJER STORE, +/– 360 FEET NORTHEAST OF OAK VALLEY DRIVE AND +/– 320 FEET SOUTHEAST OF ANN ARBOR-SALINE ROAD.
ELEVATION=929.03'

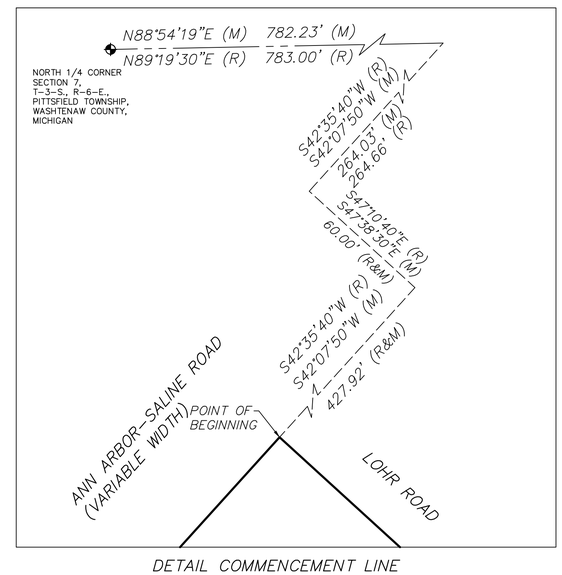
NOTE: TO CONVERT ELEVATIONS TO NAVD 88, SUBTRACT 0.38' FROM SHOWN ELEVATIONS

UTILITY STATEMENT

THE U.G. UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE U.G. UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE U.G. UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.

(R) = UTILITY SHOWN FROM RECORDS OR PLANS, & FIELD LOCATED WHERE POSSIBLE.

PRIOR TO THE PLANNED BUILDING IMPROVEMENTS, AND/ OR CONSTRUCTION, THE RESPECTIVE UTILITY COMPANIES MUST BE NOTIFIED TO STAKE THE PRECISE LOCATION OF THEIR UTILITIES.



DETAIL COMMENCEMENT LINE

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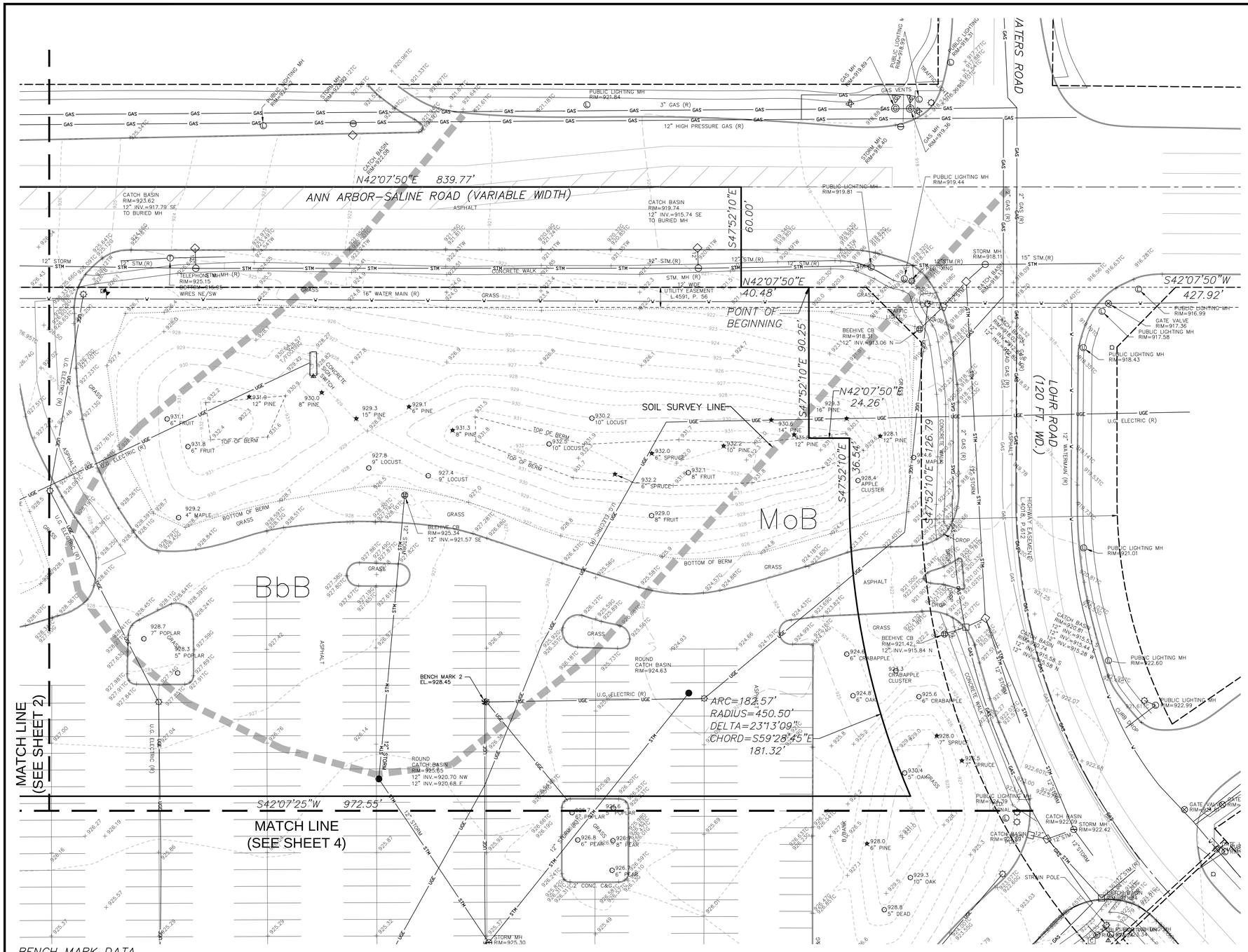

BENCH MARK DATA

(N.G.V.D. 1929) DATUM

REFERENCE BENCH MARK NO. 1
TOP OF NORTH FLANGE BOLT ON HYDRANT.
ELEVATION=926.36'
(OUT OF SCOPE OF DRAWING.)

SITE BENCH MARK NO. 2
CUT "+" IN SOUTHWEST LIGHT POLE BASE IN PARKING LOT OF MEIJER STORE, +/- 340 FEET SOUTHWEST OF LOHR ROAD AND +/- 300 FEET SOUTHEAST OF ANN ARBOR-SALINE ROAD.
ELEVATION=928.45'

SITE BENCH MARK NO. 3
CUT "+" IN NORTHEAST LIGHT POLE BASE IN PARKING LOT OF MEIJER STORE, +/- 360 FEET NORTHEAST OF OAK VALLEY DRIVE AND +/- 320 FEET SOUTHEAST OF ANN ARBOR-SALINE ROAD.
ELEVATION=929.03'

NOTE: TO CONVERT ELEVATIONS TO NAVD 88, SUBTRACT 0.38' FROM SHOWN ELEVATIONS

UTILITY STATEMENT

THE U.G. UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE U.G. UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE U.G. UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.

(R) = UTILITY SHOWN FROM RECORDS OR PLANS, & FIELD LOCATED WHERE POSSIBLE.

PRIOR TO THE PLANNED BUILDING IMPROVEMENTS, AND/ OR CONSTRUCTION, THE RESPECTIVE UTILITY COMPANIES MUST BE NOTIFIED TO STAKE THE PRECISE LOCATION OF THEIR UTILITIES.

SOIL SURVEY
(FROM NATURAL RESOURCES CONSERVATION SERVICE)

BbB – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES

MoB – MORLEY LOAM, 2 TO 6 PERCENT SLOPES

LEGEND – EXISTING

- E/ PAVEMENT
- CURB
- E/ GRAVEL
- CL ROAD
- E/ WALK
- RAILROAD
- E/ BRICK
- MISC. LINE
- FENCE
- GUARD RAIL
- WALL
- BLDG. LINE
- OVERHEAD WIRES
- RAILING
- OVERHANG LINE
- T/ BANK
- B/ BANK
- CL DITCH/STREAM
- SHRUB LINE
- TREE LINE
- WATER EDGE
- WETLAND LINE
- STORM LINE
- SAN. LINE
- WATER LINE
- GAS LINE
- UG ELEC. LINE
- UG TELE. LINE
- UG CABLE TV LINE
- PAINT STRIPE
- COMBINED SEWER
- PLD LINE
- STEAM LINE
- SECTION LINE
- SAN. MH
- C.O. SAN. CLEAN OUT
- SAN. RISER
- P.S. SAN. PUMP STATION
- GATE VALVE
- HYDRANT
- WATER VALVE
- WATER METER
- POST INDICATOR VALVE
- WELL HEAD
- FDC CONNECTION
- IRRIGATION CONTROL BOX
- STORM MH
- CATCH BASIN
- BEEHIVE CB
- CULVERT E.S.
- ROOF/DOWN SPOUT
- OVERFLOW/OUTLET STRUCTURE
- C.O. STORM CLEAN OUT
- ROUND CB
- LIGHT POLE
- UTILITY POLE
- ELEC. TRANS.
- AC AIR CONDITIONER
- ELEC. MH
- ELEC. METER
- ELEC. RISER
- TRAFFIC CONTROL BOX
- PUBLIC LIGHTING MH
- GAS METER
- GAS RISER
- GAS VALVE
- GAS MH
- TELE. RISER
- TELE. MH
- TELE. CROSS BOX
- CABLE RISER
- PAY PHONE
- MANHOLE
- SIGN
- PROT. POST/GUARD POST
- GUY
- DECIDUOUS TREE
- CONIFEROUS TREE
- UTILITY FLAG
- BLDG. CORNER (FIELD LOCATED)
- HANDICAP PARKING
- WETLAND FLAG
- BUSH/SHRUB
- PARKING METER
- RESIDENTIAL MAILBOX
- U.S. MAILBOX
- 000.00+ 000.0 EXISTING ELEVATION
- SOILBORING
- MONITORING WELL
- LAWN IRRIG. HEAD
- CENTERLINE R.R. TRACK
- MISC. TOPO. SHOT
- SURVEY CONTROL POINT
- FOUND IRON
- FOUND NAIL
- F. CUT CROSS
- SECTION COR.
- FENCE POST
- BENCHMARK
- FOUND PIPE
- FOUND MON.
- ASPH. ASPHALT
- CONC. CONCRETE
- A.C. AIR CONDITIONER
- G.P. GUARD POST
- C.L.F. CHAIN-LINK FENCE
- D.L. DOOR LEDGE
- F.F. FINISHED FLOOR
- O.H. OVERHANG
- F.I. FOUND IRON
- S.I. SET IRON
- F.I.P. FOUND IRON PIPE
- M. MEASURED
- R. RECORD
- F.M. FOUND MONUMENT
- S.N. SET NAIL
- CMP CORREGATED METAL PIPE
- RCP REINFORCED CONCRETE PIPE

SCALE: 1" = 30'

0 15 30 60 90

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TOPOGRAPHIC SURVEY NORTHEAST

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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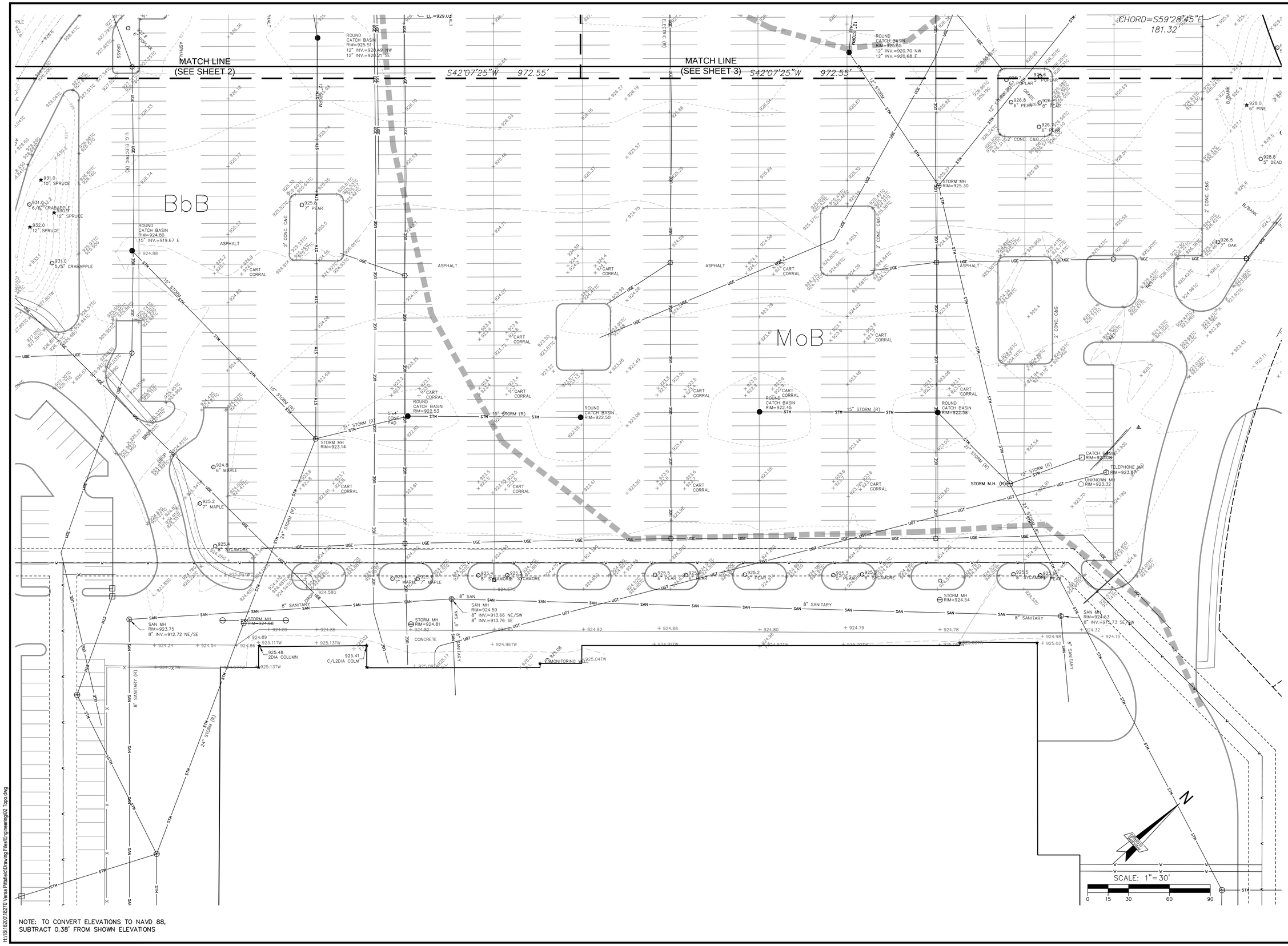

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TOPOGRAPHIC SURVEY - MEIJER PARKING LOT

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PITTSFIELD TOWNSHIP
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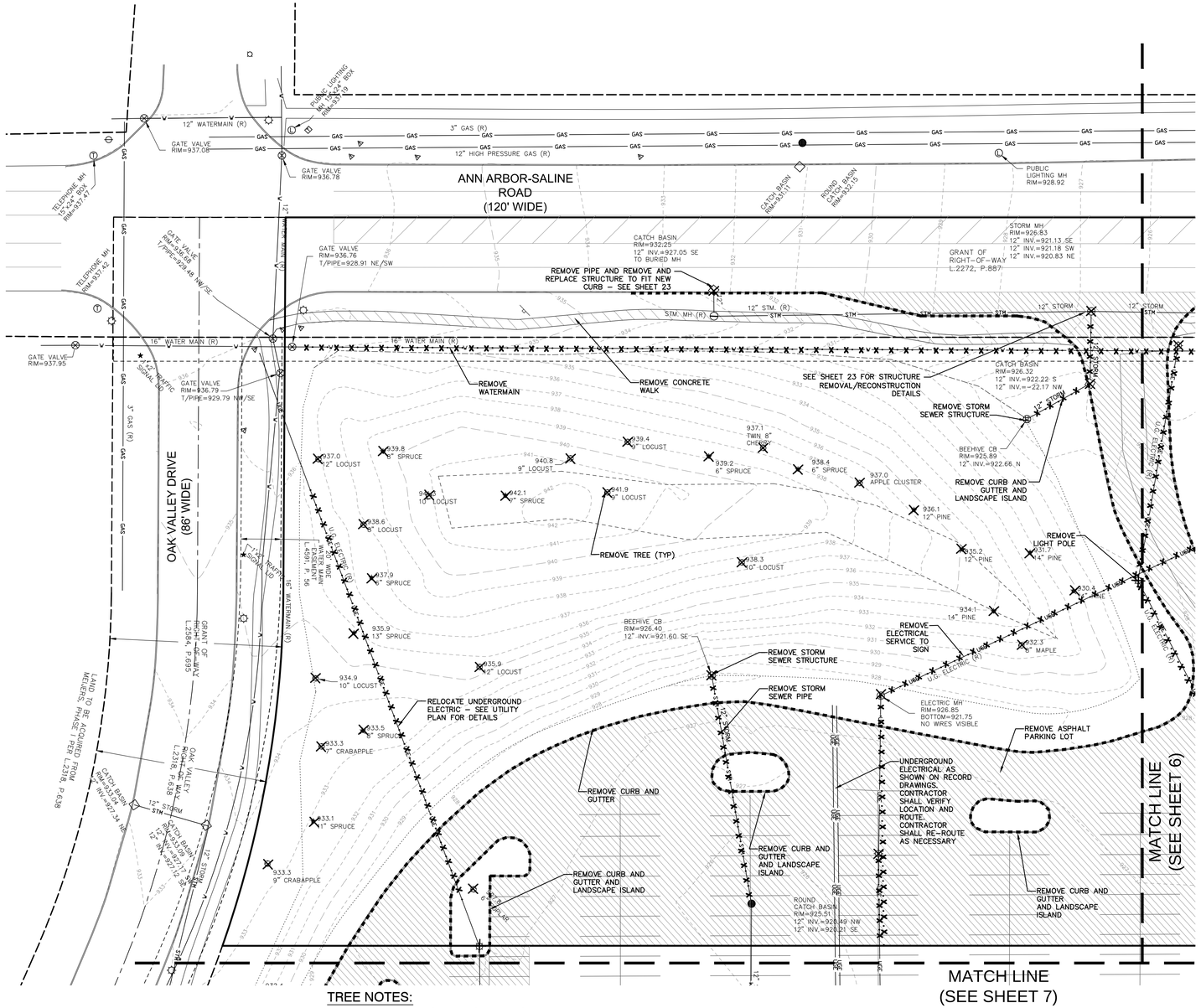

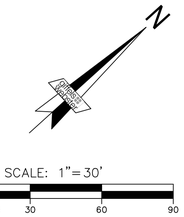

DEMOLITION LEGEND:

- REMOVE OBJECT
- REMOVE UTILITY
- ABANDON UTILITY PIPE
- CUT AND BULKHEAD UTILITY PIPE
- REMOVE EXISTING CURB
- REMOVE ASPHALT PAVEMENT
- REMOVE CONCRETE SURFACE

DEMOLITION NOTES:

1. REFER TO THE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS AND RESPONSIBILITIES.
2. WITH THE EXCEPTION OF AN AMOUNT OF EXCAVATED MATERIALS SUFFICIENT FOR BACKFILLING AND CONSTRUCTION OF FILLS AS CALLED FOR ON THE PLANS AND AS INDICATED BELOW, ALL BROKEN CONCRETE, STONE AND EXCESS EXCAVATED MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR.
3. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN THEIR OWN DISPOSAL GROUND, AND WILL RECEIVE NO ADDITIONAL COMPENSATION FOR DISPOSING OF ANY OF THE EXCESS MATERIALS. MATERIALS ACCEPTABLE TO THE ENGINEER MAY BE DISPOSED OF ON-SITE AT THE CONTRACTORS EXPENSE IN A MANNER APPROVED IN ADVANCE BY THE ENGINEER.
4. THE EDGE OF EXISTING PAVEMENT SHALL BE CLEANED OF EARTH AND OTHER FOREIGN MATERIAL BEFORE ADJACENT POURS ARE PLACED.
5. EXISTING UTILITIES ON SITE WILL BE CAPPED OR BULK-HEADED AT THE MAIN IN ACCORDANCE WITH PITTSFIELD CHARTER TWP AND SERVICE PROVIDER STANDARDS. ALL BULKHEADING AND/OR SEWER PIPE REMOVAL NECESSITATED BY THE REMOVAL OF DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE STRUCTURE REMOVAL.
6. THE CONTRACTOR SHALL COORDINATE WITH AFFECTED UTILITY COMPANIES FOR THE REMOVAL OR RELOCATION OF UTILITY AND LIGHT POLES.
7. STREET SIGNS IN THE WAY OF CONSTRUCTION WILL BE REMOVED AND RESET IMMEDIATELY IN A TEMPORARY LOCATION, AS APPROVED BY THE ENGINEER.
8. THE CONTRACTOR SHALL PROTECT ALL EXISTING SIGNS AND POSTS SCHEDULED TO REMAIN, AS DIRECTED BY THE ENGINEER.
9. ALL UNDERGROUND UTILITIES NOT INDICATED FOR REMOVAL SHALL BE PROTECTED THROUGHOUT CONSTRUCTION.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PRIVATE PROPERTY (INCLUDING BUILDINGS AND FOUNDATIONS) THROUGHOUT CONSTRUCTION AND SHALL MAINTAIN SAFE PEDESTRIAN ACCESS AT ALL TIMES.
11. THE REMOVAL OF PAVEMENT, CURBS AND WALKS SHALL INCLUDE ALL REQUIRED SAWCUTTING. CURB REMOVAL IS INCIDENTAL TO PAVEMENT REMOVAL.

TREE NOTES:

1. NO TREES MEET HERITAGE TREE REQUIREMENTS.
2. ALL TREES ARE IN GOOD CONDITION.

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DEMOLITION PLAN SOUTHWEST

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PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
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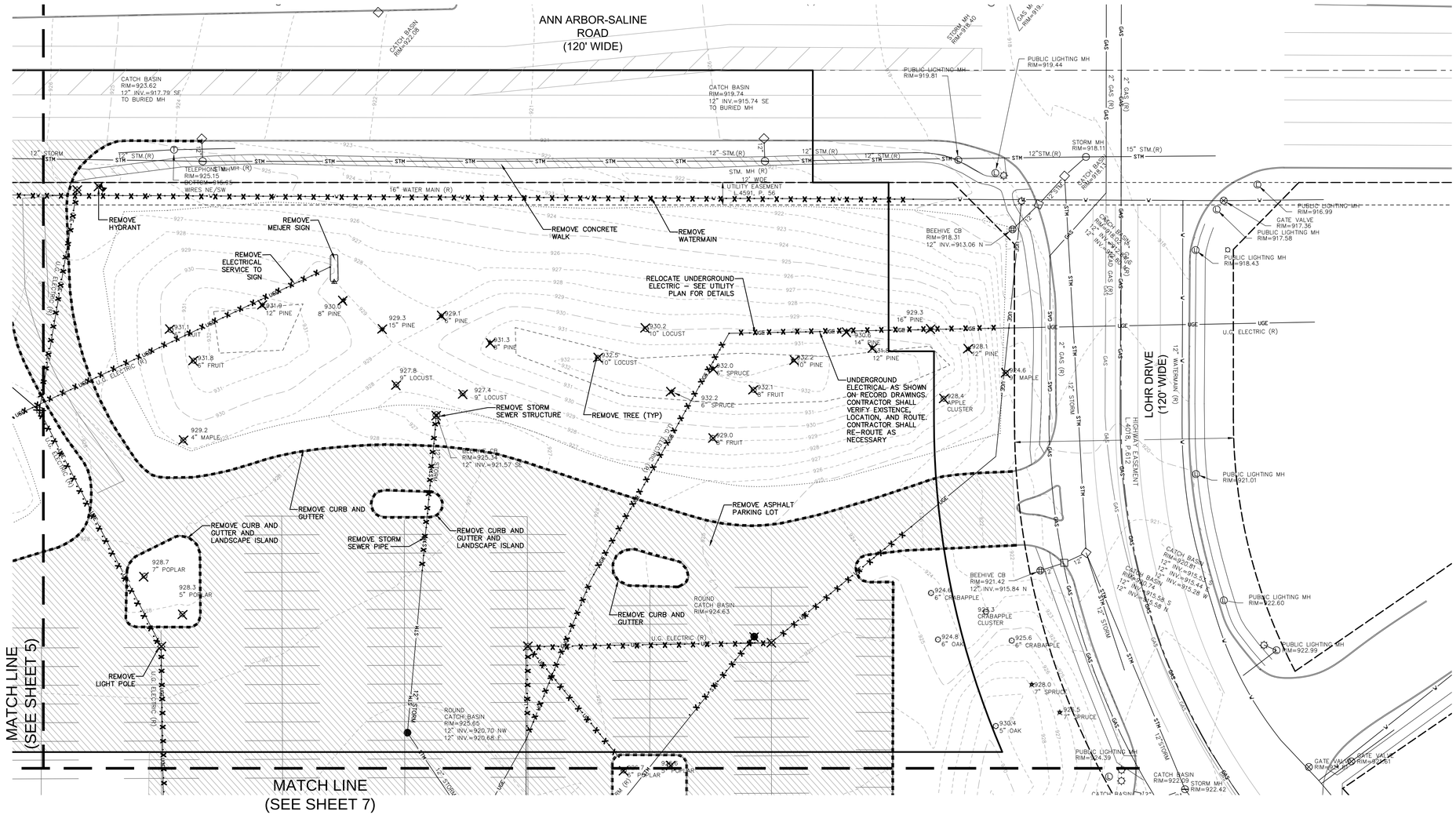

DEMOLITION LEGEND:

- REMOVE OBJECT
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- CUT AND BULKHEAD UTILITY PIPE
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DEMOLITION PLAN NORTHEST

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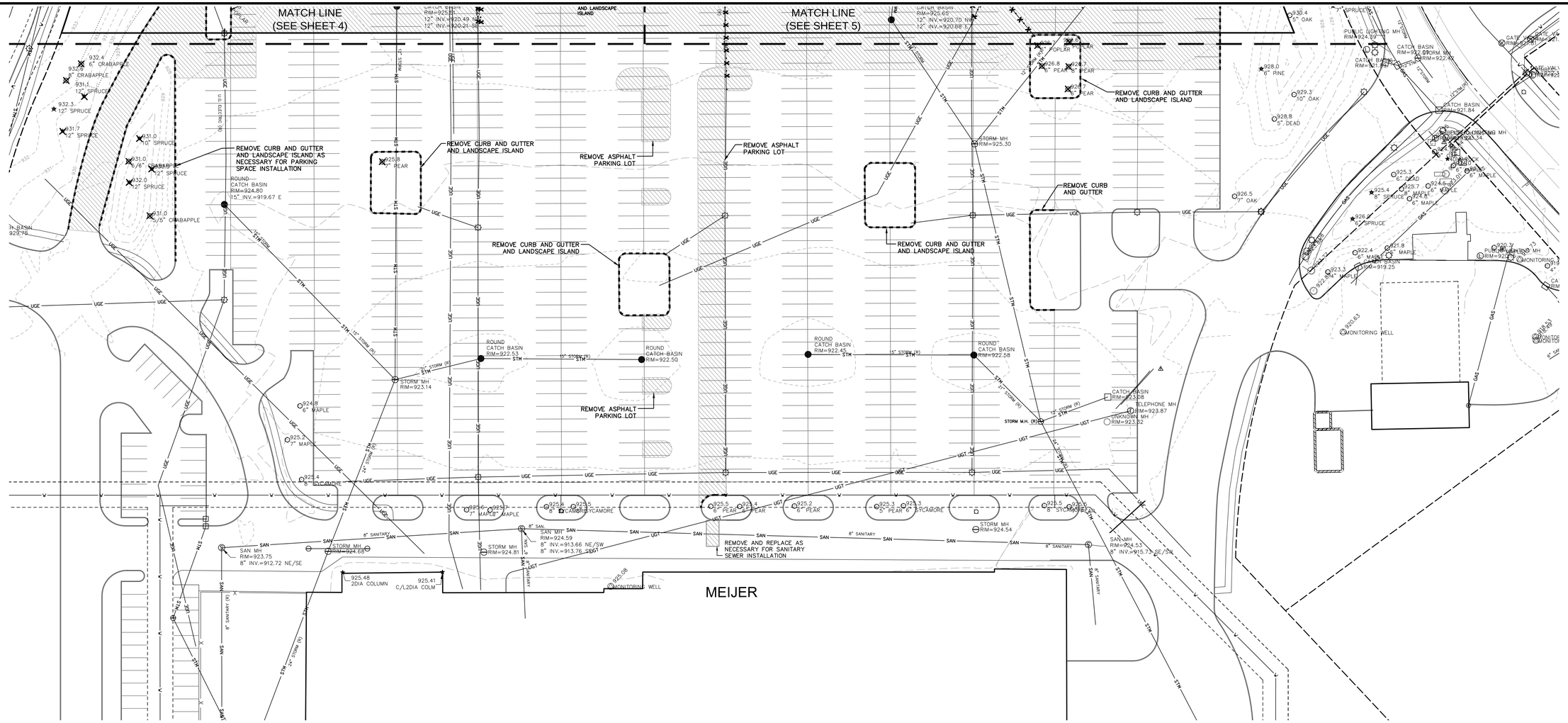

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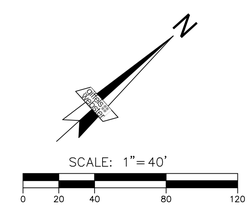

DEMOLITION LEGEND:

REMOVE OBJECT	X
REMOVE UTILITY	· X · X · X · X ·
ABANDON UTILITY PIPE	· / · / · / · / ·
CUT AND BULKHEAD UTILITY PIPE	⊠
REMOVE EXISTING CURB	
REMOVE ASPHALT PAVEMENT	
REMOVE CONCRETE SURFACE	

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DEMOLITION PLAN MEIJER PARKING LOT

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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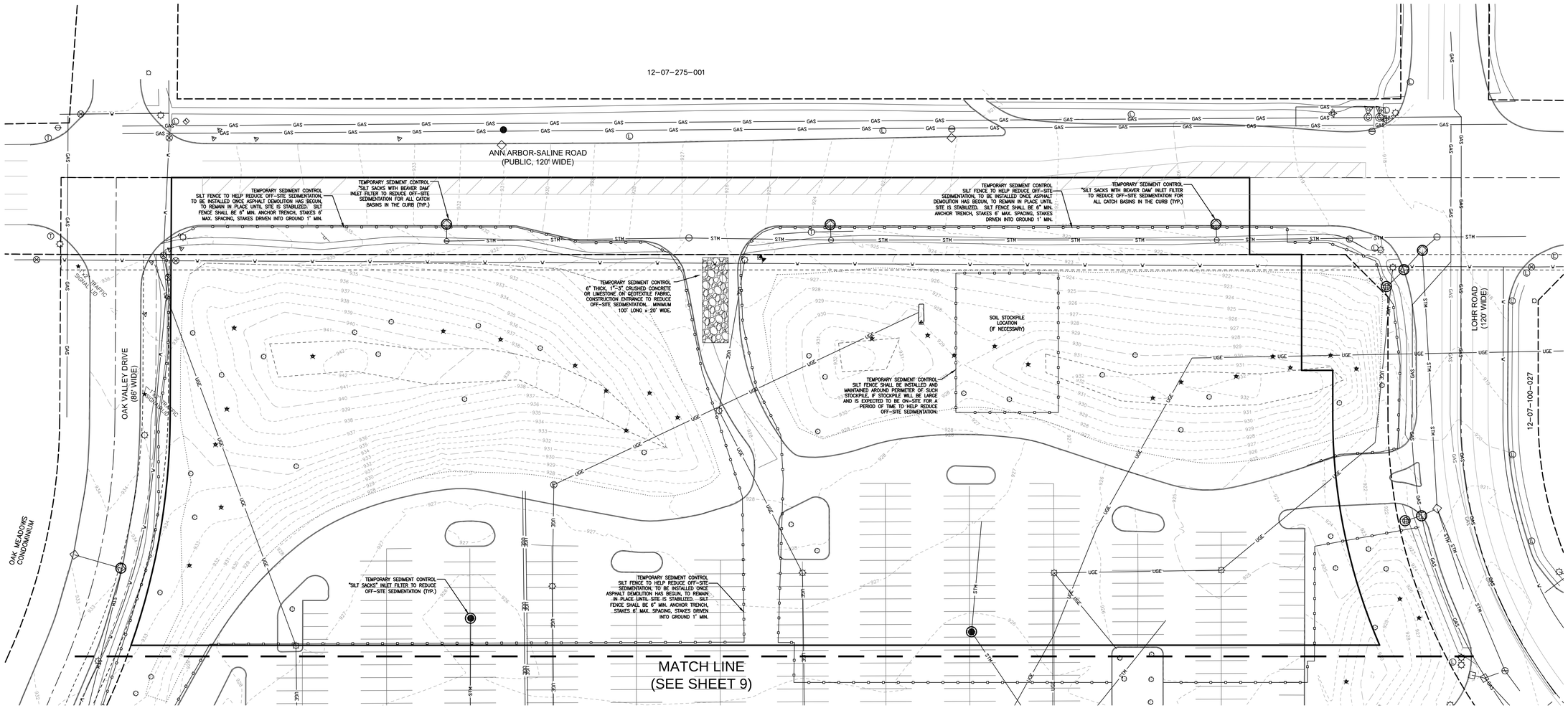

PITTSFIELD TOWNSHIP SESC NOTES:

1. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE SESC PLANS AT ALL TIMES DURING CONSTRUCTION ON THIS PROJECT. ANY MODIFICATIONS OR ADDITIONS TO THE SOIL EROSION CONTROL MEASURES DUE TO CONSTRUCTION OR CHANGED CONDITIONS, SHALL BE COMPLIED WITH AS REQUIRED OR DIRECTED BY THE OWNER, PROJECT ENGINEER, OR PITTSFIELD CHARTER TOWNSHIP.
2. ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF PITTSFIELD CHARTER TOWNSHIP AND THE LAWS OF THE STATE OF MICHIGAN
3. A NPDES CONSTRUCTION ACTIVITY PERMIT IS REQUIRED FOR ALL SITES GREATER THAN FIVE (5) ACRES.
4. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR. PERIODIC INSPECTIONS MAY BE MADE BY THE OWNER / PROJECT ENGINEER / TOWNSHIP TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES. ANY NECESSARY CORRECTIONS SHALL BE MADE, WITHOUT DELAY, BY THE ONSITE RESPONSIBLE INDIVIDUAL.
5. EROSION AND SEDIMENTATION FROM WORK ON THE SITE SHALL BE CONTAINED ON THE SITE AND NOT BE ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS.
6. ALL MUD / DIRT TRACKED ONTO ROADS FROM THE SITE DUE TO CONSTRUCTION, SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
7. RESTORATION OF ALL DISTURBED ARES, INCLUDING PLACEMENT OF TOPSOIL, SEED, FERTILIZER AND MULCH AND / OR SOD SHALL BE COMPLETED WITHIN FIVE (5) DAYS OF THE COMPLETION OF FINAL GRADE.
8. CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS, AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING OPERATIONS.
9. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
10. PROPER DUST CONTROL SHALL BE MAINTAINED DURING CONSTRUCTION BY USE OF WATER TRUCKS AND / OR CHLORIDE, AS REQUIRED.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND REMOVAL OF SOME UPON AUTHORIZED COMPLETION OF THE PROJECT. COMPLETION OF THE PROJECT WILL NOT BE AUTHORIZED UNTIL ALL SITE WORK, HOME BUILDING, ROAD WORK, AND UTILITY CONSTRUCTION IS COMPLETE AND ALL SOILS ARE STABILIZED.
12. THE CONTRACTOR SHALL NOT GRADE IN EXISTING WETLANDS OR CONSERVATION AREAS TO BE PROTECTED. SILT FENCE SHALL BE INSTALLED AND MAINTAINED ADJACENT TO EXISTING WETLAND AND CONSERVATION AREAS TO PREVENT GRADING, EROSION, AND SEDIMENTATION INTO THEM.
13. TREE PROTECTION FENCING MUST REMAIN INTACT UNTIL RESTORATION OF THE SITE IS COMPLETE.
14. STEEP SLOPES (STEEPER THAN 1:4) SHALL BE STABILIZED WITH EROSION CONTROL BLANKET.
15. STEEP SLOPES THAT DO NOT TAKE UPON INITIAL SEEDING MUST BE RE-SEEDED AND STABILIZED WITH EROSION CONTROL BLANKETS.
16. TREE PROTECTION FENCE: STANDARD 48" HIGH SNOW OR CONSTRUCTION FENCE, 6' MAX. SPACING OF STAKES, FENCE LOCATED OUTSIDE DRIP LINE.
17. WHERE EXCAVATION HAS BEEN THROUGH LAWN AREAS, THE CONTRACTOR SHALL RESTORE THE DISTURBED AREA BY PLACING TOPSOIL AND SEEDING OR SODDING OVER THE FINAL BACK FILL MATERIAL.

SESC NOTES:

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF PITTSFIELD CHARTER TOWNSHIP AND WASHTENAW COUNTY SOIL CONSERVATION DISTRICT.
2. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES.
3. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
4. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND A FIELD PRECONSTRUCTION MEETING HELP WITH THE SESC INSPECTOR.
5. CONSTRUCTION, INCLUDING INSTALLATION OF PIPE AND ASSOCIATED VALVES AND IN STRUCTURES, BACK FILLING, SURFACE RESTORATION, IN REMOVAL OF EXCESS EXCAVATED MATERIAL SHALL BE ACCOMPLISHED IN ONE CONTINUOUS OPERATION.
6. PAVEMENT AND/OR VEGETATION SHALL NOT BE STRIPPED FROM AN AREA UNLESS PIPE LAYING OPERATIONS ARE TO COMMENCE IN THAT AREA WITHIN THE NEXT THREE DAYS.
7. BACKFILLING AND REMOVAL OF EXCESS EXCAVATED MATERIAL SHALL FOLLOW PIPE LAYING BY NO MORE THAN 100'.
8. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
9. TEMPORARY STABILIZATION SHALL BE PROVIDED DURING THE NON-GROWING SEASON FOR ALL AREAS TO BE SEEDED. THIS TIME PERIOD CONSIDERED TO BE FROM OCTOBER 1 THROUGH APRIL 20.
10. TEMPORARY STABILIZATION SHALL CONSIST OF EITHER SMALL GRAIN STRAW OR GRASS HAY SPREAD AT THE RATE OF 1.5 TO 2 TONS PER ACRE WHICH SHALL BE ANCHORED IN PLACE TO PREVENT IT FROM BEING BLOWN OR WASHED AWAY.
11. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE PERMANENT STABILIZATION AS SOON AS PRACTICAL.
12. CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
13. STAGING THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED, AND AS REQUIRED TO INSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
14. SOIL EROSION CONTROL PRACTICES WILL BE ESTABLISHED IN EARLY STAGES OF CONSTRUCTION BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF DIRT OFF THE SITE.
15. ALL DEWATERING SHALL BE DONE IN A MANNER WHICH WILL NOT CONTRIBUTE TO DEPOSITION OF SEDIMENT IN ROAD DITCHES OR OPEN WATER.
16. THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF ACT 451 OF 1994, AS AMENDED THE SOIL EROSION & SEDIMENT ACT.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL DEVICES AND PRACTICES.
18. ANY SEDIMENT CONTROL FENCING WHICH BECOMES TORN, RIPPED, FALLEN OR FAILS TO PREVENT EROSION AS INTENDED, SHALL BE IMMEDIATELY REMOVED AND REPLACED WITH NEW EROSION CONTROL FENCING.
19. COMPACT & MAINTAIN 20'x100' MUD MAT FROM ACCESS ROAD. DRIVE TO BE CONSTRUCTED OF 1"-3" CRUSHED LIMESTONE WITH A MINIMUM THICKNESS OF 6" ON GEOTEXTILE FABRIC.
20. CONTRACTOR SHALL KEEP DEBRIS AND TRASH CLEANED UP AT ALL TIMES TO PREVENT CONTAMINATION OF RUNOFF.
21. CONTRACTOR SHALL REMOVE ALL SEDIMENT CONTROLS AFTER FINAL STABILIZATION.
22. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE STREET SWEEPING AND DUST CONTROL.

SEQUENCE OF CONSTRUCTION:

A. OBTAIN ALL NECESSARY CITY, COUNTY, AND STATE PERMITS. THE INSTALLATION OF SILT FENCING OR TREE PROTECTION FENCING SHALL NOT OCCUR PRIOR TO THE INITIAL CITY PRE-CONSTRUCTION MEETING. WHEN NATURAL FEATURES EXIST ON THE SITE, INSPECTION OF STAKING MAY BE REQUIRED PRIOR TO INSTALLATION OF THE FENCING.
B. CONTRACTOR MUST SUBMIT A NOTICE OF COVERAGE APPLICATION WITH DESIGNATED AGENT SIGNATURE 48 HOURS PRIOR TO COMMENCING WORK.
C. CONSTRUCT TEMPORARY CONSTRUCTION DRIVE AT LOCATION SHOWN AND MAINTAIN DAILY.
D. INSTALL PERIMETER SILT FENCES AND INLET FILTERS ON EXISTING CATCH BASINS. NO CLEARING OR GRADING MAY BEGIN UNTIL ALL PERIMETER SEDIMENT CONTROL DEVICES ARE IN PLACE AND FUNCTIONAL.
E. REMOVE DESIGNATED TREES AND DEMOLISH SITE AS SHOWN ON DEMOLITION PLAN.
F. COMMENCE SITE GRADING AND STOCKPILE TOPSOIL IN LOCATION APPROVED BY OWNER AND ENGINEER.
G. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED. FREQUENT WATERING AS NEEDED OF EXCAVATION AND FILL AREAS SHALL BE DONE TO MINIMIZE WIND EROSION.
H. TRANSITION GRADING ACTIVITIES FROM MASS GRADING TO FINE GRADING.
J. COMMENCE WITH PHASE II.

CONTACT FOR ALL EROSION CONTROL MEASURES

OWNER: 24TH AVENUE PLACE L.L.C.

REPRESENTATIVE: STEVE ROBINSON, PRESIDENT

25900 West 11 Mile Road, Suite 250
Southfield, MI 48034
248.352.2454
248.352.0602 - fax

STEVE@VERSACOS.COM

MAINTENANCE SCHEDULE

CHECK SILT FENCE	WEEKLY AND AFTER SIGNIFICANT RAIN EVENT
SCRAPE & SWEEP PARKING LOTS	AS NEEDED - MIN. SWEEPING ONCE A WEEK, MIN. SCRAPING DAILY
CHECK INLET FILTERS	AFTER RAIN EVENT

SEE SHEET 10 FOR ADDITIONAL SESC NOTES AND SEQUENCE OF CONSTRUCTION

SESC LEGEND:

SILT FENCE

ORANGE CONSTRUCTION FENCE

INLET FILTER

MUD MAT

SCALE: 1"= 40'

0 20 40 80 120

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01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

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SESC PLAN PHASE 1

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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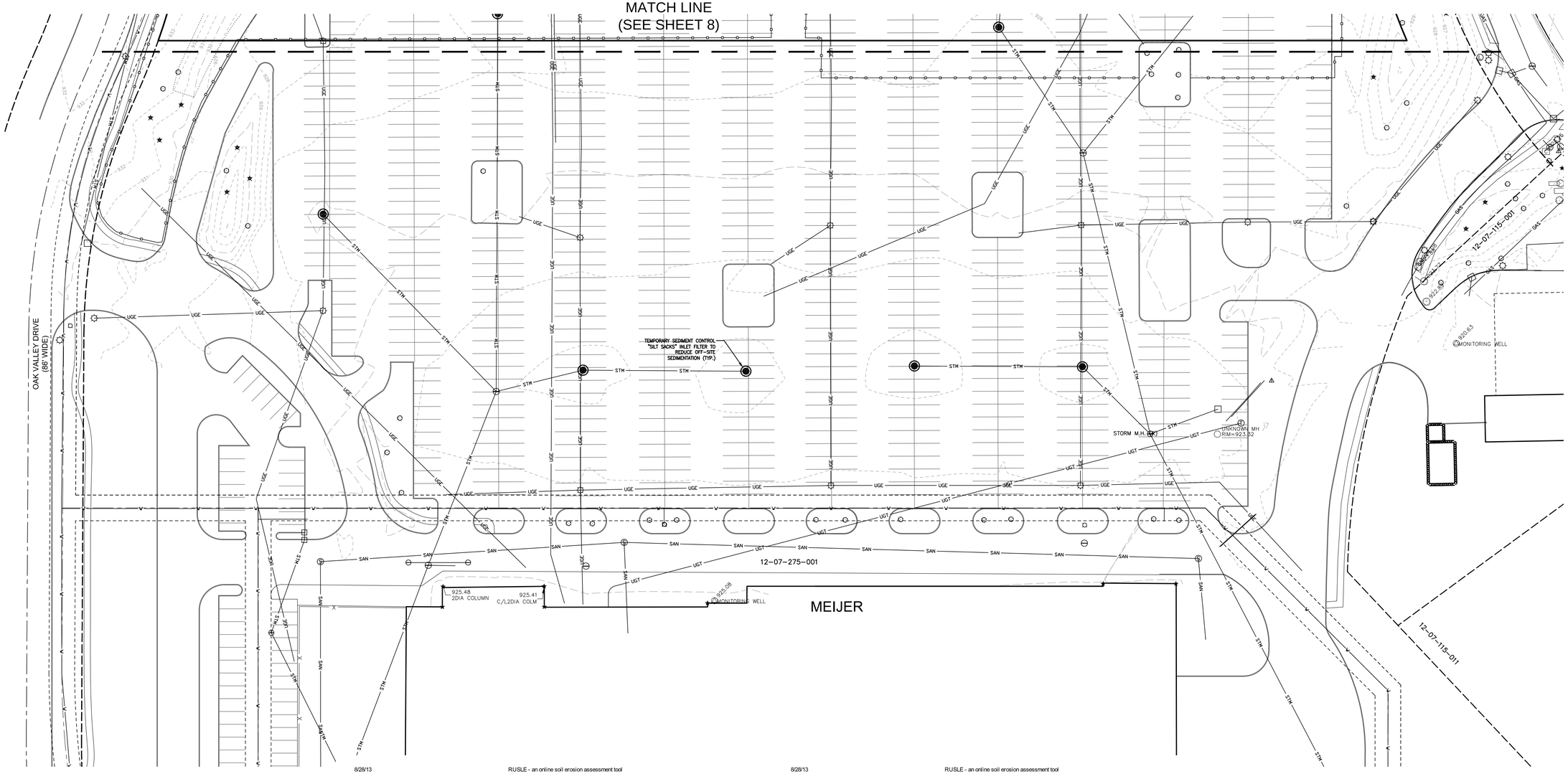

8/28/13 RUSLE - an online soil erosion assessment tool

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> About RUSLE
> Erosion Factors
> Calculate Erosion
> Resources
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> Acknowledgement

Calculated Soil Loss

The following are calculated soil loss for the construction site.

Site Information:

County:	Washtenaw
Site:	Construction Site
Site ID:	001
Soil:	Blount (BbB)
Slope:	4%
Slope Length:	100 ft.
Mulch Type:	Straw/hay
Mulch Rate:	1.5 (tons/acre)
Acreage:	8 acre(s)

Calculated Soil Loss:

Erosion Factors:	R = 100 K = 0.43 LS = 0.55 C = 0.12 P = 1
Tolerable Soil Loss:	T = 3 (tons/acre/year)
Calculated Soil Loss:	A = 2.84 (tons/acre/year)
Potential soil loss (total):	22.70 (tons/year)

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> Calculate Erosion
> Resources
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> Acknowledgement

Calculated Soil Loss

The following are calculated soil loss for the construction site.

Site Information:

County:	Washtenaw
Site:	Construction Site
Site ID:	001
Soil:	Morley (MoB)
Slope:	4%
Slope Length:	100 ft.
Mulch Type:	Straw/hay
Mulch Rate:	1.5 (tons/acre)
Acreage:	8 acre(s)

Calculated Soil Loss:

Erosion Factors:	R = 100 K = 0.37 LS = 0.55 C = 0.12 P = 1
Tolerable Soil Loss:	T = 3 (tons/acre/year)
Calculated Soil Loss:	A = 2.44 (tons/acre/year)
Potential soil loss (total):	19.54 (tons/year)

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SESC LEGEND:

SILT FENCE
ORANGE CONSTRUCTION FENCE
INLET FILTER
MUD MAT

N

SCALE: 1"= 40'
0 20 40 80 120

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SESC PLAN PHASE 1

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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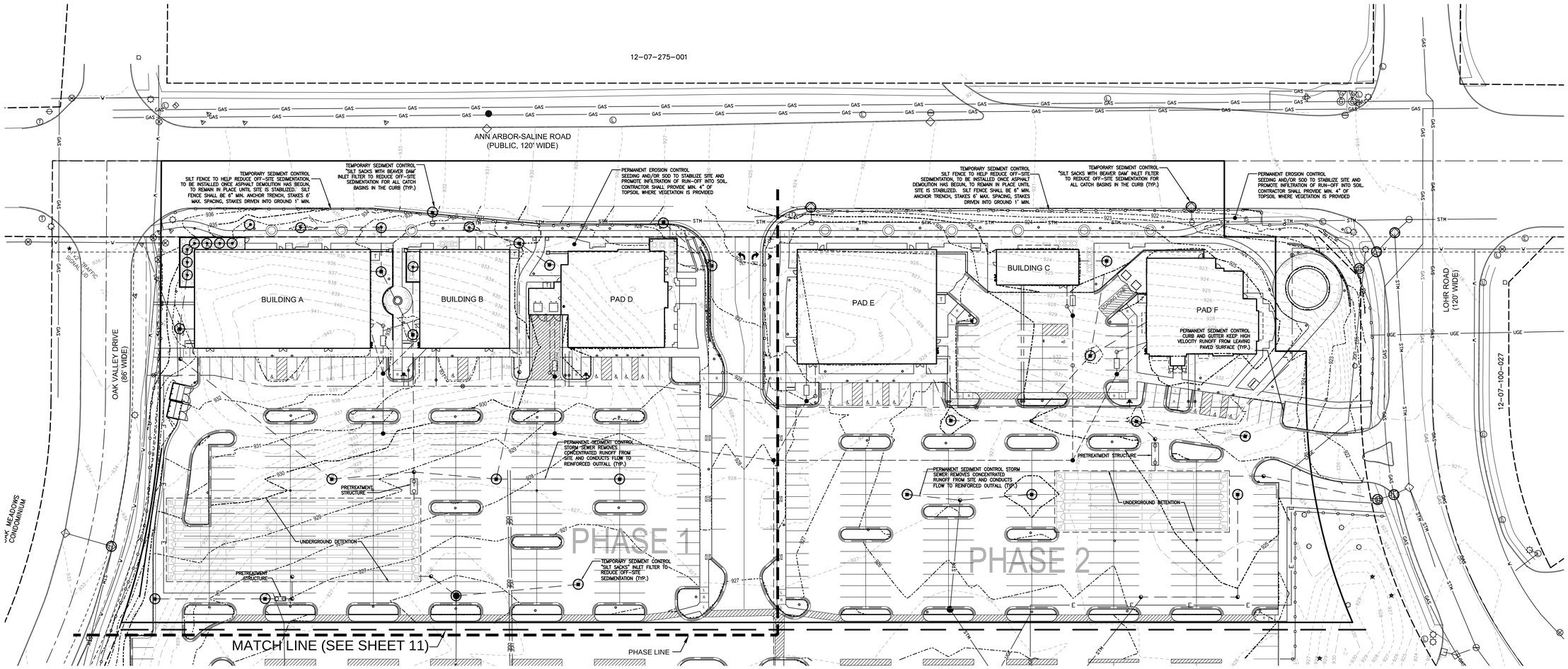

SESC MAINTENANCE NOTES:

1. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR FOR EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES, AND NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
2. TEMPORARY STABILIZATION SHALL BE REPAIRED WHEN, AND AS OFTEN AS NECESSARY, AS DETERMINED BY THE CONTRACTOR / ENGINEER / TOWNSHIP.
3. CONTRACTOR SHALL REMOVE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES AND OTHER CHANGES HAVE BEEN ACCOMPLISHED, AND WHEN REQUIRED.
4. THROUGHOUT THE CONSTRUCTION PERIOD, ALL MUD/SILT TRACKED ON TO EXISTING COUNTY ROADS AND MEIJER PARKING LOT FROM THE SITE DUE TO CONSTRUCTION SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR.
5. CATCH BASIN INLET FILTERS SHALL BE MAINTAINED CLEAN AT ALL TIMES THROUGHOUT THE CONSTRUCTION PERIOD. IF A FILTER HAS HOLES OR IS INUNDATED WITH SEDIMENT, THE FILTER WILL REQUIRE CLEANING OR REPLACEMENT.
6. CONSTRUCTION ACCESS ROAD AND LAYDOWN MUST BE MAINTAINED AS NECESSARY. REPLENISH CRUSHED AGGREGATE IF PRESENT LAYER IS FILLED WITH SEDIMENT, POOLING WATER OR HAS RUTS. A NEW LAYER MAY BE ADDED IF OLD LAYERS BECOME COMPACTED.
7. IF REPAIR OR REPLACEMENT IS NECESSARY TO SILT FENCE, IT SHALL BE PERFORMED IMMEDIATELY. THE SILT FENCE SHOULD BE TRENCHED IN, BACK-FILLED, AND STAPLED OR STAKED ACCORDING TO THE MANUFACTURER'S / TOWNSHIP SPECIFICATIONS. MAINTENANCE INCLUDES THE REMOVING OF BUILT-UP SEDIMENT. WHEN THE SEDIMENT ACCUMULATES TO 1/4 OF THE HEIGHT OF THE FENCE, CONTRACTOR MAY HAVE TO REMOVE, REPLACE, RETRENCH, OR RE-BACKFILL THE FENCE IF IT FAILS. IT WOULD ALSO BE NECESSARY TO RE-INSTALL IF ANY PORTION OF THE FENCING WAS DAMAGED BY CONSTRUCTION MACHINERY.
8. ANY SEDIMENT CONTROL FENCING WHICH BECOMES TORN, RIPPED, FALLEN OR FAILS TO PREVENT EROSION AS INTENDED, SHALL BE IMMEDIATELY REMOVED AND REPLACED WITH NEW EROSION CONTROL FENCING.
9. SEEDING OR RE-SEEDING MAY BE REQUIRED IMMEDIATELY TO AREAS WHICH HAVE BEEN DAMAGED BY RUNOFF.
10. ANY MULCH MAT OR SOIL STABILIZATION MEASURES WHICH ARE DISTURBED DUE TO CONSTRUCTION, HEAVY RAIN EVENTS, ETC. SHALL BE RESTORED IMMEDIATELY TO PREVENT FURTHER EROSION.
11. ALL PRETREATMENT STRUCTURES SHALL BE INSPECTED WEEKLY FOR SEDIMENT ACCUMULATION UNTIL SITE IS STABILIZED AND CLEAN AS REQUIRED.

SEQUENCE OF CONSTRUCTION:

A. CONSTRUCT SANITARY SEWER.
B. INSTALL WATERMAIN AND STORM DRAINAGE SYSTEM. PLACE INLET FILTERS ON NEW STORM INLETS.
C. INSTALL INLET/OUTLET PROTECTION AT THE LOCATIONS OF ALL GRATE INLETS, CURB INLETS, AND AT THE ENDS OF ALL EXPOSED STORM SEWER PIPES.
D. INSTALL ALL FRANCHISED UTILITIES (PHONE, GAS, AND ELECTRIC). IT IS THE CONTRACTOR'S RESPONSIBILITY TO GRADE AND STABILIZE DISTURBANCES DUE TO THE INSTALLATION OF PUBLIC UTILITIES.
E. FINALIZE PAVEMENT SUBGRADE PREPARATION. CONSTRUCT ALL CURB AND GUTTER. INLET PROTECTION MAY BE REMOVED TEMPORARILY FOR THIS CONSTRUCTION.
F. REMOVE INLET PROTECTION AROUND INLETS AND MANHOLES NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
G. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED. FREQUENT WATERING AS NEEDED OF EXCAVATION AND FILL AREAS SHALL BE DONE TO MINIMIZE WIND EROSION.
H. REMOVE TEMPORARY CONSTRUCTION EXITS ONLY PRIOR TO PAVEMENT CONSTRUCTION IN THESE AREAS (THESE AREAS ARE TO BE PAVED LAST).
I. INSTALL PAVEMENT COMPLETELY, REPAIR OR REPLACE INLET FILTERS AS REQUIRED.
J. CARRY OUT FINAL GRADING, SEEDING AND PLANTING
K. REMOVE SILT FENCING AND INLET FILTERS AFTER ALL PAVING IS COMPLETE AND EXPOSED SURFACES ARE STABILIZED.

PITTSFIELD TOWNSHIP SEEDING / SODDING NOTES:

1. SEED OR SOD IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
2. ALL AREAS OF DISTURBED EARTH THAT ARE NOT TO BE PAVED OR SODDED SHALL HAVE 4 INCHES OF TOPSOIL, SEED, FERTILIZER AND MULCH.
3. IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREA WITH UNWEATHERED SMALL GRAIN STRAW (PREFERABLY WHEAT) OR HAY SPREAD. SPREAD UNIFORMLY AT THE RATE OF 1-1/2 TO 2 TONS OR 100 POUNDS (2-3 BALES) PER 1,000 SQUARE FEET. THIS MULCH SHOULD BE ANCHORED WITH A DISC-TYPE MULCH-ANCHORING TOOL.
4. ANY DISTURBED AREA NOT PAVED, SEED AND MULCHED, SODDED OR BUILT UPON ON OR AFTER NOVEMBER 15TH, IS TO BE MULCHED IN THE MANNER AS SPECIFIED ABOVE, IN ORDER TO PROVIDE SOIL EROSION PROTECTION DURING THE WINTER AND EARLY SPRING.
5. ALL EROSION AND SEDIMENTATION CONTROL PREVENTION PROCURES AND STRUCTURES ARE TO COMPLY WITH THE STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENTATION CONTROL OF THE WASHTENAW COUNTY SOIL CONSERVATION DISTRICT.

PITTSFIELD TOWNSHIP CATCH BASIN / MAHNOLE PROTECTION NOTES:

1. PROTECT STORM SEWER CATCH BASINS WITH THE FOLLOWING PRODUCT OR APPROVED EQUAL:
   a. REGULAR FLOW SILTSACK (FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)
   b. HI-FLOW SILTSACK (FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)
   c. OIL-ABSORBANT SILTSACK (FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)

PITTSFIELD TOWNSHIP SEEDING / SODDING NOTES:

1. DURING CONSTRUCTION, ALL ROADS SHALL BE PROTECTED FROM UNVEGETATED AREAS WASHING ONTO ROAD SURFACES BY PLACEMENT OF SILT FENCE BEHIND CURB OR A 10-FOOT WIDE STRAW MULCH BANK BEHIND THE CURB OR OTHER APPROVED METHOD AND / OR AS SHOWN ON THE PLANS.
2. DURING CONSTRUCTION OF ANY PORTION OF THE PROJECT, ROADS SHALL BE MAINTAINED FREE OF DIRT, SILT, AND CONSTRUCTION DEBRIS.

CONTACT FOR ALL EROSION CONTROL MEASURES

OWNER: 24TH AVENUE PLACE L.L.C.

REPRESENTATIVE: STEVE ROBINSON, PRESIDENT

25900 West 11 Mile Road, Suite 250
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248.352.0602 - fax

STEVE@VERSACOS.COM

MAINTENANCE SCHEDULE	
CHECK SILT FENCE	WEEKLY AND AFTER SIGNIFICANT RAIN EVENT
SCRAPE & SWEEP PARKING LOTS	AS NEEDED - MIN. SWEEPING ONCE A WEEK, MIN. SCRAPING DAILY
CHECK INLET FILTERS	AFTER RAIN EVENT
CHECK PRETREATMENT STRUCTURES	WEEKLY AND AFTER SIGNIFICANT RAIN EVENT

SESC LEGEND:

SILT FENCE
ORANGE CONSTRUCTION FENCE
INLET FILTER

MUD MAT

N

SCALE: 1"= 40'

0 20 40 80 120

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SESC PLAN PHASE 2

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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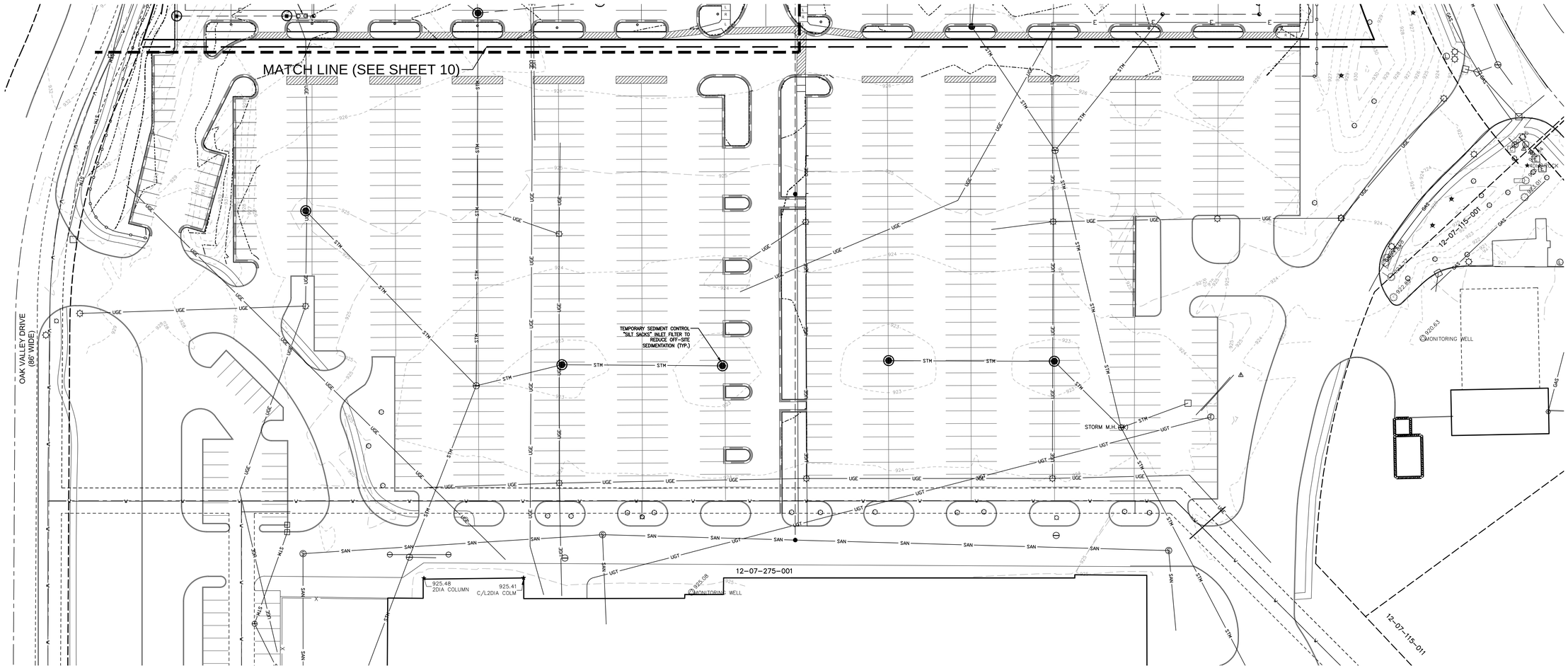


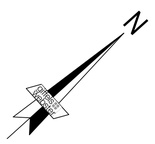
SESC LEGEND:

SILT FENCE

ORANGE CONSTRUCTION FENCE

INLET FILTER

MUD MAT



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SESC PLAN PHASE 2

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
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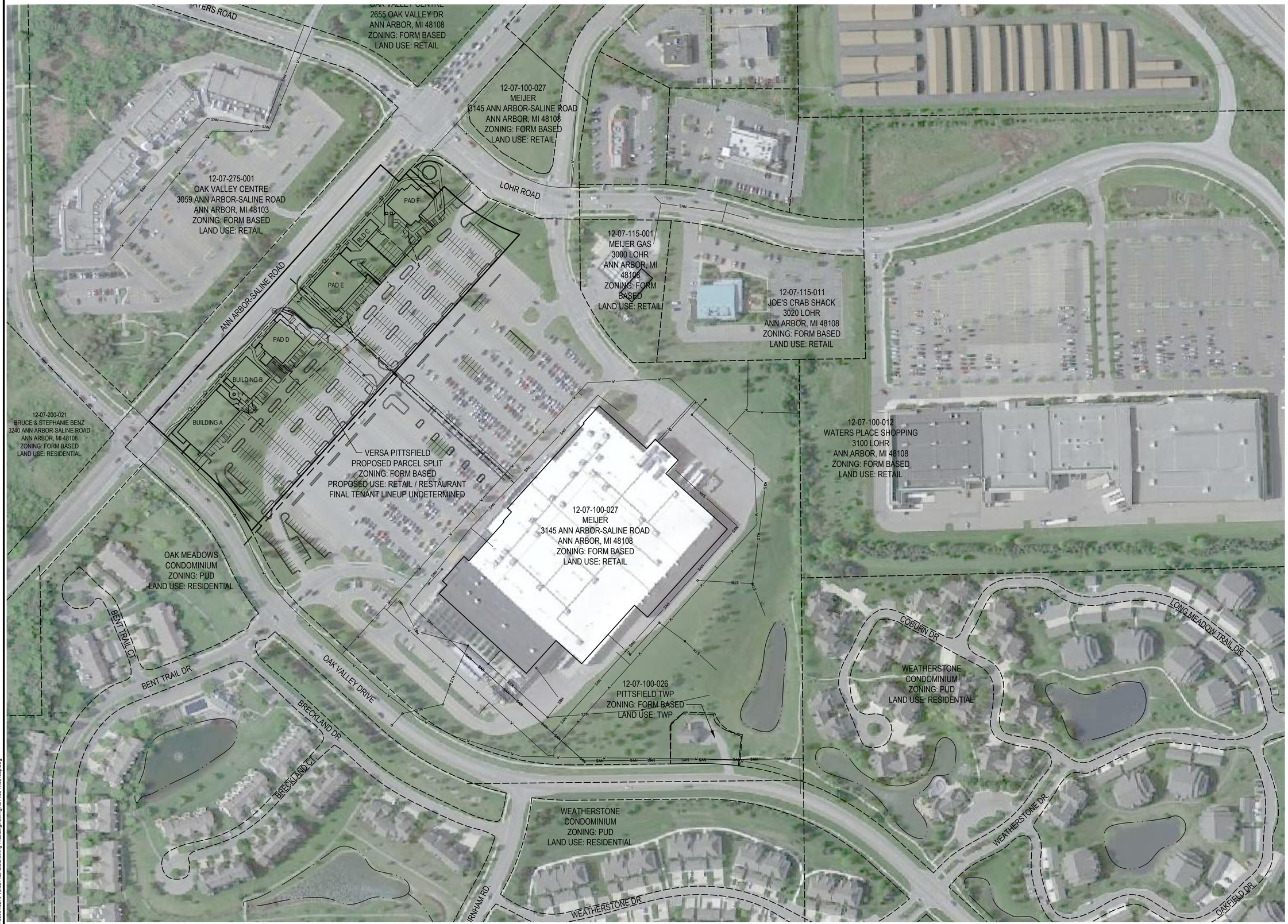

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AREA WIDE MAP

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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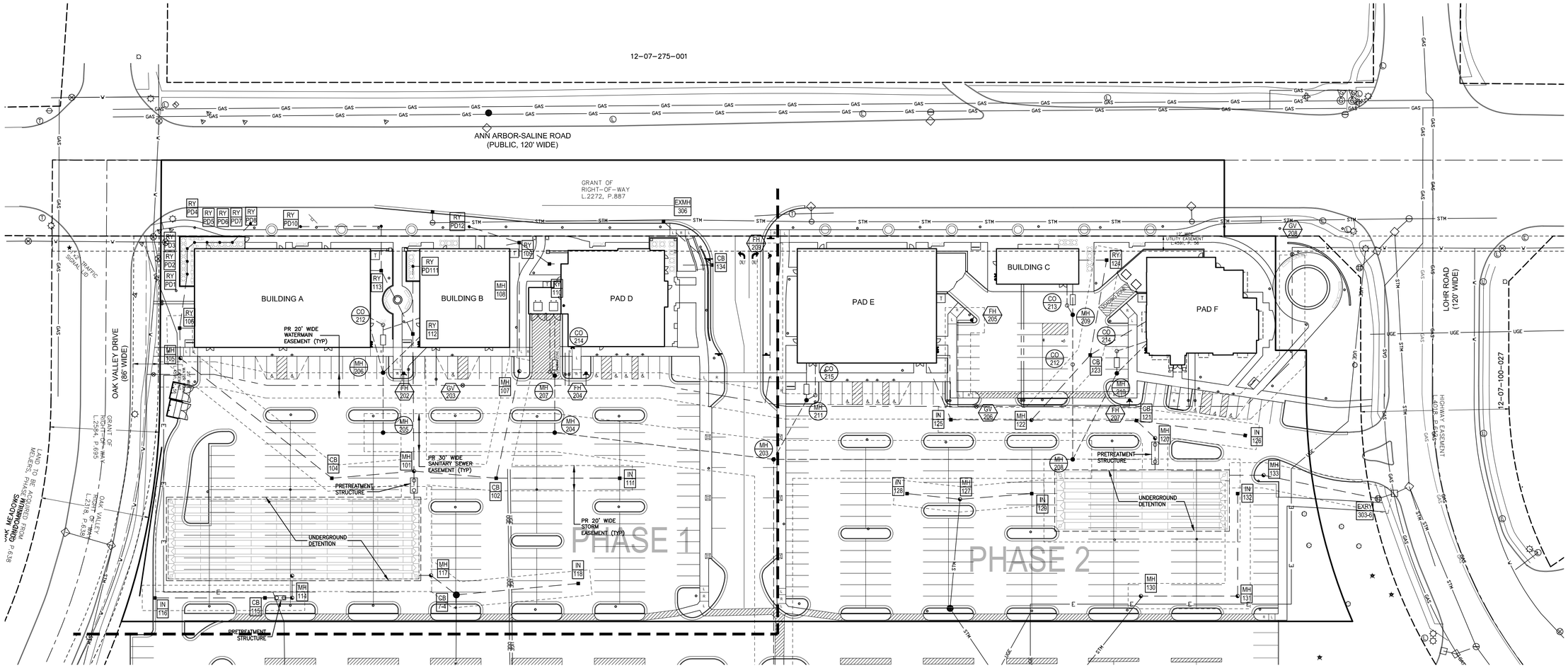
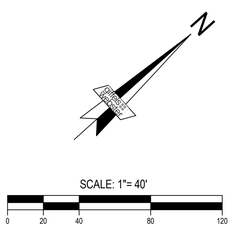


NOTES:

1. NEW FRANCHISED UTILITY LOCATIONS WILL BE SHOWN ON THE AS-BUILT PLANS. IF LOCATIONS ARE KNOW PRIOR TO CONSTRUCTION, UTILITY ROUTING WILL BE ADDED TO THE CONSTRUCTION PLANS.



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	T-3-S R-6-E

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DATE:	ISSUE:
12.14.2012	SUBMIT SITE PLAN
04.25.2013	RESUBMIT SITE PLAN
06.21.2013	RESUBMIT SITE PLAN
08.15.2013	RESUBMIT SITE PLAN
09.18.2013	SUBMIT FINAL SITE PLAN
09.23.2013	SUBMIT FOR WCRC AND WCWRC APPROVAL
10.17.2013	SUBMIT FOR FINAL SITE PLAN APPROVAL
11.12.2013	SUBMIT TO WCWRC FOR FINAL APPROVAL
11.21.2013	FINAL SITE PLAN SUBMITTAL
01.13.2014	WCRC RESUBMITTAL
01.27.2014	WCRC RESUBMITTAL
01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

Developed For:

VERSA DEVELOPMENT

25900 W. 11 MILE ROAD
SUITE 250
SOUTHFIELD, MI 48034
(248) 416-1985

OVERALL EASEMENT & UTILITY PLAN

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
Scale:	1" = 40'
Sheet:	13
Project:	18270.00

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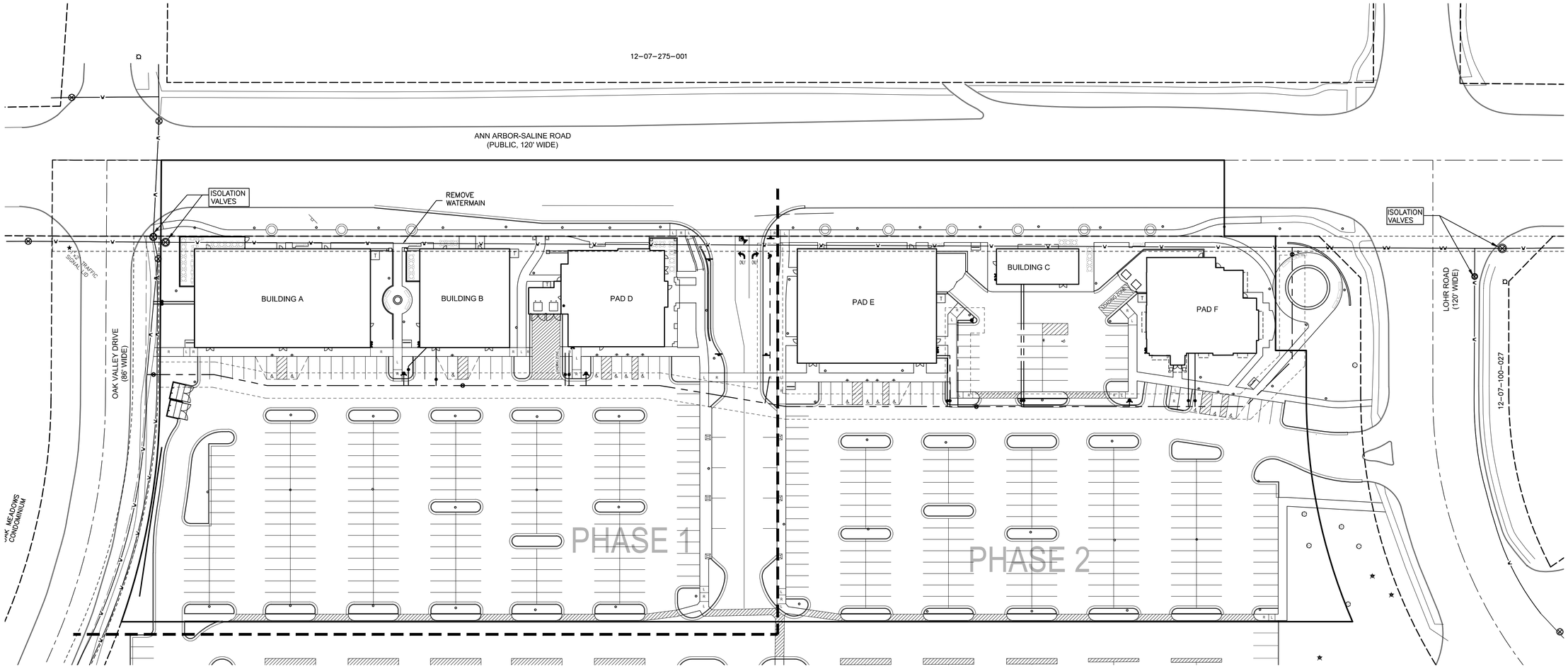

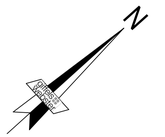

SCALE: 1"= 40'

0 20 40 80 120

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WATERMAIN ISOLATION PLAN

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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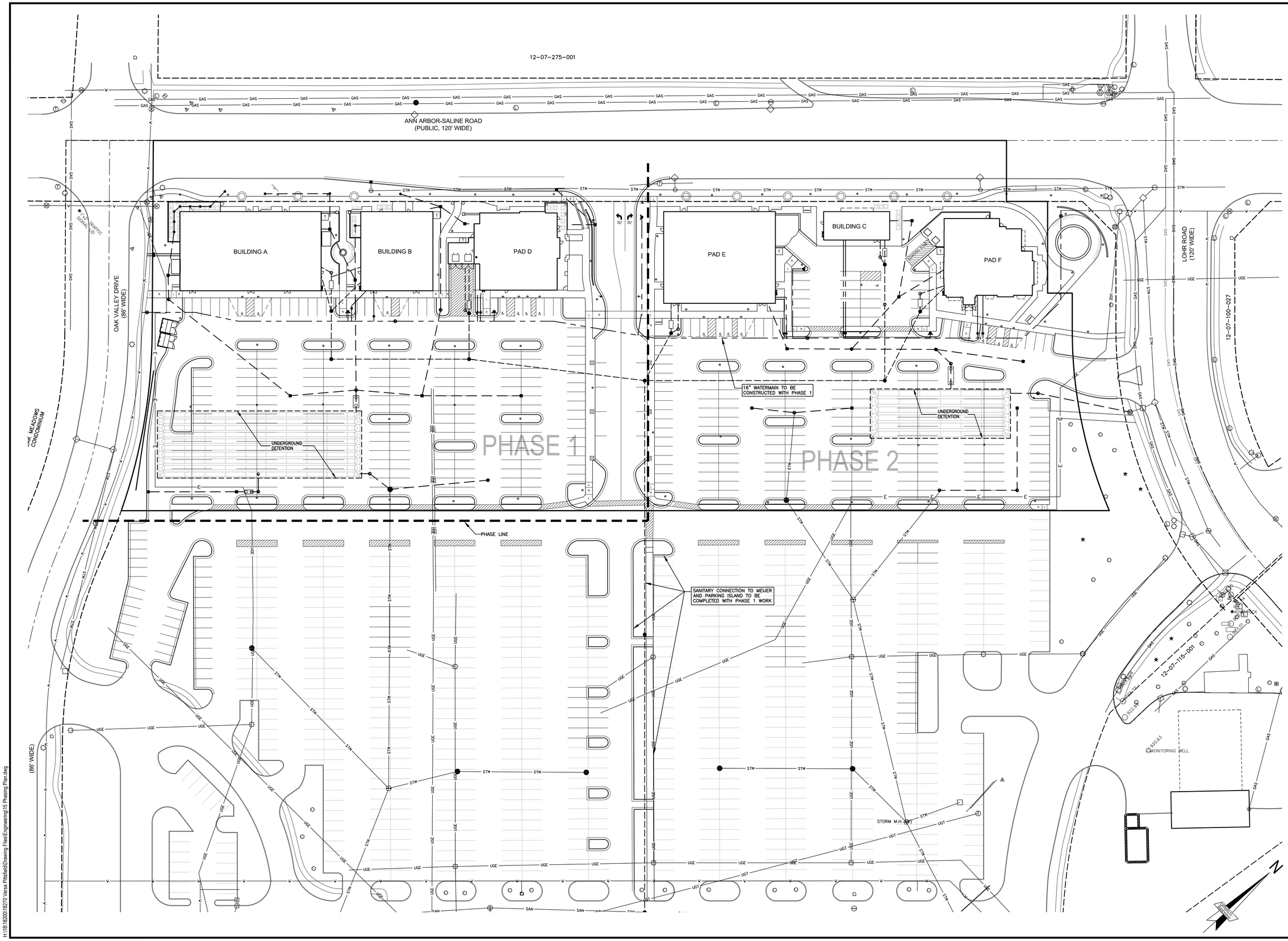

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PHASING PLAN

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
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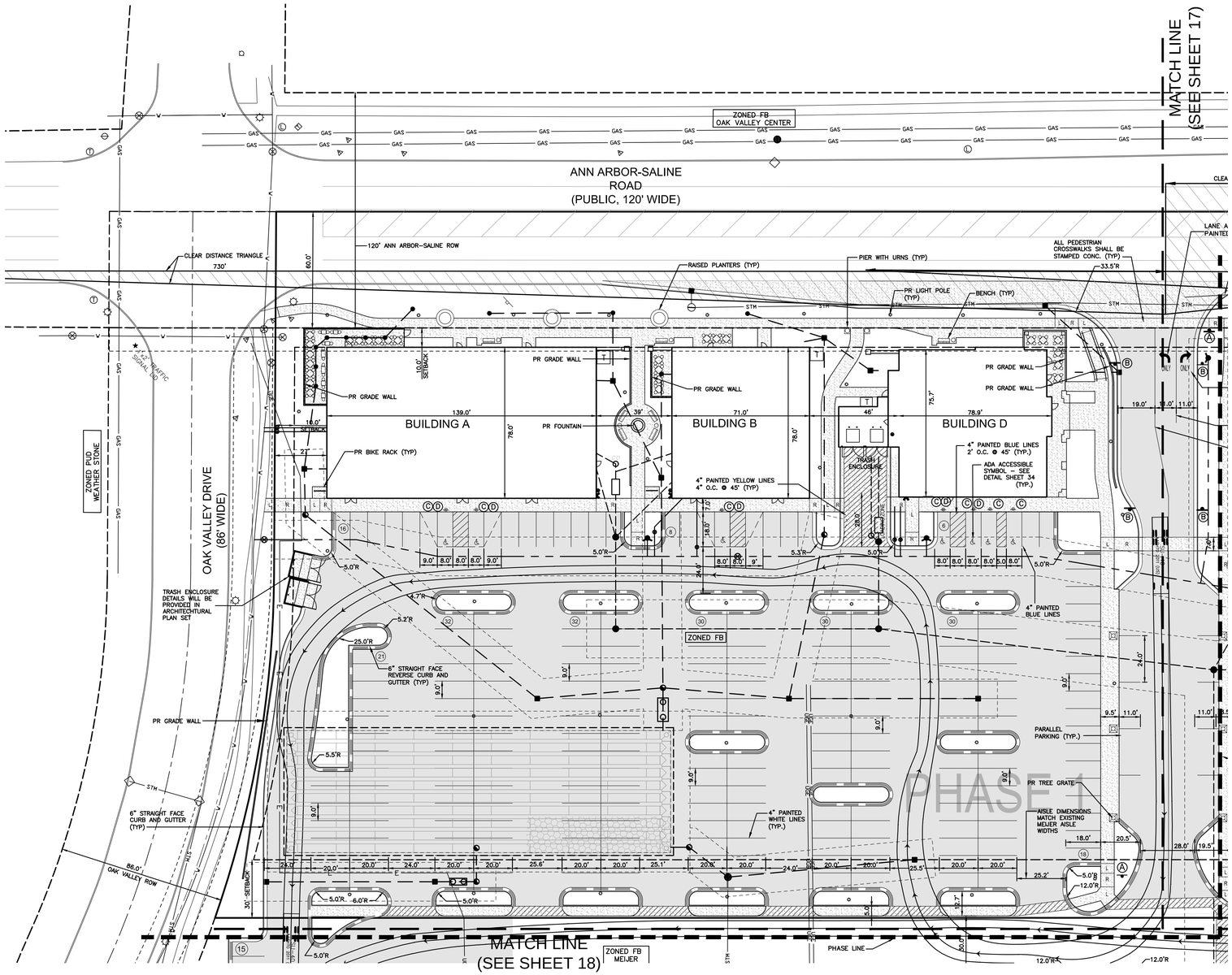
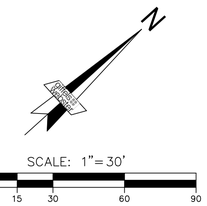




PAVING NOTES:

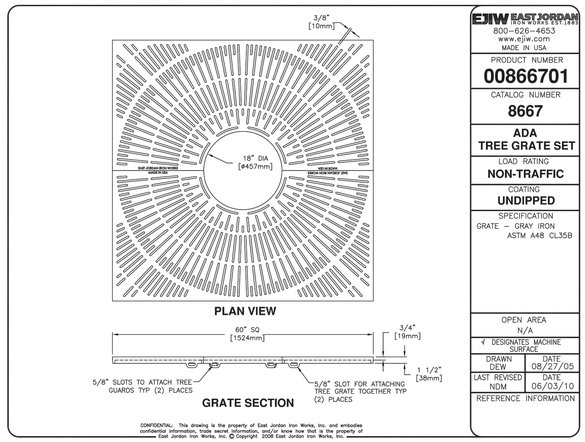
1. THE PAVING CONTRACTOR SHALL BE REQUIRED TO COORDINATE THE INSTALLATION OF GAS, ELECTRIC, PHONE, CABLE, SPRINKLERS, ETC. IN SUCH A MANNER THAT WILL FACILITATE THEIR PROPER INSTALLATION PRIOR TO PLACING THE PAVEMENT MATERIALS. ENSURE THAT ALL REQUIRED PIPES, CONDUITS, CABLES AND SLEEVES ARE PROPERLY PLACED AND THAT THE TRENCHES ARE PROPERLY BACKFILLED AND COMPACTED.
2. BUTT JOINTS SHALL BE PLACED AT ALL LOCATIONS WHERE AN EXISTING ASPHALT PAVEMENT SURFACE IS BEING DISTURBED BY REMOVALS AND/OR THE INSTALLATION OF NEW ASPHALT PAVEMENT.
3. ALL PAVEMENT AREAS SHOULD BE CLEARED AND GRUBBED BY REMOVING SURFACE VEGETATION, TOPSOIL, DEBRIS AND OTHER DELETERIOUS MATERIALS.
4. THE PLACEMENT OF THE FINAL ASPHALT LIFT SHALL BE DELAYED UNTIL THE MAJORITY OF THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED, OR AS APPROVED BY THE OWNER. A BOND COAT OF SS-1H EMULSION SHALL BE APPLIED (AT A RATE OF 0.10 GALLONS/S.Y.D.) BETWEEN THE LEVELING AND WEARING COURSE WHEN 48 HOURS HAVE ELAPSED BETWEEN PLACEMENTS.
5. THE FINAL SUB-GRADE SHALL BE THOROUGHLY PROOF-ROLLED UNDER THE OBSERVATION OF THE SOILS ENGINEER.
6. PROPOSED AGGREGATE BASE SHALL EXTEND A MINIMUM OF 1 FOOT BEYOND THE PAVEMENT EDGE/BACK OF CURB.
7. BARRIER FREE SIGNAGE SHALL BE PLACED IN FRONT OF EVERY DESIGNATED BARRIER FREE STALL. THE CONTRACTOR SHALL COORDINATE STANDARD AND VAN ACCESSIBILITY SIGNAGE AS INDICATED ON THE PLANS.
8. ALL BARRIER FREE RAMPS TO BE A.D.A. COMPLIANT.
9. GENERAL GRADING REQUIREMENTS ARE AS FOLLOWS:
   A. FINISH GRADE AT EXISTING BUILDING SHALL MATCH BRICK LEDGES, DOORWAYS OR BASEMENT WINDOWS
   B. MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING: 5% FOR FIRST 10' THEN 2% AFTER
   C. SIDEWALK CROSS SLOPE SHALL BE A MAXIMUM OF 2%
   D. PAVEMENT SLOPES (1.0% MINIMUM, 4.0% MAXIMUM) UNIFORMLY BETWEEN FINISH GRADE ON PLANS
   E. LAWN AREAS 2% MINIMUM TO 25% (BERMS) MAXIMUM
10. REFER TO ARCHITECTURAL PLANS TO COORDINATE ALL:
   A. WATER SUPPLY, METERING, SPRINKLER AND FDC PIPING, DESIGN AND COORDINATION
   B. BUILDING SEWER, BUILDING DRAIN DESIGN AND CONNECTIONS TO CLEAN OUTS AND ROOF CONNECTORS
   C. GAS, ELECTRIC AND COMMUNICATION SERVICES AND LIGHTING DETAILS AND COORDINATION.
   D. ALL BUILDING ACCESS WALKS AND ENTRY DETAILS, INCLUDING SUPPORTED SLABS
   E. ALL WORK TO CONSTRUCT THE BUILDING AND ALL ITEMS CONNECTED TO IT
11. PRIOR TO THE PLACEMENT OF ANY BASE ASPHALT OR LEVELING COURSE, THE CURBS SHALL BE PARTIALLY BACKFILLED AND THE SUB-GRADE SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF THE SOILS ENGINEER.
12. ALL SIDEWALK AND PATHWAYS IN ANY PUBLIC R.O.W. SHALL BE INSPECTED BY THE AGENCY WITH JURISDICTION.
13. DIMENSION ARE TO FACE OF CURB.

TRAFFIC SIGNING:

ITEM	MMUTCD CODE	DESCRIPTION	SIZE	QUANTITY
A	R1-1	STOP	24x24	1
B		NO PARKING	12x18	2
		FIRE LANE		
C	R7-8	HANDICAP PARKING ONLY	12x18	7
		(SEE DETAIL SHEET 34)		
D	R7-8A	VAN ACCESSIBLE	12x6	5
		(SEE DETAIL SHEET 34)		

LEGEND

- PROPERTY LINE
- EXIST. R.O.W.
- PR. GATE VALVE
- PR. HYDRANT ASSEMBLY W/ SHUT OFF
- PR. FDC
- PR. WATER MAIN
- PR. STORM SEWER CATCHBASIN
- PR. STORM SEWER MANHOLE
- PR. STORM SEWER END SECTION
- PR. 8"–10" RIP–RAP
- PR. STORM SEWER
- PR. SANITARY SEWER CLEANOUT
- PR. SANITARY SEWER MANHOLE
- PR. SANITARY SEWER
- PR. UNDERGROUND ELECTRICAL SERVICE
- PR. UNDERGROUND GAS SERVICE
- PR. UNDERGROUND TELEPHONE SERVICE
- PR. C.G.M.
- PR. UTILITY CROSSING
- PR. COUNTOUR MINOR
- PR. COUNTOUR MAJOR
- PR. SPOT ELEVATION
- PR. SWALE
- PR. CURB AND GUTTER
- PR. REVERSE CURB AND GUTTER
- PR. STANDARD DUTY ASPHALT
- PR. CONCRETE



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01.27.2014	WCRC RESUBMITTAL
01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

Developed For:

VERSA DEVELOPMENT

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SITE / PAVING PLAN SOUTHWEST

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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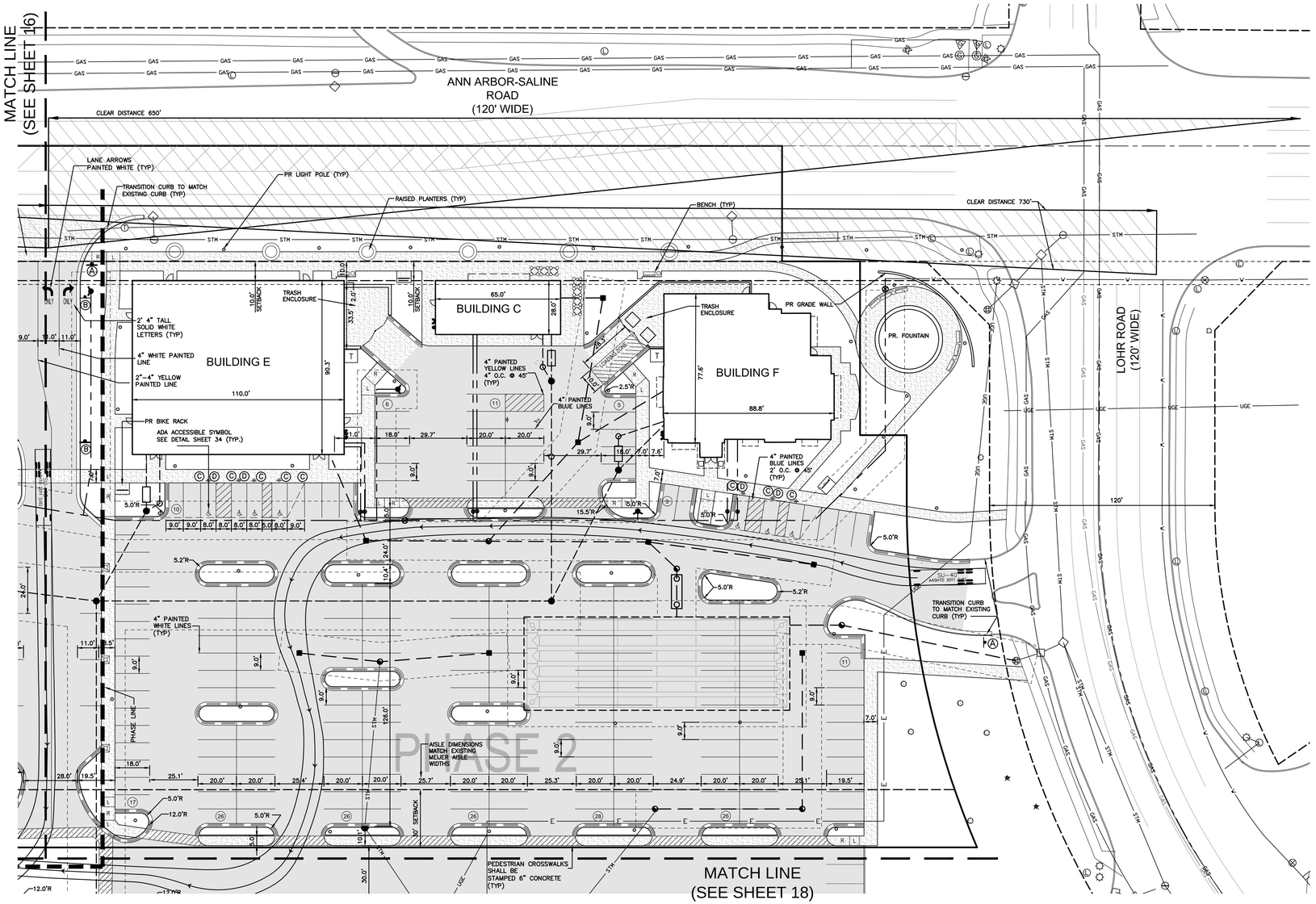

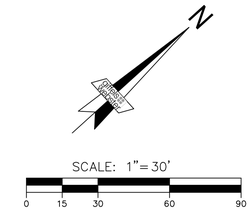

LEGEND

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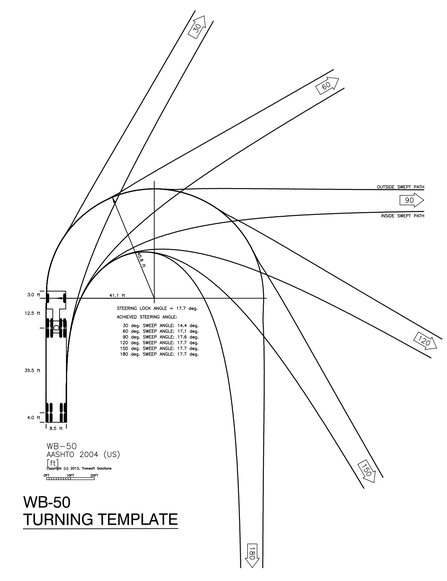
- PR. CONCRETE

TRAFFIC SIGNING:

ITEM	MMUTCD CODE	DESCRIPTION	SIZE	QUANTITY
A	R1-1	STOP	24x24	2
B		NO PARKING FIRE LANE	12x18	2
C	R7-8	HANDICAP PARKING ONLY (SEE DETAIL SHEET 34)	12x18	8
D	R7-8A	VAN ACCESSIBLE (SEE DETAIL SHEET 34)	12x6	4



WB-50
TURNING TEMPLATE

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SITE / PAVING PLAN NORTHEAST

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
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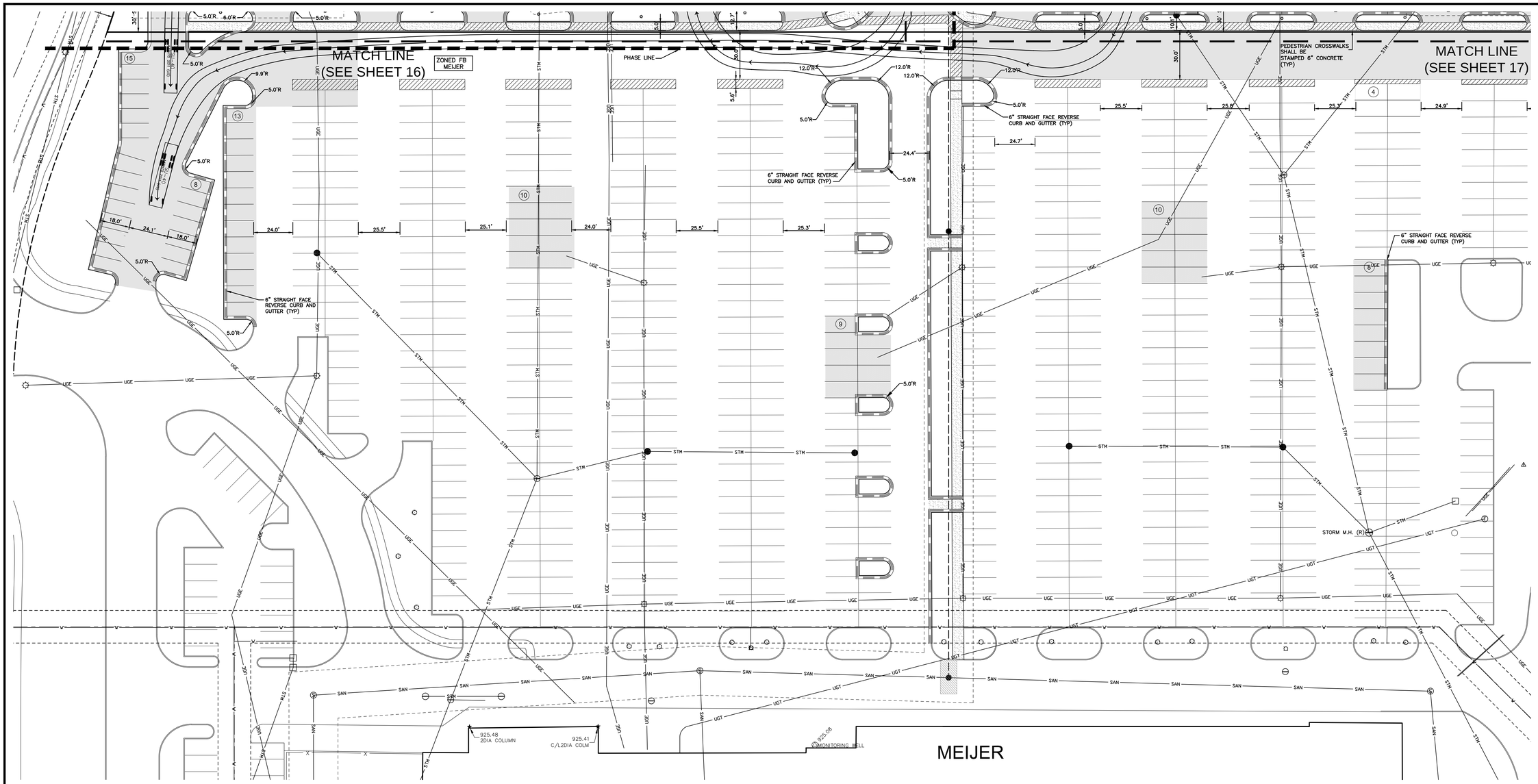

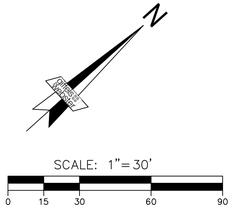

LEGEND

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- EXIST. R.O.W.
- PR. GATE VALVE
- PR. HYDRANT ASSEMBLY W/ SHUT OFF
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SITE / PAVING PLAN - MEIJER PARKING LOT

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
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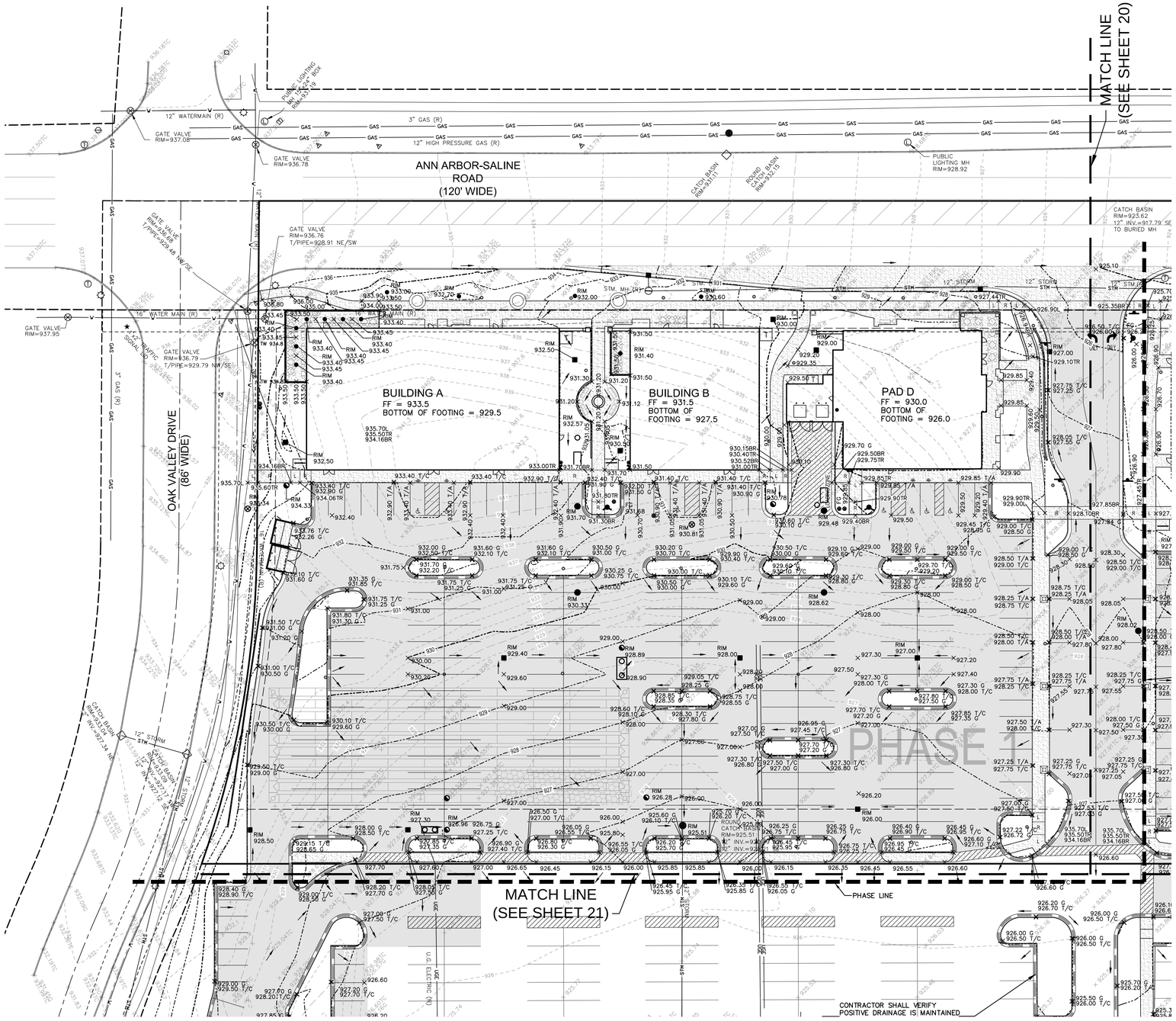

GRADING NOTES:

1. REFER TO THE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS AND RESPONSIBILITIES.
2. THE FINAL SUB-GRADE SHALL BE THOROUGHLY PROOF-ROLLED UNDER THE OBSERVATION OF THE SOILS ENGINEER.
3. ALL TRENCHES WITHIN A ONE ON ONE SLOPE OF PAVEMENT SHALL BE BACKFILLED WITH SAND (MDOT CLASS II MINIMUM) AND MECHANICALLY COMPACTED IN NOT MORE THAN 9" LAYER TO 95% MAXIMUM DRY DENSITY PER MODIFIED PROCTER COMPACTION TEST ASTM D-1557.
4. NO FROZEN MATERIAL SHALL BE PERMITTED AS BACKFILL UNDER ANY ROADWAY, DRIVEWAY OR PARKING AREA.
5. PRIOR TO THE START OF ANY FILLING, THE CONTRACTOR SHALL REMOVE ALL TOPSOIL AND ALL OTHER UNACCEPTABLE SOIL FROM THE FILL AREAS, AND PROPERLY BACKFILL WITH ACCEPTABLE SOIL.
6. ALL BARRIER FREE RAMPS TO BE A.D.A. COMPLIANT.
7. GENERAL GRADING REQUIREMENTS ARE AS FOLLOWS:
   - A. FINISH GRADE AT EXISTING BUILDING SHALL MATCH BRICK LEDGES, DOORWAYS OR BASEMENT WINDOWS
   - B. MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING: 5% WITHIN THE FIRST 10' AND 2% AFTER.
   - C. SIDEWALK CROSS SLOPE SHALL BE NO MORE THAN 2%.
   - D. PAVEMENT SLOPES (1.0% MINIMUM, 4.0% MAXIMUM) UNIFORMLY BETWEEN FINISH GRADE ON PLANS
   - E. LAWN AREAS ± 2% MINIMUM TO 25% (BERMS) MAXIMUM
8. GRADES ARE NOTED AS FOLLOWS: TC - TOP OF CURB, TP - TOP OF PAVEMENT, TW - TOP OF WALK.
9. REFER TO ARCHITECTURAL PLANS TO COORDINATE ALL:
   - A. WATER SUPPLY, METERING, SPRINKLER AND FDC PIPING, DESIGN AND COORDINATION
   - B. BUILDING SEWER, BUILDING DRAIN DESIGN AND CONNECTIONS TO CLEAN OUTS AND ROOF CONNECTORS
   - C. GAS, ELECTRIC AND COMMUNICATION SERVICES AND LIGHTING DETAILS AND COORDINATION.
   - D. ALL BUILDING ACCESS WALKS AND ENTRY DETAILS, INCLUDING SUPPORTED SLABS
   - E. ALL WORK TO CONSTRUCT THE BUILDING AND ALL ITEMS CONNECTED TO IT
10. PRIOR TO THE PLACEMENT OF ANY BASE ASPHALT OR LEVELING COURSE, THE CURBS SHALL BE PARTIALLY BACKFILLED AND THE SUB-GRADE SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF THE SOILS ENGINEER.
11. ALL SIDEWALK AND PATHWAYS IN ANY PUBLIC R.O.W. SHALL BE INSPECTED BY THE AGENCY WITH JURISDICTION.

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- PR. SPOT ELEVATION
- PR. SWALE
- PR. CURB AND GUTTER
- PR. REVERSE CURB AND GUTTER
- PR. STANDARD DUTY ASPHALT
- PR. CONCRETE

*SEE SHEET 22 FOR GRADE WALL ELEVATIONS

SCALE: 1"= 30'

0 15 30 60 90

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Designer:	N.M.T.
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GRADING PLAN SOUTHWEST

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
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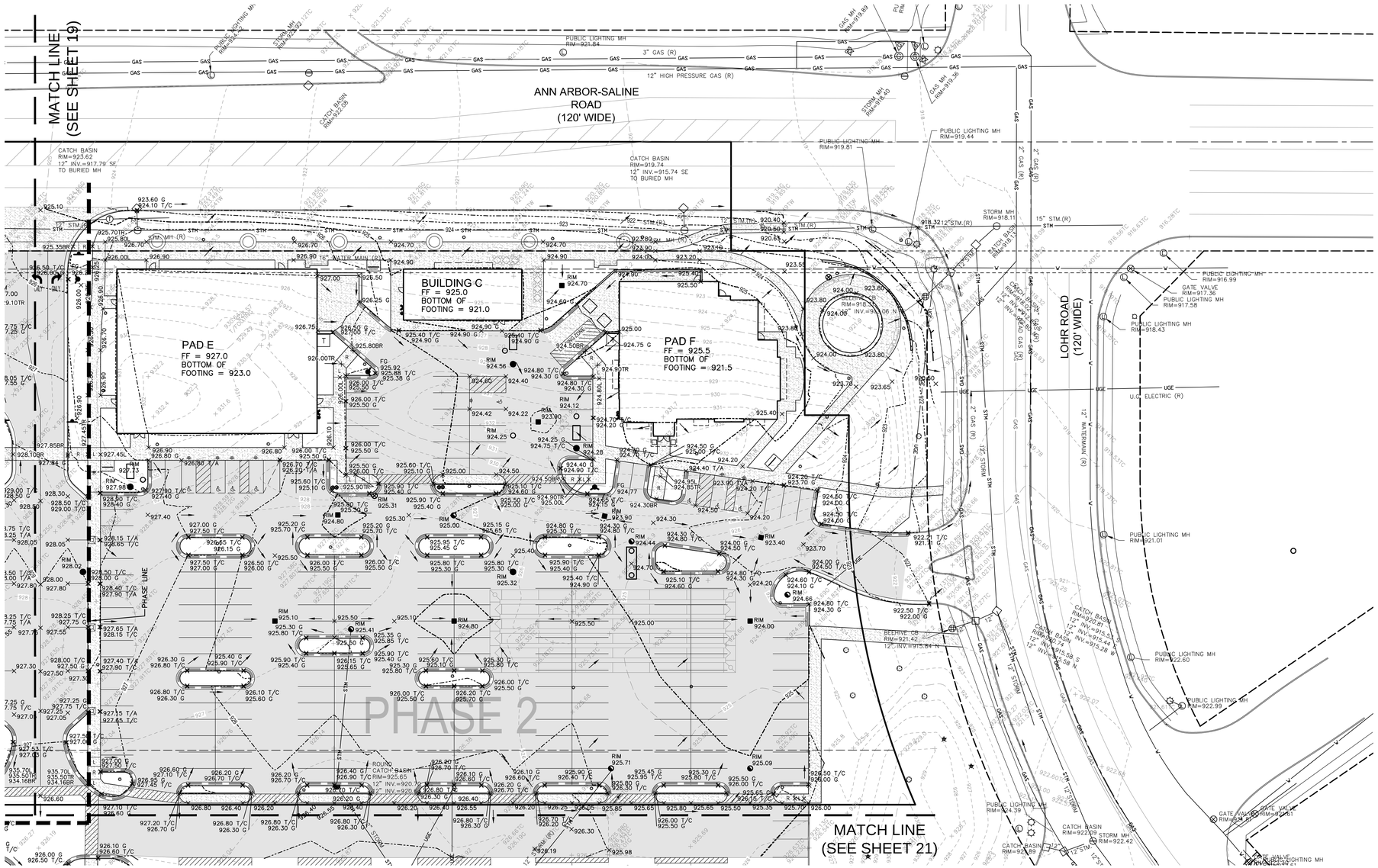

LEGEND

- PROPERTY LINE
- EXIST. R.O.W.
- PR. GATE VALVE
- PR. HYDRANT ASSEMBLY W/ SHUT OFF
- PR. FDC
- PR. WATER MAIN
- PR. STORM SEWER CATCHBASIN
- PR. STORM SEWER MANHOLE
- PR. STORM SEWER END SECTION
- PR. 8"-10" RIP-RAP
- PR. STORM SEWER
- PR. SANITARY SEWER CLEANOUT
- PR. SANITARY SEWER MANHOLE
- PR. SANITARY SEWER
- PR. UNDERGROUND ELECTRICAL SERVICE
- PR. UNDERGROUND GAS SERVICE
- PR. UNDERGROUND TELEPHONE SERVICE
- PR. C.G.M.
- PR. UTILITY CROSSING
- PR. COUNTOUR MINOR
- PR. COUNTOUR MAJOR
- PR. SPOT ELEVATION
- PR. SWALE
- PR. CURB AND GUTTER
- PR. REVERSE CURB AND GUTTER

*SEE SHEET 22 FOR GRADE WALL ELEVATIONS

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GRADING PLAN NORTHEAST

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

SCALE: 1" = 30'

0 15 30 60 90

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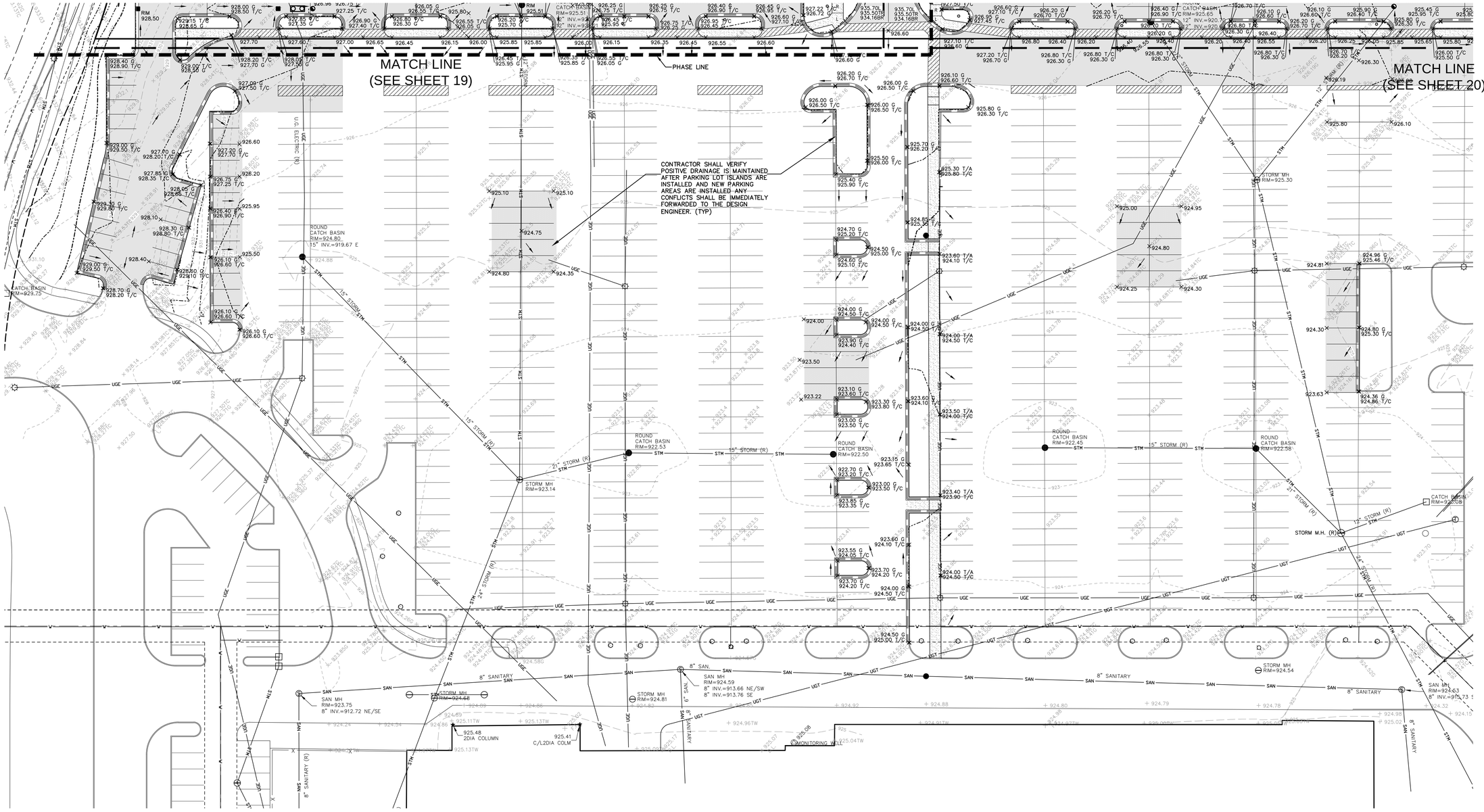

LEGEND

- PROPERTY LINE
- EXIST. R.O.W.
- PR. GATE VALVE
- PR. HYDRANT ASSEMBLY W/ SHUT OFF
- PR. FDC
- PR. WATER MAIN
- PR. STORM SEWER CATCHBASIN
- PR. STORM SEWER MANHOLE
- PR. STORM SEWER END SECTION
- PR. 8"-10" RIP-RAP
- PR. STORM SEWER
- PR. SANITARY SEWER CLEANOUT
- PR. SANITARY SEWER MANHOLE
- PR. SANITARY SEWER
- G — PR. UNDERGROUND ELECTRICAL SERVICE
- PR. UNDERGROUND GAS SERVICE
- T — PR. UNDERGROUND TELEPHONE SERVICE
- PR. C.G.M.
- 3 — PR. UTILITY CROSSING
- 940 — PR. COUNTOUR MINOR
- 940 — PR. COUNTOUR MAJOR
- 940.30 — PR. SPOT ELEVATION
- PR. SWALE
- PR. CURB AND GUTTER
- PR. REVERSE CURB AND GUTTER

N

SCALE: 1"=30'

0 15 30 60 90

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GRADING PLAN - MEIJER PARKING LOT

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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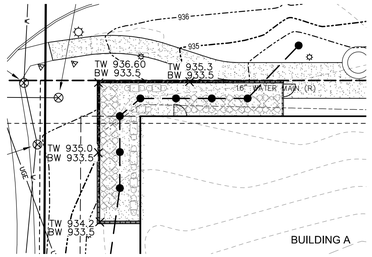

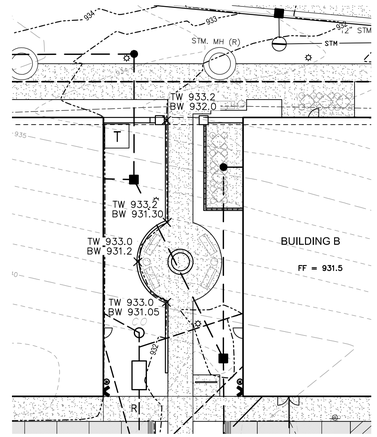

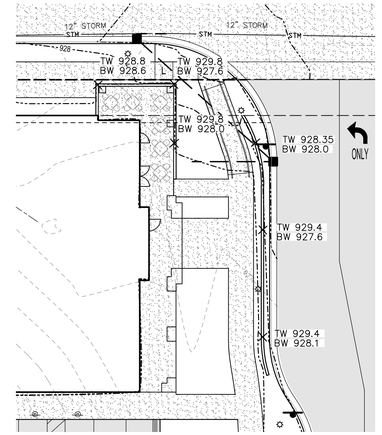

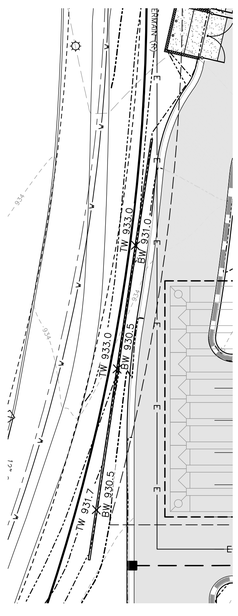

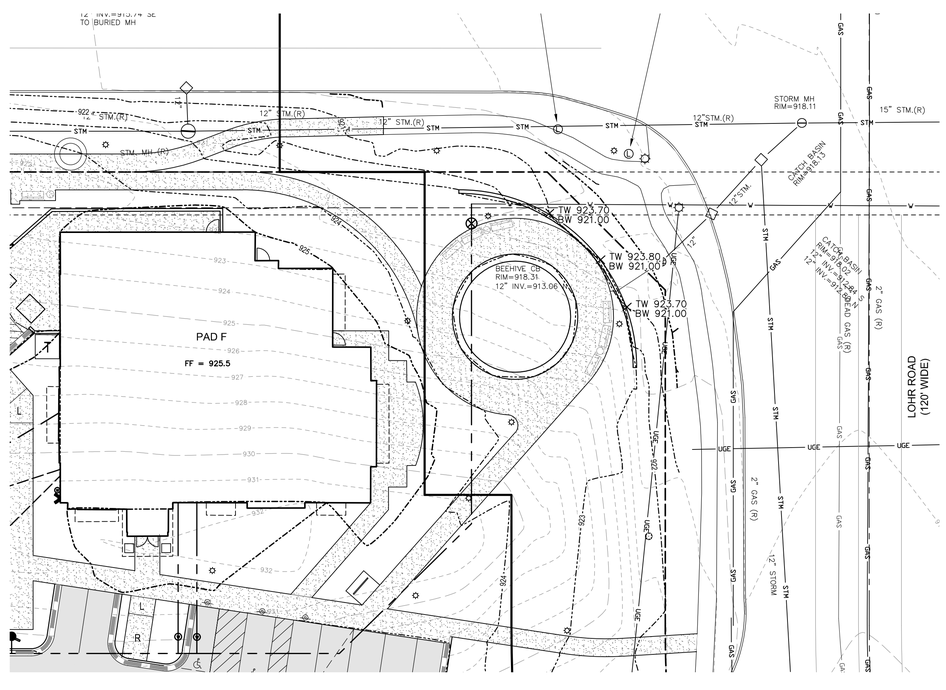

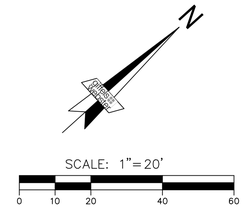

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WALL ELEVATIONS

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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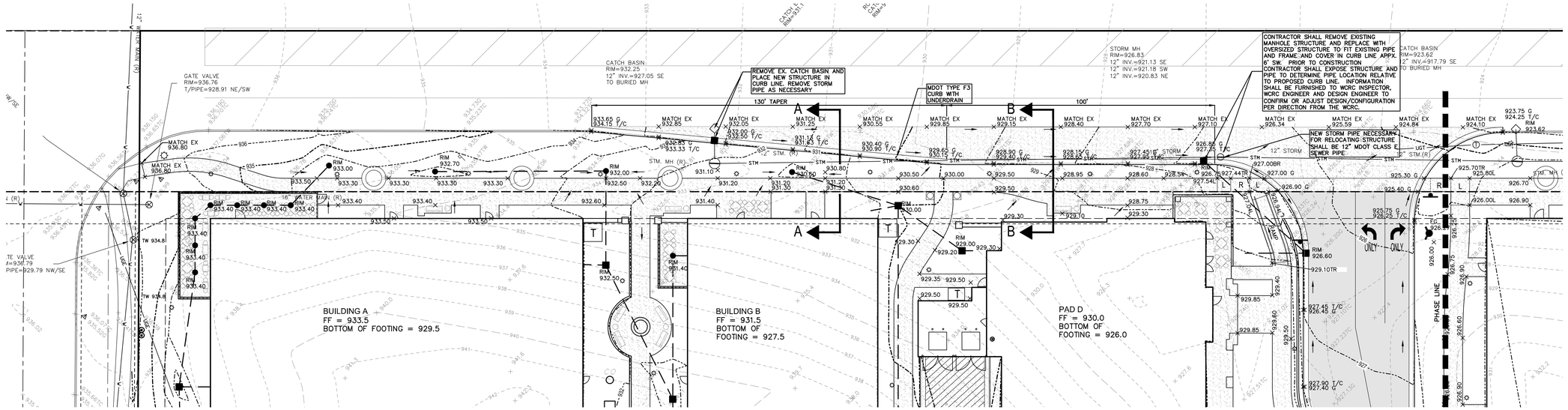
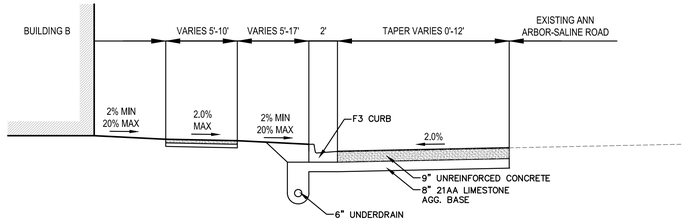
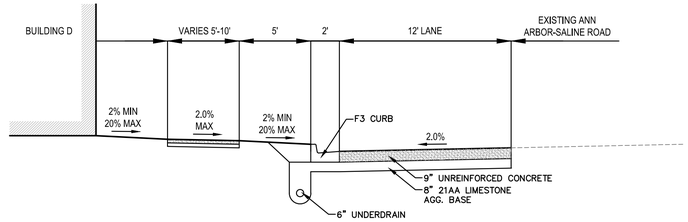




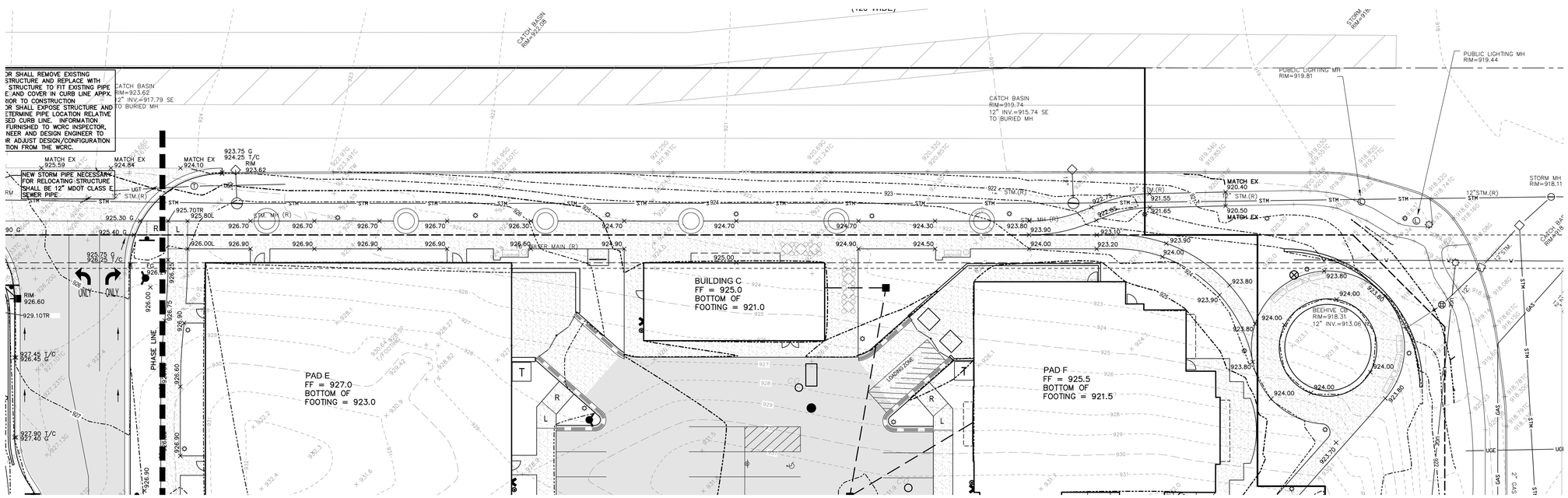
TYPICAL CROSS SECTION - A-A

SCALE 1" = 5'



TYPICAL CROSS SECTION - B-B

SCALE 1" = 5'



SCALE: 1"=20'

0 10 20 40 60

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DETAILED GRADING

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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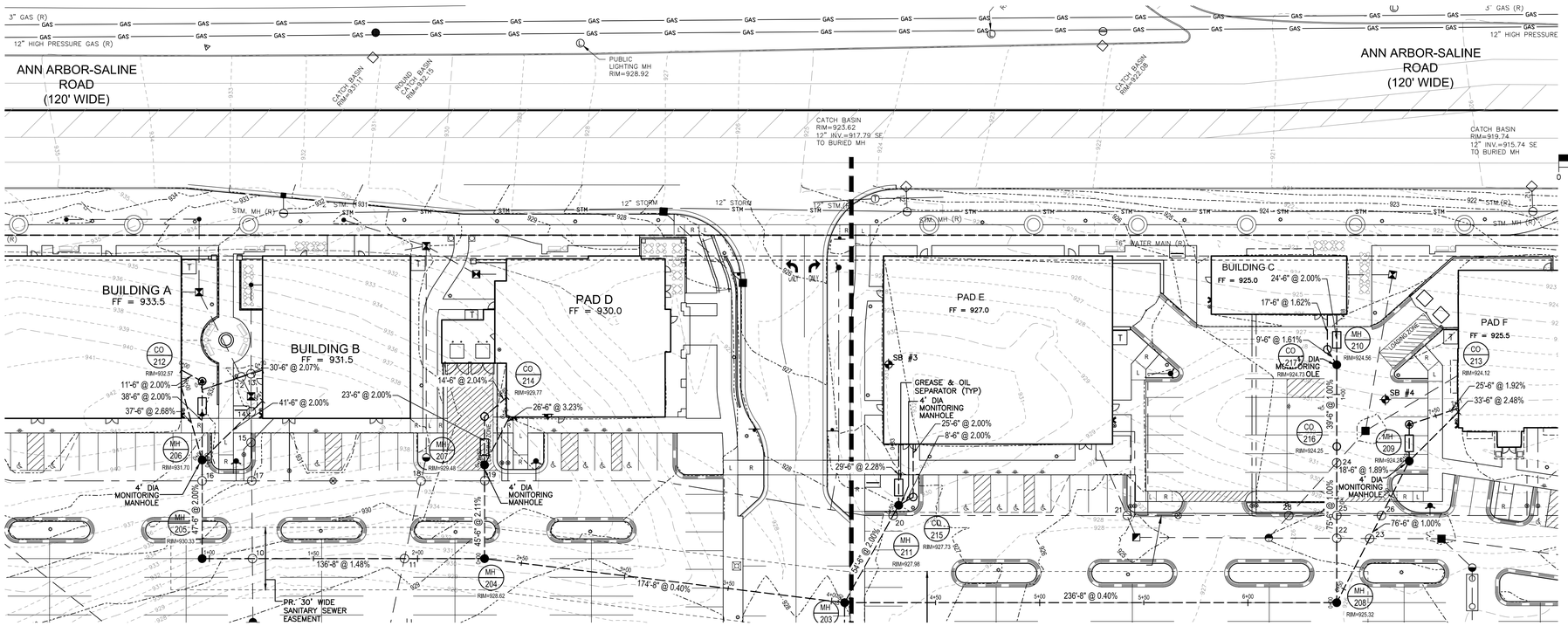

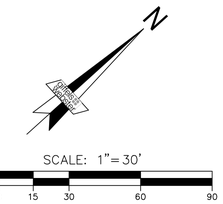

COMPACTION NOTE:
COMPACTION OF TRENCHES IS REQUIRED IN ROADWAY CORRIDORS, SIDEWALKS AND PARKING LOTS. (CLASS II GRANULAR BACKFILL AT 95% COMPACTION)

GREASE INTERCEPTOR:
GREASE INTERCEPTORS SHALL BE CHECKED ONCE YEARLY.

PERSON RESPONSIBLE:
LISA DAVIS,
HEAD OF PROPERTY MAINTENANCE

PIPE MATERIALS:

1. SANITARY SEWER: 8" - SDR 26 PVC
   6" LEADS - SDR 26 PVC

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Quality Control:	
Section:	7
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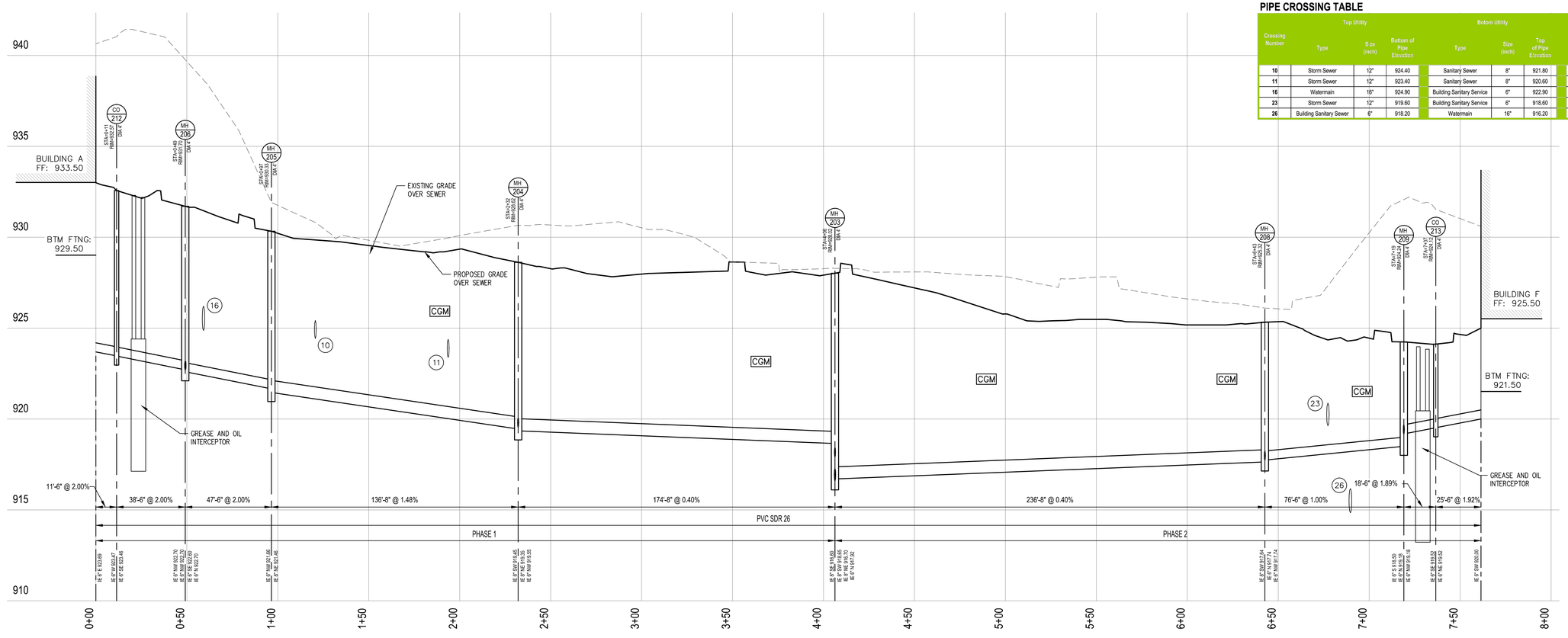
PIPE CROSSING TABLE

Crossing Number	Top Utility Type	Top Utility Size (inch)	Top Utility Bottom of Pipe Elevation	Botom Utility Type	Botom Utility Size (inch)	Botom Utility Top of Pipe Elevation	Clearance	Comments
10	Storm Sewer	12"	924.40	Sanitary Sewer	8"	921.80	2.60	
11	Storm Sewer	12"	923.40	Sanitary Sewer	8"	920.60	2.80	
16	Watermain	16"	924.90	Building Sanitary Service	6"	922.90	2.00	
23	Storm Sewer	12"	919.60	Building Sanitary Service	6"	918.60	1.00	
26	Building Sanitary Sewer	6"	918.20	Watermain	16"	916.20	2.00	Dip Watermain



BUILDING A - BUILDING F

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SANITARY SEWER PLAN AND PROFILE

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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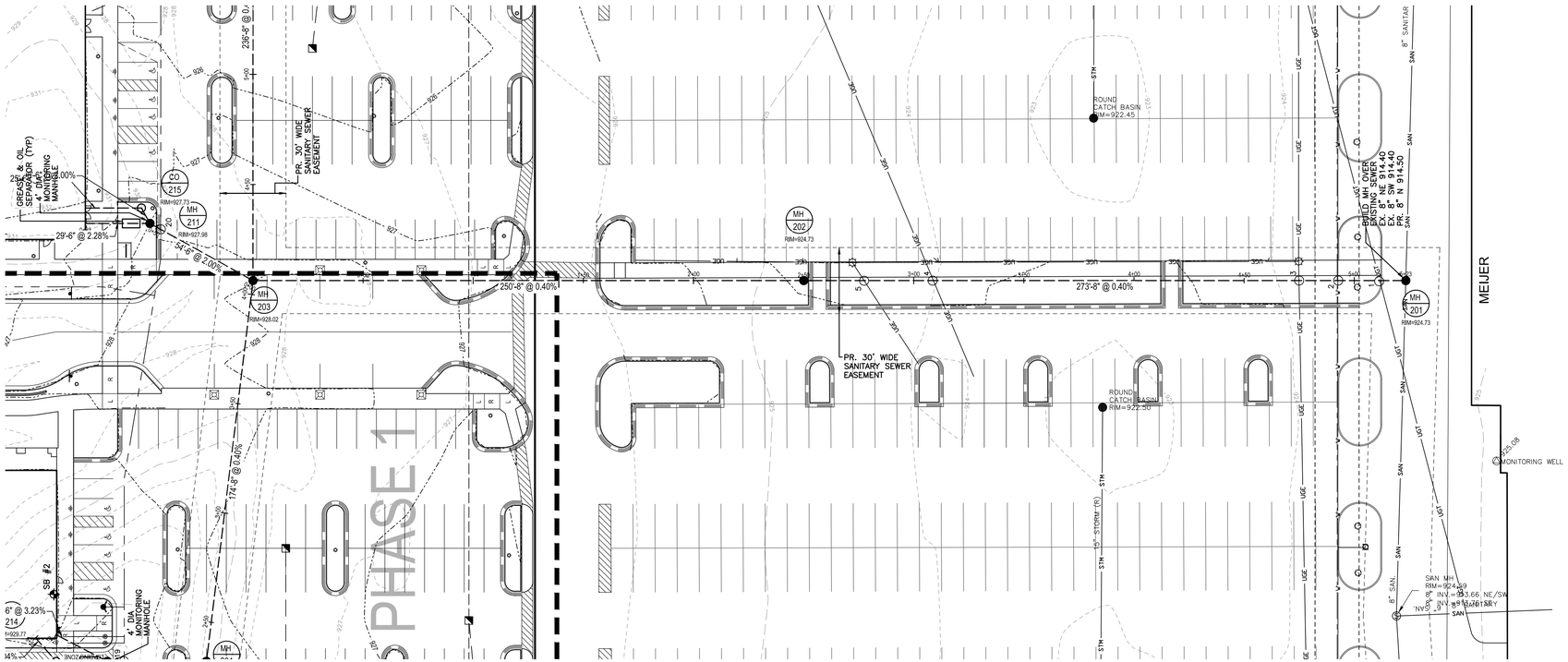

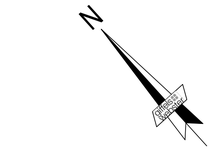

SCALE: 1" = 30'

0 15 30 60 90

COMPACTION NOTE:
COMPACTION OF TRENCHES IS REQUIRED IN ROADWAY CORRIDORS, SIDEWALKS AND PARKING LOTS. (CLASS II GRANULAR BACKFILL AT 95% COMPACTION)

GREASE INTERCEPTOR:
GREASE INTERCEPTORS SHALL BE CHECKED ONCE YEARLY.

PERSON RESPONSIBLE:
LISA DAVIS,
HEAD OF PROPERTY MAINTENANCE

PIPE MATERIALS:
1. SANITARY SEWER: 8" - SDR 26 PVC
   6" LEADS - SDR 26 PVC

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Designer:	N.M.T.
Quality Control:	
Section:	7
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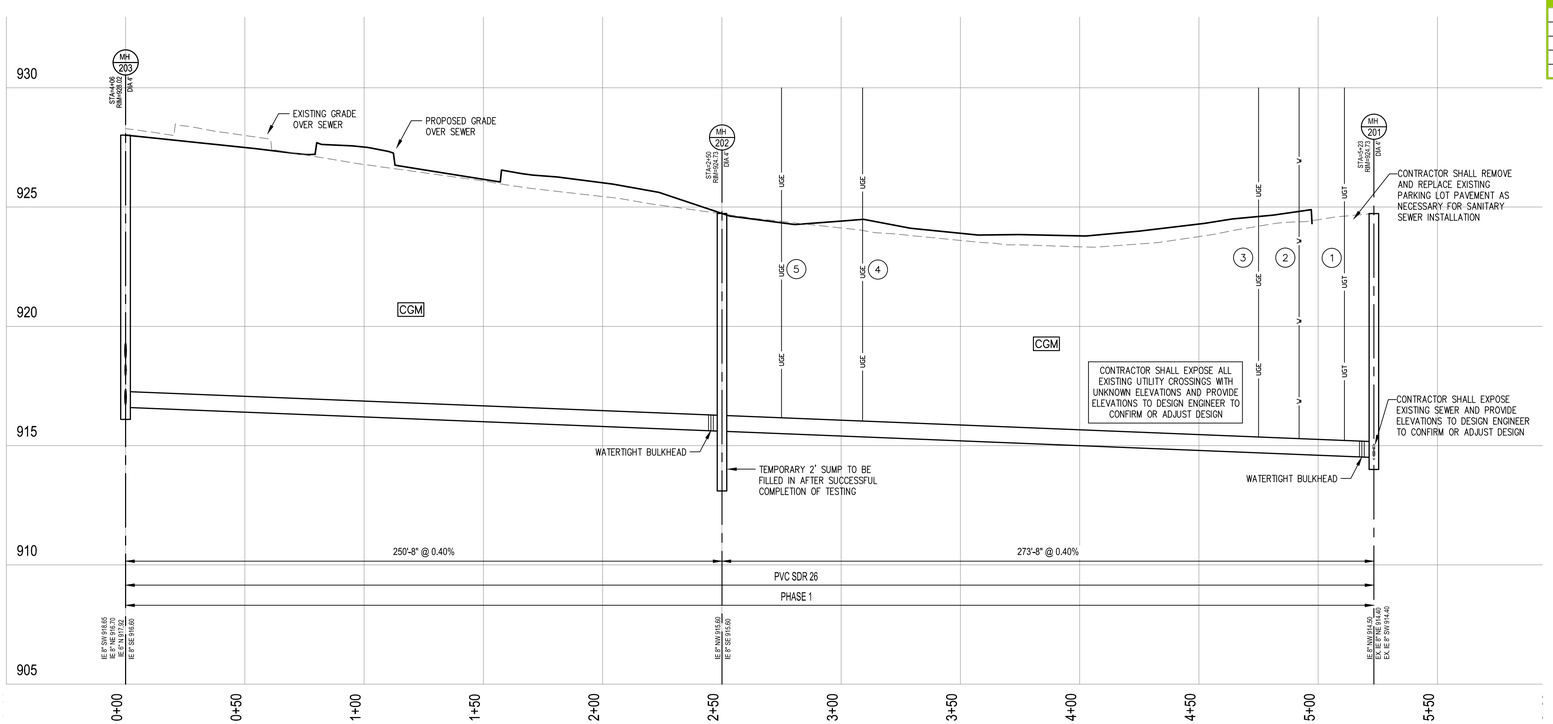
Professional Seal:

PIPE CROSSING TABLE

Crossing Number	Top Utility Type	Top Utility Size (inch)	Top Utility Bottom of Pipe Elevation	Botom Utility Type	Botom Utility Size (inch)	Botom Utility Top of Pipe Elevation	Clearance	Comments
1	UG Telephone	??	Unknown	Sanitary Sewer	8"	915.30	Unknown	
2	Watermain	12"	Unknown	Sanitary Sewer	8"	915.30	Unknown	
3	UG Electric	??	Unknown	Sanitary Sewer	8"	915.40	Unknown	
4	UG Electric	??	Unknown	Sanitary Sewer	8"	916.10	Unknown	
5	UG Electric	??	Unknown	Sanitary Sewer	8"	916.20	Unknown	



MH 203 - MH 201

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01.13.2014	WCRC RESUBMITTAL
01.27.2014	WCRC RESUBMITTAL
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SANITARY SEWER PLAN AND PROFILE

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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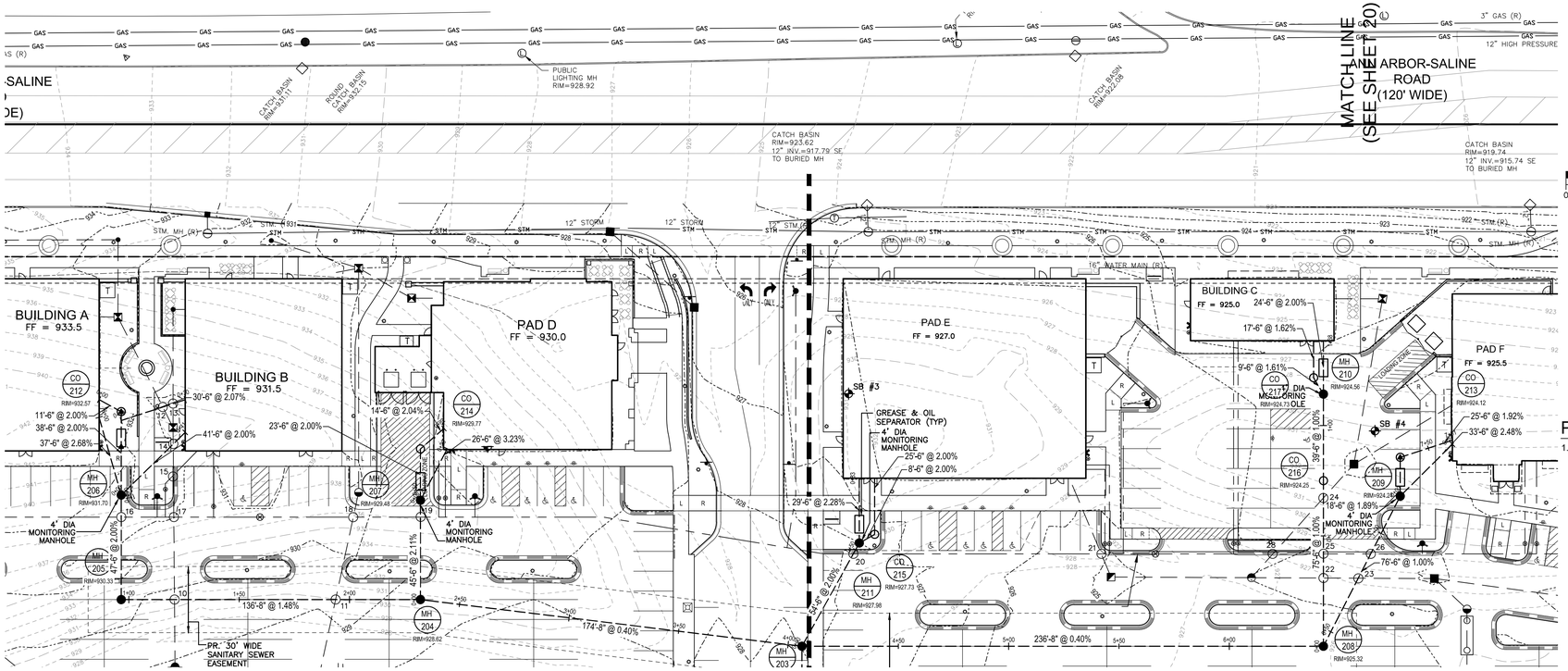

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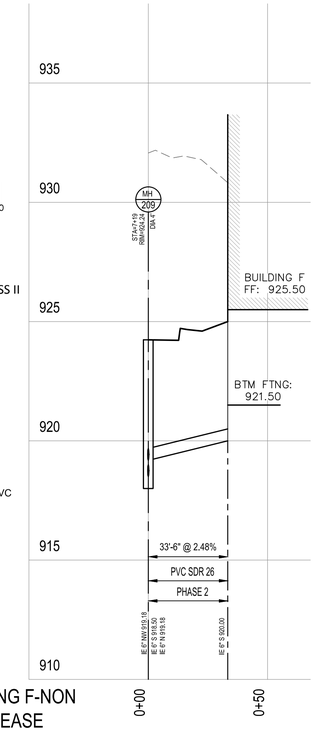
GREASE INTERCEPTOR:
GREASE INTERCEPTORS SHALL BE CHECKED ONCE YEARLY.

PERSON RESPONSIBLE:
LISA DAVIS,
HEAD OF PROPERTY MAINTENANCE

PIPE MATERIALS:

1. SANITARY SEWER: 8" - SDR 26 PVC
   6" LEADS - SDR 26 PVC



BUILDING F-NON GREASE

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Quality Control:	
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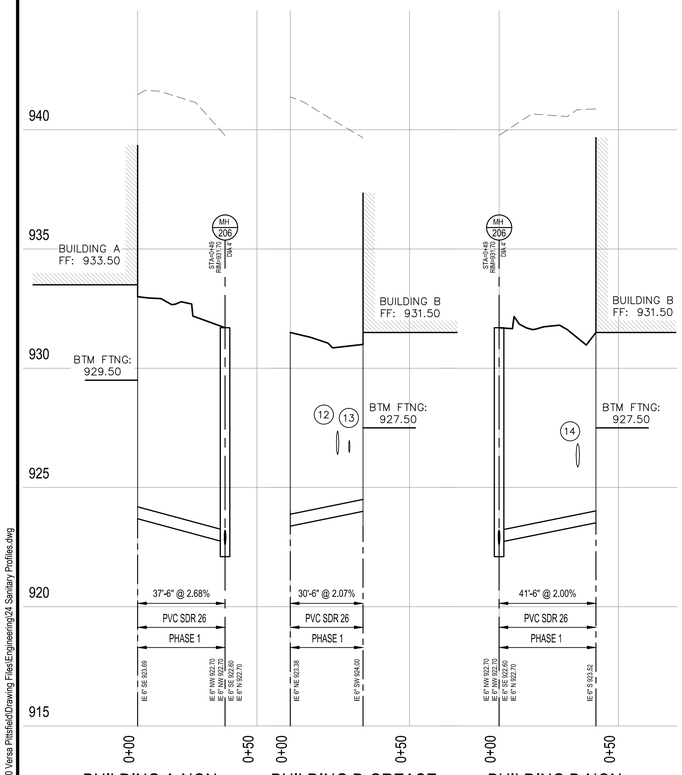


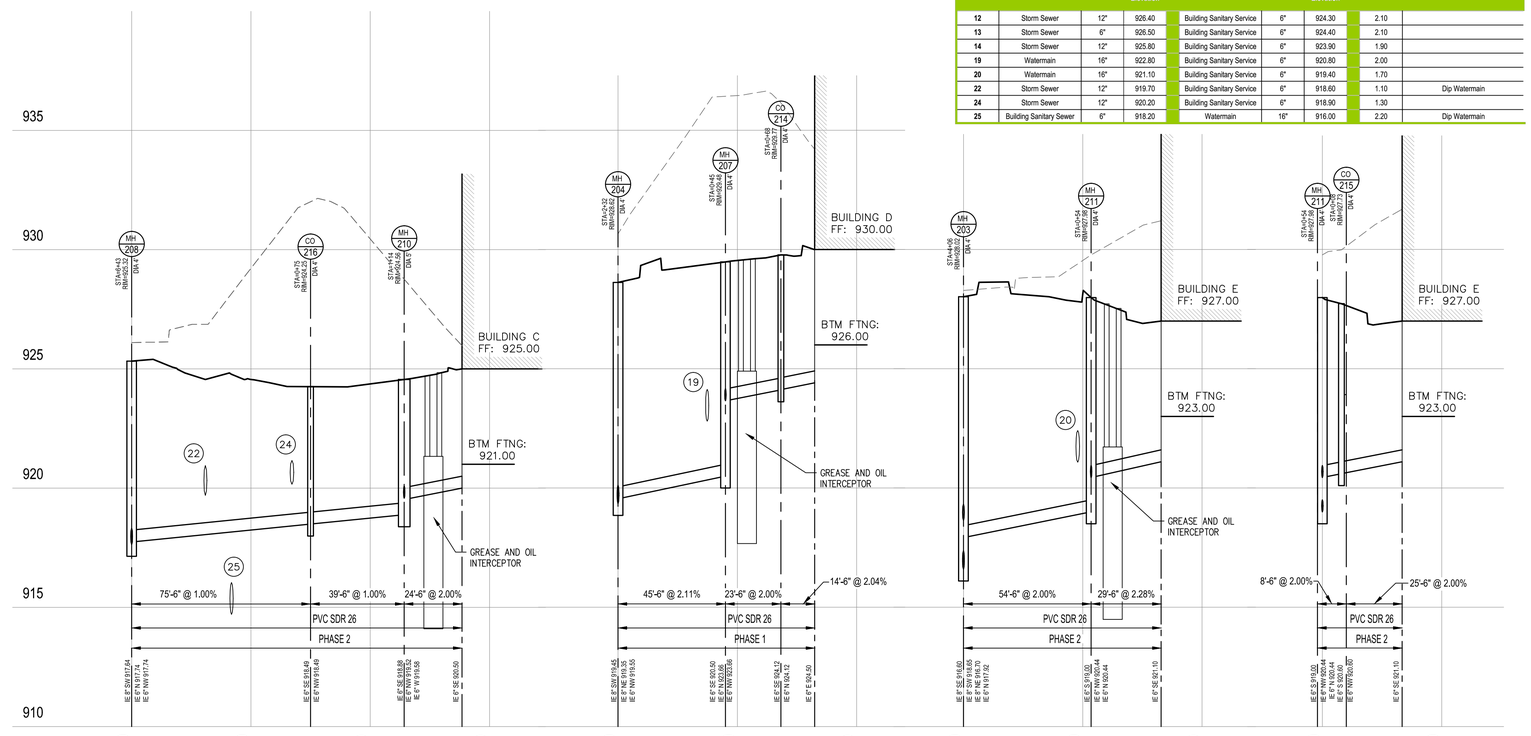
BUILDING A-NON GREASE

BUILDING B-GREASE

BUILDING B-NON GREASE

PIPE CROSSING TABLE

Crossing Number	Top Utility Type	Top Utility Size (inch)	Top Utility Bottom of Pipe Elevation	Botom Utility Type	Botom Utility Size (inch)	Botom Utility Top of Pipe Elevation	Clearance	Comments
12	Storm Sewer	12"	926.40	Building Sanitary Service	6"	924.30	2.10	
13	Storm Sewer	6"	926.50	Building Sanitary Service	6"	924.40	2.10	
14	Storm Sewer	12"	925.80	Building Sanitary Service	6"	923.90	1.90	
19	Watermain	16"	922.80	Building Sanitary Service	6"	920.80	2.00	
20	Watermain	16"	921.10	Building Sanitary Service	6"	919.40	1.70	
22	Storm Sewer	12"	919.70	Building Sanitary Service	6"	918.60	1.10	Dip Watermain
24	Storm Sewer	12"	920.20	Building Sanitary Service	6"	918.90	1.30	
25	Building Sanitary Sewer	6"	918.20	Watermain	16"	916.00	2.20	Dip Watermain



BUILDING C

BUILDING D

BUILDING E-GREASE

BUILDING E-NON GREASE

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SANITARY SEWER LEAD PLAN AND PROFILES

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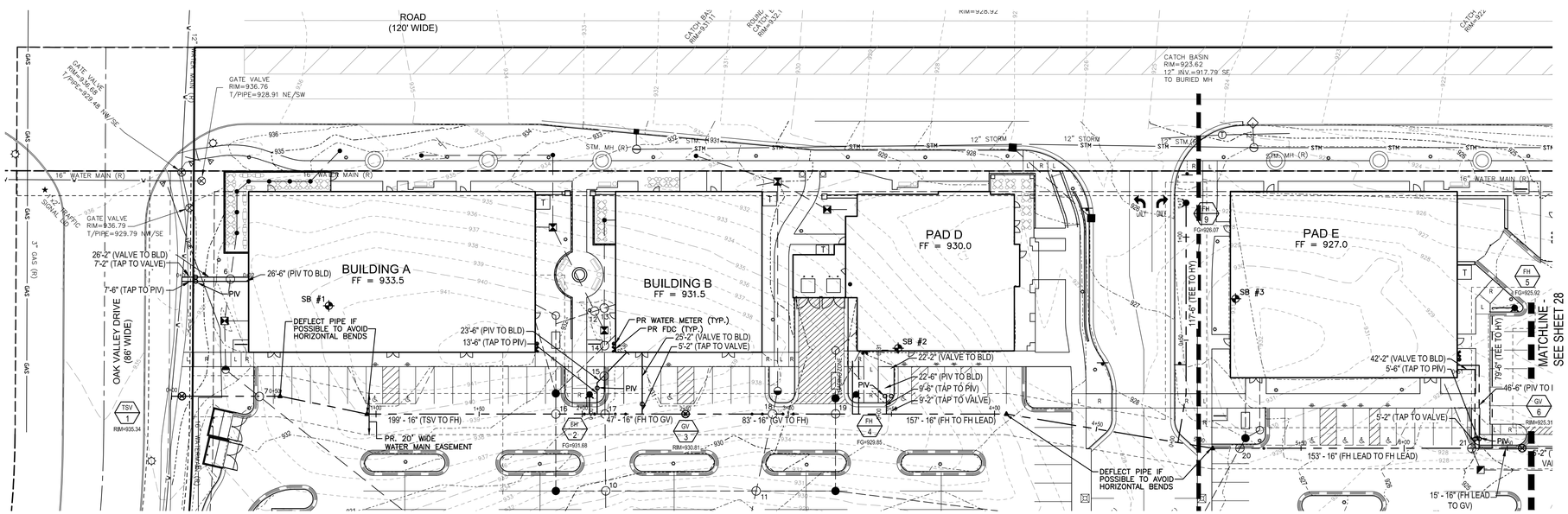
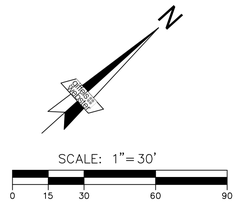
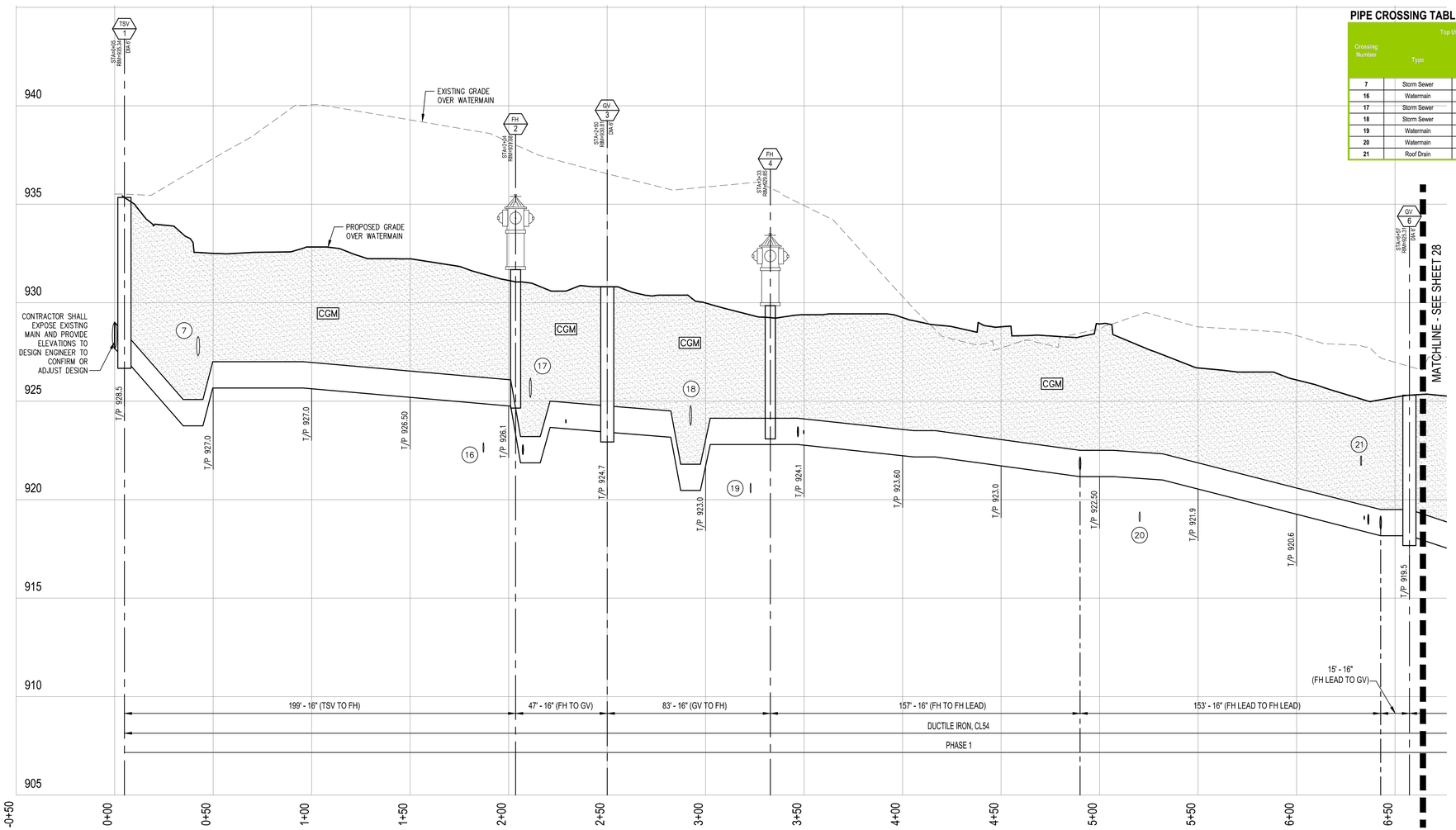




COMPACTION NOTE:
COMPACTION OF TRENCHES IS REQUIRED IN ROADWAY CORRIDORS, SIDEWALKS AND PARKING LOTS. (CLASS II GRANULAR BACKFILL AT 95% COMPACTION)

PIPE MATERIALS:

1. WATERMAIN: 16", 8", 6" - DUCTILE IRON CL 54 DOUBLE CEMENT LINED
   16" & 8" PIPE SHALL HAVE TRACER WIRE
   2" - TYPE 'K' COPPER - DOMESTIC
   16" GV SHALL BE 16" BUTTERFLY VALVE (PRATT)



PIPE CROSSING TABLE

Crossing Number	Top Utility Type	Top Utility Size (inch)	Top Utility Bottom of Pipe Elevation	Botom Utility Type	Botom Utility Size (inch)	Botom Utility Top of Pipe Elevation	Clearance	Comments
7	Storm Sewer	12"	927.30	Watermain	16"	925.10	2.20	Dip Watermain
16	Watermain	16"	924.90	Building Sanitary Service	6"	922.90	2.00	
17	Storm Sewer	12"	925.20	Watermain	16"	923.20	2.00	Dip Watermain
18	Storm Sewer	12"	923.80	Watermain	16"	921.80	2.00	Dip Watermain
19	Watermain	16"	922.80	Building Sanitary Service	6"	920.80	2.00	
20	Watermain	16"	921.10	Building Sanitary Service	6"	919.40	1.70	
21	Roof Drain	6"	921.70	Watermain	16"	919.80	1.90	

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WATERMAIN PLAN AND PROFILE

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
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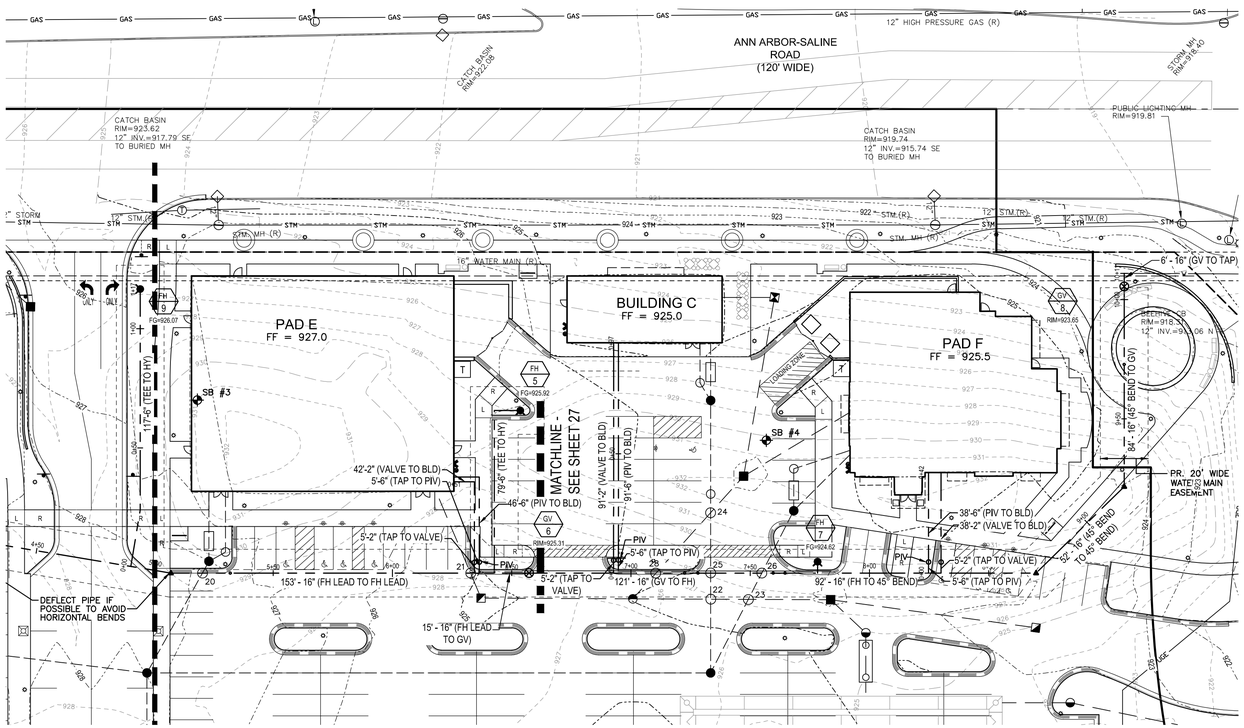


COMPACTION NOTE:

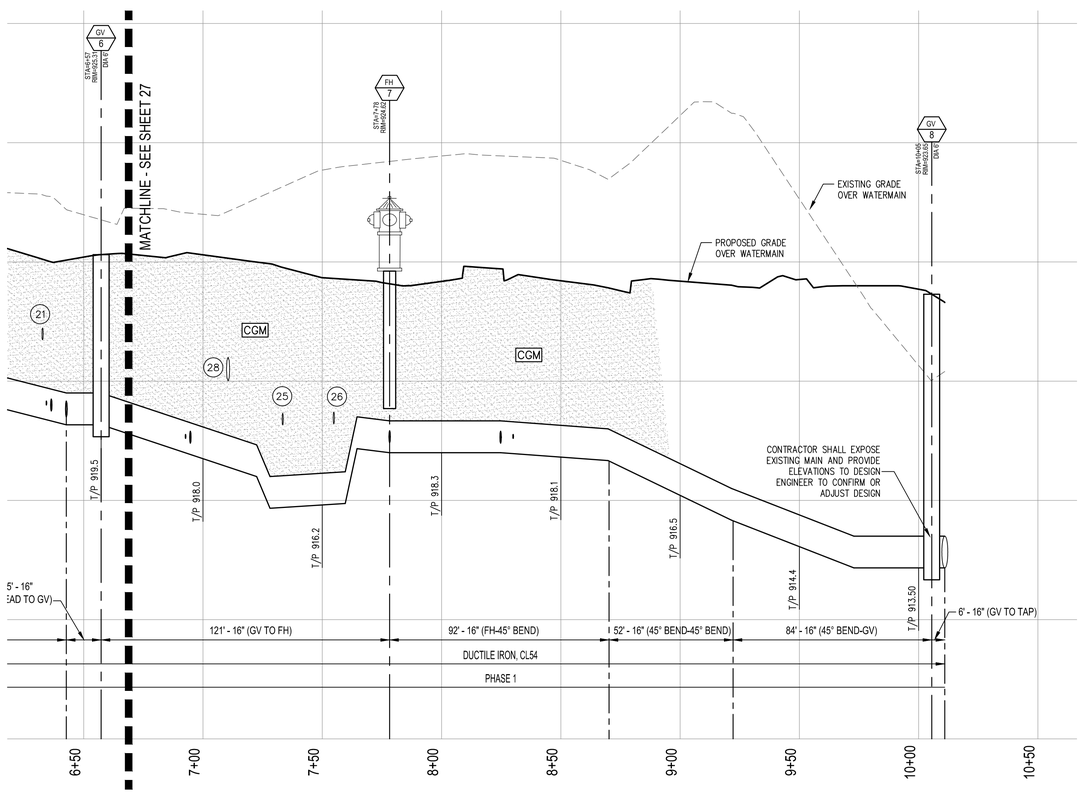
COMPACTION OF TRENCHES IS REQUIRED IN ROADWAY CORRIDORS, SIDEWALKS AND PARKING LOTS. (CLASS II GRANULAR BACKFILL AT 95% COMPACTION)

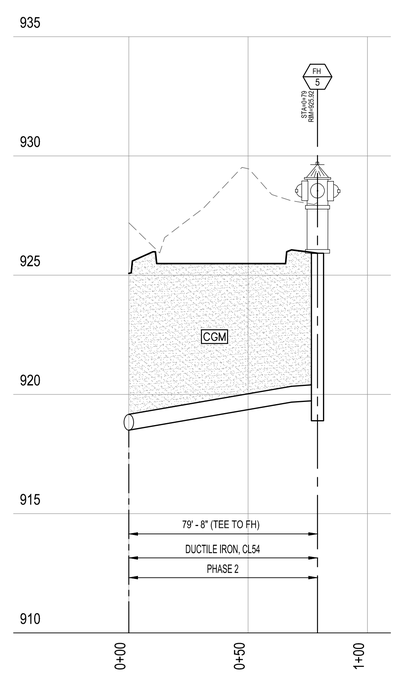
PIPE MATERIALS:

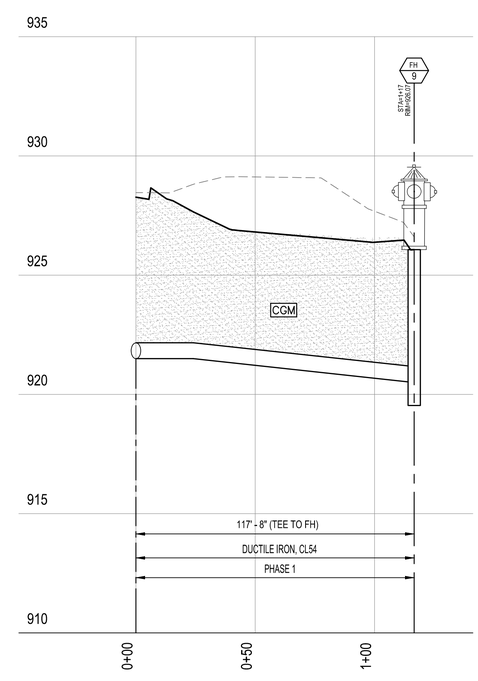
1. WATERMAIN: 16", 8", 6" - DUCTILE IRON CL 54 DOUBLE CEMENT LINED
   16" & 8" PIPE SHALL HAVE TRACER WIRE
   2" - TYPE 'K' COPPER - DOMESTIC
   16" GV SHALL BE 16" BUTTERFLY VALVE (PRATT)

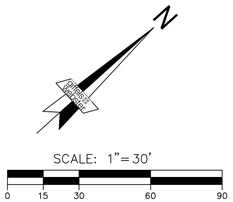
PIPE CROSSING TABLE

Crossing Number	Top Utility Type	Top Utility Size (inch)	Top Utility Bottom of Pipe Elevation	Botom Utility Type	Botom Utility Size (inch)	Botom Utility Top of Pipe Elevation	Clearance	Comments
25	Building Sanitary Sewer	6"	918.20	Watermain	16"	916.00	2.20	Dip Watermain
26	Building Sanitary Sewer	6"	918.20	Watermain	16"	916.20	2.00	Dip Watermain
28	Storm Sewer	12"	920	Watermain	16"	917.70	2.30	Dip Watermain









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WATERMAIN PLAN AND PROFILES

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
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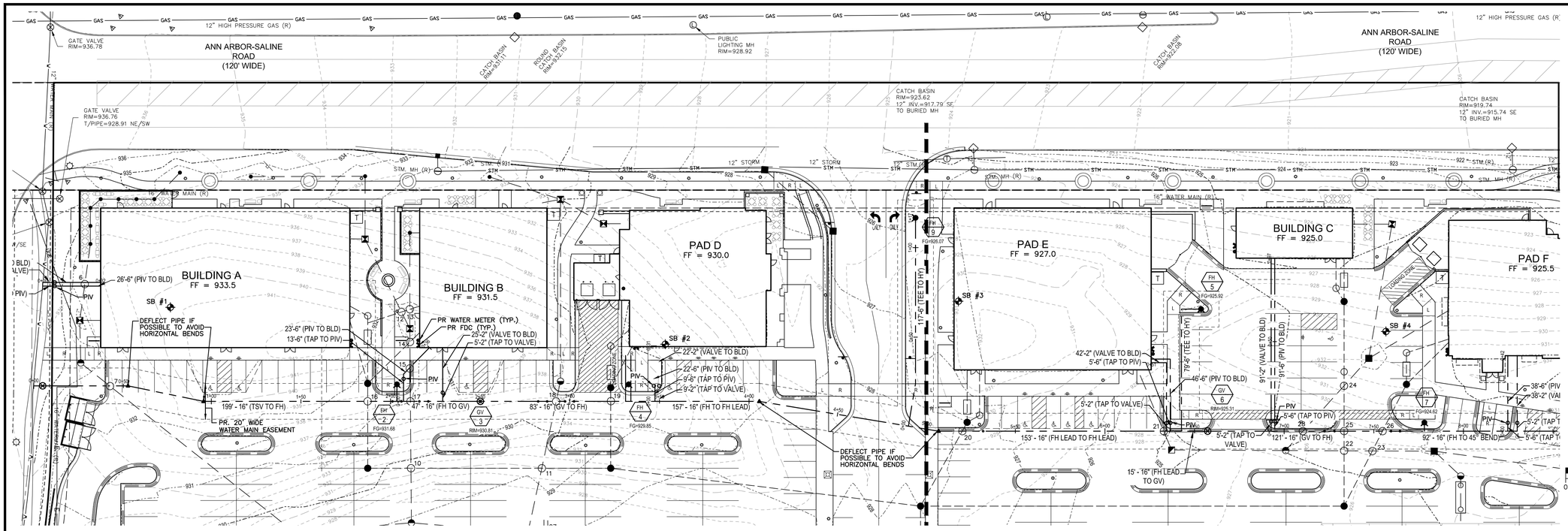

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PIPE MATERIALS:

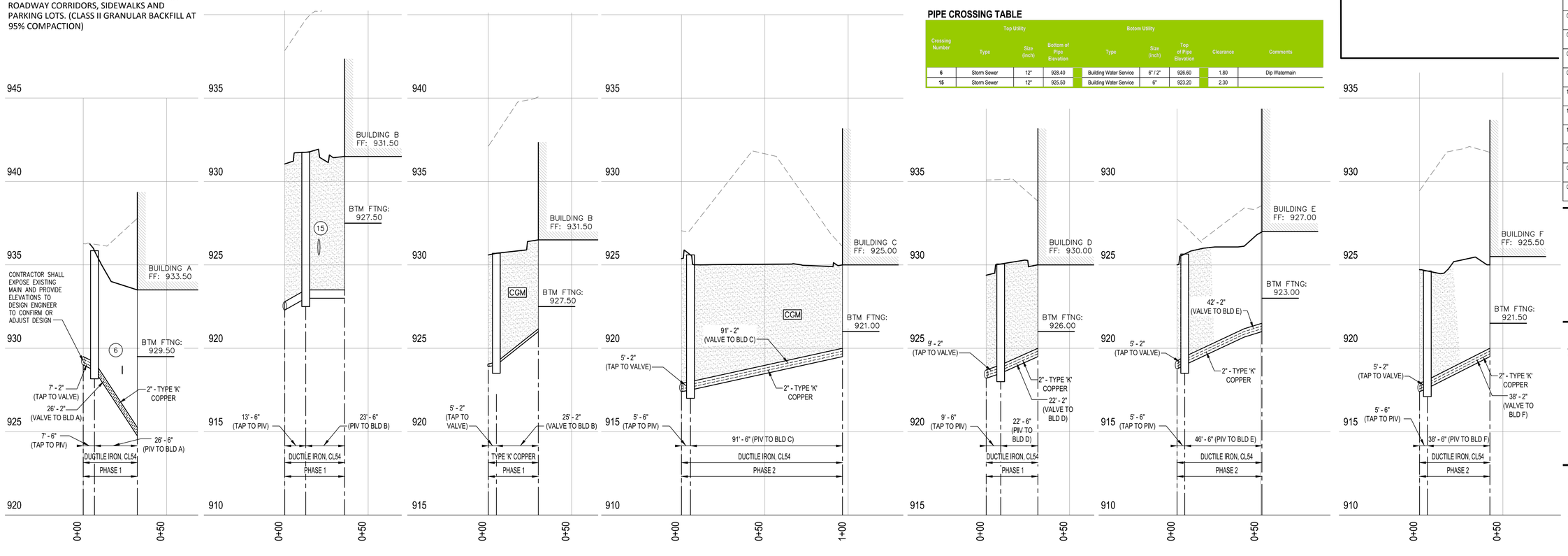
1. WATERMAIN: 16", 8", 6" - DUCTILE IRON CL 54 DOUBLE CEMENT LINED
16" & 8" PIPE SHALL HAVE TRACER WIRE
2" - TYPE 'K' COPPER - DOMESTIC
16" GV SHALL BE 16" BUTTERFLY VALVE (PRATT)

COMPACTION NOTE:

COMPACTION OF TRENCHES IS REQUIRED IN ROADWAY CORRIDORS, SIDEWALKS AND PARKING LOTS. (CLASS II GRANULAR BACKFILL AT 95% COMPACTION)

PIPE CROSSING TABLE

Crossing Number	Top Utility Type	Top Utility Size (inch)	Top Utility Bottom of Pipe Elevation	Botom Utility Type	Botom Utility Size (inch)	Botom Utility Top of Pipe Elevation	Clearance	Comments
6	Storm Sewer	12"	928.40	Building Water Service	6" / 2"	926.60	1.80	Dip Watermain
15	Storm Sewer	12"	925.50	Building Water Service	6"	923.20	2.30	



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WATERMAIN PLAN AND PROFILES

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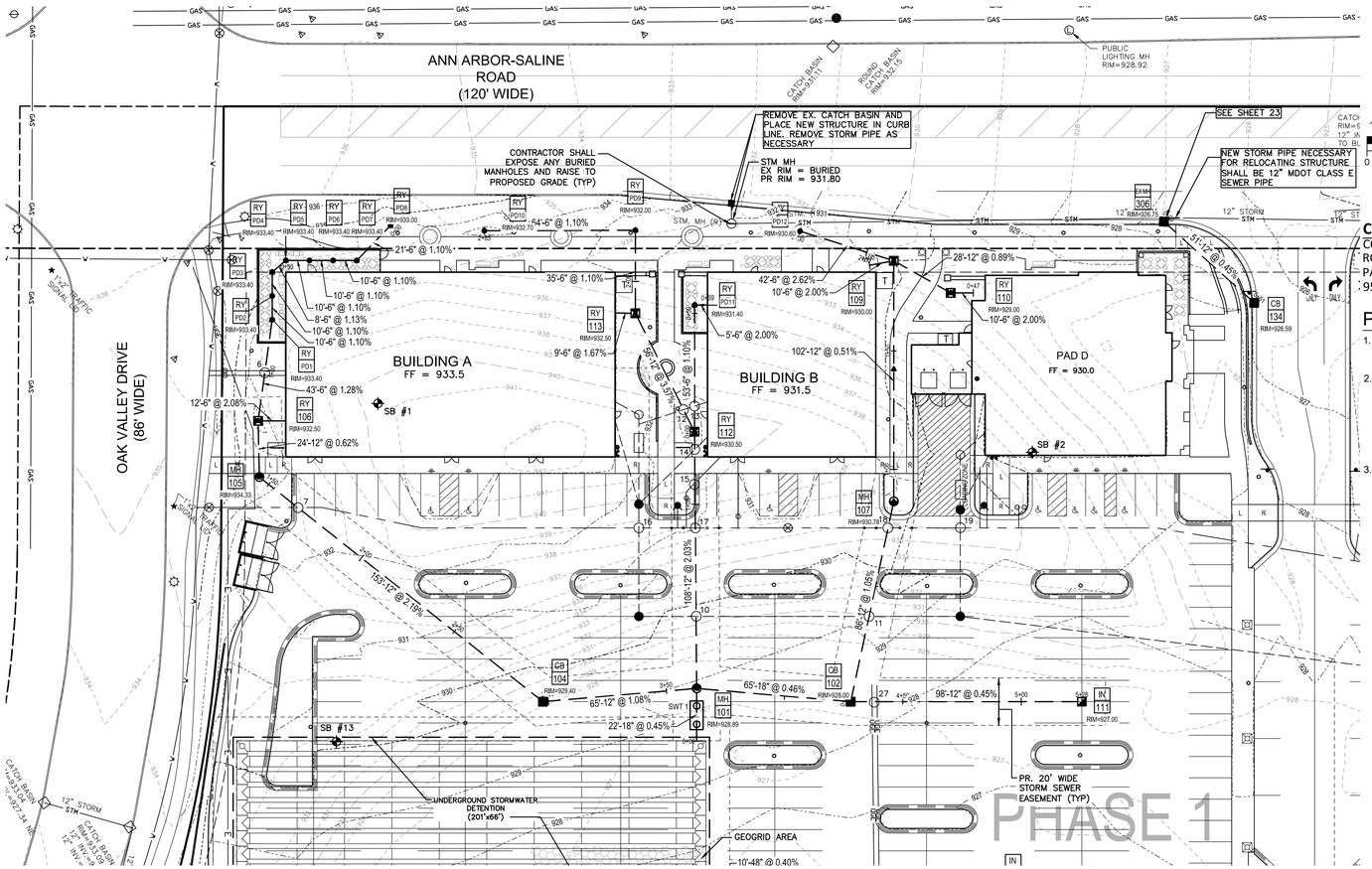
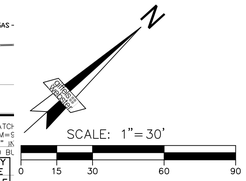




PIPE CROSSING TABLE

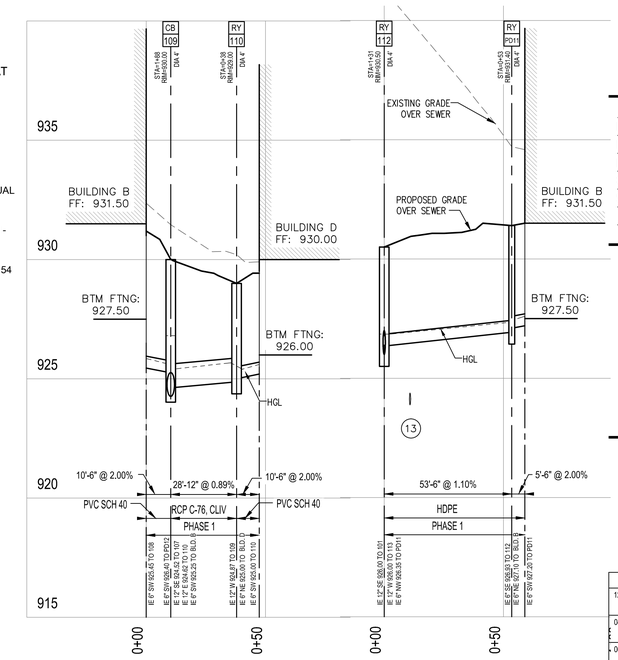
Crossing Number	Top Utility Type	Top Utility Size (inch)	Top Utility Bottom of Pipe Elevation	Bottom Utility Type	Bottom Utility Size (inch)	Bottom Utility Top of Pipe Elevation	Clearance	Comments
10	Storm Sewer	12"	924.40	Sanitary Sewer	8"	921.80	2.60	
11	Storm Sewer	12"	923.40	Sanitary Sewer	8"	920.60	2.80	
12	Storm Sewer	12"	926.40	Building Sanitary Service	6"	924.30	2.10	
13	Storm Sewer	6"	926.50	Building Sanitary Service	6"	924.40	2.10	
14	Storm Sewer	12"	925.80	Building Sanitary Service	6"	923.90	1.90	
15	Storm Sewer	12"	925.50	Building Water Service	6"	923.20	2.30	
17	Storm Sewer	12"	925.20	Watermain	16"	923.20	2.00	Dip Watermain
18	Storm Sewer	12"	923.80	Watermain	16"	921.80	2.00	Dip Watermain

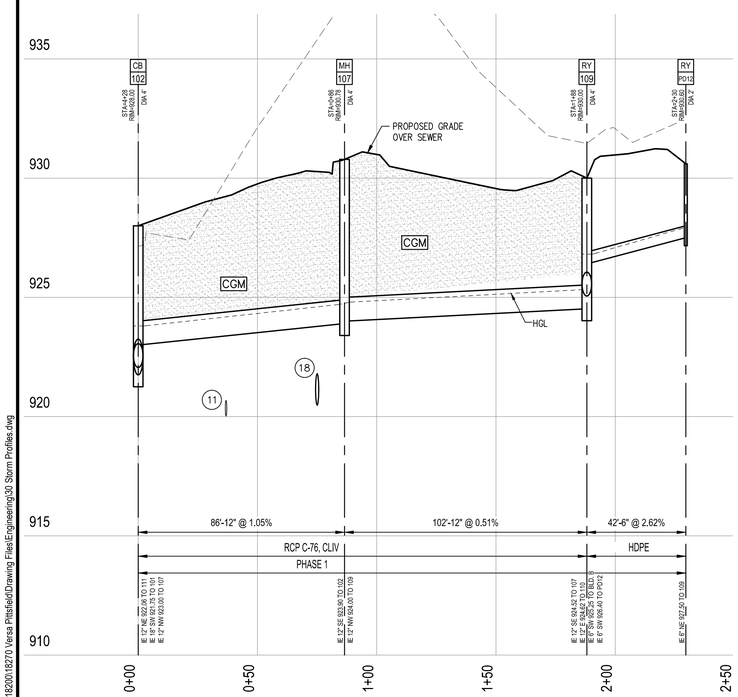
COMPACTION NOTE:

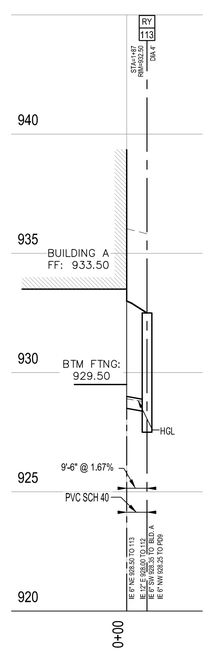
COMPACTION OF TRENCHES IS REQUIRED IN ROADWAY CORRIDORS, SIDEWALKS AND PARKING LOTS. (CLASS II GRANULAR BACKFILL AT 95% COMPACTION)

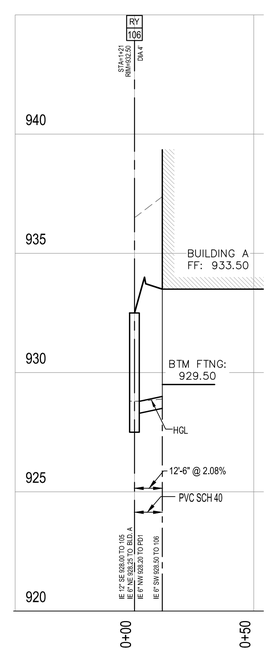
PIPE MATERIALS:

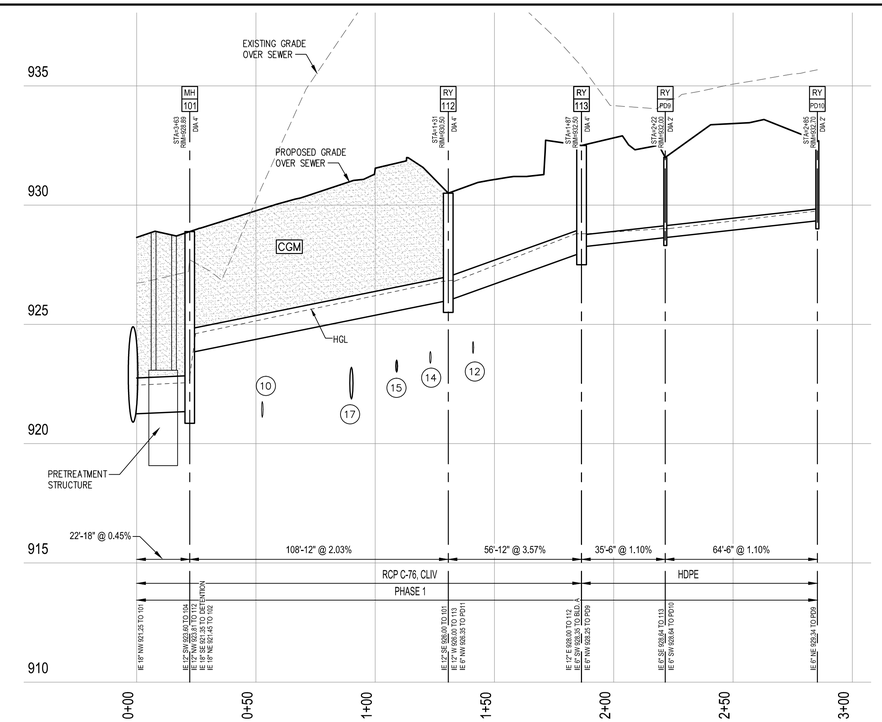
1. SANITARY SEWER: 8" - SDR 26 PVC
   6" LEADS - SDR 26 PVC
2. STORM SEWER: RCP, C76, CL IV
   ADS N12 OR APPROVED EQUAL
   ROOF DRAIN LEADS -
   6" - PVC, SCH 40
   UNDERGROUND DETENTION - HDPE
3. WATERMAIN: 16", 8", 6" - DUCTILE IRON CL 54
   DOUBLE CEMENT LINED
   2" - TYPE 'K' COPPER











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STORM SEWER PLAN AND PROFILES

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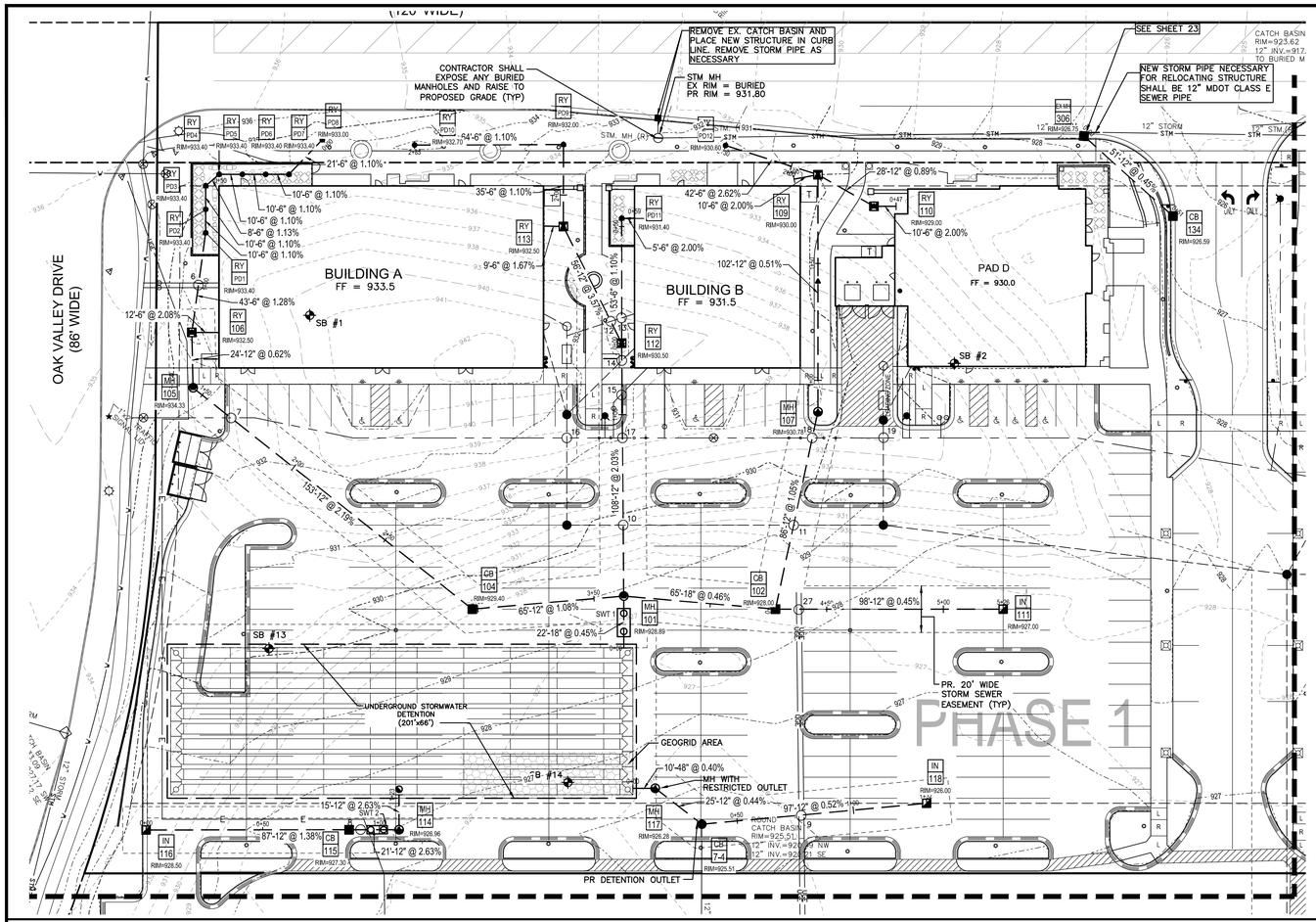

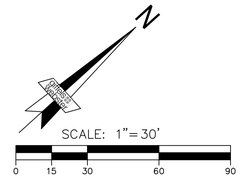

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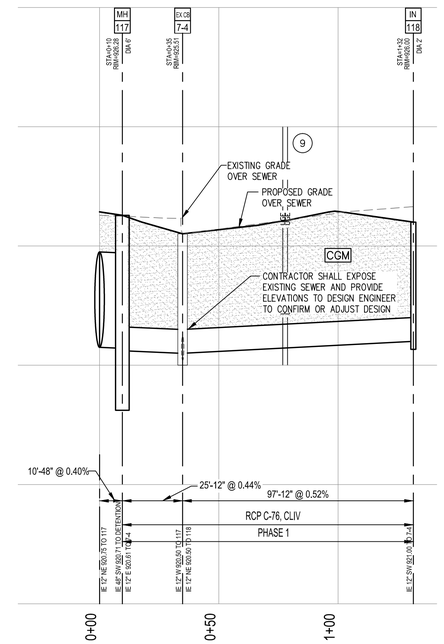
7	Storm Sewer	12"	927.30	Watermain	16"	925.10	2.20	Dip Watermain
8	Pr. UG Electric	??	Unknown	Storm Sewer	12"	923.10	Unknown	
9	UG Electric	??	Unknown	Storm Sewer	12"	921.70	Unknown	
27	UG Electric	??	Unknown	Storm Sewer	12"	917.40	Unknown	



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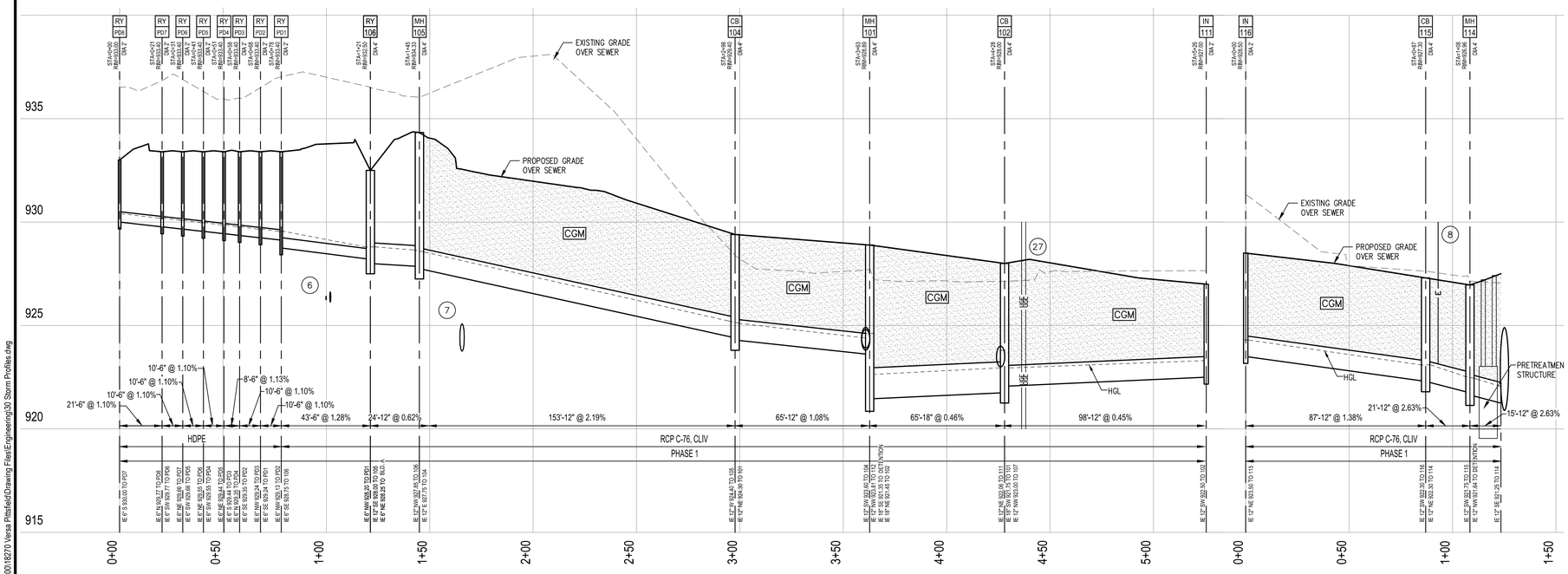
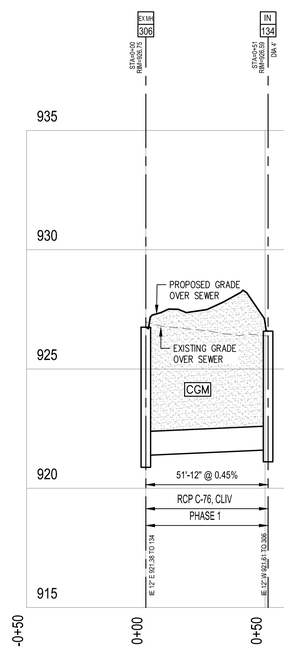
PIPE MATERIALS:

1. SANITARY SEWER: 8" - SDR 26 PVC
   6" LEADS - SDR 26 PVC
2. STORM SEWER: RCP, C76, CL IV
   ADS N12 OR APPROVED EQUAL
   ROOF DRAIN LEADS -
   6" - PVC, SCH 40
   UNDERGROUND DETENTION -
   HDPE
3. WATERMAIN: 16", 8", 6" - DUCTILE IRON CL 54
   DOUBLE CEMENT LINED
   2" - TYPE 'K' COPPER





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01.13.2014	WCRC RESUBMITTAL
01.27.2014	WCRC RESUBMITTAL
01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

Developed For:

VERSA DEVELOPMENT

25900 W. 11 MILE ROAD
SUITE 250
SOUTHFIELD, MI 48034
(248) 416-1985

STORM SEWER PLAN AND PROFILES

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
Scale:	H: 1" = 30' V: 1" = 3'
Sheet:	31
Project:	18270.00

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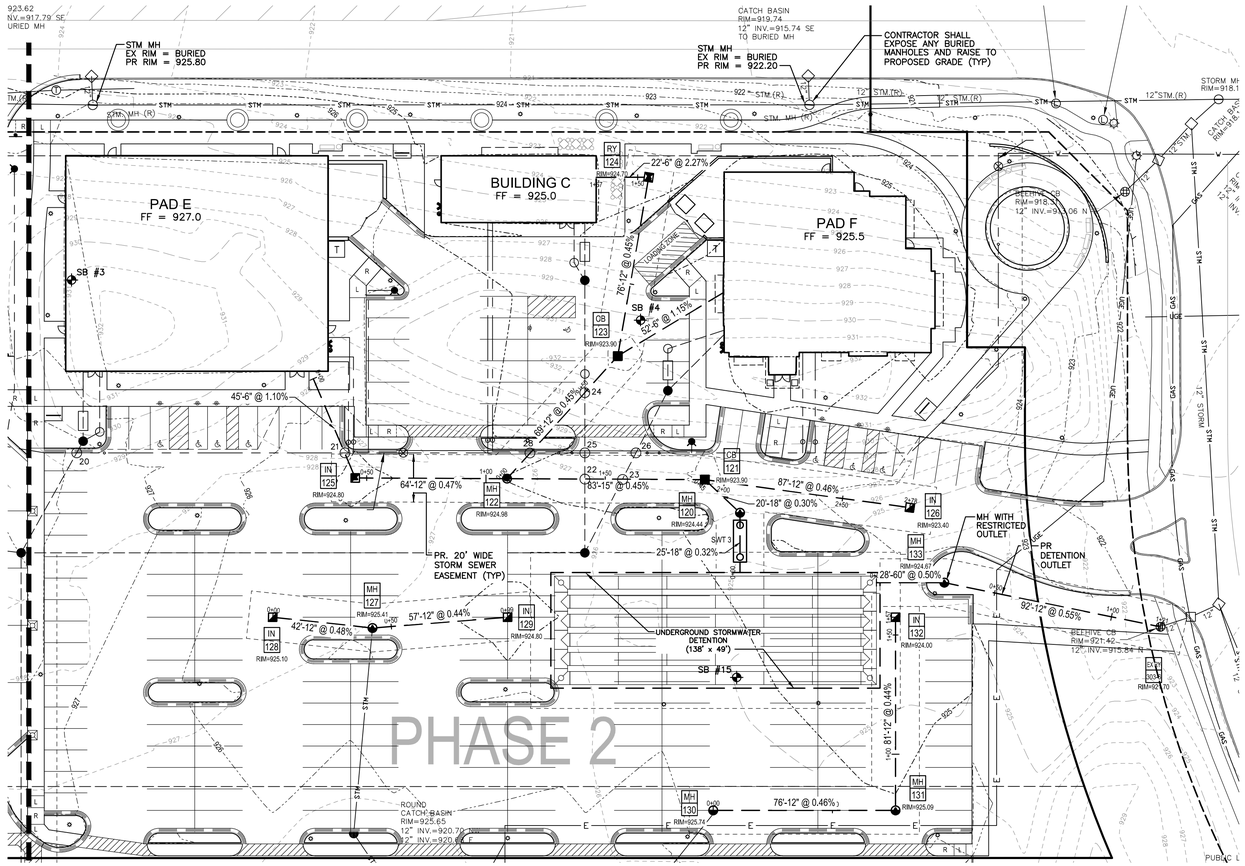
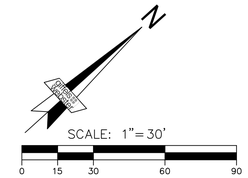
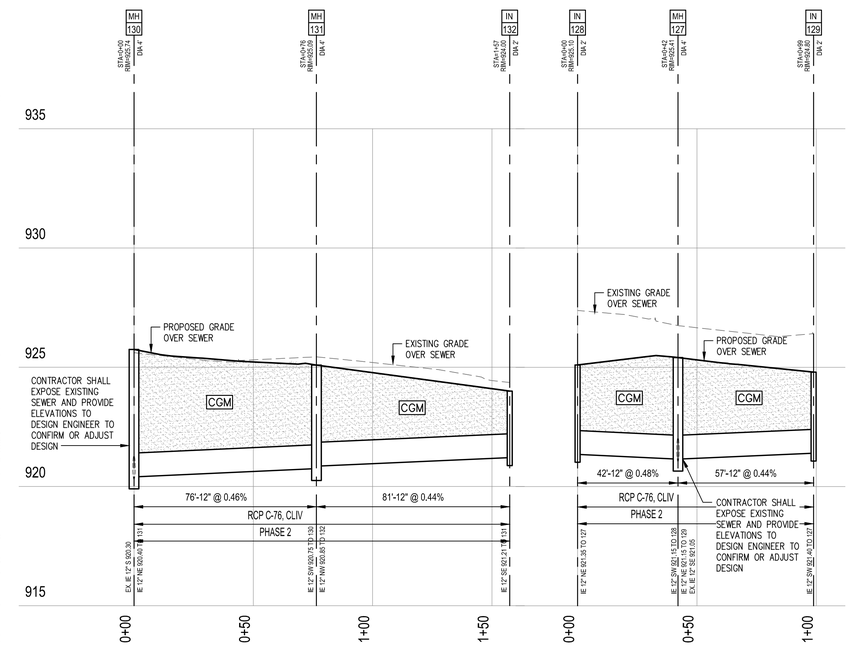
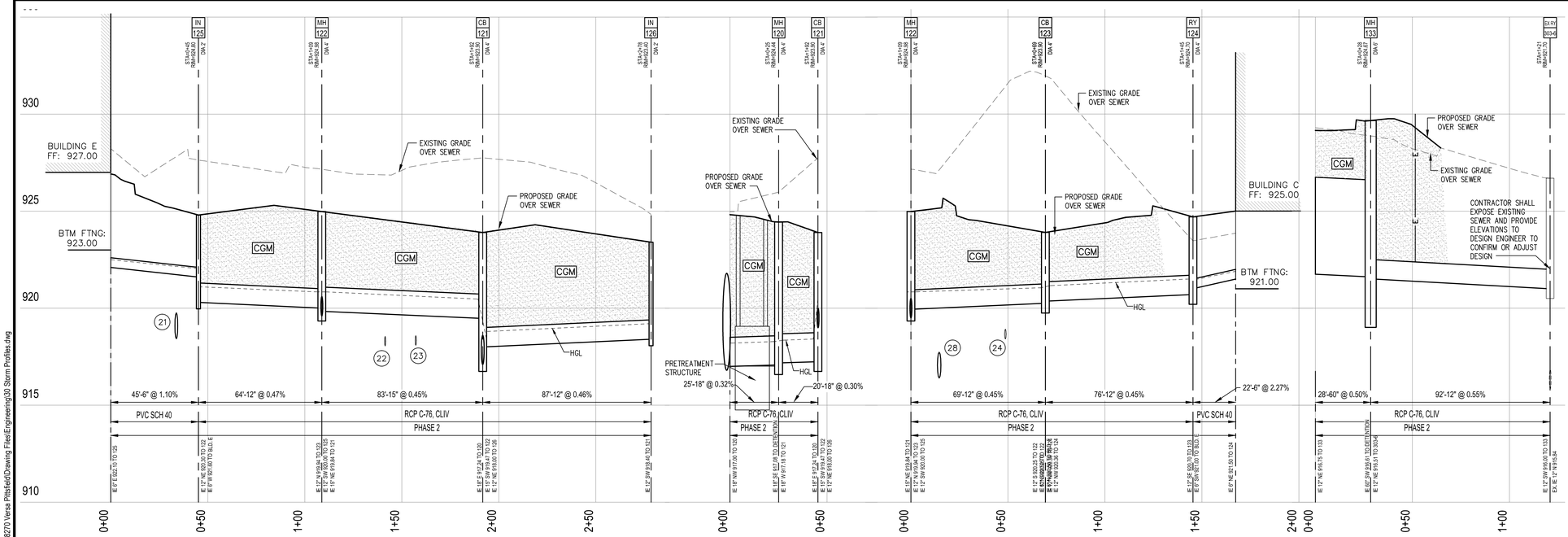




PIPE CROSSING TABLE

Crossing Number	Top Utility Type	Top Utility Size (inch)	Top Utility Bottom of Pipe Elevation	Botom Utility Type	Botom Utility Size (inch)	Botom Utility Top of Pipe Elevation	Clearance	Comments
21	Roof Drain	6"	921.70	Watermain	16"	919.80	1.90	
22	Storm Sewer	12"	919.70	Building Sanitary Service	6"	918.60	1.10	Dip Watermain
23	Storm Sewer	12"	919.60	Building Sanitary Service	6"	918.60	1.00	
24	Storm Sewer	12"	920.20	Building Sanitary Service	6"	918.90	1.30	
28	Storm Sewer	12"	920	Watermain	16"	917.70	2.30	Dip Watermain





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PITTSFIELD TOWNSHIP
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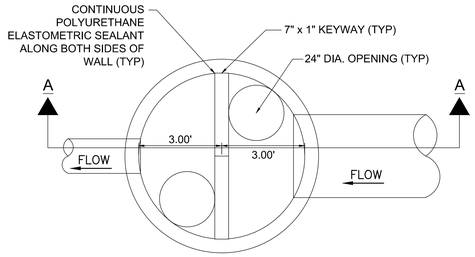
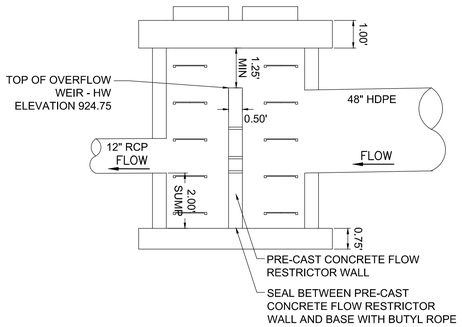
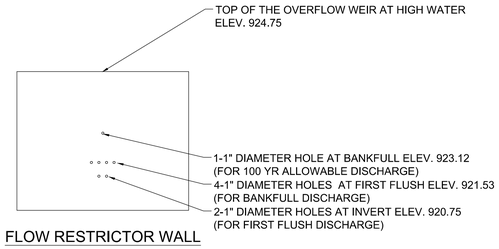


PLAN VIEW

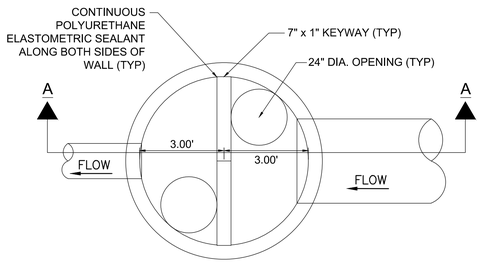


SECTION A-A

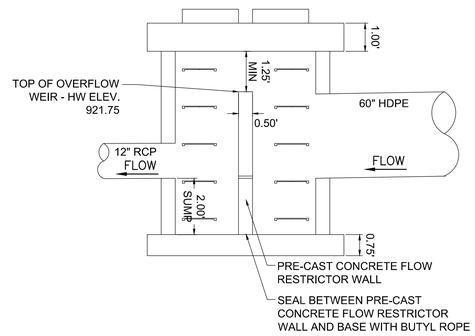


FLOW RESTRICTOR WALL

RESTRICTOR MANHOLE 117 DETAIL



PLAN VIEW



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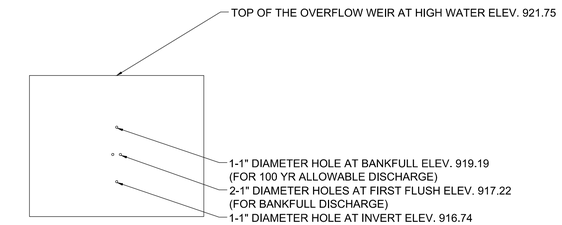

FLOW RESTRICTOR WALL

UTILITY NOTES:

1. REFER TO ARCHITECTURAL PLANS TO COORDINATE ALL:
   A. WATER SUPPLY, METERING, SPRINKLER AND FDC PIPING, DESIGN AND COORDINATION
   B. BUILDING SEWER, BUILDING DRAIN DESIGN AND CONNECTIONS TO CLEAN OUTS AND ROOF CONNECTORS
   C. GAS, ELECTRIC AND COMMUNICATION SERVICES, AND LIGHTING DETAILS
   D. ALL BUILDING ACCESS WALKS AND ENTRY DETAILS, INCLUDING SUPPORTED SLABS
   E. ALL WORK TO CONSTRUCT THE BUILDING AND ALL ITEMS CONNECTED TO IT
2. ALL TRENCHES WITHIN A ONE ON ONE SLOPE OF PAVEMENT SHALL BE BACKFILLED WITH SAND (MDOT CLASS II MINIMUM) AND MECHANICALLY COMPACTED IN NOT MORE THAN 9" LAYER TO 95% MAXIMUM DRY DENSITY PER MODIFIED PROCTER COMPACTION TEST ASTM D-1557. COMPACTED SAND BACKFILL SHALL ALSO BE PROVIDED FOR ALL SEWER TRENCHES LOCATED UNDER, OR WITHIN, THREE FEET OF PAVEMENT.
3. A MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS REQUIRED AT UTILITY CROSSINGS (MEASURED FROM THE OUTSIDE OF PIPE TO THE OUTSIDE OF PIPE). POSITIVE PROVISIONS SHALL BE MADE TO ENSURE THAT ALL UTILITY TRENCHES ARE FREE DRAINING DURING ALL PHASES OF CONSTRUCTION.
4. THE REQUIRED BEDDING FOR SEWER PIPE SHALL CONSIST OF A MAXIMUM 3/4 INCH DIAMETER CRUSHED STONE.
5. THE MINIMUM SLOPE FOR A BUILDING LEAD IS 1%. LEADS SHALL ONLY BE CONNECTED TO THE MAIN LINE WITH WYES.
6. ALL STORM SEWER PIPE SHALL BE CONSTRUCTED WITH RUBBER GASKET (PREMIUM) JOINTS.
7. THE CONTRACTOR SHALL COORDINATE THE REMOVAL OF ALL UTILITY LINES AND STRUCTURES, AS OUTLINED ON THE DEMOLITION PLAN, WITH THE INSTALLATION OF UTILITY IMPROVEMENTS.
8. CONTRACTOR SHALL BE REQUIRED TO COORDINATE THE INSTALLATION OF GAS, ELECTRIC, PHONE, CABLE, SPRINKLERS ETC., IN SUCH A MANNER THAT WILL FACILITATE THEIR PROPER INSTALLATION PRIOR TO PLACING THE PAVEMENT MATERIALS. ENSURE THAT ALL REQUIRED PIPES, CONDUITS, CABLES AND SLEEVES ARE PROPERLY PLACED AND THAT THE TRENCHES ARE PROPERLY BACKFILLED AND COMPACTED.
9. THE CONTRACTOR SHALL REMOVE UTILITIES, WHICH HAVE BEEN ABANDONED IN PLACE, AS REQUIRED TO COMPLETE INSTALLATION OF NEW UTILITIES. WHENEVER ABANDONED UTILITIES ARE CUT, CONTRACTOR SHALL COMPLETELY CAP BOTH ENDS TO PREVENT THE INFILTRATION OF SOILS.
10. NO CONNECTION MAY BE MADE TO ANY EXISTING WATER MAIN UNTIL THE NEW MAIN HAS PASSED ALL PRESSURE AND BACTERIOLOGICAL TESTING.
11. ROADWAY, DRIVEWAY AND PARKING AREA CROSSINGS SHALL BE TEMPORARILY CONDITIONED IMMEDIATELY AFTER CROSSING BY PLACING 8" OF MDOT 22A GRAVEL OR SLAG AGGREGATE, AND SHALL BE MAINTAINED IN GOOD, DUST FREE CONDITION UNTIL PAVEMENT RESTORATION IS MADE.
12. WATER LEADS SHALL HAVE A MINIMUM OF 5.5 FEET OF COVER.
13. THIS PROJECT DOES NOT LIE WITHIN A 100 YEAR FLOODPLAIN AS INDICATED ON FIRM MAP #26161CO382E, DATED APRIL 3, 2012.
14. DELIVERY OF THE SWTC'S WILL BE BY KSI OR ONE OF OUR APPROVED CARRIERS. THE UNITS SHOULD BE STORED AWAY FROM CONSTRUCTION EQUIPMENT AND RELATED ACTIVITIES. AS AN EXTRA PRECAUTION THE UNITS CAN BE FENCED OFF WITH T POSTS AND SAFETY ORANGE PLASTIC FENCING. THE UNITS SHOULD BE STORED WITH THE RISERS VERTICAL. SHRINK WRAPPING THE RISER INLETS(TOPS) WILL KEEP WATER OUT BUT IS NOT NECESSARY. CHOCK UNITS WITH 4x4 PIECES OF WOOD ON BOTH SIDES OF UNITS TO KEEP FROM ROLLING OVER. THE UNITS SHOULD BE LIFTED WITH TWO NYLON/SYNTHETIC STRAPS (NO STEEL CHOKE CABLES) APPROX. 1/4 WAY IN FROM EACH END OF STRUCTURE. THE EXCAVATOR WILL ADJUST THE STRAPS A FEW CORRUGATION ONE WAY OR ANOTHER TO HORIZONTALLY BALANCE THE UNIT. THESE UNITS ARE LIGHT WEIGHT AND EASY TO MOVE.

QUANTITIES

SANITARY SEWER	
6" SANITARY SEWER, LEAD SDR 26	692 L.F.
8" SANITARY SEWER, PVC SDR 26	1,069 L.F.
MANHOLE, 4' DIA.	10 EA.
CONSTRUCT MANHOLE OVER EXISTING PIPE	1 EA.
GREASE AND OIL SEPARATOR	5 EA.
CLEAN OUT	5 EA.
WATERMAIN	
2" DOMESTIC SERVICE, COPPER "K"	280 L.F.
6" D.I.P. CL54	290 L.F.
8" D.I.P. CL54	196 L.F.
16" D.I.P. CL54	1,009 L.F.
16" VALVE & WELL	3 EA.
STANDARD HYDRANT & VALVE ASSEMBLY	5 EA.
6" P.I.V.	6 EA.
2" GATE VALVE & BOX	6 EA.
16"x16" TAPPING SLEEVE VALVE & WELL	1 EA.
STORM SEWER	
6" STORM SEWER, PVC	368 L.F.
12" STORM SEWER, C-76 CLIV	1,695 L.F.
15" STORM SEWER, C-76 CLIV	83 L.F.
18" STORM SEWER, C-76 CLIV	110 L.F.
STORM INLET, 8" DIA. HDPE	8 EA.
STORM INLET, 2' DIA. HDPE	4 EA.
STORM INLET, 2' DIA.	8 EA.
CATCH BASIN, 4' DIA.	12 EA.
MANHOLE, 4' DIA.	13 EA.
RESTRICTED OUTLET MANHOLE	2 EA.
PRETREATMENT STRUCTURE SW 101	1 EA.
PRETREATMENT STRUCTURE SW 114	1 EA.
PRETREATMENT STRUCTURE NE 120	1 EA.
UNDERGROUND DETENTION SW	1 EA.
UNDERGROUND DETENTION NE	1 EA.

RESTRICTOR MANHOLE 133 DETAIL

PIPE MATERIALS:

1. SANITARY SEWER: 8" - SDR 26 PVC
   6" LEADS - SDR 26 PVC
2. STORM SEWER: RCP, C76, CL IV
   HDPE
   ROOF DRAIN LEADS -
   6" - PVC, SCH 40
   UNDERGROUND DETENTION -
   HDPE
3. WATERMAIN: 16", 8", 6" - DUCTILE IRON CL 54
   DOUBLE CEMENT LINED
   16" & 8" SHALL HAVE TRACER WIRE
   2" - TYPE 'K' COPPER - DOMESTIC
   16" GV SHALL BE 16" BUTTERFLY VALVE (PRAD)

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Watermain Structure Table
Versa Pittsfield
18270.00

Prepared By NMT
Working Date November 21, 2013

Structure	Casting	FG / Rim
TSV 1	EJIW 1040	935.34
FH 2	EJIW 5BR-250	931.68
GV 3	EJIW 1040	930.81
FH 4	EJIW 5BR-250	929.85
FH 5	EJIW 5BR-250	925.92
GV 6	EJIW 1040	925.31
FH 7	EJIW 5BR-250	924.77
GV 8	EJIW 1040	919.94
FH 9	EJIW 5BR-250	926.27

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Sanitary Sewer Structure Table
Versa Pittsfield
18270.00

Prepared By NMT
Working Date November 21, 2013

Structure	Casting	Rim	Invert(s)	Depth
MH 201	EJIW 1040	924.83	EX 8" SW 914.40 EX 8" NE 914.40 8" NW 914.50	10.43
MH 202	EJIW 1040	924.73	8" NW 915.60 8" SE 915.60	9.13
MH 203	EJIW 1040	928.02	8" SE 916.60 8" SW 918.65 8" NE 916.70 6" N 917.92	11.42'
MH 204	EJIW 1040	928.62	8" SW 919.35 8" NE 919.35 6" NW 919.55	9.27'
MH 205	EJIW 1040	930.33	8" NE 921.46 6" NW 921.66	8.87'
MH 206	EJIW 1040	931.7	6" NW 922.70 6" NW 922.70 6" SE 922.60 6" N 922.70	9.10'
MH 207	EJIW 1040	929.48	6" SE 920.50 6" N 923.66 6" NW 923.66	8.98'
MH 208	EJIW 1040	925.32	8" SW 917.64 6" N 917.74 6" NW 917.74	7.68'
MH 209	EJIW 1040	924.24	6" S 918.50 6" N 919.18 6" NW 919.18	5.74'
MH 210	EJIW 1040	924.5	6" SE 918.88 6" NW 919.52 6" W 919.58	5.04
MH 211	EJIW 1040	927.98	6" S 919.00 6" NW 920.44 6" N 920.44	8.98'
CO 212	EJIW 1080	932.57	6" W 923.47 6" SE 923.47	9.10'
CO 213	EJIW 1080	924.12	6" SE 919.52 6" NE 919.52	4.60'
CO 214	EJIW 1080	929.77	6" SE 924.12 6" N 924.12	5.65'
CO 215	EJIW 1080	927.73	6" S 920.60 6" NW 920.60	7.13'
CO 216	EJIW 1080	924.25	6" SE 918.49 6" NW 918.49	5.76'
CO 217	EJIW 1080	924.73	6" NW 917.72 6" E 917.72	7.01

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Storm Sewer Structure Table
Versa Pittsfield
18270.00

Prepared By NMT
Working Date November 21, 2013

Structure	Casting	Rim	Invert(s)	Depth	Sump
MH 101	EJIW 1040Z Type B	928.89	12" SW 923.60 12" NW 923.81 18" SE 921.35 18" NE 921.45	7.54'	NO
CB 102	EJIW 1040Z Type M1	928.00	12" NE 922.06 12" NW 923.00 18" SW 921.75	6.25'	NO
CB 104	EJIW 1040Z Type M1	929.40	12" W 924.40 12" NE 924.30	5.10'	NO
MH 105	EJIW 1040Z Type B	934.33	12" NW 927.85 12" E 927.75	6.58'	NO
RY 106	EJIW 1040Z Type P-02 Beehive	932.50	6" NE 928.25 12" SE 928.00 6" NW 928.20	4.50'	NO
MH 107	EJIW 1040Z Type B	930.78	12" SE 923.90 12" NW 924.00	6.88'	NO
MH 108	EJIW 1040Z Type B	929.70	6" SW 925.84 12" SE 924.26 12" NE 924.36 12" NW 925.00	5.4	NO
RY 109	EJIW 1040Z Type P-02 Beehive	930.00	6" SW 928.40 12" SE 926.00	4.00'	NO
RY 110	EJIW 1040Z Type P-02 Beehive	929.00	6" NE 924.80 12" SW 924.50	4.50'	NO
IN 111	EJIW 1040Z Type M1	927.00	12" SW 922.50	4.50'	NO
RY 112	EJIW 1040Z Type P-02 Beehive	930.50	6" NW 926.35 12" SE 926.00 12" W 926.00	4.50'	NO
RY 113	EJIW 1040Z Type P-02 Beehive	932.50	6" SW 928.35 6" NW 928.40 12" E 928.00	4.50'	NO
MH 114	EJIW 1040Z Type B	926.96	12" SW 921.75 12" NW 921.64	5.32'	NO
CB 115	EJIW 1040Z Type M1	927.30	12" SW 922.30 12" NE 922.30	5.00'	NO
IN 116	EJIW 1040Z Type M1	928.50	12" NE 923.50	5.00'	NO
MH 117	EJIW 1040Z Type B	926.28	48" SW 920.71 12" E 920.61	5.65'	YES
IN 118	EJIW 1040Z Type M1	926.00	12" SW 921.00	5.00'	NO
MH 120	EJIW 1040Z Type B	924.44	18" SE 917.08 18" W 917.18	7.36'	NO
CB 121	EJIW 1040Z Type M1	923.90	12" NE 918.00 15" SW 919.47 18" E 917.24	6.6600	NO

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Storm Sewer Structure Table
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MH 122	EJIW 1040Z Type B	924.88	12" N 919.94 12" SW 920.00 15" NE 919.84	5.1400	NO
CB 123	EJIW 1040Z Type M1	923.90	6" N 920.50 12" NW 920.36 12" S 920.25	3.6500	NO
RY 124	EJIW 1040Z Type P-02 Beehive	924.70	6" SW 921.00 12" SE 920.70	4.00'	NO
IN 125	EJIW 1040Z Type M1	924.80	6" W 921.60 12" NE 920.30	4.50'	NO
IN 126	EJIW 1040Z Type M1	923.40	12" SW 918.40	5.00'	NO
MH 127	EJIW 1040Z Type B	925.41	12" SW 921.15 12" NE 921.15 EX 12" SE 921.05	4.36'	NO
IN 128	EJIW 1040Z Type M1	925.10	12" NE 921.35	3.7500	NO
IN 129	EJIW 1040Z Type M1	924.80	12" SW 921.40	3.40'	NO
MH 130	EJIW 1040Z Type B	925.74	12" NE 920.40 EX 12" S 920.30	5.44'	NO
MH 131	EJIW 1040Z Type B	925.09	12" SW 920.75 12" NW 920.85	4.34'	NO
IN 132	EJIW 1040Z Type M1	924.00	12" SE 921.21	2.79'	NO
MH 133	EJIW 1040Z Type B	924.67	12" NE 916.51 60" SW 916.61	8.16'	YES
IN 134	EJIW 1040Z Type M1	926.58	12" W 921.58	5.00'	NO
PD1	NDS 1214 1222	933.40	6" NW 929.15 6" SE 928.75	4.65'	NO
PD2	NDS 1214 1222	933.40	6" NW 929.26 6" SE 929.26	4.14'	NO
PD3	NDS 1214 1222	933.40	6" N 929.37 6" SE 929.37	4.03'	NO
PD4	NDS 1214 1222	933.40	6" NE 929.46 6" S 929.46	3.94'	NO
PD5	NDS 1214 1222	933.40	6" NE 929.57 6" SW 929.57	3.83'	NO
PD6	NDS 1214 1222	933.40	6" NE 929.68 6" SW 929.68	3.72'	NO
PD7	NDS 1214 1222	933.40	6" N 929.79 6" SW 929.79	3.61'	NO
PD8	KSI Heavy Duty	933.20	6" S 930.00	3.20'	NO
PD9	KSI Heavy Duty	932.20	6" SE 928.61 6" SW 928.61	3.59'	NO
PD10	KSI Heavy Duty	933.00	6" NE 929.34	3.66'	NO
PD11	NDS 1214 1222	931.40	6" SE 926.93 6" NE 927.10	4.47'	NO
PD12	KSI Heavy Duty	931.10	6" NE 927.50	3.60'	NO

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11.12.2013	SUBMIT TO WCWRC FOR FINAL APPROVAL
11.21.2013	FINAL SITE PLAN SUBMITTAL
01.13.2014	WCRC RESUBMITTAL
01.27.2014	WCRC RESUBMITTAL
01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

Developed For:

VERSA DEVELOPMENT

25900 W. 11 MILE ROAD
SUITE 250
SOUTHFIELD, MI 48034
(248) 416-1985

STORM SEWER DETAILS AND UTILITY NOTES AND QUANTITIES

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
Scale:	NA
Sheet:	30
Project:	18270.00

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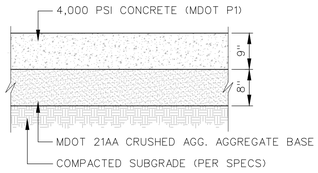
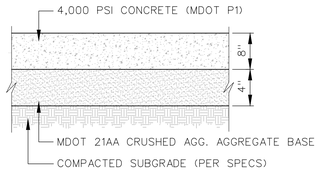


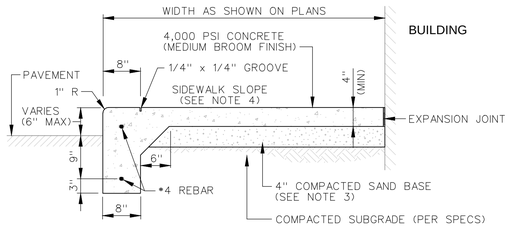
ANN ARBOR-SALINE ROAD PAVEMENT SECTION

NO SCALE



STANDARD CONCRETE PAVEMENT SECTION

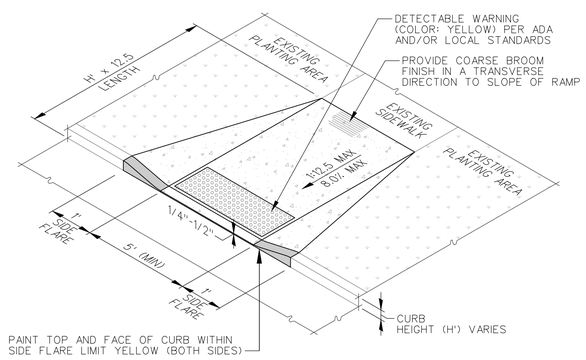
NO SCALE



NOTES:
1. EXPANSION JOINTS: 1/2" WIDE x FULL DEPTH, AT 25' INTERVALS TRANSVERSELY, AROUND EMBEDDED ITEMS SUCH AS LIGHT BASES AND AT ABUTTING STRUCTURES SUCH AS BUILDINGS OR CURBS.
2. CONTRACTION JOINTS: 1/4" WIDE x 1" DEEP, ARRANGE TO FORM PANELS 6' MAXIMUM IN EITHER DIRECTION.
3. SAND BASE MATERIAL SHALL MEET THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) SPECIFICATIONS FOR GRADATION AND OTHER SPECIFIED MATERIAL REQUIREMENTS.
4. SIDEWALK SLOPE SHALL NOT EXCEED A MAXIMUM CROSS SLOPE OF 2.0% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.0%.

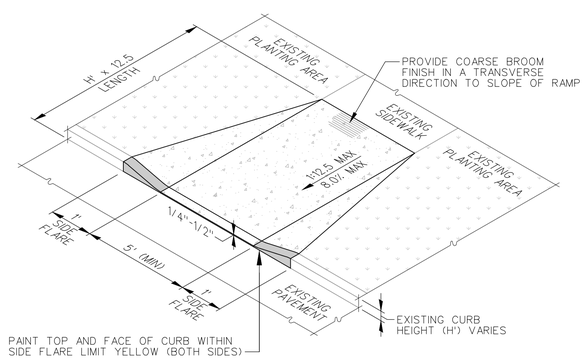
INTEGRAL CONCRETE CURB AND SIDEWALK DETAIL

NOT TO SCALE



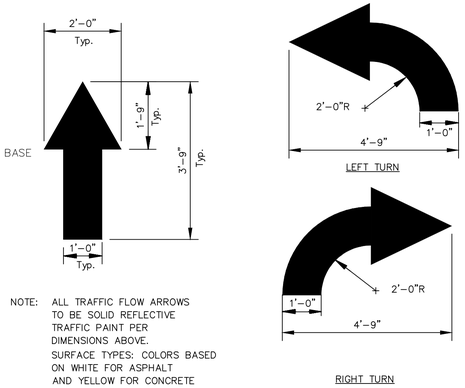
CURB RAMP WITH ROLLED SIDE FLARE DETAIL (WALKS IN ROW ONLY)

NOT TO SCALE



CURB RAMP WITH ROLLED SIDE FLARE DETAIL

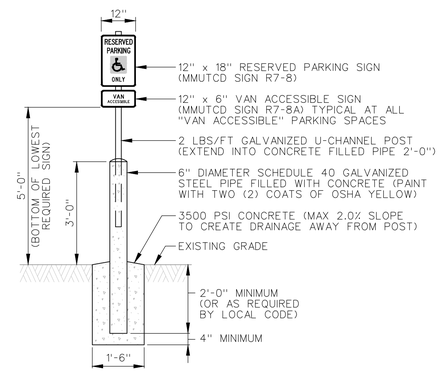
NOT TO SCALE



NOTE: ALL TRAFFIC FLOW ARROWS TO BE SOLID REFLECTIVE TRAFFIC PAINT PER DIMENSIONS ABOVE.
SURFACE TYPES: COLORS BASED ON WHITE FOR ASPHALT AND YELLOW FOR CONCRETE

TRAFFIC MARKINGS

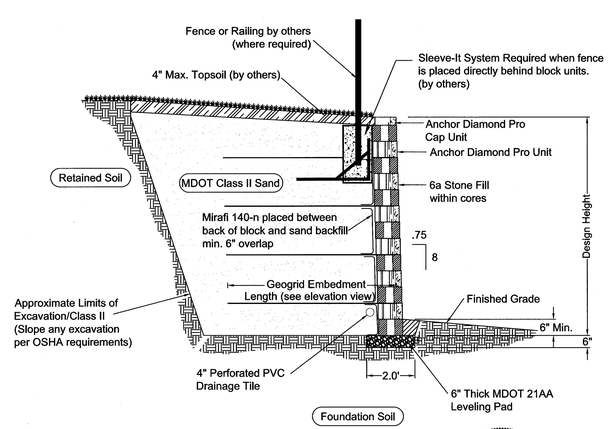
NO SCALE



NOTES:
1. ONE REQUIRED AT EACH ACCESSIBLE PARKING SPACE.
2. WHERE ACCESSIBLE SPACES FACE EACH OTHER WITHOUT WALKWAY, THERE SHALL BE ONE POST WITH SIGNS MOUNTED ON BOTH SIDES.
3. SIGNS SHALL BE MOUNTED TO POST WITH GALVANIZED OR CADMIUM PLATED 5/16" DIAMETER STEEL BOLTS, NUTS AND WASHERS. THE CONTRACTOR SHALL SUPPLY AND INSTALL 5/16" NYLON WASHERS BETWEEN BOLT HEADS AND SIGN FACE TO PROTECT FINISH.
4. SIGNS SHALL CONFORM TO THE CURRENT "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD)" PUBLISHED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) AND MICHIGAN STATE POLICE (MSP) FOR SIZE, COLOR AND DIMENSIONS.

ACCESSIBLE PARKING SIGN DETAIL

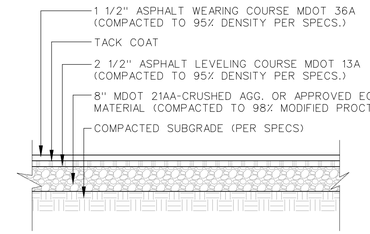
NOT TO SCALE



TYPICAL RETAINING WALL DETAIL

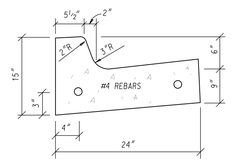
NO SCALE

NOTE:
FINAL DETAILS WILL BE PROVIDED BY OTHERS



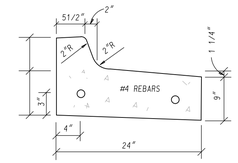
STANDARD DUTY ASPHALT PAVEMENT SECTION

NO SCALE



6" STANDARD CONCRETE CURB & GUTTER

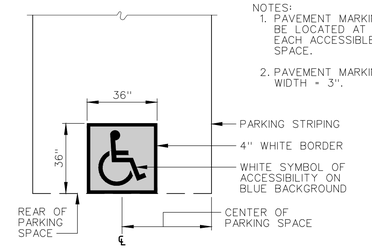
NO SCALE



6" STRAIGHT REVERSE CURB & GUTTER

NO SCALE

NOTE:
CONTRACTOR SHALL REVIEW PROPOSED AND EXISTING PAVEMENT SLOPE PRIOR TO INSTALLING APPROPRIATE CURB AND GUTTER SECTION.

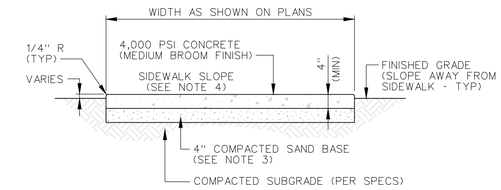


PERPENDICULAR PARKING

NOTES:
1. PAVEMENT MARKING SHALL BE LOCATED AT REAR OF EACH ACCESSIBLE PARKING SPACE.
2. PAVEMENT MARKING STROKE WIDTH = 3".

SYMBOL OF ACCESSIBILITY PAVEMENT MARKING DETAIL

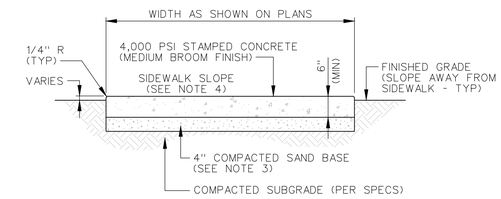
NOT TO SCALE



NOTES:
1. EXPANSION JOINTS: 1/2" WIDE x FULL DEPTH, AT 25' INTERVALS TRANSVERSELY, AROUND EMBEDDED ITEMS SUCH AS LIGHT BASES AND AT ABUTTING STRUCTURES SUCH AS BUILDINGS OR CURBS.
2. CONTRACTION JOINTS: 1/4" WIDE x 1" DEEP, ARRANGE TO FORM PANELS 6' MAXIMUM IN EITHER DIRECTION.
3. SAND BASE MATERIAL SHALL MEET THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) SPECIFICATIONS FOR GRADATION AND OTHER SPECIFIED MATERIAL REQUIREMENTS.
4. SIDEWALK SLOPE SHALL NOT EXCEED A MAXIMUM CROSS SLOPE OF 2.0% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.0%.

4" CONCRETE SIDEWALK DETAIL

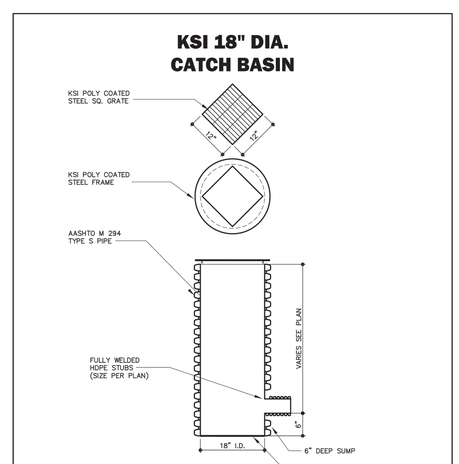
NOT TO SCALE

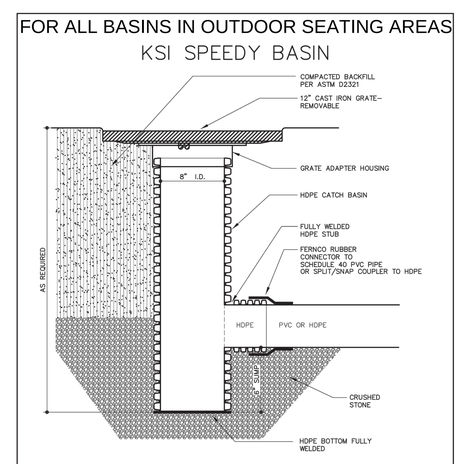


NOTES:
1. EXPANSION JOINTS: 1/2" WIDE x FULL DEPTH, AT 25' INTERVALS TRANSVERSELY, AROUND EMBEDDED ITEMS SUCH AS LIGHT BASES AND AT ABUTTING STRUCTURES SUCH AS BUILDINGS OR CURBS.
2. CONTRACTION JOINTS: 1/4" WIDE x 1" DEEP, ARRANGE TO FORM PANELS 6' MAXIMUM IN EITHER DIRECTION.
3. SAND BASE MATERIAL SHALL MEET THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) SPECIFICATIONS FOR GRADATION AND OTHER SPECIFIED MATERIAL REQUIREMENTS.
4. SIDEWALK SLOPE SHALL NOT EXCEED A MAXIMUM CROSS SLOPE OF 2.0% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.0%.

6" CONCRETE SIDEWALK DETAIL (FOR CROSSWALKS)

NOT TO SCALE





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Manager:	J.K.A.
Designer:	N.M.T.
Quality Control:	
Section:	7
	T-3-S R-6-E

Professional Seal:

DATE:	ISSUE:
12.14.2012	SUBMIT SITE PLAN
04.25.2013	RESUBMIT SITE PLAN
06.21.2013	RESUBMIT SITE PLAN
08.15.2013	RESUBMIT SITE PLAN
09.18.2013	SUBMIT FINAL SITE PLAN
09.23.2013	SUBMIT FOR WCRC AND WCWRC APPROVAL
10.17.2013	SUBMIT FOR FINAL SITE PLAN APPROVAL
11.12.2013	SUBMIT TO WCWRC FOR FINAL APPROVAL
11.21.2013	FINAL SITE PLAN SUBMITTAL
01.13.2014	WCRC RESUBMITTAL
01.27.2014	WCRC RESUBMITTAL
01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

Developed For:

VERSA DEVELOPMENT

25900 W. 11 MILE ROAD
SUITE 250
SOUTHFIELD, MI 48034
(248) 416-1985

SITE DETAILS

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
Scale:	NA
Sheet:	34
Project:	18270.00

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21355 Hatcher Avenue • Ferndale, MI 48220
Phone: (248) 399-2066 • Fax: (248) 399-2157

LOG OF SOIL BORING NO. 1
PROJECT Soil Boring Berm Areas
JOB NO. 13-021
LOCATION Ann Arbor-Saline Road and Oak Valley Drive
SURFACE ELEV. _____ DATE 1-31-13
Pittsfield Township, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	0'6"		Moist dark brown silty clayey TOPSOIL with sand and pebbles and vegetation, fill						
	7'0"		Moist brown silty CLAY with sand and pebbles, vegetation and brown and dark brown streaks, fill						
	8'0"		Moist brown and dark brown silty sandy CLAY with pebbles and vegetation, fill						
	10'2"		Moist brown, dark brown and blue silty sandy CLAY with pebbles and vegetation, fill						
	12'6"		Moist variegated silty CLAY with sand and pebbles						
	15'0"								

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION	none	FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES			

McDOWELL & ASSOCIATES
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21355 Hatcher Avenue • Ferndale, MI 48220
Phone: (248) 399-2066 • Fax: (248) 399-2157

LOG OF SOIL BORING NO. 2
PROJECT Soil Boring Berm Areas
JOB NO. 13-021
LOCATION Ann Arbor-Saline Road and Oak Valley Drive
SURFACE ELEV. _____ DATE 1-31-13
Pittsfield Township, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	0'4"		Moist dark brown silty clayey TOPSOIL with vegetation and pebbles, fill						
	6'2"		Moist brown silty CLAY with sand and pebbles and vegetation, fill						
	8'0"		Moist brown silty CLAY with sand and pebbles, vegetation and dark brown searns, fill						
	15'0"		Moist variegated silty CLAY with sand and pebbles						

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION	none	FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES			

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LOG OF SOIL BORING NO. 3
PROJECT Soil Boring Berm Areas
JOB NO. 13-021
LOCATION Ann Arbor-Saline Road and Oak Valley Drive
SURFACE ELEV. _____ DATE 1-31-13
Pittsfield Township, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	0'4"		Moist dark brown silty clayey TOPSOIL with sand and pebbles and vegetation, fill						
	5'0"		Moist brown silty CLAY with sand and pebbles, fill						
	7'3"		Moist brown and dark brown silty CLAY with sand and pebbles and vegetation, fill						
	10'3"		Moist brown, dark brown and blue silty CLAY with sand and pebbles and vegetation, fill						
	15'0"		Moist variegated silty CLAY with sand and pebbles and trace of vegetation						

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION	none	FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES			

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Geotechnical, Environmental, & Hydrogeologic Services
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Phone: (248) 399-2066 • Fax: (248) 399-2157

LOG OF SOIL BORING NO. 4
PROJECT Soil Boring Berm Areas
JOB NO. 13-021
LOCATION Ann Arbor-Saline Road and Oak Valley Drive
SURFACE ELEV. _____ DATE 1-31-13
Pittsfield Township, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	0'5"		Moist dark brown silty sandy clayey TOPSOIL with vegetation and pebbles, fill						
	5'6"		Moist brown silty CLAY with sand and pebble, fill						
	7'0"		Moist brown and dark brown silty sandy CLAY with pebbles and vegetation, fill						
	15'0"		Moist brown and dark brown silty sandy CLAY with pebbles, vegetation, roots and topsoil streaks, fill						

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION	none	FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES			

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LOG OF SOIL BORING NO. 13
PROJECT Soils Investigation - Proposed Restaurant Buildings -- Meijer's Outlots
JOB NO. 13-241
LOCATION Ann Arbor-Saline Road & Oak Valley Drive
SURFACE ELEV. _____ DATE 8-20-13
Pittsfield Township, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	1'8"		Moist brown silty sandy CLAY with pebbles, vegetation and dark color streaks, fill						
A SS	3'0"		Stiff to very stiff moist brown slightly organic silty sandy CLAY with vegetation, fill	6 / 8 / 10	15.5	120	*	(6000)	
B SS	4'6"		Stiff moist brown silty CLAY with sand and pebbles	4 / 5 / 7					
C SS	6'0"		Firm moist variegated silty CLAY with sand and pebbles and wet sand seams	2 / 3 / 4	28.7	119	*	(2000)	
D SS	8'6"		Very stiff moist variegated silty CLAY with sand and pebbles	7 / 12 / 22					
	9'8"		Extremely stiff moist blue silty CLAY with sand and pebbles						
	10'6"								

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
* Calibrated Penetrometer
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	6	FT.	2 INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION	6	FT.	9 INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	heavy		

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LOG OF SOIL BORING NO. 14
PROJECT Soils Investigation - Proposed Restaurant Buildings -- Meijer's Outlots
JOB NO. 13-241
LOCATION Ann Arbor-Saline Road & Oak Valley Drive
SURFACE ELEV. _____ DATE 8-20-13
Pittsfield Township, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	0'7"		ASPHALT						
	0'10"		Moist brown SAND & GRAVEL, aggregate fill						
	1'4"		Moist brown fine SAND, fill						
A SS	3'0"		Very stiff moist brown silty CLAY with sand and pebbles	5 / 8 / 13	13.4	137	*	(6000)	
B SS	4'6"		Extremely stiff moist blue silty CLAY with sand and pebbles and brown silt seams	7 / 12 / 16	13.6	135	*	(8000)	
C SS	6'3"		Very stiff moist blue silty CLAY with sand and pebbles	9 / 10 / 11					
D SS	10'6"			5 / 7 / 10					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
* Calibrated Penetrometer
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION	none	FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES			

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LOG OF SOIL BORING NO. 15
PROJECT Soils Investigation - Proposed Restaurant Buildings -- Meijer's Outlots
JOB NO. 13-241
LOCATION Ann Arbor-Saline Road & Oak Valley Drive
SURFACE ELEV. _____ DATE 8-20-13
Pittsfield Township, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	0'5"		ASPHALT						
	1'0"		Moist brown SAND & GRAVEL, aggregate fill						
A SS	2'5"		Compact moist brown fine SAND, fill	4 / 4 / 10	12.6	135	*	(5000)	
B SS	6'6"		Very stiff moist variegated silty CLAY with sand and pebbles and wet sand seams	7 / 10 / 11	11.9	137	*	(6000)	
C SS	9'6"		Extremely stiff moist blue silty CLAY with sand and pebbles	9 / 9 / 14					
D SS	10'6"			11 / 16 / 27					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:
* Calibrated Penetrometer
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	7	FT.	0 INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION	6	FT.	8 INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	heavy		

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11.12.2013	SUBMIT TO WCWRC FOR FINAL APPROVAL
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SOIL BORING LOGS

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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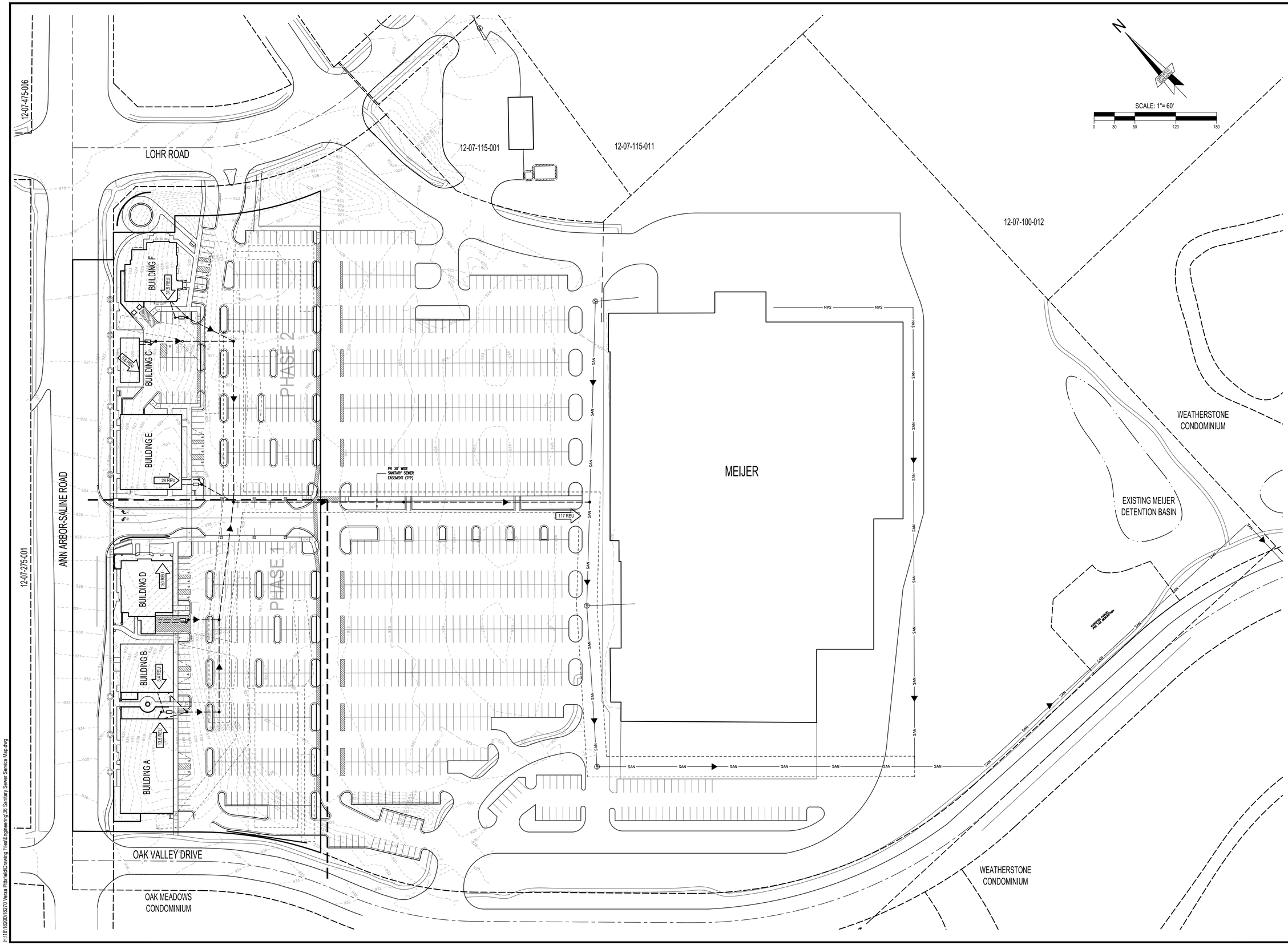

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SANITARY SEWER SERVICE DISTRICT MAP

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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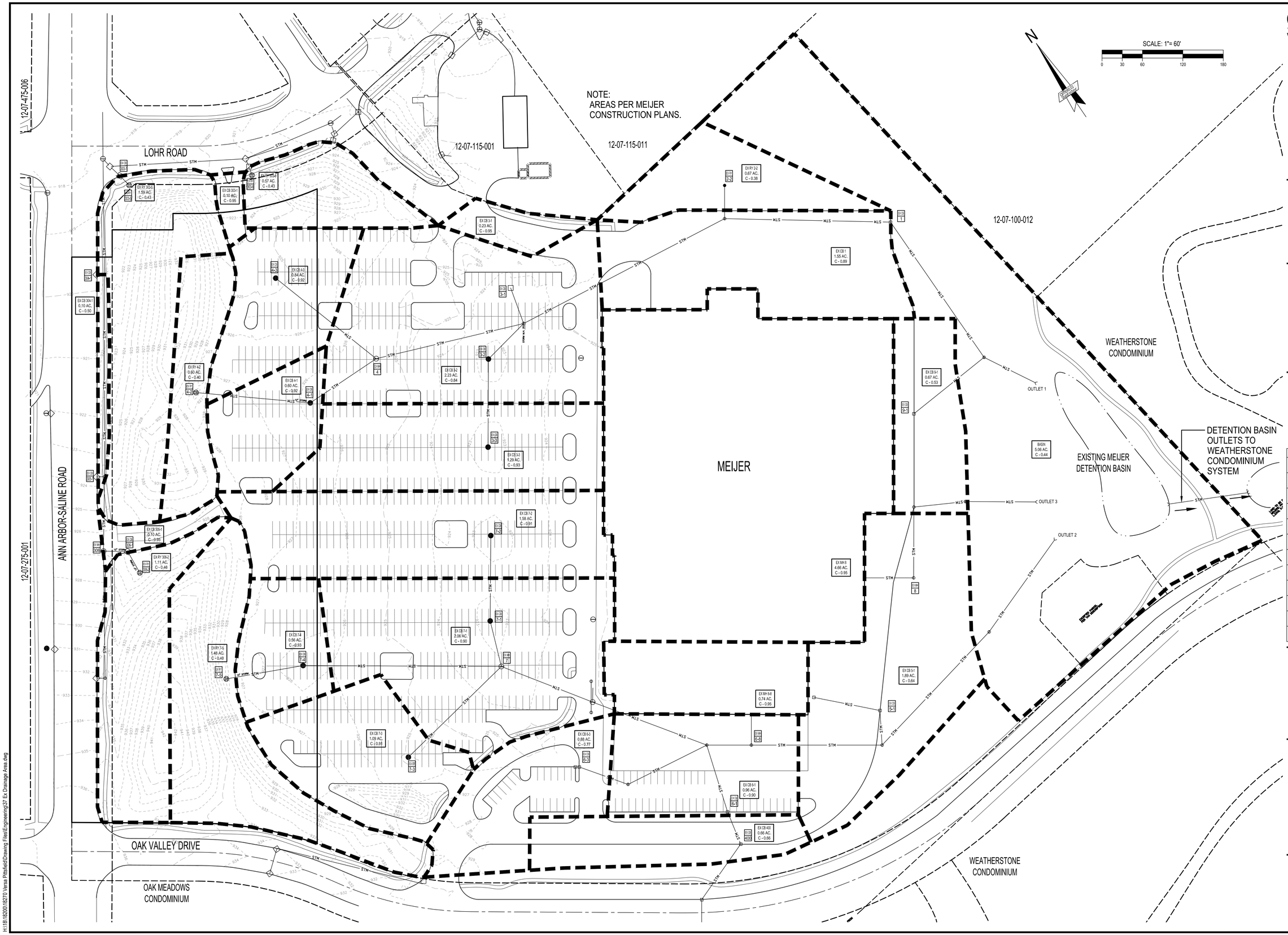

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EXISTING DRAINAGE AREA PLAN

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PITTSFIELD TOWNSHIP
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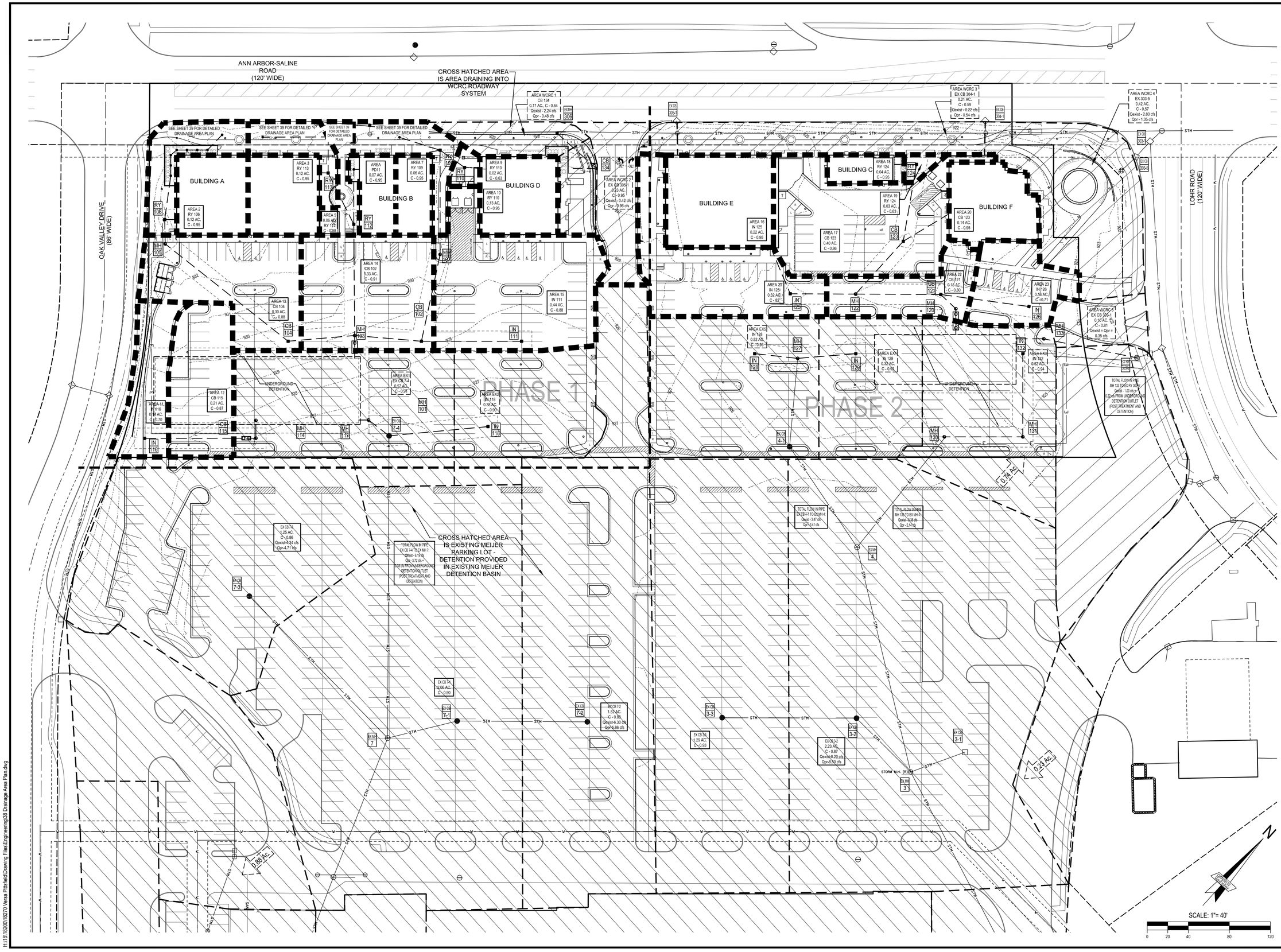

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PROPOSED DRAINAGE AREA PLAN

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
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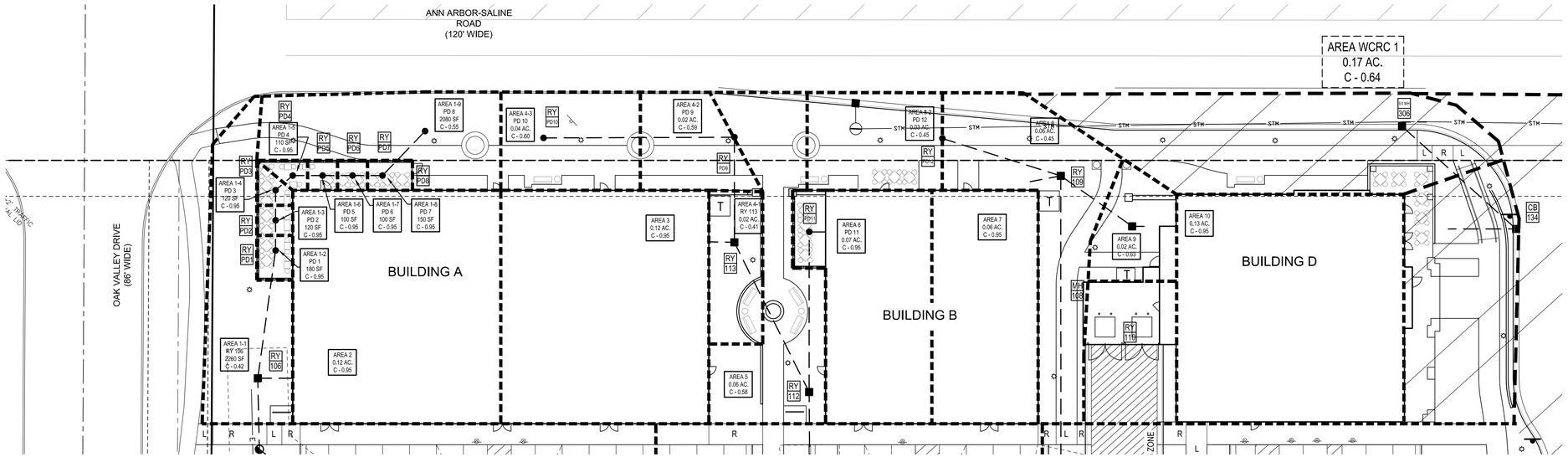

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Storm Sewer Design
Versa Pittsfield
18270.00

Prepared By	NMT	
Working Date	11/21/2013	
Design Storm Event	10 year storm	
Rainfall Intensity	I=175/(Tc+25)=	4.38

From	To	Catchment Area (acres)	Runoff C Factor	Total Equiv Area (acres)	Total Time of Concentration Tc (min)	Total Rainfall Intensity (in/hr)	Total Flow (cfs)	Pipe Capacity (cfs)	Pipe Diameter (inches)	Pipe Length (feet)	Pipe Slope (percent)	Pipe Velocity (fps)	Time of Flow (min)	Upstream Rim Elevation	Downstream Rim Elevation	Upstream Invert Elevation	Downstream Invert Elevation	HGL Slope (percent)	Upstream HGL (feet)	Downstream HGL (feet)
Southwest Detention System																				
Bld A Lead	RY 106	0.12	0.95	0.11	15.00	4.38	0.50	0.81	6	12	2.08%	4.13	0.05		932.50	928.50	928.00	0.79	928.90	928.80
RY 106	MH 105	0.05	0.42	0.14	15.05	4.37	0.59	2.81	12	24	0.62%	3.58	0.11	932.50	934.33	928.00	927.85	0.03	928.80	928.65
MH 105	CB 104	0.00	0.00	0.14	15.16	4.36	0.59	5.27	12	153	2.19%	6.73	0.38	934.33	929.40	927.75	924.40	0.03	928.55	925.20
CB 104	MH 101	0.30	0.88	0.40	15.54	4.32	1.73	3.70	12	65	1.08%	4.73	0.23	929.40	928.89	924.30	923.60	0.23	925.10	924.40
MH 101	DETENTION	0.00	0.00	1.49	15.77	4.29	6.41	7.05	18	22	0.45%	4.00	0.09	928.89		921.35	921.25	0.37	922.55	922.45
IN 111	CB 102	0.41	0.88	0.36	15.00	4.38	1.58	2.39	12	98	0.45%	3.05	0.54	927.00	928.00	922.50	922.06	0.20	923.30	922.95
CB 102	MH 101	0.33	0.91	0.87	15.54	4.32	3.76	7.12	18	65	0.46%	4.04	0.27	928.00	928.89	921.75	921.45	0.13	922.95	922.65
PD 12	RY 109	0.0323	0.53	0.02	15.00	4.38	0.08	0.91	6	42	2.62%	4.64	0.15	931.10	930.00	927.50	926.40	0.02	927.90	926.81
RY 109	MH 108	0.07	0.50	0.05	15.15	4.36	0.24	5.25	12	46	2.17%	6.70	0.11	930.00	929.70	926.40	926.00	0.00	927.20	926.80
MH 108	MH 1107	0.00	0.00	0.21	15.27	4.35	0.91	2.42	12	56	0.46%	3.08	0.30	929.70	930.78	924.25	924.00	0.06	925.08	924.80
MH 107	CB 102	0.00	0.00	0.21	15.57	4.31	0.90	3.65	12	86	1.05%	4.66	0.31	930.78	928.00	923.90	923.00	0.06	924.70	923.80
Bld D Lead	RY 110	0.13	0.95	0.12	15.00	4.38	0.54	0.79	6	10	2.00%	4.05	0.04		929.00	925.00	924.80	0.92	925.40	925.30
RY 110	MH 108	0.05	0.63	0.16	15.04	4.37	0.68	2.52	12	28	0.50%	3.22	0.15	929.00	930.00	924.50	924.36	0.04	925.30	925.16
Bld A Lead	RY 113	0.12	0.95	0.11	15.00	4.38	0.50	0.73	6	9	1.67%	3.70	0.04		932.50	928.50	928.35	0.79	928.90	928.80
RY 113	RY 112	0.02	0.41	0.12	0.00	7.00	0.86	6.73	12	56	3.57%	8.59	0.11	932.50	930.50	928.00	926.00	0.06	928.80	926.80
RY 112	MH 101	0.06	0.58	0.22	15.04	4.37	0.98	5.08	12	108	2.03%	6.48	0.28	930.50	928.89	926.00	923.81	0.08	926.80	924.61
Bld B Lead	PD 11	0.06	0.95	0.06	15.00	4.38	0.25	0.79	6	5	2.00%	4.05	0.02		931.40	927.20	927.10	0.20	927.60	927.50
PD 11	RY 112	0.01	0.95	0.07	15.02	4.37	0.29	0.59	6	53	1.10%	3.01	0.29	931.40	930.50	926.93	926.35	0.27	927.33	927.15
IN 116	CB 115	0.14	0.70	0.10	15.00	4.38	0.43	4.19	12	87	1.38%	5.34	0.27	928.50	927.30	923.50	922.30	0.01	924.30	923.10
CB 115	MH 114	0.21	0.87	0.28	15.27	4.35	1.22	5.82	12	21	2.67%	7.43	0.05	927.30	926.96	922.30	921.64	0.12	923.10	922.54
PLAZA DRAIN SYSTEM																				
PD 8	PD 7	0.0478	0.55	0.03	15.00	4.38	0.11	0.59	6	19	1.10%	3.01	0.11	933.20	933.40	930.00	929.79	0.04	930.40	930.19
PD 7	PD 6	0.0034	0.95	0.03	15.11	4.36	0.13	0.59	6	10	1.10%	3.01	0.06	933.40	933.40	929.79	929.68	0.05	930.19	930.08
PD 6	PD 5	0.0023	0.95	0.03	15.16	4.36	0.14	0.59	6	10	1.10%	3.01	0.06	933.40	933.40	929.68	929.57	0.06	930.08	929.97
PD 5	PD 4	0.0023	0.95	0.03	15.22	4.35	0.15	0.59	6	10	1.10%	3.01	0.06	933.40	933.40	929.57	929.46	0.07	929.97	929.86
PD 4	PD 3	0.0025	0.95	0.04	15.27	4.35	0.16	0.59	6	8	1.10%	3.01	0.04	933.40	933.40	929.46	929.37	0.08	929.86	929.77
PD 3	PD 2	0.0028	0.95	0.04	15.32	4.34	0.17	0.59	6	10	1.10%	3.01	0.06	933.40	933.40	929.37	929.26	0.09	929.77	929.66
PD 2	PD 1	0.0028	0.95	0.04	15.37	4.33	0.18	0.59	6	10	1.10%	3.01	0.06	933.40	933.40	929.26	929.15	0.10	929.66	929.55
PD 1	RY 106	0.0041	0.95	0.05	15.43	4.33	0.20	0.63	6	43	1.28%	3.24	0.22	933.40	932.50	928.75	928.20	0.12	929.15	928.80
PD 10	PD 9	0.0356	0.60	0.02	15.00	4.38	0.09	0.59	6	66	1.11%	3.02	0.36	933.00	932.20	929.34	928.61	0.03	929.74	929.01
PD 9	RY 113	0.0243	0.59	0.04	15.36	4.34	0.15	0.59	6	19	1.11%	3.02	0.10	932.20	932.50	928.61	928.40	0.08	929.01	928.80
Southwest Connection to Existing Meijer																				
IN 118	Ex CB 7-4	0.38	0.90	0.34	15.00	4.38	1.50	2.57	12	97	0.52%	3.28	0.49	926.00	925.51	921.00	920.50	0.18		
Ex CB 7-4	Ex MH 7	0.57	0.91	0.86	15.49	4.32	3.72													
Northeast System																				
Bld C Lead	RY 124	0.04	0.95	0.04	15.00	4.38	0.17	0.85	6	22	2.27%	4.32	0.08		924.70	921.50	921.00	0.09	921.90	921.50
RY 124	CB 123	0.03	0.63	0.06	15.08	4.37	0.25	2.39	12	76	0.45%	3.05	0.42	924.70	923.90	920.70	920.36	0.00	921.50	921.16
CB 123	MH 122	0.40	0.86	0.53	15.50	4.32	2.31	2.39	12	69	0.45%	3.05	0.38	923.90	924.98	920.25	919.94	0.42	921.13	920.84
MH 122	CB 121	0.00	0.00	1.01	15.88	4.28	4.30	4.33	15	83	0.45%	3.54	0.39	924.98	923.90	919.84	919.47	0.44	920.64	920.47
CB 121	MH 120	0.15	0.80	1.28	16.27	4.24	5.42	5.75	18	20	0.30%	3.26	0.10	923.90	924.44	917.24	917.18	0.26	918.44	918.35
IN 126	CB 121	0.16	0.95	0.15	15.00	4.38	0.67	2.42	12	87	0.46%	3.08	0.47	923.40	924.00	918.40	918.00	0.03	919.20	918.80
Bld E Lead	IN 125	0.22	0.95	0.21	15.00	4.38	0.91	0.59	6	45	1.10%	3.01	0.25		924.80	922.10	921.60	2.64	923.19	922.00
IN 125	MH 122	0.32	0.82	0.47	15.25	4.35	2.05	2.44	12	64	0.47%	3.12	0.34	924.80	924.98	920.30	920.00	0.33	921.10	920.84
Bld F Lead	CB 123	0.14	0.95	0.13	15.00	4.38	0.58	2.42	12	87	0.46%	3.08	0.47		923.90	921.10	920.50	0.03	921.90	918.80
Northeast Connection to Existing Meijer																				
IN 128	MH 127	0.52	0.93	0.48	15.00	4.38	2.12	2.47	12	42	0.48%	3.15	0.22	925.10	925.41	921.35	921.15	0.35		
IN 129	MH 127	0.32	0.92	0.29	15.00	4.38	1.29	2.36	12	57	0.44%	3.02	0.31	924.80	925.41	921.40	921.15	0.13		
IN 132	MH 131	0.52	0.94	0.49	15.00	4.38	2.14	2.39	12	81	0.45%	3.05	0.44	924.00	925.09	921.21	920.85	0.36		
MH 131	MH 130	0.00	0.00	0.49	15.44	4.33	2.12	2.39	12	76	0.45%	3.05	0.42	925.09	925.74	920.75	920.40	0.35		
West WCRC Ex Flows From on-site drainage (Approximate since MH is buried and slopes cannot be determined) Area WCRC 1																				
Ex RY 306-2	Ex CB 306-1	1.04	0.43	0.45	15.00	4.38	1.96	3.90	12	37	1.20%	4.98	0.12							
Ex CB 306-1	Ex MH 306	0.07	0.95	0.51	15.12	4.36	2.24	2.39	12	76	0.45%	3.05	0.42							
West WCRC Proposed Pipe Flows from on-site drainage																				
CB 134	Ex MH 306	0.17	0.64	0.11	15.00	4.38	0.48	2.44	12	43	0.47%	3.12	0.23							
East WCRC Ex Flows from on-site drainage (Approximate since MHs are buried and slopes cannot be determined)																				
Ex CB 305-1	Ex MH 305	0.10	0.95	0.10	15.00	4.38	0.42	3.56	12	12	1.00%	4.55	0.04							
Ex RY 303-5	Ex CB 303-1	1.59	0.43	0.68	15.00	4.38	2.99	2.44	12	43	0.47%	3.12	0.23							
East WCRC Proposed Flows from on-site drainage (Approximate since MHs are buried and slopes cannot be determined)																				
Ex CB 305-1	Ex MH 305	0.23	0.95	0.22	15.00	4.38	0.96	3.56	12	12	1.00%	4.55	0.04							
Ex RY 304-1	Ex MH 304	0.21	0.59	0.12	15.00	4.38	0.54	2.44	12	43	0.47%	3.12	0.23							
Ex RY 303-5	Ex CB 303-1	0.42	0.57	0.24	15.00	4.38	1.05	2.44	12	43	0.47%	3.12	0.23							

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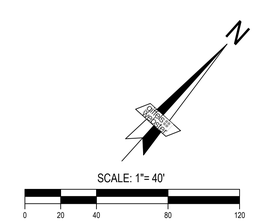
PROPOSED DETAILED DRAINAGE AREA PLAN AND STORM SEWER CALCULATIONS

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN



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Sheet:	39
Project:	18270.00

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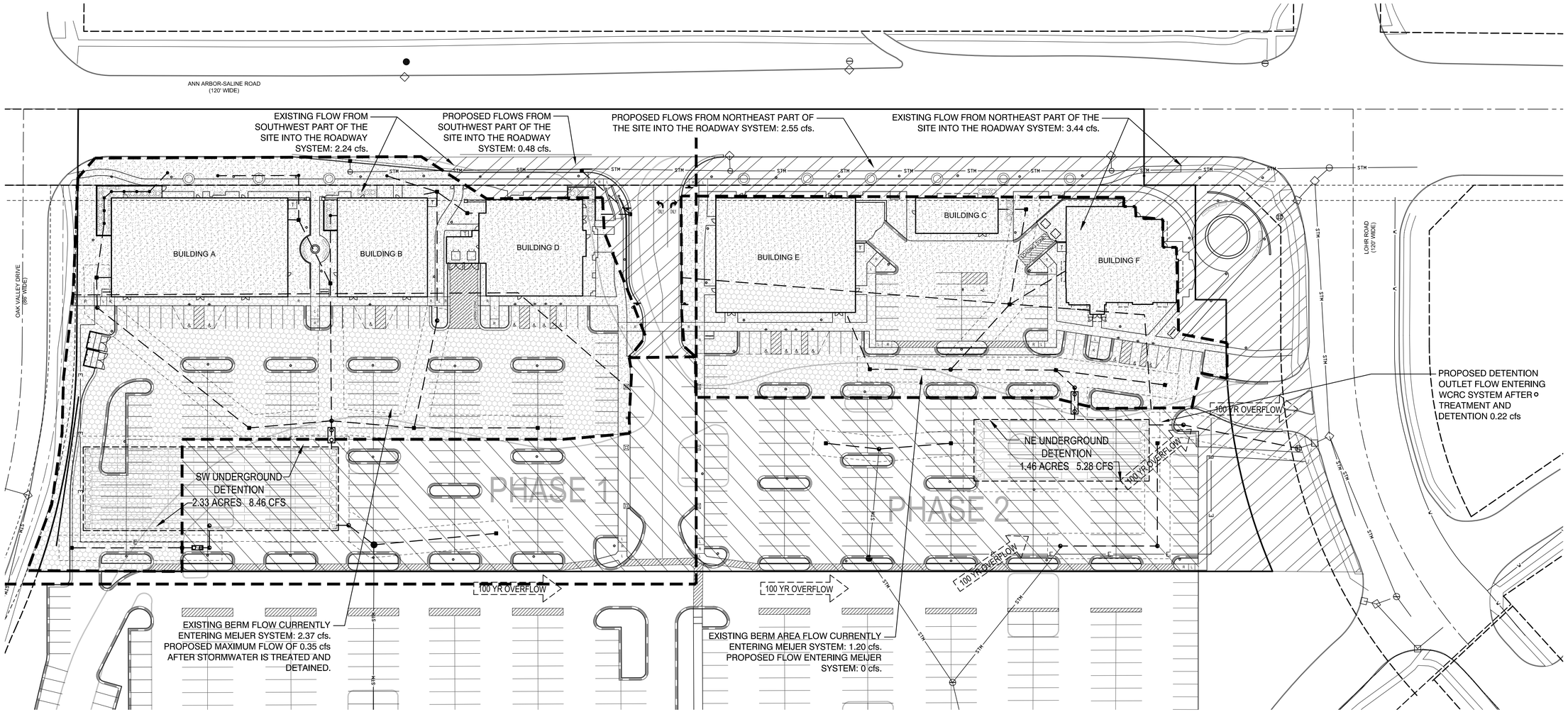
H:\18\18200\18270 Versa Pittsfield\Drawing Files\Engineering\39 Proposed Street Drainage Area Plan.dwg



LEGEND

- EXISTING DRAINAGE AREA INTO WCRC SYSTEM AND WILL CONTINUE INTO WCRC SYSTEM
- EXISTING PARKING LOT INTO MEIJER SYSTEM AND WILL CONTINUE INTO MEIJER SYSTEM
- EXISTING BERM AREA INTO WCRC SYSTEM WILL NOW BE TREATED AND DETAINED ONSITE
- EXISTING BERM AREA INTO MEIJER SYSTEM WILL NOW BE TREATED AND DETAINED ONSITE

N

SCALE: 1"= 40'

0 20 40 80 120

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Designer:	N.M.T.
Quality Control:	
Section:	7
	T-3-S R-6-E

Professional Seal:

DATE:	ISSUE:
12.14.2012	SUBMIT SITE PLAN
04.25.2013	RESUBMIT SITE PLAN
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01.13.2014	WCRC RESUBMITTAL
01.27.2014	WCRC RESUBMITTAL
01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

Developed For:

VERSA DEVELOPMENT

25900 W. 11 MILE ROAD
SUITE 250
SOUTHFIELD, MI 48034
(248) 416-1985

SITE STORMWATER MANAGEMENT PLAN

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
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Sanitary Sewer Basis of Design
Versa Pittsfield
18260.00

Prepared By NMT
Working Date September 16, 2013

Commercial Use

Grocery Store / Supermarket	0.31/1,000 sf	x	230,000 sf	= 71.3		
(Meijer)			**Total =**	**71.3**	**REU**	

Population= 3.5 people per REU

= 71 REU x 3.5 people per REU

= 249.55 people

Average Flow= Population x Per Capita Capacity

= 249.55 people x 100 gpcpd

= 24955.00 gpd = **0.0386** cfs

Peaking Factor= $\frac{18 + \sqrt{249.55 \text{ people}} / 1{,}000}{4 + \sqrt{0.00 \text{ people}} / 1{,}000}$

= 4.62

Peak Flow= Population x Per Capita Capacity x Peaking Factor

= 250 people x 100 gpcpd x 4.62

= 115414.07 gpd = **0.1786** cfs

The selected size of the proposed sewer (8" pipe @ 0.40 = 0.76 cfs) is adequate for the calculated flows.

Sanitary Sewer Basis of Design
Versa Pittsfield
18260.00

Prepared By NMT
Working Date November 21, 2013

Commercial Use

****Tenant lineup not set. Building uses are based on conceptual lineup. Final calculations will be provided once final tenant lineup is set. For calculation purposes, higher REU uses were selected for vacant spaces.**

Building A				
Restaurant (Quick Service)	5.6 per restaurant	x	2	= 11.2
Office	0.4 per 1,000 sf	x	6,200 sf	= 2.3
Building B				
Restaurant (Quick Service)	5.6 per restaurant	x	1	= 5.6
Dentist	1.4 per dentist	x	2	= 2.8
Building C				
Restaurant (Quick Service)	5.6 per restaurant	x	1	= 5.6
Building D				
Restaurant (Sit down)	0.13 per seat	x	231	= 30
Building E				
Restaurant (Sit down)	0.13 per seat	x	200	= 26
Office	0.4 per 1,000 sf	x	6,200 sf	= 2
Building F				
Restaurant (Sit down)	0.13 per seat	x	242	= 31.5
			Total =	**117** **REU**

Population= 3.5 people per REU

= 117 REU x 3.5 people per REU

= 409.50 people

Average Flow= Population x Per Capita Capacity

= 409.50 people x 100 gpcpd

= 40950.00 gpd = **0.0634** cfs

Peaking Factor= $\frac{18 + \sqrt{409.50 \text{ people}} / 1{,}000}{4 + \sqrt{0.00 \text{ people}} / 1{,}000}$

= 4.66

Peak Flow= Population x Per Capita Capacity x Peaking Factor

= 410 people x 100 gpcpd x 4.66

= 190826.20 gpd = **0.2953** cfs

The selected size of the proposed sewer (8" pipe @ 0.40 = 0.76 cfs) is adequate for the calculated flows.

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01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

Detention Design
Versa Pittsfield - West
18270.00

Completed By NMT
Working Date November 15, 2013
Jurisdiction Washtenaw County

Weighted "C" Calculation

	Area (acres)	C	Area x C
Building Roofs and Pavement	1.83	0.95	1.74
Lawn/Open Areas <4%	0.24	0.30	0.07
Lawn/Open Areas 4-8%	0.05	0.35	0.02
Lawn/Open Areas >8%	0.21	0.40	0.08
Total	2.33		1.91

$C = \frac{\text{Area x C}}{\text{Area}} = \frac{1.91}{2.33} = 0.82$

Allowable Outflow Calculation

Based on Acreage: Property Area= 2.33 acres

Q_o= 0.15 cfs/acre

= 0.15 cfs/acre x 2.33 acres

= 0.35 cfs

100 YEAR STORM EVENT
Required Storage Volume

$Q_o = \frac{Q_o}{A \times C} = \frac{0.35}{2.33 \text{ acres} \times 0.82}$

= 0.18 cfs per acres impervious

T_{100}= $\frac{-25 + \sqrt{10{,}313 / Qo}}{-25 + \sqrt{10{,}313 / 0.18}}$

= 212.52 minutes

V_{S100}= $\frac{16{,}500 \times T_{100}}{T_{100} + 25} - \frac{40 \times Q_{pr} \times T_{100}}{}$

= $\frac{16{,}500 \times 212.52}{212.52 + 25} - \frac{40 \times 0.18 \times 212.52}{}$

= 13209 cubic feet per acre imprevious

V_{100}= $V_{100} \times A \times C$

= 13209 x 2.33 x 0.82

= 25256 cubic feet

Detention Design
Versa Pittsfield - West
18270.00

Completed By NMT
Working Date November 15, 2013
Jurisdiction Washtenaw County

Required First Flush Storage Volume

First flush volume, or first half inch of rain in a 24-hour storm

V_{ff}= 1,815 x A x C

= 1,815 x 2.33 x 0.82

= 3470 cubic feet

Bankfull Storage Volume

V_{bf}= 8,170 x A x C

= 8,170 x 2.33 x 0.82

= 15621 cubic feet

First Flush Elevation Calculation

Elevation of Outlet E_O= E_O= 920.75

Elevation at First Flush E_f= E_f= 921.53 h_{f-f} = 0.78 ft

Bankfull Storage Elevation Calculation

Elevation at bankfull storage volume Vbff1= E_O= 920.75

Elevation at bankfull storage volume Vbff2= E_{bf}= 923.12 h_{O-bf} = 2.37 ft

Total Storage Elevation Calculation

Elevation at total storage volume V_O= E_O= 920.75

Elevation at total storage volume V_{100}= E_{100}= 924.75 $h_{O-100yr}$ = 4.00 ft

Outlet Structure Calculations

First Flush Volume:

Must be detained for a minimum of 24 hours.

V_f Release time = 24.00 hours

$Q_f = \frac{V_f}{\text{Release Time}} = \frac{3470}{86400}$ = 0.040 cfs

$Q_f = c \times A_{f-f} \times (2 \times 32.2 \times h_{f-f})^{0.5}$ c = 0.62

h_{f-f} = 0.78 ft Use 2/3h = 0.52 ft

$A_{f-f} = \frac{Q_f}{0.62(64.4 \times h_{f-f})^{0.5}} = \frac{0.0402}{0.62(64.4 \times h_{f-f})^{0.5}}$ = 0.0112 ft^2

Use 2 - 1" holes at outlet elevation A_{f-f} = 0.0108 ft^2

Detention Design
Versa Pittsfield - West
18270.00

Completed By NMT
Working Date November 15, 2013
Jurisdiction Washtenaw County

$Q_f = c \times A_{f-f} \times (64.4 \times h_{f-f})^{0.5}$ = 0.039 cfs

Dewatering Time = $\frac{V_f}{Q_f} = \frac{3470}{0.039}$ = 24.88 hr

Bankfull Volume:

Must be detained for a minimum of 24 hours and no longer than 40 hours.

V_{bf} Release time = 24.00 hours

$Q_{bf-total} = \frac{V_{bf}}{\text{Release Time}} = \frac{15621}{86400}$ = 0.181 cfs

$Q_{bf} = c \times A_{bf-f} \times (2 \times 32.2 \times h_{O-bf})^{0.5}$ c = 0.62

h_{O-bf} = 2.37 ft Use 2/3h = 1.58 ft

Q_{bf} = 0.068 cfs

$Q_{bf} = Q_{bf-total} - Q_{ff}$ = 0.113 cfs

$h_{f-bf} = h_{O-bf} - h_{O-ff}$ = 1.59 ft Use 2/3h = 1.06 ft

$A_{bf-f} = \frac{Q_{bf}}{0.62(64.4 \times h_{f-bf})^{0.5}} = \frac{0.113}{0.62(64.4 \times h_{f-bf})^{0.5}}$ = 0.022 ft^2

Use 4 - 1" holes at first flush elevation A_{bf-f} = 0.0216 ft^2

$Q_{bf} = c \times A_{bf-f} \times (64.4 \times h_{f-bf})^{0.5}$ = 0.111 cfs

Dewatering Time = $\frac{V_{bf}}{Q_{bf}} = \frac{15621}{0.178}$ = 24.35 hr

100 Year Outflow:

$Q_{allowable}$ = 0.35 cfs

$h_{O-100yr}$ = 4.00 ft

$Q_{ff} = c \times A_{f-f} \times (2 \times 32.2 \times h_{O-100yr})^{0.5}$ c = 0.62

Q_{ff} = 0.107 cfs

$h_{bf-100yr}$ = 3.22 ft

$Q_{bf} = c \times A_{bf-f} \times (2 \times 32.2 \times h_{O-100yr})^{0.5}$ c = 0.62

Q_{bf} = 0.193 cfs

$Q_{100} = Q_{allowable} - Q_{ff} - Q_{bf}$ = 0.049 cfs

$h_{bf-100yr}$ = 1.63 ft

$A_{bf-100} = \frac{Q_{100}}{0.62(64.4 \times h_{bf-100yr})^{0.5}} = \frac{0.049}{0.62(64.4 \times h_{bf-100yr})^{0.5}}$ = 0.008 ft^2

Use 1 - 1" hole at bankfull flush elevation A_{bf-100} = 0.0054 ft^2

$Q_{100} = c \times A_{bf-100} \times (64.4 \times h_{bf-100yr})^{0.5}$ = 0.034 cfs

$Q_{total} = Q_{100} + Q_{ff} + Q_{bf}$ = 0.33 cfs < 0.35 cfs

Developed For:

VERSA DEVELOPMENT

25900 W. 11 MILE ROAD
SUITE 250
SOUTHFIELD, MI 48034
(248) 416-1985

SANITARY AND DETENTION CALCULATIONS

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
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Detention Design
Versa Pittsfield - East
18270.00

Completed By	NMT
Working Date	November 15, 2013
Jurisdiction	Washtenaw County

Weighted "C" Calculation

	Area (acres)	C	Area x C
Building Roofs and Pavement	1.21	0.95	1.15
Lawn/Open Areas <4%	0.25	0.30	0.08
Total	1.46		1.22

C= Area x C / Area = 1.22 / 1.46 = 0.84

Allowable Outflow Calculation

Based on Acreage: Property Area= 1.46 acres

Q_a= 0.15 cfs/acre

= 0.15 cfs/acre x 1.46 acres

= 0.22 cfs

100 YEAR STORM EVENT
Required Storage Volume

Q_D= Q_a / A x C = 0.22 / 1.46 acres x 0.84

= 0.18 cfs per acres impervious

T_{100}= -25 + $\sqrt{10{,}313 / Q_D}$

= -25 + $\sqrt{10{,}313 / 0.18}$

= 215.13 minutes

V_{S100}= (16,500 x T_{100}) / (T_{100} + 25) - (40 x Q_a x T_{100})

= (16,500 x 215.13) / (215.13 + 25) - (40 x 0.18 x 215.13)

= 13243 cubic feet per acre imprevious

V_{100}= V_{s100} x A x C

= 13243 x 1.46 x 0.84

= 16216 cubic feet

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Detention Design
Versa Pittsfield - East
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Completed By	NMT
Working Date	November 15, 2013
Jurisdiction	Washtenaw County

Required First Flush Storage Volume

First flush volume, or first half inch of rain in a 24-hour storm

V_{ff}= 1,815 x A x 1.46 x C x 0.84

= 1,815 x 1.46 x 0.84

= 2222 cubic feet

Bankfull Storage Volume

V_{bf}= 8,170 x A x 1.46 x C x 0.84

= 8,170 x 1.46 x 0.84

= 10004 cubic feet

First Flush Elevation Calculation

Elevation of Outlet E_{OT}= E_{OT}= 916.25

Elevation at First Flush E_{ff}= E_{ff}= 917.22 h_{O-F} = 0.97 ft

Bankfull Storage Elevation Calculation

Elevation at bankfull storage volume Vbff1= E_{OT}= 916.25

Elevation at bankfull storage volume Vbff2= E_{bf}= 919.19 h_{O-F} = 2.94 ft

Total Storage Elevation Calculation

Elevation at total storage volume V_{s1}= E_{OT}= 916.25

Elevation at total storage volume V_{s2}= E_{100}= 921.25 $h_{0-100yr}$ = 5.00 ft

Outlet Structure Calculations

First Flush Volume:

Must be detained for a minimum of 24 hours.

V_F Release time = 24.00 hours

Q_F = V_F / Release Time = 2222 / 86400 = 0.0257 cfs

Q_F = c x A_{O-F} x (2 x 32.2 x h_{O-F})$^{0.5}$ c = 0.62

h_{O-F} = 0.97 ft Use 2/3h = 0.65 ft

A_{O-F} = Q_F / (0.62(64.4 x h_{O-F})$^{0.5}$) = 0.0257 / (0.62(64.4 x h_{O-F})$^{0.5}$) = 0.0064 ft^2

Use 1 - 1" hole at outlet elevation A_{O-F} = 0.0054 ft^2

Q_F = c x A_{O-F} x (64.4 x h_{O-F})$^{0.5}$ = 0.022 cfs

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Dewatering Time = V_F / Q_F = 2222 / 0.022 = 28.57 hr

Bankfull Volume:

Must be detained for a minimum of 24 hours and no longer than 40 hours.

V_{bf} Release time = 24.00 hours

$Q_{bf\ total}$ = V_{bf} / Release Time = 10004 / 86400 = 0.116 cfs

Q_F = c x A_{O-F} x (2 x 32.2 x h_{O-F})$^{0.5}$ c = 0.62

h_{O-bf} = 2.94 ft Use 2/3h = 1.96 ft

Q_F = 0.038 cfs

Q_{bf} = $Q_{bf\ total}$ - Q_F = 0.078 cfs

h_{O-bf} = h_{O-bf} - h_{O-F} = 1.97 ft Use 2/3h = 1.31 ft

A_{O-bf} = Q_{bf} / (0.62(64.4 x h_{O-bf})$^{0.5}$) = 0.078 / (0.62(64.4 x h_{O-bf})$^{0.5}$) = 0.014 ft^2

Use 2 - 1" holes at first flush elevation A_{O-bf} = 0.0108 ft^2

Q_{bf} = c x A_{O-bf} x (64.4 x h_{O-bf})$^{0.5}$ = 0.062 cfs

Dewatering Time = V_{bf} / Q_F = 10004 / 0.099 = 28.01 hr

100 Year Outflow:

$Q_{allowable}$ = 0.22 cfs

$h_{0-100yr}$ = 5.00 ft

Q_F = c x A_{O-F} x (2 x 32.2 x $h_{0-100yr}$)$^{0.5}$ c = 0.62

Q_F = 0.060 cfs

$h_{O-100yr}$ = 4.03 ft

Q_{bf} = c x A_{O-bf} x (2 x 32.2 x $h_{O-100yr}$)$^{0.5}$ c = 0.62

Q_{bf} = 0.108 cfs

Q_{100} = $Q_{allowable}$-Q_F-Q_{bf} = 0.051 cfs

$h_{bf-100yr}$ = 2.06 ft Use 2/3h = 1.37 ft

A_{bf-100} = Q_{100} / (0.62(64.4 x $h_{bf-100yr}$)$^{0.5}$) = 0.051 / (0.62(64.4 x $h_{bf-100yr}$)$^{0.5}$) = 0.009 ft^2

Use 1 - 1" hole at bankfull flush elevation A_{bf-100} = 0.0054 ft^2

Q_{100} = c x A_{bf-100} x (64.4 x $h_{bf-100yr}$)$^{0.5}$ = 0.031 cfs

Q_{total} = Q_{100}+Q_F+Q_{bf} = 0.20 cfs < 0.22 cfs

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DETENTION CALCULATIONS

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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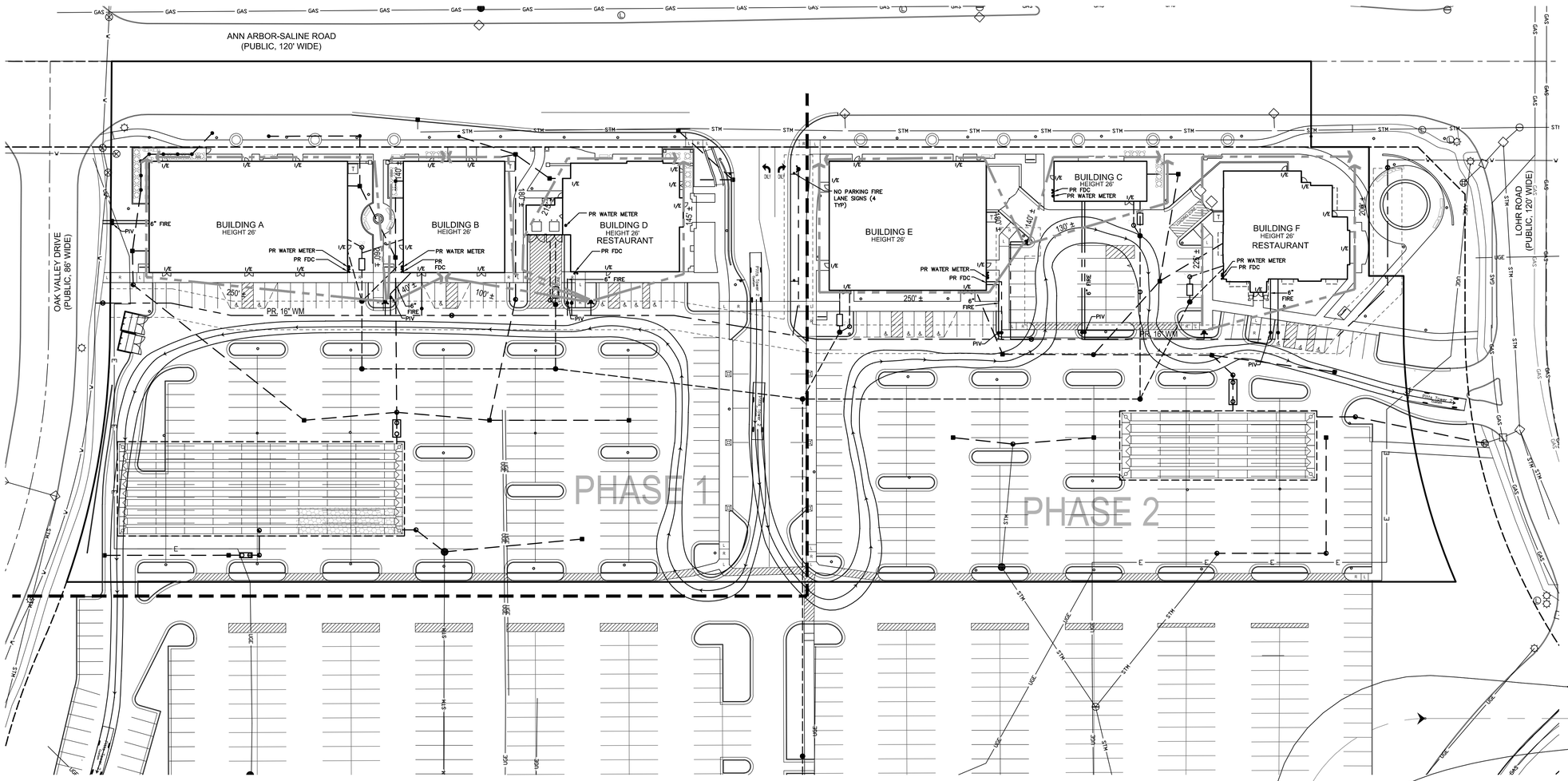

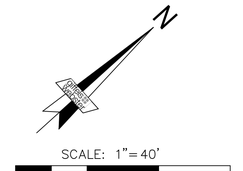

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Developed For:

VERSA DEVELOPMENT

25900 W. 11 MILE ROAD
SUITE 250
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(248) 416-1985

FIRE PROTECTION PLAN

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
Scale:	1" = 40'
Sheet:	43
Project:	18270.00

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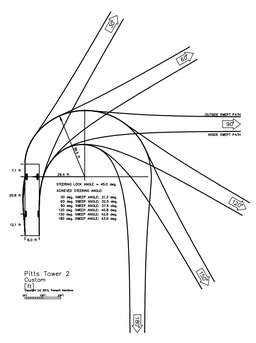
NOTES:

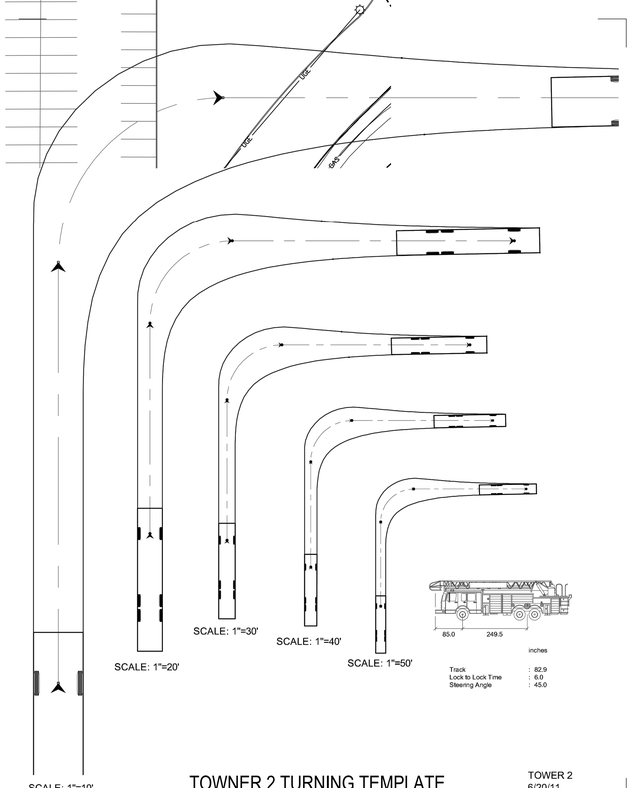
1. BOTH SIDES OF BUILDING MUST BE ADDRESSED (PARKING LOT & ANN ARBOR-SALINE ROAD SIDES)
2. FINAL BUILDING USES WILL BE DETERMINED ONCE TENANT LINEUPS ARE FINALIZED
3. GAS & ELECTRIC FRANCHISED UTILITIES WILL BE ADDED TO THE PLANS ONCE RECEIVED FROM UTILITY COMPANIES AND WILL BE SHOWN ON THE ASBUILTS
4. EACH TENANT WILL HAVE KNOX BOX

LEGEND

I/E	POINTS OF INGRESS/EGRESS
	FIRE LANE – NO STANDING SIGN



PITTS TOWER 2 TURNING TEMPLATE
(AUTOTURN DATA)



TOWNER 2 TURNING TEMPLATE

TOWER 2
6/20/11

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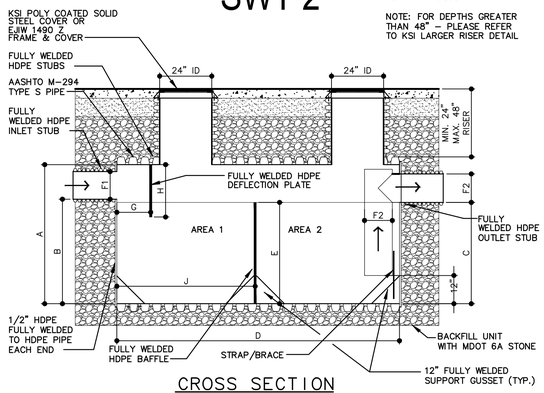
STORM WATER TREATMENT CHAMBER
KSI SERIES 350 HDPE CHAMBER

SWT 2

NOTE: INSTALL UNIT PER ASTM D2321

NOTE: FOR DEPTHS GREATER THAN 48" – PLEASE REFER TO KSI LARGER RISER DETAIL



CROSS SECTION

STORM WATER TREATMENT CHAMBER DIMENSIONS AND CAPACITIES

MODEL NO.	A	B	C	D	E	F1	F2	G	H	J	AREA 1	AREA 2
350-36-12	36"	21"	20"	105"	20"	12"	12"	12"	20"	52"	17.8 CF	30 CF
~~350-36-15~~	~~36"~~	~~18"~~	~~17"~~	~~131"~~	~~17"~~	~~15"~~	~~15"~~	~~12"~~	~~21"~~	~~65"~~	~~17.8 CF~~	~~40 CF~~

DESIGN BY: AG / RK	REV: 12-19-12 DATE: 10-10-08	1 OF 1	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. SERIES 350 SWTC v12.19.12			

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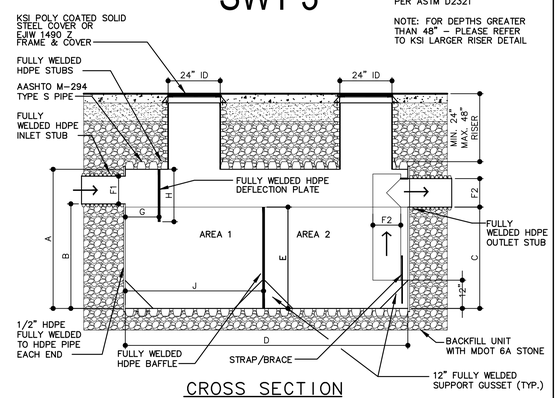
2111 Sage Lake Road
Prescott, MI 48756
Ph: 800-699-4046
Fx: 248-375-8144

STORM WATER TREATMENT CHAMBER
KSI SERIES 1250 HDPE CHAMBER

SWT 3

NOTE: INSTALL UNIT PER ASTM D2321

NOTE: FOR DEPTHS GREATER THAN 48" – PLEASE REFER TO KSI LARGER RISER DETAIL



CROSS SECTION

STORM WATER TREATMENT CHAMBER DIMENSIONS AND CAPACITIES

MODEL NO.	A	B	C	D	E	F1	F2	G	H	J	AREA 1	AREA 2
~~1250-48-12~~	~~48"~~	~~33"~~	~~32"~~	~~165"~~	~~32"~~	~~12"~~	~~12"~~	~~12"~~	~~20"~~	~~83"~~	~~61.1 CF~~	~~149 CF~~
~~1250-48-15~~	~~48"~~	~~36"~~	~~29"~~	~~195"~~	~~29"~~	~~15"~~	~~15"~~	~~12"~~	~~21"~~	~~93"~~	~~61.1 CF~~	~~165 CF~~
1250-48-18	48"	27"	26"	211"	26"	18"	18"	12"	24"	106"	61.1 CF	187 CF
~~1250-48-21~~	~~48"~~	~~24"~~	~~23"~~	~~247"~~	~~23"~~	~~21"~~	~~21"~~	~~12"~~	~~27"~~	~~124"~~	~~61.1 CF~~	~~217 CF~~
~~1250-48-24~~	~~48"~~	~~21"~~	~~20"~~	~~296"~~	~~20"~~	~~24"~~	~~24"~~	~~12"~~	~~30"~~	~~148"~~	~~61.1 CF~~	~~260 CF~~
~~1250-60-21~~	~~60"~~	~~36"~~	~~35"~~	~~124"~~	~~35"~~	~~21"~~	~~21"~~	~~12"~~	~~27"~~	~~62"~~	~~61.1 CF~~	~~160 CF~~
~~1250-60-24~~	~~60"~~	~~33"~~	~~32"~~	~~130"~~	~~32"~~	~~24"~~	~~24"~~	~~12"~~	~~30"~~	~~69"~~	~~61.1 CF~~	~~184 CF~~

DESIGN BY: AG / RK	REV: 12-19-12 DATE: 10-10-08	1 OF 1	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. SERIES 1250 SWTC v12.19.12			

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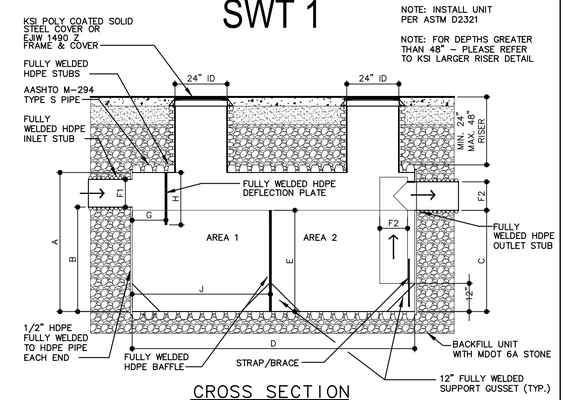
STORM WATER TREATMENT CHAMBER
KSI SERIES 1500 HDPE CHAMBER

SWT 1

NOTE: INSTALL UNIT PER ASTM D2321

NOTE: FOR DEPTHS GREATER THAN 48" – PLEASE REFER TO KSI LARGER RISER DETAIL



CROSS SECTION

STORM WATER TREATMENT CHAMBER DIMENSIONS AND CAPACITIES

MODEL NO.	A	B	C	D	E	F1	F2	G	H	J	AREA 1	AREA 2
~~1500-48-12~~	~~48"~~	~~33"~~	~~32"~~	~~214"~~	~~32"~~	~~12"~~	~~12"~~	~~20"~~	~~107"~~	~~79.1 CF~~	~~116 CF~~
~~1500-48-15~~	~~48"~~	~~36"~~	~~29"~~	~~240"~~	~~29"~~	~~15"~~	~~15"~~	~~12"~~	~~21"~~	~~120"~~	~~79.1 CF~~	~~130 CF~~
1500-48-18	48"	27"	26"	274"	26"	18"	18"	12"	24"	137"	79.1 CF	167 CF
~~1500-48-21~~	~~48"~~	~~24"~~	~~23"~~	~~320"~~	~~23"~~	~~21"~~	~~21"~~	~~12"~~	~~27"~~	~~160"~~	~~79.1 CF~~	~~207 CF~~
~~1500-60-15~~	~~60"~~	~~42"~~	~~41"~~	~~133"~~	~~41"~~	~~15"~~	~~15"~~	~~12"~~	~~21"~~	~~67"~~	~~79.1 CF~~	~~111 CF~~
1500-60-18	60"	39"	38"	145"	38"	18"	18"	12"	24"	73"	79.1 CF	125 CF
~~1500-60-21~~	~~60"~~	~~36"~~	~~35"~~	~~160"~~	~~35"~~	~~21"~~	~~21"~~	~~12"~~	~~27"~~	~~80"~~	~~79.1 CF~~	~~144 CF~~
~~1500-60-24~~	~~60"~~	~~33"~~	~~32"~~	~~179"~~	~~32"~~	~~24"~~	~~24"~~	~~12"~~	~~30"~~	~~90"~~	~~79.1 CF~~	~~166 CF~~

DESIGN BY: AG / RK	REV: 12-19-12 DATE: 10-10-08	1 OF 1	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. SERIES 1500 SWTC v12.19.12			

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STORM WATER TREATMENT CHAMBER
INSTALLATION AND MAINTENANCE GUIDELINES

INSTALLATION GUIDELINES

1. EXCAVATE AREA FOR KSI SWTC AND PREPARE TRENCH BOTTOM PER ASTM D2321, SECTIONS 6 & 7.

2. THE KSI SWTC SHALL BE INSTALLED ON A BED OF NO LESS THAN 12" CLASS I, II OR III BEDDING MATERIALS COMPACTED TO 95% PROCTOR DENSITY. MDOT 6A IS RECOMMENDED.

3. INSTALL KSI SWTC UNIT, HIGH FLOW BYPASS LINE (IF APPLICABLE), DIVERSION STRUCTURE AND EXITING STRUCTURE AT ELEVATIONS INDICATED ON SITE PLAN. COUPLE INLET AND OUTLET STUBS WITH APPROPRIATE PIPE COUPLINGS, FERNCOS OR HDPE SPLIT COUPLERS TO CONVEYANCE PIPE.

4. BACKFILL UNIT WITH CLASS I, II OR III MATERIALS PER ASTM D 2321. CLASS I MATERIAL IS RECOMMENDED. BACKFILL SHALL BE COMPACTED TO 95% PROCTOR DENSITY. MDOT 6A IS RECOMMENDED.

5. THE HDPE ACCESS RISERS SHALL BE FIELD CUT TO FINISH GRADE BY THE CONTRACTOR. SEE RISER INSTALLATION OPTIONS PAGE.

6. KSI RECOMMENDS FILLING THE UNIT WITH WATER UPON COMPLETION OF INSTALLATION UP TO THE BAFFLE HEIGHT.

MAINTENANCE GUIDELINES

1. ALL STORM WATER TREATMENT CHAMBERS WILL REQUIRE PERIODIC MAINTENANCE DEPENDING ON SPECIFIC SITE CONDITIONS.

2. KSI RECCOMMENDS CLEANING THE SWTC QUARTERLY AND AFTER HEAVY RAIN STORMS. SEDIMENT IS EASIER TO REMOVE WHEN IT IS REMOVED ON A REGULAR BASIS.

3. DISPOSAL OF MATERIAL FROM THE KSI SWTC ARE SIMILAR TO THAT OF ANY OTHER BEST MANAGEMENT PRACTICES (BMP). LOCAL GUIDELINES SHOULD BE CONSULTED PRIOR TO DISPOSAL OF THE SWTC CONTENTS. PETROLEUM WASTE PRODUCTS SHOULD BE REMOVED BY A LICENSED WASTE MANAGEMENT COMPANY.

4. IF A HYDROCARBON REMOVAL SYSTEM WAS INSTALLED – REPLACE IT WHEN IT TURNS BLACK. UNIT CAN BE DISPOSED OF VIA NORMAL REFUSE REMOVAL. SPENT UNIT DOES NOT LEACH CAPTURED CONTAMINATES.

WHITE = NEW
GREY = WORKING
BLACK = SPENT – NEEDS REPLACEMENT – CONTACT KSI FOR REPLACEMENT PARTS

5. AFTER CLEANING THE UNIT –KSI RECCOMMENDS REFILLING THE UNIT WITH WATER

DESIGN BY: AG / RK	REV: 12-19-12 DATE: 4-17-08	1 OF 1	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. SWTC INSTALL & MAINT.			

KENNEDY SOLUTIONS, INC.
2111 Sage Lake Road
Prescott, MI 48756
Ph: 800-699-4046
Fx: 248-375-8144

STORM WATER TREATMENT CHAMBER

NOTES:

1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I, II OR III MATERIAL AS DEFINED IN ASTM D2321, LATEST EDITION; AS AN ALTERNATIVE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC AND OR A GEOGRID.

2. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 12" FOR 36"–120" DIA. SWTC.

3. HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

4. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MIN. TRENCH WIDTHS ARE AS FOLLOWS

NOMINAL I.D.	NOMINAL O.D.	MINIMUM RECOMM. TRENCH WIDTH
36"	42"	90"
48"	54"	102"
60"	66"	114"
72"	80.5"	129"
96"	105.9"	154"
120"	131.3"	190"

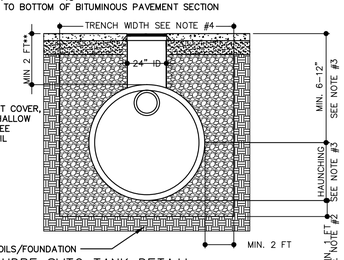
5. MINIMUM COVER: MINIMUM RECOMMENDED COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE AS SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWIESE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF THE SWTC TANK TO THE GROUND SURFACE.

SURFACE LIVE LOAD	MIN. RECOMMENDED COVER
HS-25/H25 (FLEXIBLE PAVEMENT)	12" FOR 36" TO 48" DIA. SWTC & 24" FOR 60"–120" DIA. SWTC*
HS-25/H25 (RIGID PAVEMENT)	12" FOR 36" TO 48" DIA. SWTC & 24" FOR 60"–120" DIA. SWTC
E80 RAILWAY	24"
HEAVY CONSTRUCTION	48"

*TOP OF SWTC TANK TO BOTTOM OF BITUMINOUS PAVEMENT SECTION

NOTE: ALSO SEE RISER INSTALLATION OPTIONS PAGE

**NOTE:
FOR INSTALLATIONS WITH LESS THAN 2 FT COVER, CONTACT KSI FOR SHALLOW BURY ASSISTANCE. SEE SHALLOW BURY DETAIL



HDPE SWTC TANK DETAIL
SCALE: NONE

DESIGN BY: AG / RK	REV: 12-19-12 DATE: 4-13-09	1 OF 1	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. SWTC INSTALLATION DETAIL			

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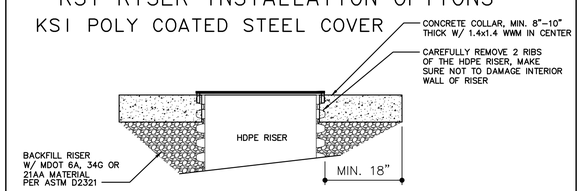
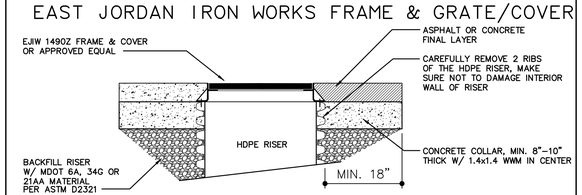
KSI RISER INSTALLATION OPTIONS

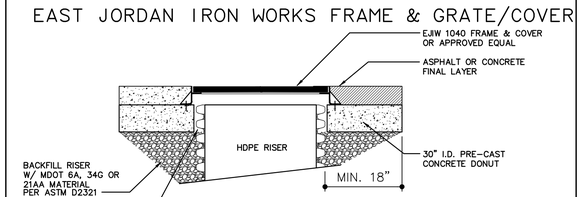
KSI POLY COATED STEEL COVER



EAST JORDAN IRON WORKS FRAME & GRATE/COVER



EAST JORDAN IRON WORKS FRAME & GRATE/COVER



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MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. RISER INSTALLATION			

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MANUFACTURED PRETREATMENT STRUCTION - KSI SYSTEM OR APPROVED EQUAL

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Suite 100
Birmingham, MI 48009
p (248) 852-3100
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Executive:	M.P.
Manager:	J.K.A.
Designer:	N.M.T.
Quality Control:	
Section:	7
	T-3-S R-6-E

Professional Seal:

DATE:	ISSUE:
12.14.2012	SUBMIT SITE PLAN
04.25.2013	RESUBMIT SITE PLAN
06.21.2013	RESUBMIT SITE PLAN
08.15.2013	RESUBMIT SITE PLAN
09.18.2013	SUBMIT FINAL SITE PLAN
09.23.2013	SUBMIT FOR WCRC AND WCWRC APPROVAL
10.17.2013	SUBMIT FOR FINAL SITE PLAN APPROVAL
11.12.2013	SUBMIT TO WCWRC FOR FINAL APPROVAL
11.21.2013	FINAL SITE PLAN SUBMITTAL
01.13.2014	WCRC RESUBMITTAL
01.27.2014	WCRC RESUBMITTAL
01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

Developed For:

VERSA DEVELOPMENT

25900 W. 11 MILE ROAD
SUITE 250
SOUTHFIELD, MI 48034
(248) 416-1985

PRETREATMENT STRUCTURE DETAILS

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
Scale:	NA
Sheet:	44
Project:	18270.00

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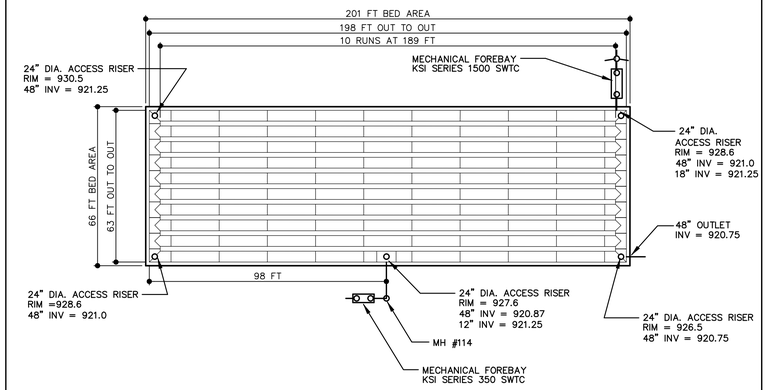
SYSTEM CAPACITY
48" DIA. = 12.56 CF/FT
(10 RUNS X 189) + (2 X 63) = 2016 FT
2016 FT X 12.56 CF/FT = 25,320 CF OF STORAGE PROVIDED

INSTALL SYSTEM PER ASTM D2321 CLASS I OR II MATERIAL– COMPACT TO 95% MODIFIED PROCTOR IN 8" LIFTS



48" HDPE SOLID UNDERGROUND DETENTION SYSTEM

NO SCALE

SEE INSTALLATION NOTE ON PAGE 2

NOTE:
HDPE PIPE MANUFACTURERED
PER ASSHTO M294, TYPE S, LATEST EDITION
UNDERGROUND DETENTION SYSTEM DISTRIBUTED BY
KENNEDY SOLUTIONS INC. 800–699–4046

DESIGN BY: AG / RK	REV: DATE: 9–20–13	1 OF 3	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. 48 UGDS v1			

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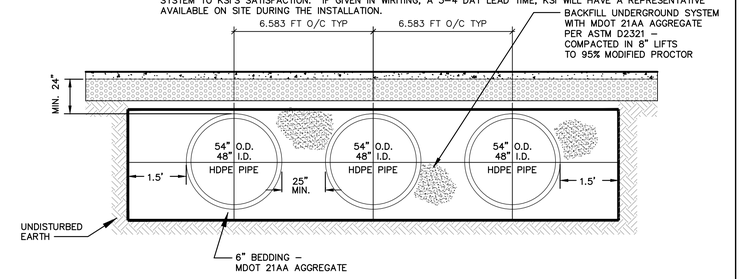
2111 Sage Lake Road
Prescott, MI 48756
Ph: 800–699–4046
Fx: 248–375–8144

INSTALLATION NOTE:
HDPE UNDERGROUND DETENTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321. CARE SHOULD BE EXERCISED WITH CONSTRUCTION EQUIPMENT DURING INSTALLATION TO PROTECT THE SYSTEM FROM DAMAGE DUE TO POINT AND IMPACT LOADING. USE A LARGE EXCAVATOR TO PLACE STONE BETWEEN AND ABOVE THE PIPE IS PREFERRABLE. COMPACTION OF THE 21AA STONE IN 8 INCH LIFTS TO 6 INCHES ABOVE PIPE. USE A VIBRATORY COMPACTOR, NOT A HOE PACK.
PLACE THE REMAINING
21AA STONE USING A TRACKED PIECE OF EQUIPMENT (DOZER) OR CONTINUE USING THE LARGE EQUIP. DESCRIBED ABOVE. DO NOT USE RUBBER TIRED EQUIP.
ONCE THE SYSTEM IS INSTALLED, PLACE A ORANGE SAFETY FENCE 4–5 FT HIGH W/ TEE POST, AROUND THE SYSTEM. PLACE FENCE 5 FT BEYOND GRID FOOTPRINT. ANY DAMAGE TO THE SYSTEM AS A RESULT OF NOT FOLLOWING THESE INSTRUCTIONS AND THE BLUEPRINT DETAILS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR THE SYSTEM TO KSI'S SATISFACTION. IF GIVEN IN WRITING, A 3–4 DAY LEAD TIME, KSI WILL HAVE A REPRESENTATIVE AVAILABLE ON SITE DURING THE INSTALLATION.



NOTES:
1. HDPE PIPE & FITTINGS SHALL CONFORM TO AASHTO M–294, TYPE S, LATEST EDITION
2. INSTALL UNDERGROUND DETENTION SYSTEM IN ACCORDANCE WITH ASTM D 2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE OR SEWER AND OTHER GRAVITY FLOW APPLICATIONS"
3. MEASURES SHALL BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL.

TYPICAL CROSS SECTION FOR 48" HDPE SOLID UNDERGROUND DETENTION SYSTEM

NO SCALE

***DESIGN ENGINEER TO DETERMINE IF SITE CONDITIONS REQUIRE THE USE OF NON WOVEN FABRIC OR GEOGRID

NOTE:
HDPE PIPE MANUFACTURERED
PER ASSHTO M294, TYPE S, LATEST EDITION
UNDERGROUND DETENTION SYSTEM DISTRIBUTED BY
KENNEDY SOLUTIONS INC. 800–699–4046

DESIGN BY: AG / RK	REV: DATE: 9–20–13	2 OF 3	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. 48 UGDS CROSS SECTION v1			

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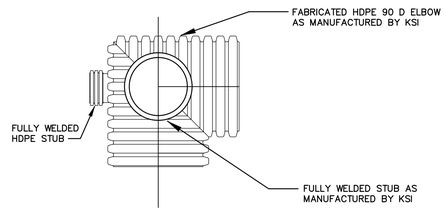
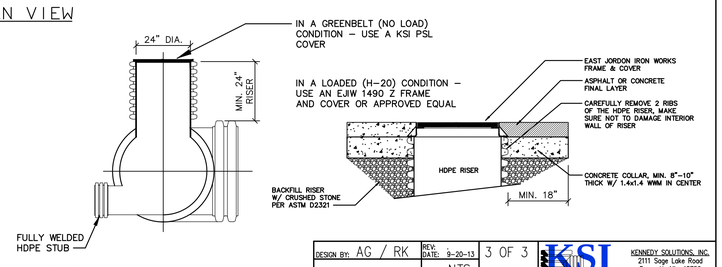
TYPICAL ACCESS RISER SECTION

24'' DIA. ACCESS MANHOLE IN HDPE ELBOW



PLAN VIEW



CROSS SECTION

DESIGN BY: AG / RK	REV: DATE: 9–20–13	3 OF 3	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. ACCESS RISER			

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Ph: 800–699–4046
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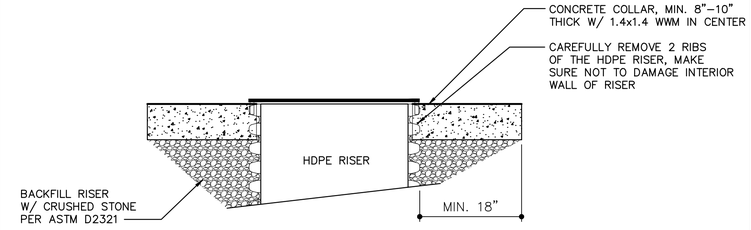
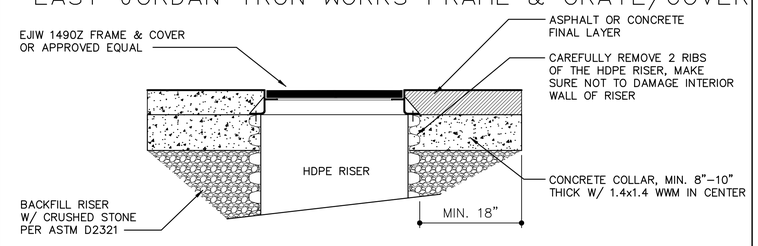
UNDERGROUND DETENTION DETAILS - KSI HDPE SYSTEM OR APPROVED EQUAL

KSI RISER INSTALLATION OPTIONS

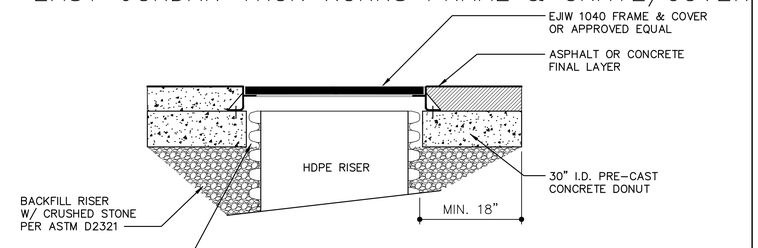
KSI POLY COATED STEEL COVER



EAST JORDAN IRON WORKS FRAME & GRATE/COVER



EAST JORDAN IRON WORKS FRAME & GRATE/COVER



DESIGN BY: AG / RK	REVISED: DATE: 8–29–07	1 OF 1	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. RISER INSTALLATION			

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Manager:	J.K.A.
Designer:	N.M.T.
Quality Control:	
Section:	7
	T-3-S R-6-E

Professional Seal:

DATE:	ISSUE:
12.14.2012	SUBMIT SITE PLAN
04.25.2013	RESUBMIT SITE PLAN
06.21.2013	RESUBMIT SITE PLAN
08.15.2013	RESUBMIT SITE PLAN
09.18.2013	SUBMIT FINAL SITE PLAN
09.23.2013	SUBMIT FOR WCRC AND WCWRC APPROVAL
10.17.2013	SUBMIT FOR FINAL SITE PLAN APPROVAL
11.12.2013	SUBMIT TO WCWRC FOR FINAL APPROVAL
11.21.2013	FINAL SITE PLAN SUBMITTAL
01.13.2014	WCRC RESUBMITTAL
01.27.2014	WCRC RESUBMITTAL
01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

Developed For:

VERSA DEVELOPMENT

25900 W. 11 MILE ROAD
SUITE 250
SOUTHFIELD, MI 48034
(248) 416-1985

UNDERGROUND DETENTION DETAILS - SOUTHWEST

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

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Scale:	NA
Sheet:	45
Project:	18270.00

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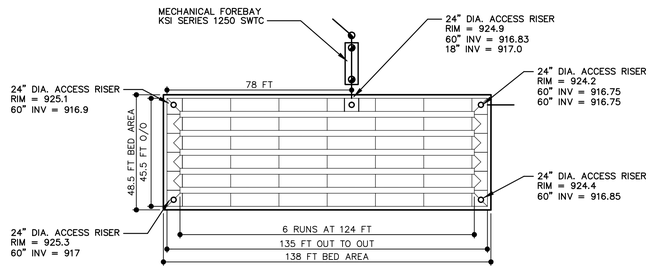
SYSTEM CAPACITY
60" DIA. = 19.63 CF/FT
(6 RUNS X 124) + (2 X 45.5) = 835 FT
835 FT X 19.63 CF/FT = 16,391 CF OF STORAGE PROVIDED

INSTALL SYSTEM PER
ASTM D2321
CLASS I OR II MATERIAL–
COMPACT TO 95% MODIFIED
PROCTOR IN 8" LIFTS



60" HDPE SOLID UNDERGROUND DETENTION SYSTEM
NO SCALE

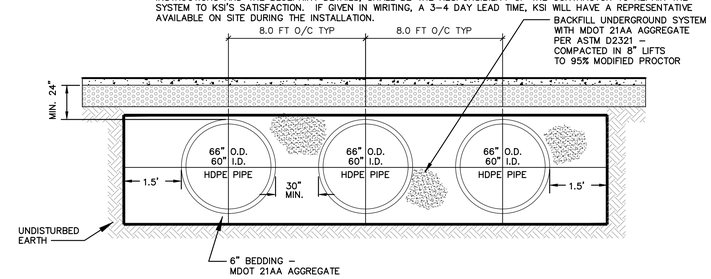
NOTE:
HDPE PIPE MANUFACTURERED
PER ASSHTO M294, TYPE S, LATEST EDITION
UNDERGROUND DETENTION SYSTEM DISTRIBUTED BY
KENNEDY SOLUTIONS INC. 800–699–4046

SEE INSTALLATION NOTE
ON PAGE 2

DESIGN BY: AG / RK	REV: DATE: 9–20–13	1 OF 3	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. 60 UGDS v1			

KENNEDY SOLUTIONS, INC.
2111 Sage Lake Road
Prescott, MI 48756
Ph: 800–699–4046
Fx: 248–375–8144

INSTALLATION NOTE:
HDPE UNDERGROUND DETENTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321.
CARE SHOULD BE EXERCISED WITH CONSTRUCTION EQUIPMENT DURING INSTALLATION TO PROTECT THE SYSTEM FROM DAMAGE DUE TO POINT AND IMPACT LOADING. USE A LARGE EXCAVATOR TO PLACE STONE BETWEEN AND ABOVE THE PIPE IS PREFERRABLE. COMPACTION OF THE 21AA STONE IN 8 INCH LIFTS TO 6 INCHES ABOVE PIPE. USE A VIBRATORY COMPACTOR, NOT A HOE PACK.
PLACE THE REMAINING
21AA STONE USING A TRACKED PIECE OF EQUIPMENT (DOZER) OR CONTINUE USING THE LARGE EQUIP. DESCRIBED ABOVE. DO NOT USE RUBBER TIRED EQUIP.
ONCE THE SYSTEM IS INSTALLED, PLACE A ORANGE SAFETY FENCE 4–5 FT HIGH W/ TEE POST, AROUND THE SYSTEM. PLACE FENCE 5 FT BEYOND GRID FOOTPRINT. ANY DAMAGE TO THE SYSTEM AS A RESULT OF NOT FOLLOWING THESE INSTRUCTIONS AND THE BLUEPRINT DETAILS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR THE SYSTEM TO KSI'S SATISFACTION. IF GIVEN IN WRITING, A 3–4 DAY LEAD TIME, KSI WILL HAVE A REPRESENTATIVE AVAILABLE ON SITE DURING THE INSTALLATION.



NOTES:
1. HDPE PIPE & FITTINGS SHALL CONFORM TO AASHTO M–294, TYPE S, LATEST EDITION
2. INSTALL UNDERGROUND DETENTION SYSTEM IN ACCORDANCE WITH ASTM D 2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE OR SEWER AND OTHER GRAVITY FLOW APPLICATIONS"
3. MEASURES SHALL BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL.

TYPICAL CROSS SECTION FOR 60" HDPE SOLID UNDERGROUND DETENTION SYSTEM
NO SCALE
***DESIGN ENGINEER TO DETERMINE IF SITE CONDITIONS REQUIRE THE USE OF NON WOVEN FABRIC OR GEOGRID

NOTE:
HDPE PIPE MANUFACTURERED
PER ASSHTO M294, TYPE S, LATEST EDITION
UNDERGROUND DETENTION SYSTEM DISTRIBUTED BY
KENNEDY SOLUTIONS INC. 800–699–4046

DESIGN BY: AG / RK	REV: DATE: 9–20–13	2 OF 3	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. 60 UGDS CROSS SECTION v1			

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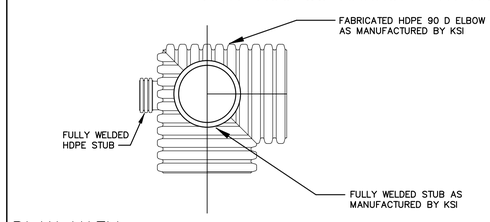
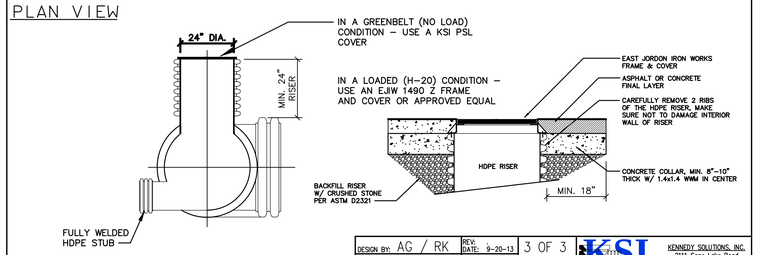
2111 Sage Lake Road
Prescott, MI 48756
Ph: 800–699–4046
Fx: 248–375–8144

TYPICAL ACCESS RISER SECTION

24'' DIA. ACCESS MANHOLE IN HDPE ELBOW



PLAN VIEW



CROSS SECTION

DESIGN BY: AG / RK	REV: DATE: 9–20–13	3 OF 3	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. ACCESS RISER			

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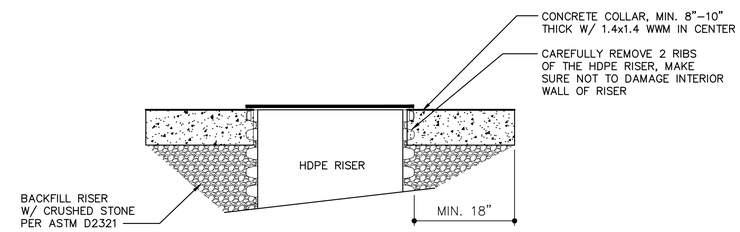
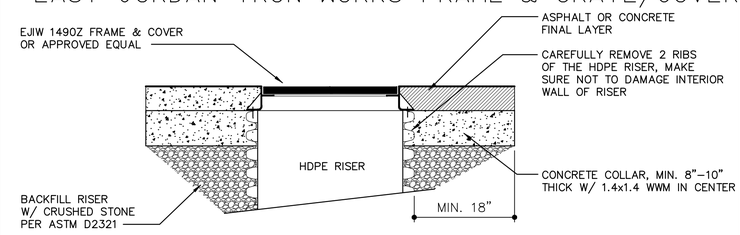
UNDERGROUND DETENTION DETAILS - KSI HDPE SYSTEM OR APPROVED EQUAL

KSI RISER INSTALLATION OPTIONS

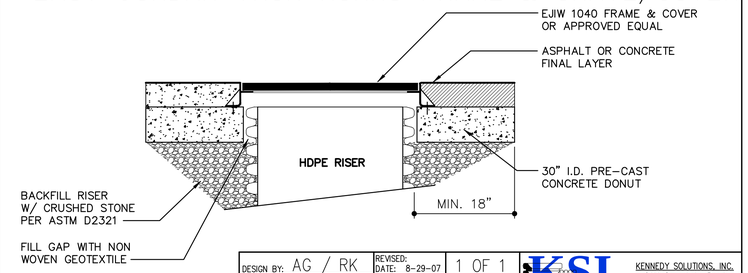
KSI POLY COATED STEEL COVER



EAST JORDAN IRON WORKS FRAME & GRATE/COVER



EAST JORDAN IRON WORKS FRAME & GRATE/COVER



DESIGN BY: AG / RK	REVISED: DATE: 8–29–07	1 OF 1	KSI
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. RISER INSTALLATION			

KENNEDY SOLUTIONS, INC.
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Prescott, MI 48756
Ph: 800–699–4046
Fx: 248–375–8144

giffels webster
Engineers
Surveyors
Planners
Landscape Architects
Environmental Specialists

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Suite 100
Birmingham, MI 48009
p (248) 852-3100
f (248) 852-6372
www.giffelswebster.com

Executive:	M.P.
Manager:	J.K.A.
Designer:	N.M.T.
Quality Control:	
Section:	7
	T-3-S R-6-E

Professional Seal:

DATE:	ISSUE:
12.14.2012	SUBMIT SITE PLAN
04.25.2013	RESUBMIT SITE PLAN
06.21.2013	RESUBMIT SITE PLAN
08.15.2013	RESUBMIT SITE PLAN
09.18.2013	SUBMIT FINAL SITE PLAN
09.23.2013	SUBMIT FOR WCRC AND WCWRC APPROVAL
10.17.2013	SUBMIT FOR FINAL SITE PLAN APPROVAL
11.12.2013	SUBMIT TO WCWRC FOR FINAL APPROVAL
11.21.2013	FINAL SITE PLAN SUBMITTAL
01.13.2014	WCRC RESUBMITTAL
01.27.2014	WCRC RESUBMITTAL
01.31.2014	FINAL SITE PLAN RESUBMITTAL WITH PHASE LINES

Developed For:

VERSA DEVELOPMENT

25900 W. 11 MILE ROAD
SUITE 250
SOUTHFIELD, MI 48034
(248) 416-1985

UNDERGROUND DETENTION DETAILS - NORTHEAST

VERSA PITTSFIELD

PITTSFIELD TOWNSHIP
WASHTENAW COUNTY
MICHIGAN

Date:	12.14.2012
Scale:	NA
Sheet:	46
Project:	18270.00

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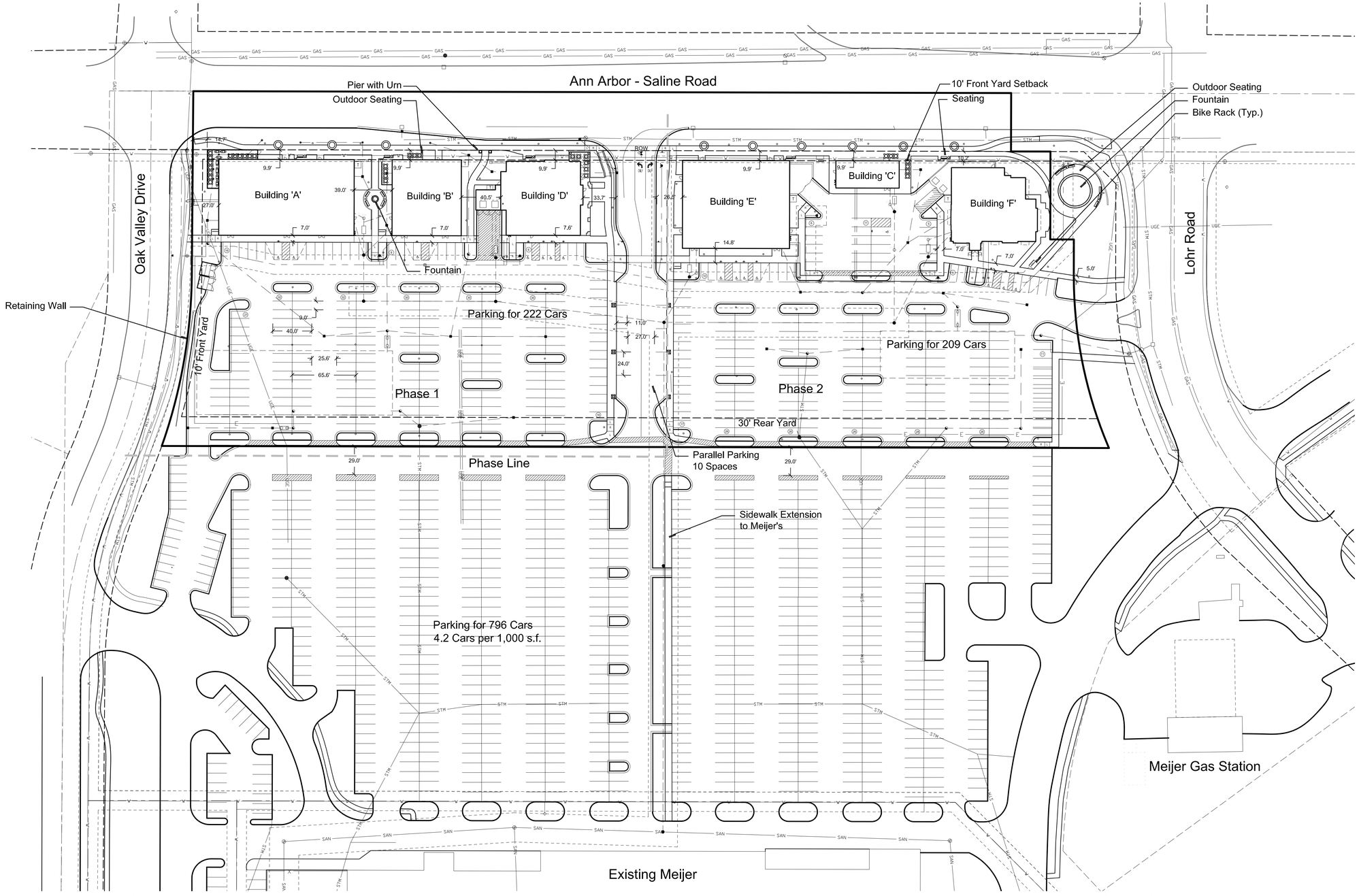
H:\18\18200\18270 Versa Pittsfield\Drawing Files\Engineering\44 Pretreatment Detention Details.dwg



Site Summary

Existing Zoning	FB (Form Based Zoning)	Building Frontage Length	807 l.f. (Excluding Access Drive)	Building Height	
Site Area	7.50 Acres	2 Story Frontage Required	565' (70% x 807)	Minimum Height	26'
Less ROW	1.16 Acres	2 Story Frontage Provided	478' (566' with 12'-15' Screen Walls)	Height Shown	23'
Net Site Area	6.34 Acres	3 Story Frontage Required	404' (50% x 807)		
		3 Story Frontage Provided	0	Parking	
Setbacks				Building Area	39,728 s.f.
Front Yard Setback Required	10' to the Building Line	Impervious Surface Allowed	5.7 s.f. (6.34 Ac x 90%)	Parking Required	TBD *
(Ann Arbor-Saline Road)		Pervious Area Provided	0.86 Acres	Parking Shown	441 Spaces
Front Yard Setback Provided	9.9' to Buildings A-E	Impervious Surface Provided	5.48 s.f. (6.34 - 0.86)	Parking Ratio	11.1 per 1,000 s.f. Gross
	12.7' to Building F				
	0' to Outdoor Seating	Landscape Area Required	1.27 Ac (6.34 ac x 20%)	Restaurant Parking Standards are Based on Number of Employees and	
		Open Space 0.86 Ac		Seating Capacity. These Quantities are not Known at this Time.	
Front Yard Setback Required	10' to the Building Line	Outdoor Seating 0.09 Ac			
(Oak Valley Drive)		Streetscape 0.06 Ac		Meijer	
Front Yard Setback Provided	27.0' to Building	Landscape Area Provided	1.01 Ac (15.9%)	Building Area	235,396 s.f.
	14.7' to Outdoor Seating	ROW Improvements 0.13 Ac		Parking Required	784 Spaces (1 per 300 s.f.)
Rear Yard Required	30'	Corner Fountain 0.16 Ac		Parking Provided	796 Spaces
Rear Yard Provided	196'	Landscape Area Provided	1.30 Ac (20.5%)		
Side Yard Required	0'	With Off-Site Ammenities			
Side Yard Provided	NA				

ULI-Shared Parking Standards

Scenario A - Peak Hour	Parking Spaces Required	Area	Visitor	Employee
2 Community Shopping Center (Retail)	65.48	16,372	3.20	0.80
3 Fine / Casual Dining	432.19	21,396	17.00	3.20
1 Fast Food (Coffee)	27.44	1,960	12.00	2.00
Total Parking	525.11	39728		

Scenario B - Peak Hour	Parking Spaces Required	Area	Area	Area
5 Fine / Casual Dining	645.37	37,768	37,768	37,768
1 Fast Food (Coffee)	21.6	1960	1960	1960
Total Parking	666.97	39728	39728	39728

Parking based on Weekend Standards per 1,000 s.f. Gross Leasable Area

Peak Hours (100% Capacity)	
Fine / Causal Dining	8:00 PM
Fast Food (Coffee)	Noon and 1:00 PM
Community Shopping Center (Retail)	2:00 and 3:00 PM

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LAND PLANNING / LANDSCAPE ARCHITECTURE
557 CARPENTER • NORTHVILLE, MI 48167
248 467 4668 • Fax 248 349 0559
Email: jca@wideopenwest.com

Versa | real estate

Seal:

STATE OF MICHIGAN
JAMES C. ALLEN
Landscape Architect
No. 1301
REGISTERED LANDSCAPE ARCHITECT

Title:

Site Plan

Project:

Pittsfield Commercial
Pittsfield Township, Michigan

Prepared for:

Versa Development
25900 West 11 Mile, Suite 250
Southfield, Michigan 48034

Revision:	Issued:
Submission	December 14, 2012
Resubmit Site Plan	April 25, 2013
Revised	August 15, 2013
Revised	September 26, 2013
Revised	October 17, 2013
Revised	November 22, 2013
Revised	January 30, 2014

Job Number:

12-028

Drawn By: jca

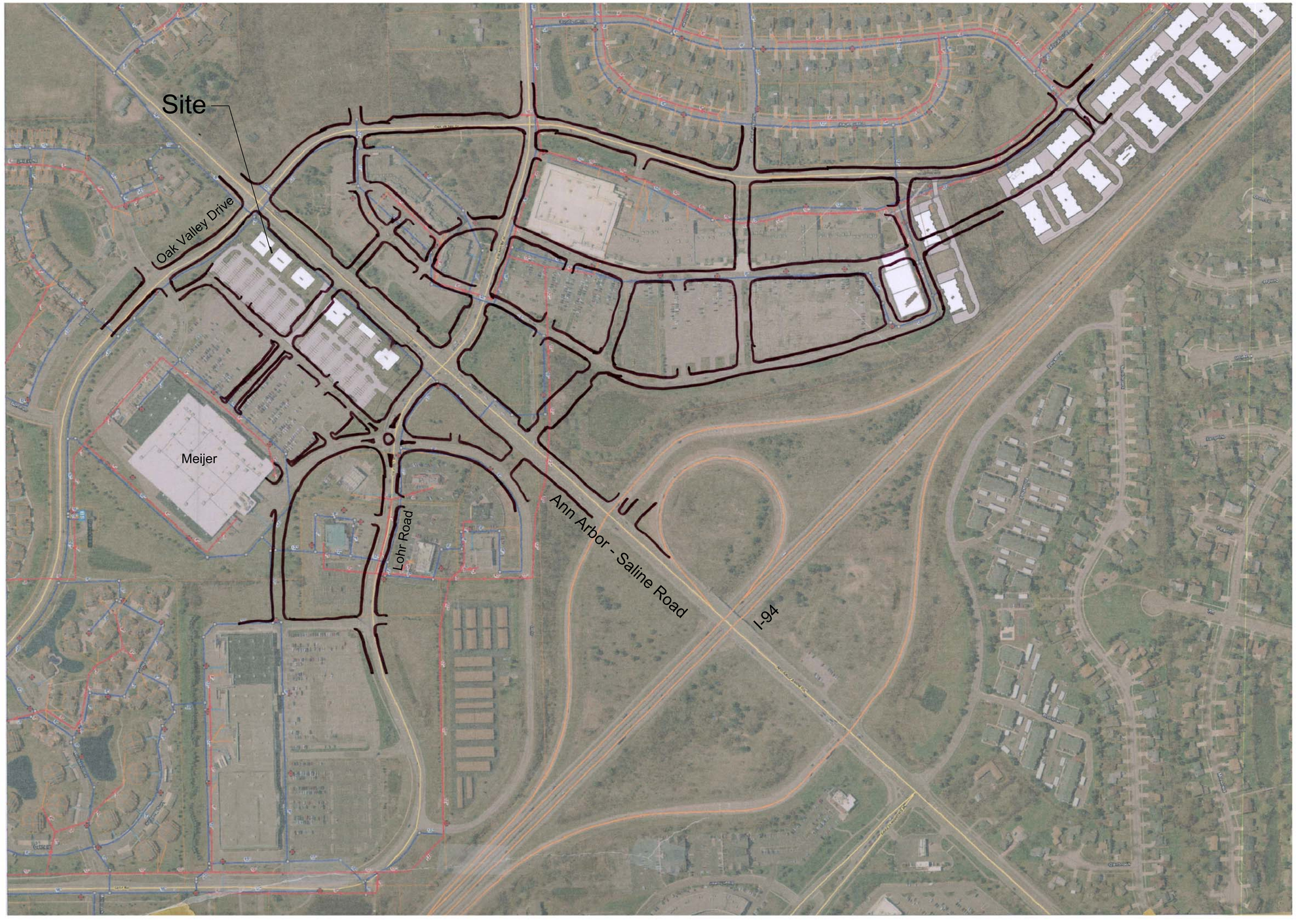
Checked By: jca

0' 25' 50'

NORTH
1"=50'

Sheet No.

47-SP-1



Plan Courtesy of Pittsfield Charter Township Planning Department

ALLEN DESIGN
LAND PLANNING / LANDSCAPE ARCHITECTURE
557 CARPENTER • NORTHVILLE, MI 48167
248 467 4668 • Fax 248 349 0559
Email: jca@wideopenwest.com

Versa | real estate

Seal:

Title:
Context Plan

Project:
Pittsfield Commercial
Pittsfield Township, Michigan

Prepared for:
Versa Development
25900 West 11 Mile, Suite 250
Southfield, Michigan 48034

Revision:	Issued:
Submission	December 14, 2012
Resubmit Site Plan	April 25, 2013
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Revised	September 26, 2013
Revised	October 17, 2013
Revised	November 22, 2013
Revised	January 30, 2014

Job Number:
12-028

Drawn By:	Checked By:
jca	jca

0' 50' 100' 200'

NORTH
1"=200'

Sheet No.
48-SP-2

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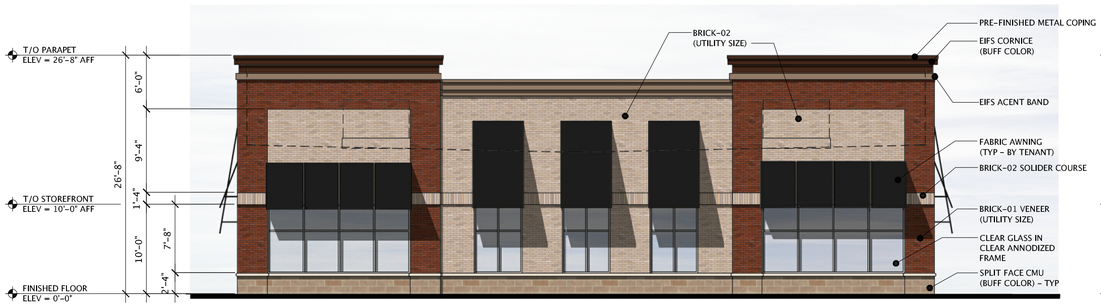
1 EAST ELEVATION - BUILDING A (PARKING LOT)

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



2 SOUTH ELEVATION - BUILDING A (OAK VALLEY DRIVE)

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

3 NORTH ELEVATION - BUILDING A (COURTYARD)

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

ROOF MOUNTED EQUIPTMENT NOTE:
ALL ROOF MOUNTED EQUIPTMENT SHALL BE SCREEN BY PARAPET AS REQUIRED

4 WEST ELEVATION - BUILDING A (ANN ARBOR-SALINE ROAD)

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

NORR

CONSULTANT:

Giffels-Webster Engineers, Inc.
ENGINEERS · LAND SURVEYORS
PLANNERS–LANDSCAPE ARCHITECTS
2871 BOND STREET
ROCHESTER HILLS, MI 48309
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FAX (248) 852-6372

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DATE	ISSUED FOR	REV
11/08/2012	OWNER REVIEW	
12/14/2012	SITE PLAN SUBMITTAL	
04/25/2012	RE-SUBMITTAL SITE PLAN	
06/21/2013	RE-SUBMITTAL SITE PLAN	
08/20/2013	TENANT COORDINATION	
01/30/2014	RE-SUBMITTAL SITE PLAN	

Project Manager A.RICCIUTI	Drawn B.COLBURN
Project Leader B.COLBURN	Checked
Date 06/21/2013	Dept Mgr Approval

Client

VERSA DEVELOPMENT
25900 W. 11 Mile Road
Southfield, MI - Sutie 250 48034
Office: (248) 996-1412

Contact: Steve Robinson

Project

PITTSFIELD DEVELOPMENT
Ann Arbor-Saline Road
Pittsfield Township, Michigan

Drawing Title

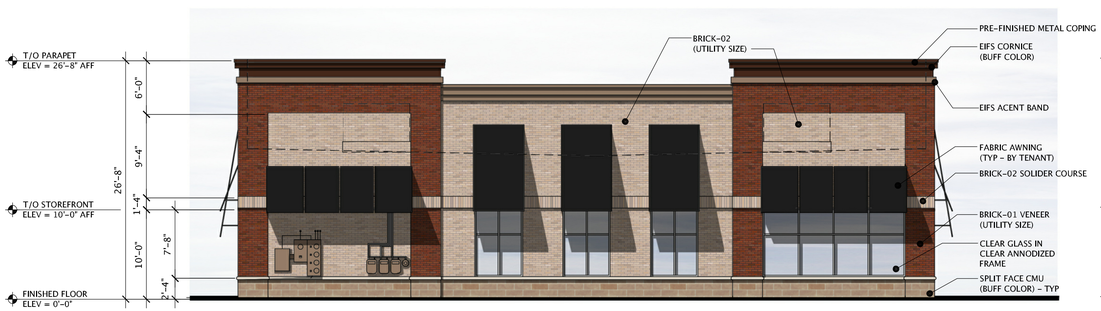
EXTERIOR ELEVATIONS
BUILDING 'A'

DO NOT SCALE DRAWING

Project No.	Drawing No.
JCDT.12.0314	49-SP3

1 EAST ELEVATION - BUILDING B (PARKING LOT)

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



2 SOUTH ELEVATION - BUILDING B (COURTYARD)

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

3 NORTH ELEVATION - BUILDING B

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

ROOF MOUNTED EQUIPTMENT NOTE:
ALL ROOF MOUNTED EQUIPTMENT SHALL BE SCREEN BY PARAPET AS REQUIRED

4 WEST ELEVATION - BUILDING B (ANN ARBOR-SALINE ROAD)

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

NORR

CONSULTANT:

Giffels-Webster Engineers, Inc.
ENGINEERS · LAND SURVEYORS
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04/25/2012	RE-SUBMITTAL SITE PLAN	
06/21/2013	RE-SUBMITTAL SITE PLAN	
08/20/2013	TENANT COORDINATION	
01/30/2014	RE-SUBMITTAL SITE PLAN	

Project Manager A.RICCIUTI	Drawn B.COLBURN
Project Leader B.COLBURN	Checked
Date 06/21/2013	Dept Mgr Approval

Client

VERSA DEVELOPMENT

25900 W. 11 Mile Road
Southfield, MI - Sutie 250 48034
Office: (248) 996-1412

Contact: Steve Robinson

Project

PITTSFIELD DEVELOPMENT
Ann Arbor-Saline Road
Pittsfield Township, Michigan

Drawing Title

EXTERIOR ELEVATIONS
BUILDING 'B'

DO NOT SCALE DRAWING

Project No.	Drawing No.
JCDT.12.0314	50-SP4

1 SOUTH ELEVATION - BUILDING C (PARKING LOT)

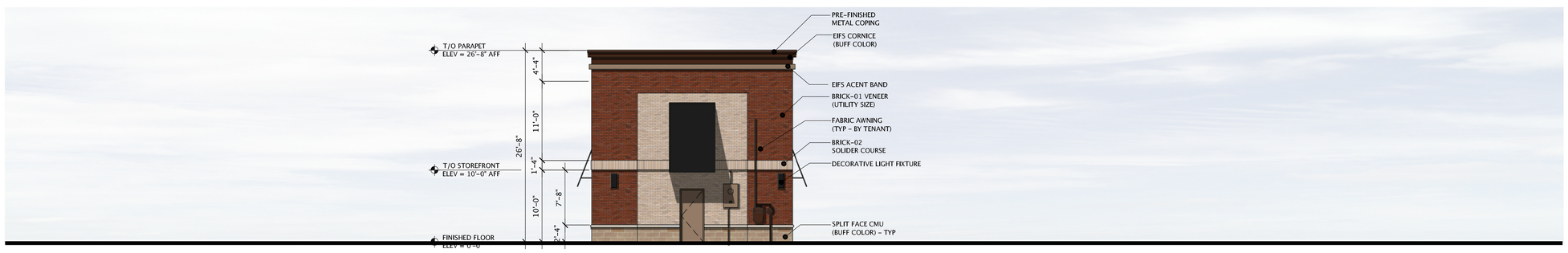
Scale: 1/8" = 1'-0"

2 NORTH ELEVATION - BUILDING C

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

3 EAST ELEVATION - BUILDING C (ANN ARBOR-SALINE)

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



4 WEST ELEVATION - BUILDING C

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

NORR

CONSULTANT:

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Project Manager A.RICCIUTI	Drawn B.COLBURN
Project Leader B.COLBURN	Checked
Date 06/21/2013	Dept Mgr Approval

Client

VERSA DEVELOPMENT
25900 W. 11 Mile Road
Southfield, MI - Sutie 250 48034
Office: (248) 996-1412

Contact: Steve Robinson

Project

PITTSFIELD DEVELOPMENT
Ann Arbor-Saline Road
Pittsfield Township, Michigan

Drawing Title

EXTERIOR ELEVATIONS
BUILDING 'C'

DO NOT SCALE DRAWING

Project No.	Drawing No.
JCDT.12.0314	51-SP5

1 EAST ELEVATION - BUILDING E (PARKING LOT)

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

2 NORTH ELEVATION - BUILDING E

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

ROOF MOUNTED EQUIPTMENT NOTE:

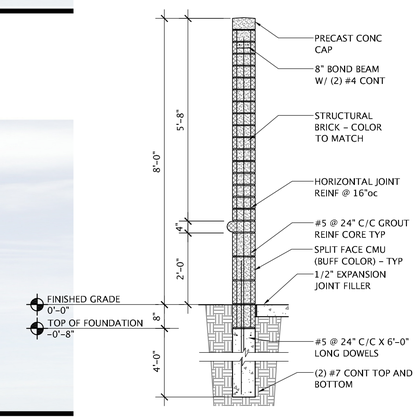
ALL ROOF MOUNTED EQUIPTMENT SHALL BE SCREEN BY PARAPET AS REQUIRED

3 SOUTH ELEVATION - BUILDING E (ACCESS DRIVE)

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

4 WEST ELEVATION - BUILDING E ANN ARBOR SALINE RD

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



SCREEN WALL SECTION

SCALE: 1/2" = 1'-0"

NORR

CONSULTANT:

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Giffels-Webster Engineers, Inc.
ENGINEERS · LAND SURVEYORS
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ROCHESTER HILLS, MI 48309
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08/20/2013	TENANT COORDINATION	
01/30/2014	RE-SUBMITTAL SITE PLAN	

Project Manager	Drawn
A.RICCIUTI	B.COLBURN
Project Leader	**Checked**
B.COLBURN	
Date	**Dept Mgr Approval**
06/21/2013	

Client

VERSA DEVELOPMENT

25900 W. 11 Mile Road
Southfield, MI - Sutie 250 48034
Office: (248) 996-1412

Contact: Steve Robinson

Project

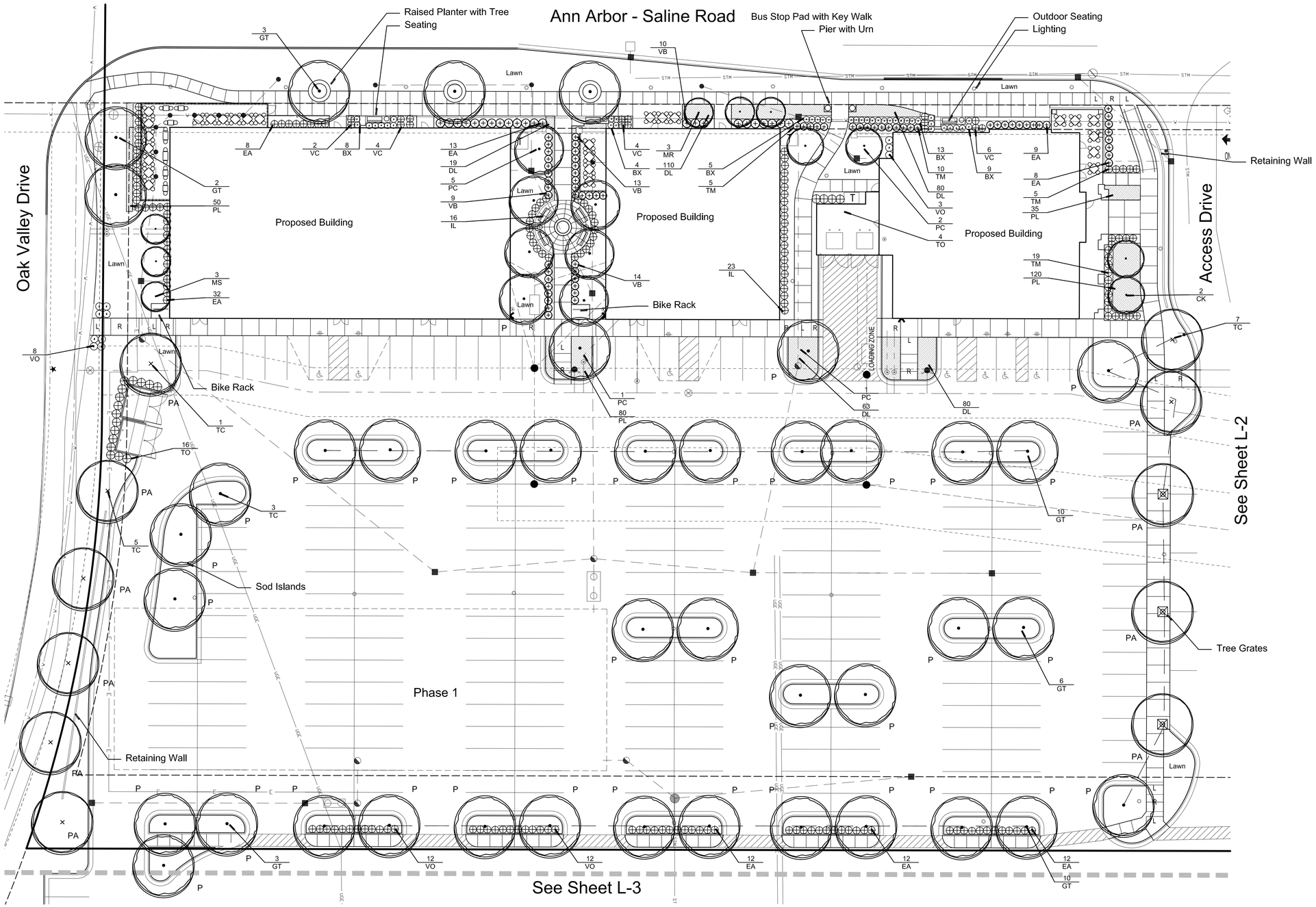
PITTSFIELD DEVELOPMENT
Ann Arbor-Saline Road
Pittsfield Township, Michigan

Drawing Title

EXTERIOR ELEVATIONS
BUILDING 'E'

DO NOT SCALE DRAWING

Project No.	Drawing No.
JCDT.12.0314	52-SP6



Landscape Summary

Interior Parking Lot Landscape	
Parking Lot Area	147,650 s.f.
Interior Landscape Required	14,765 s.f. (147,650 s.f. x 10%)
Interior Landscape Provided	11,653 s.f. (7.9%)
Parking Lot Trees	
Spaces Shown	441 Spaces
Trees Required	44 Trees (441 / 10)
Trees Provided	71 Trees
Perimeter Trees	
Parking Lot Perimeter	704'
Trees Required	18 Trees (704' / 40)
Trees Provided	18 Trees

Street Trees	
Oak Valley	
Street Frontage	252'
Trees Required	8 Trees (1 per 30')
Trees Provided	8 Trees
Ann Arbor Saline Road	
Street Frontage	840'
Trees Required	28 Trees (1 per 30')
Trees Provided	29 Trees

19 Trees of the Required Trees are Located in the Meijer Parking Lot

Notes:

"P" Denotes Required Parking Lot Tree
"PA" Denotes Required Parking Lot Perimeter Trees
See Sheet L-3 for Site Furnishings

Plant List

sym.	qty.	botanical name	common name	caliper	spacing	root	height
BX	39	Buxus microphylla	Boxwood		as shown		24"
CK	2	Cornus kousa	Kousa Dogwood	2.0"	as shown	B&B	
DL	342	Hemerocallis 'Happy Returns'	Happy Returns Daylily		No. 2 Cont.		
EA	106	Euonymus alta 'Compact'	Compact Burning Bush		as shown		30"
GT	34	Gleditsia triacanthos var. 'Inermis'	Honey Locust	2.5"	as shown	B&B	
IL	39	Ilex x. m. "Blue Boy" and "Blue Girl"	Blue Boy Holly		as shown		30"
MR	3	Malus sargentii	Sargent Crab	2.0"	as shown	B&B	
MS	3	Malus 'Spring Snow'	Spring Snow Crab	2.0"	as shown	B&B	
PC	9	Pyrus calleryana 'Cleveland Select'	Cleveland Pear	2.5"	as shown	B&B	
PL	285	Pennisetum a. 'Little Bunnies'	Little Bunnies Dwarf Fountain Grass		No. 2 Cont.		
TC	16	Tilia cordata 'Greenspire'	Greenspire Linden	2.5"	as shown	B&B	
TM	39	Taxus x. m. 'Densiformis'	Dense Yew		as shown		30"
TO	20	Thuja occidentalis 'Dark Green Heavy'	Dark Green Arborvitae		as shown	B&B	6'
VB	46	Viburnum x. burkwoodii	Burkwood Viburnum		as shown		30"
VC	16	Viburnum carlesii	Korean Spice Viburnum		as shown		30"
VO	38	Viburnum opulus 'Compacta'	European Cranberry Bush		as shown		30"

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ALLEN DESIGN
LAND PLANNING / LANDSCAPE ARCHITECTURE
557 CARPENTER • NORTHVILLE, MI 48167
248 467 4668 • Fax 248 349 0559
Email: jca@wideopenwest.com

Versa real estate

Seal:

Title:

Landscape Plan

Project:

Pittsfield Commercial
Pittsfield Township, Michigan

Prepared for:

Versa Development
25900 West 11 Mile, Suite 250
Southfield, Michigan 48034

Revision:	Issued:
Submission	December 14, 2012
Resubmit Site Plan	April 25, 2013
Revised	June 21, 2013
Revised	August 15, 2013
Revised	September 26, 2013
Revised	October 17, 2013
Revised	November 22, 2013
Revised	January 30, 2014

Job Number:

12-028

Drawn By: jca

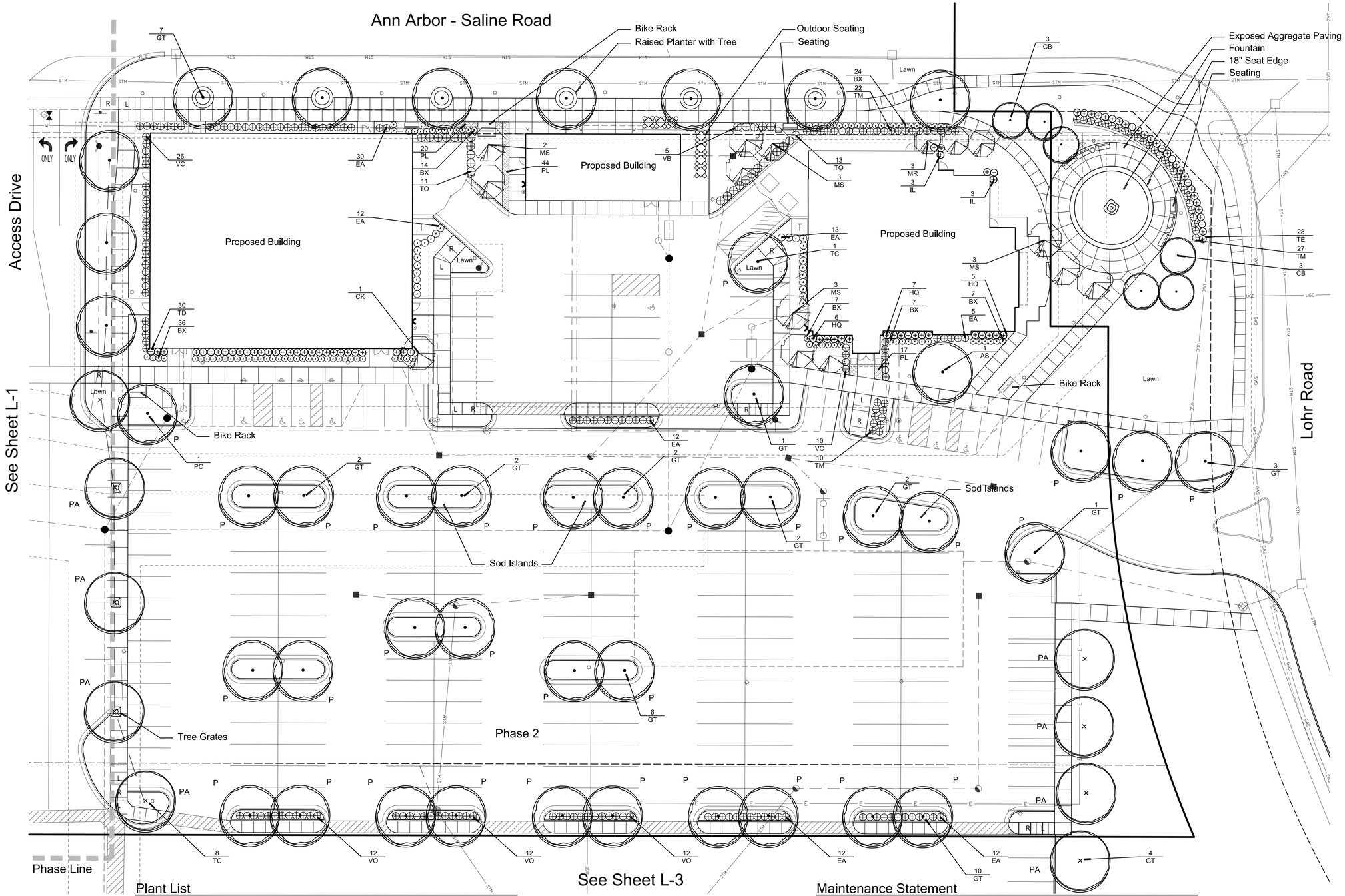
Checked By: jca

0' 5' 10' 20'

NORTH
1"=20'

Sheet No.

53-L-1



Plant List

sym.	qty.	botanical name	common name	caliper	spacing	root	height
AS	1	Acer saccharum	Sugar Maple	2.5"	as shown	B&B	
BX	94	Buxus microphylla	Boxwood		as shown		24"
CB	6	Carpinus betula	European Hornbeam	2.5"	as shown	B&B	
CK	1	Cornus kousa	Kousa Dogwood	2.0"	as shown	B&B	
EA	96	Euonymus alta 'Compact'	Compact Burning Bush		as shown		30"
GT	42	Gleditsia triacanthos var. 'Inermis'	Honey Locust	2.5"	as shown	B&B	
HQ	18	Hydrangea quercifolia	Oakleaf Hydrangea		as shown		30"
IL	6	Ilex x. m. "Blue Boy" and "Blue Girl"	Blue Boy Holly		as shown		30"
MR	3	Malus sargentii	Sargent Crab	2.0"	as shown	B&B	
MS	11	Malus 'Spring Snow'	Spring Snow Crab	2.0"	as shown	B&B	
PC	1	Pyrus calleryana 'Cleveland Select'	Cleveland Select Pear	2.5"	as shown	B&B	
PL	81	Pennisetum a. 'Little Bunnies'	Little Bunnies Dwarf Fountain Grass			No. 2 Cont.	
TC	9	Tilia cordata 'Greenspire'	Greenspire Linden	2.5"	as shown	B&B	
TD	30	Taxus x. m. 'Hicksii'	Hicks Yew		as shown	B&B	36"
TE	28	Taxus x m. 'Everlow'	Everlow Yew		as shown		18"
TM	59	Taxus x. m. 'Densiformis'	Dense Yew		as shown		30"
TO	24	Thuja occidentalis 'Dark Green Heavy'	Dark Green Arborvitae		as shown	B&B	6'
VB	5	Viburnum x. burkwoodii	Burkwood Viburnum		as shown		30"
VC	36	Viburnum carlesii	Korean Spice Viburnum		as shown		30"
VO	36	Viburnum opulus 'Compacta'	European Cranberry Bush		as shown		30"

Notes:
"P" Denotes Required Parking Lot Tree
"PA" Denotes Required Parking Lot Perimeter Trees
See Sheet L-3 for Site Furnishings

Maintenance Statement

The owner of the property shall be responsible for all maintenance of site landscaping, as follows:

Continuing Care
Landscaping shall be kept in a neat, orderly and healthy growing condition, free from debris and refuse. All landscape materials shall be maintained by a regular program or mowing, watering, weeding, feeding and pruning. Pruning shall be minimal at the time of installation, only to remove dead or diseased branches. Subsequent pruning shall assure proper maturation of plants to achieve their approved purpose.

Replenishment
All dead or diseased plant material shall be removed and replaced within six (6) months after it dies or in the next planting season, whichever occurs first. For purposes of this the planting season for deciduous plants shall be between March 1 and June 1 and from October 1 until the prepared soil becomes frozen. The planting season for evergreen plants shall be between March 1 and June 1. Plant material installed to replace dead or diseased material shall be as close as practical to the size of the material it is intended to replace.

Watering
The developer, at the time of submission of the final site plan shall demonstrate that adequate provisions have been made to supply water to all landscape areas. This shall be accomplished by installation of an underground irrigation system to provide water for the landscape areas specified on the landscape plan.

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Versa | real estate

Seal:

STATE OF MICHIGAN
JAMES C. ALLEN
Landscape Architect
No. 1301
REGISTERED LANDSCAPE ARCHITECT

Title:
Landscape Plan

Project:
Pittsfield Commercial
Pittsfield Township, Michigan

Prepared for:
Versa Development
25900 West 11 Mile, Suite 250
Southfield, Michigan 48034

Revision:	Issued:
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Revised	September 26, 2013
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Revised	January 30, 2014

Job Number:
12-028

Drawn By: jca
Checked By: jca

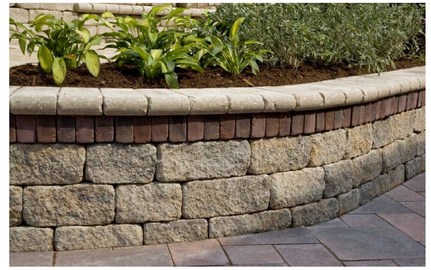
0' 5' 10' 20'
NORTH
1"=20'

Sheet No.
54-L-2

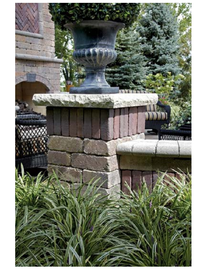
Bench

Litter

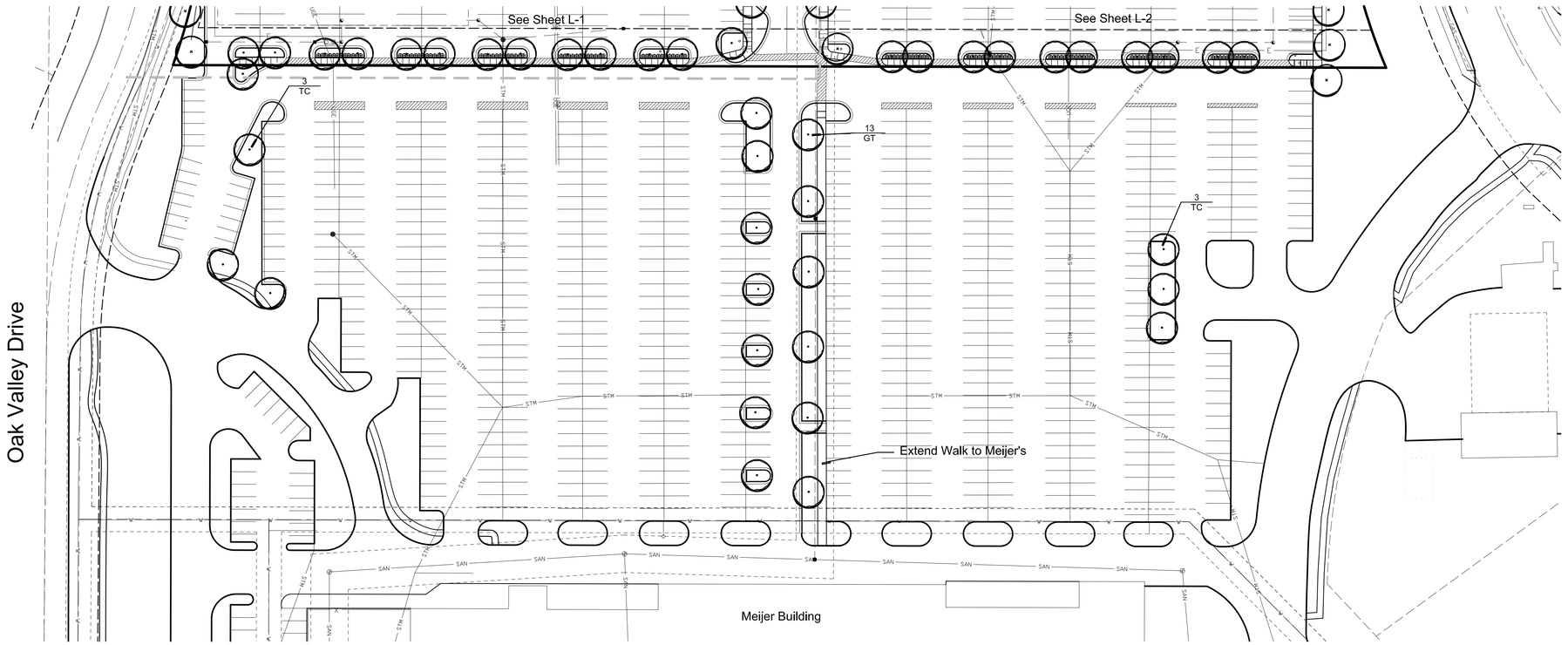
Raised Planter



Pier with Urn

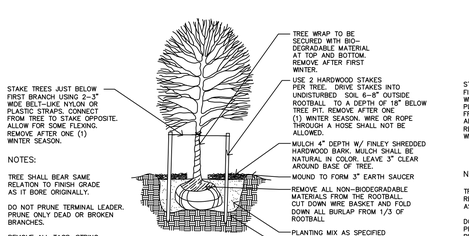


Meijer Lot Improvements



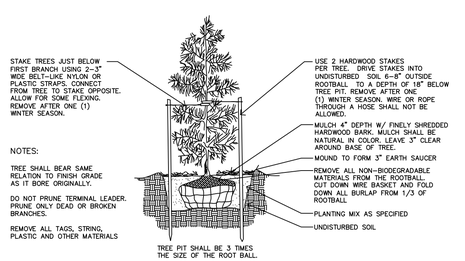
Plant List

sym.	qty.	botanical name	common name	caliper	spacing	root	height
GT	13	Gleditsia Triacanthos var. inermis	Honeylocust	2.5"	as shown	B&B	
TC	6	Tilia cordata 'Greenspire'	Greenspire Linden	2.5"	as shown	B&B	



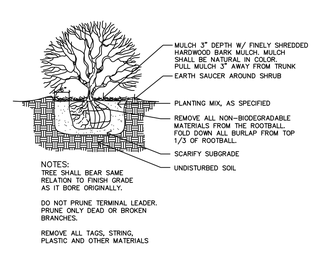
DECIDUOUS TREE PLANTING DETAIL

NTS



EVERGREEN TREE PLANTING DETAIL

NTS



SHRUB PLANTING DETAIL

NTS

LANDSCAPE REQUIREMENTS

1. The work shall consist of providing all necessary materials, labor, warrants, equipment, tools and supervision required for the completion as shown on the drawings.
2. The plant materials shall conform to type stated on the plant list. Sizes shall be the minimum stated on the plant list or larger. All measurements shall be in accordance with the latest edition of the "A.A.N. Standards for nursery stock."
3. The plant material shall be nursery grown and inspected by the owner's representative before planting. The owner's representative reserves the right to reject any plant material at any time.
4. Plants designated "B & B" shall be balled and burlapped with firm balls of earth.
5. The contractor is responsible for planting the materials at the correct grades and spacing. The plants shall be oriented as to give the best appearance.
6. When the plant has been properly set, the pit shall be backfilled with a topsoil mixture, gradually filling, patting and settling with water.
7. All plant materials shall be pruned and injuries repaired. The amount of pruning shall be limited to the removal of dead or injured twigs and to compensate for the loss of roots from transplanting. Cuts should be flush, leaving no stubs. Cuts over 1" shall be painted with tree paint.
8. The contractor agrees to guarantee all plant materials for the period of two years. At that time the owner's representative reserves the right for a final inspection. Plant material with 25% die back, as determined by the owner's representative shall be replaced. This guarantee includes the furnishing of new plants, labor and materials. These new plants shall also be guaranteed for the period of one year.
9. Topsoil shall be friable, fertile topsoil of clay loam character containing at least 5% but not more than 20% by weight of organic matter with a PH range from 6.0 to 7.0. Soil shall be free from clay lumps, coarse sand, plant roots, sticks and other foreign materials, foreign materials.
10. Seed mix shall consist of the following types and proportions:
    Kentucky Blue Grass - "Baron/Cheriadelphi" 60%
    Chewing Chewing Fescue 15%
    Creeping Reed Fescue 15%
    Perennial Rye Grass 10%
    Weed content shall not exceed 1%.
    The mix shall be applied at a rate of 200 lbs./acre
11. Sod shall be two year old "Baron/Cheriadelphi" Kentucky Blue Grass grown in a sod nursery on loam soil.
12. The Contractor shall verify all rights of way, easements, property lines and limits of work, etc. prior to commencing work.
13. The Contractor shall be responsible for contacting and coordinating with all pertinent utility companies 72 hours in advance of any digging to make himself familiar with all underground utilities, pipes and structures. The Contractor shall take sole responsibility for any cost incurred due to damage of said utilities.
14. The Contractor shall not willfully proceed with construction as designed when it is obvious that unknown obstructions and/or grade differences exist. Such conditions shall be immediately brought to the attention of the owner's representative and/or Landscape Architect. The Contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.
15. Any discrepancies between dimensioned layout and actual field conditions shall be reported to the Owner's representative and Landscape Architect. Failure to make such discrepancies known will result in Contractor's responsibility and liability for any changes and associated cost.
16. The Contractor to verify percolation of all planting pits prior to installation of plant material.

Additional Notes:
1. All Landscaped Areas Shall be Irrigated with an Automatic, Underground System.
2. Planting Shall Occur Between March 1 - May 15 and October 15 - December 15

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Seal:

STATE OF MICHIGAN
JAMES C. ALLEN
Landscape Architect
REGISTERED LANDSCAPE ARCHITECT

Title:
Landscape Details

Project:
Pittsfield Commercial
Pittsfield Township, Michigan

Prepared for:
Versa Development
25900 West 11 Mile, Suite 250
Southfield, Michigan 48034

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Resubmit Site Plan	April 23, 2013
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Revised	October 17, 2013
Revised	November 22, 2013
Revised	January 30, 2014

Job Number:
12-028

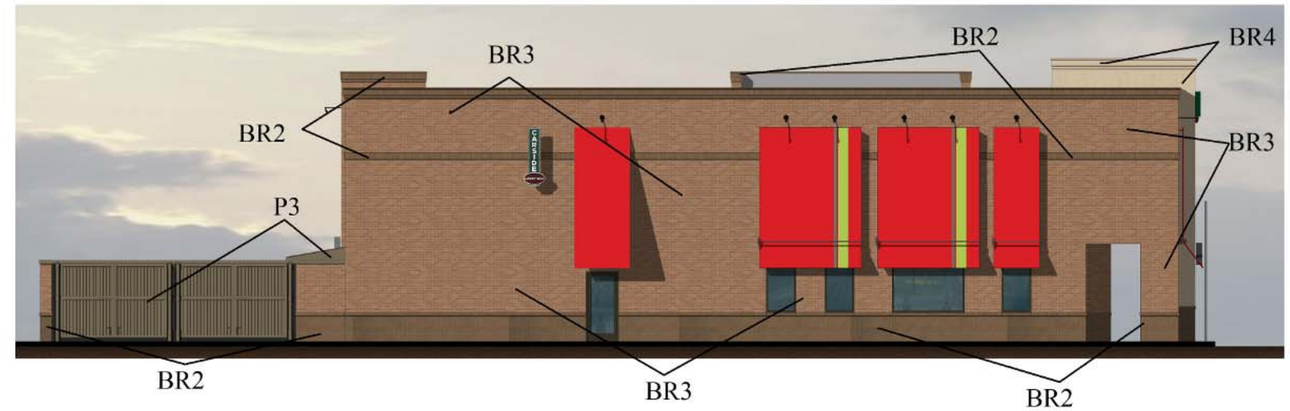
Drawn By:	Checked By:
jca	jca

0' 25' 50'
1"=50'
NORTH

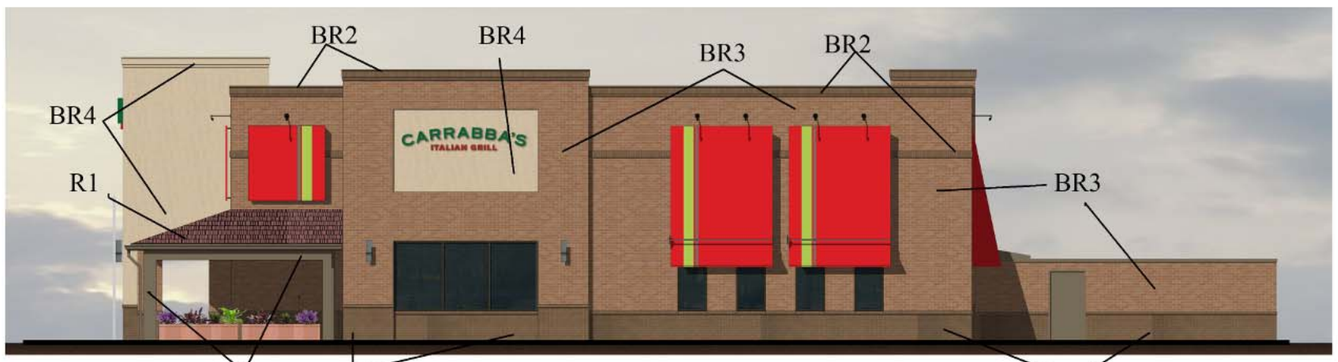
Sheet No.
55-L-3

PROPOSED CARRABBA'S ITALIAN GRILL
ANN ARBOR, MICHIGAN

NORTH-EAST ELEVATION



SOUTH-EAST ELEVATION



NORTH-WEST ELEVATION

SOUTH-WEST ELEVATION

FINISHES

BR2 BRICK WAINSCOT:
LAKEWOOD BRICK COLOR
"EXPRESSO"

BR3 BRICK WALLS:
LAKEWOOD BRICK COLOR
"CORK GRAIN"

BR4 BRICK WALLS:
LAKEWOOD BRICK COLOR
"MIST GRAY"

P3 WOOD TRIM:
SHERWIN WILLIAMS COLOR
"SUPERIOR BRONZE"

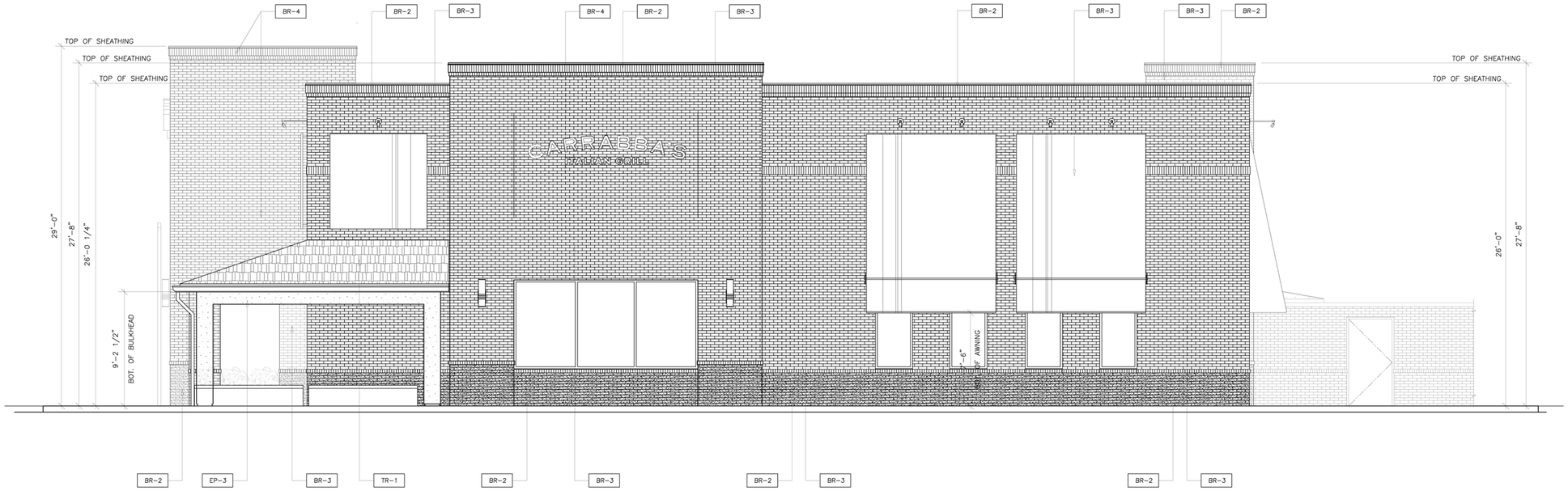
R1 METAL TILE ROOFING:
GERAD ROOFING
BARREL VAULT COLOR:
"BARCELONA"

DATE: 09/25/2013

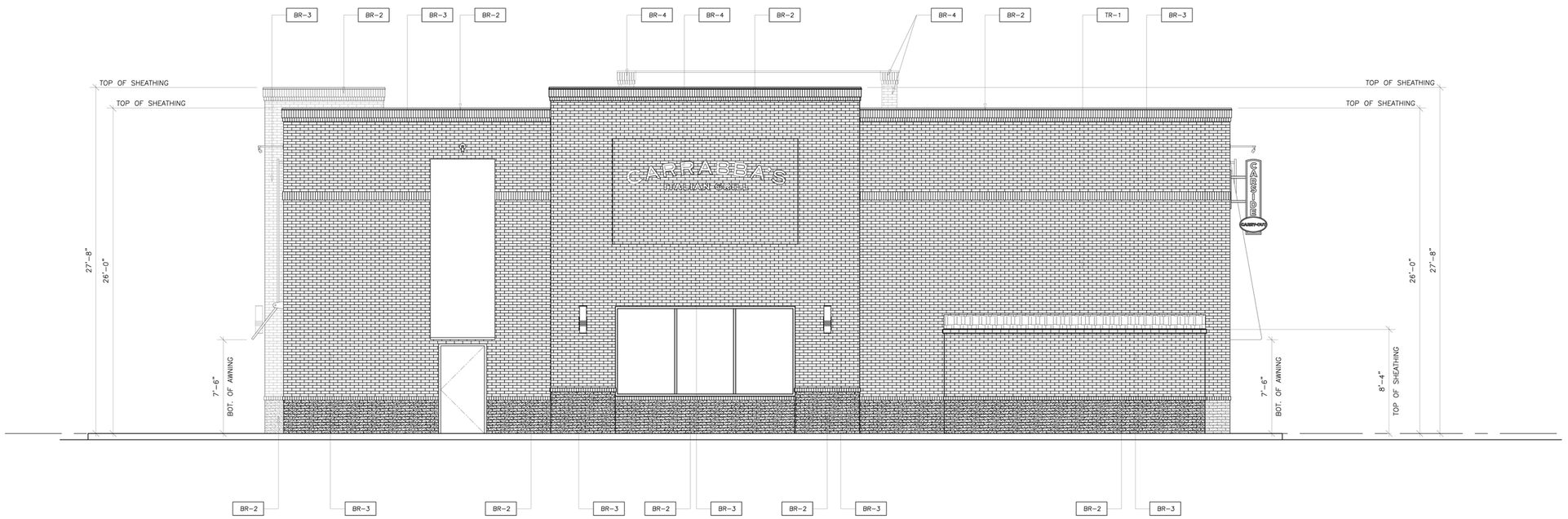
JAS ARCHITECTURE

JON W. SAMMER, AIA
3921 OLD LEE HIGHWAY,
SUITE 72-B
FAIRFAX, VIRGINIA 22030
703-591-0747

SHEET 56



3 NORTH-WEST ELEVATION



4 SOUTH-WEST ELEVATION

GENERAL NOTES

A. GENERAL CONTRACTOR TO VERIFY ALL WOOD BLOCKING MOUNTING HEIGHTS WITH OWNER'S VENDORS FOR ALL SIGNAGE AND AWNINGS.

B. GENERAL CONTRACTOR TO COORDINATE INSTALLATION OF ALL EXTERIOR WALL MOUNTED ACCENT LIGHTS.

C. GENERAL CONTRACTOR TO SUBMIT SAMPLES OF ALL FINISHES TO OWNER FOR APPROVAL PRIOR TO ORDERING MATERIALS.

D. GENERAL CONTRACTOR TO PROTECT ALL EXTERIOR WALL MOUNTED ACCENT LIGHTS UNTIL PROJECT TURN-OVER.

SIGNAGE NOTES

A. SIGNAGE SHOWN FOR GENERAL LOCATION ONLY. REFER TO APPROVED SIGN DRAWINGS BY OWNER'S SIGNAGE VENDOR.

B. CONTRACTOR SHALL PROVIDE ADEQUATE POWER AND CONNECTION TO SIGN. COORDINATE WITH SIGN CONTRACTOR.

a. SEPARATE PERMIT REQUIRED FOR ALL SIGNS.

AWNING NOTES

A. AWNINGS SHOWN FOR GENERAL LOCATION ONLY. REFER TO APPROVED SHOP DRAWINGS BY OWNER'S AWNING VENDOR.

B. SEPARATE PERMIT REQUIRED FOR ALL AWNINGS & CANOPIES.

FINISH LEGEND

AAA-#

EP-1	~~EXTERIOR PAINT: COLOR TO MATCH SHERWIN-WILLIAMS PAINT; SW7036 "ACCESSIBLE BIEGE" SUBMIT SAMPLE PANEL FOR OWNER APPROVAL.~~
EP-2	~~EXTERIOR PAINT: COLOR TO MATCH SHERWIN-WILLIAMS PAINT; SW6143 "BASKET BIEGE" SUBMIT SAMPLE PANEL FOR OWNER APPROVAL.~~
EP-3	MIRATEC WOOD TRIM: COLOR TO MATCH SHERWIN-WILLIAMS PAINT; SW6152 "SUPERIOR BRONZE" SUBMIT SAMPLE PANEL FOR OWNER APPROVAL.
BR-2	MODULAR BRICK VENEER WAINSCOT LAKEWOOD BRICK "EXPRESSO" (SMOOTH) SUBMIT SAMPLE PANEL FOR OWNER APPROVAL. G.C. SHALL SOLID BRICKS @ 5% OF TOTAL ORDER & SPECIAL SHAPES WHERE NOTED IN ARCHITECTURAL DETAILS.
BR-3	MODULAR BRICK VENEER WAINSCOT LAKEWOOD BRICK "CORK GRAIN" (SMOOTH) SUBMIT SAMPLE PANEL FOR OWNER APPROVAL.
BR-4	MODULAR BRICK TRIM LAKEWOOD BRICK "MIST GRAY" (SMOOTH) SUBMIT SAMPLE PANEL FOR OWNER APPROVAL.
TR-1	METAL TILE ROOFING: GERRAD ROOFING TECHNOLOGIES, METAL PANEL ROOFING; STYLE: BARREL VAULT; COLOR: BARCELONA SUBMIT SAMPLE PANEL FOR OWNER APPROVAL.

JON W. SAMMER
ARCHITECT, AIA
3921 OLD LEE HWY
SUITE 72-B
FAIRFAX, VIRGINIA 22030
(703) 591-0747

SUBMISSION AND REVISION DATES

NUM.	DESCRIPTION
	09/19/2013 PLANNING SUBMISSION
1	09/26/2013 PLANNING CONDITIONAL APPROVAL REQUIREMENTS

REVISION SYMBOLS

☐ DOES NOT APPLY TO THIS SHEET

■ APPLIES TO THIS SHEET

CARRABBA'S
ITALIAN GRILL

ANN ARBOR, MICHIGAN

SEAL:

I CERTIFY THAT THESE DRAWINGS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MICHIGAN, LICENSE NUMBER 1301047268, EXPIRATION DATE 10/31/2013.

SCALE: 1/4" = 1'-0"

U.N.O

PROJECT NO. CBAA_1303

SHEET TITLE

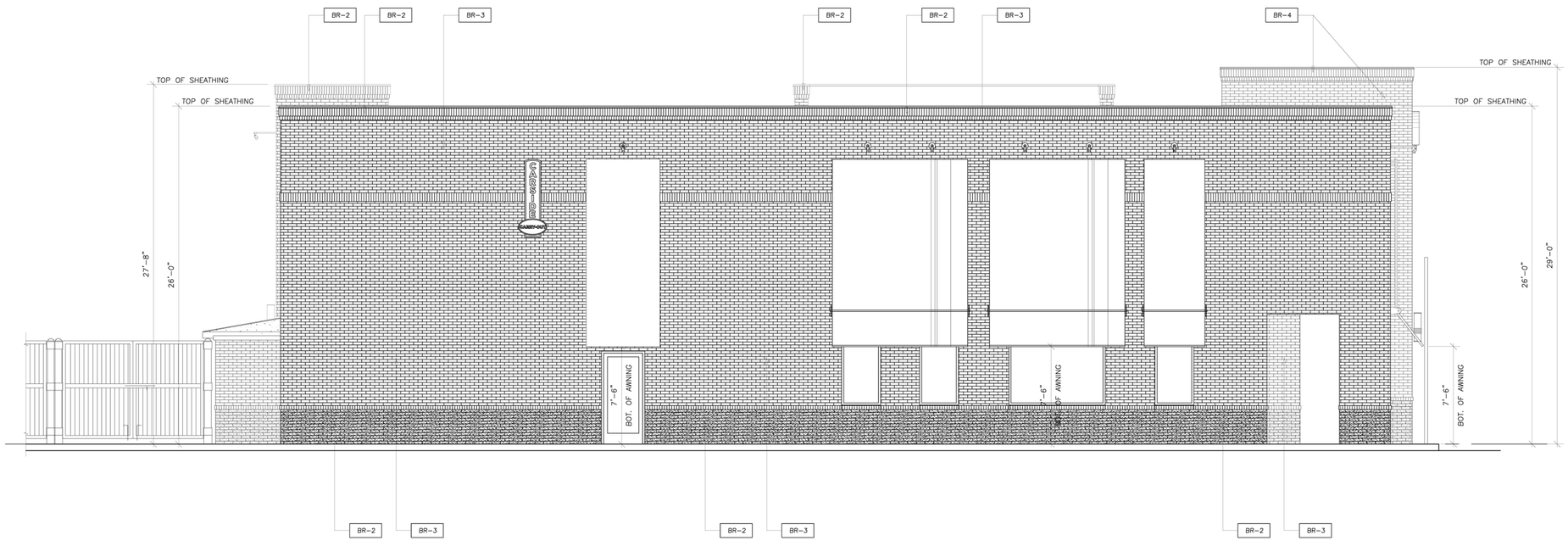
EXTERIOR ELEVATIONS

SHEET

57

OF

1 NORTH-EAST ELEVATION



2 SOUTH-EAST ELEVATION

GENERAL NOTES

A. GENERAL CONTRACTOR TO VERIFY ALL WOOD BLOCKING MOUNTING HEIGHTS WITH OWNER'S VENDORS FOR ALL SIGNAGE AND AWNINGS.

B. GENERAL CONTRACTOR TO COORDINATE INSTALLATION OF ALL EXTERIOR WALL MOUNTED ACCENT LIGHTS.

C. GENERAL CONTRACTOR TO SUBMIT SAMPLES OF ALL FINISHES TO OWNER FOR APPROVAL PRIOR TO ORDERING MATERIALS.

D. GENERAL CONTRACTOR TO PROTECT ALL EXTERIOR WALL MOUNTED ACCENT LIGHTS UNTIL PROJECT TURN-OVER.

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A. SIGNAGE SHOWN FOR GENERAL LOCATION ONLY. REFER TO APPROVED SIGN DRAWINGS BY OWNER'S SIGNAGE VENDOR.

B. CONTRACTOR SHALL PROVIDE ADEQUATE POWER AND CONNECTION TO SIGN. COORDINATE WITH SIGN CONTRACTOR.

c. SEPARATE PERMIT REQUIRED FOR ALL SIGNS.

AWNING NOTES

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B. SEPARATE PERMIT REQUIRED FOR ALL AWNINGS & CANOPIES.

FINISH LEGEND

AM-#

EP-1	~~EXTERIOR PAINT: COLOR TO MATCH SHERWIN-WILLIAMS PAINT; SW7036 "ACCESSIBLE BEIGE" SUBMIT SAMPLE PANEL FOR OWNER APPROVAL.~~
EP-2	~~EXTERIOR PAINT: COLOR TO MATCH SHERWIN-WILLIAMS PAINT; SW6148 "SPANISH BEIGE" SUBMIT SAMPLE PANEL FOR OWNER APPROVAL.~~
EP-3	MIRATEC WOOD TRIM: COLOR TO MATCH SHERWIN-WILLIAMS PAINT; SW6152 "SUPERIOR BRONZE" SUBMIT SAMPLE PANEL FOR OWNER APPROVAL.
BR-2	MODULAR BRICK VENEER WAINSCOT LAKEWOOD BRICK "EXPRESSO" (SMOOTH) SUBMIT SAMPLE PANEL FOR OWNER APPROVAL. G.C. SHALL SOLID BRICKS @ 5% OF TOTAL ORDER & SPECIAL SHAPES WHERE NOTED IN ARCHITECTURAL DETAILS.
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TR-1	METAL TILE ROOFING: GERRAD ROOFING TECHNOLOGIES, METAL PANEL ROOFING; STYLE: BARREL VAULT; COLOR: BARCELONA SUBMIT SAMPLE PANEL FOR OWNER APPROVAL.

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SUBMISSION AND REVISION DATES

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CARRABBA'S ITALIAN GRILL

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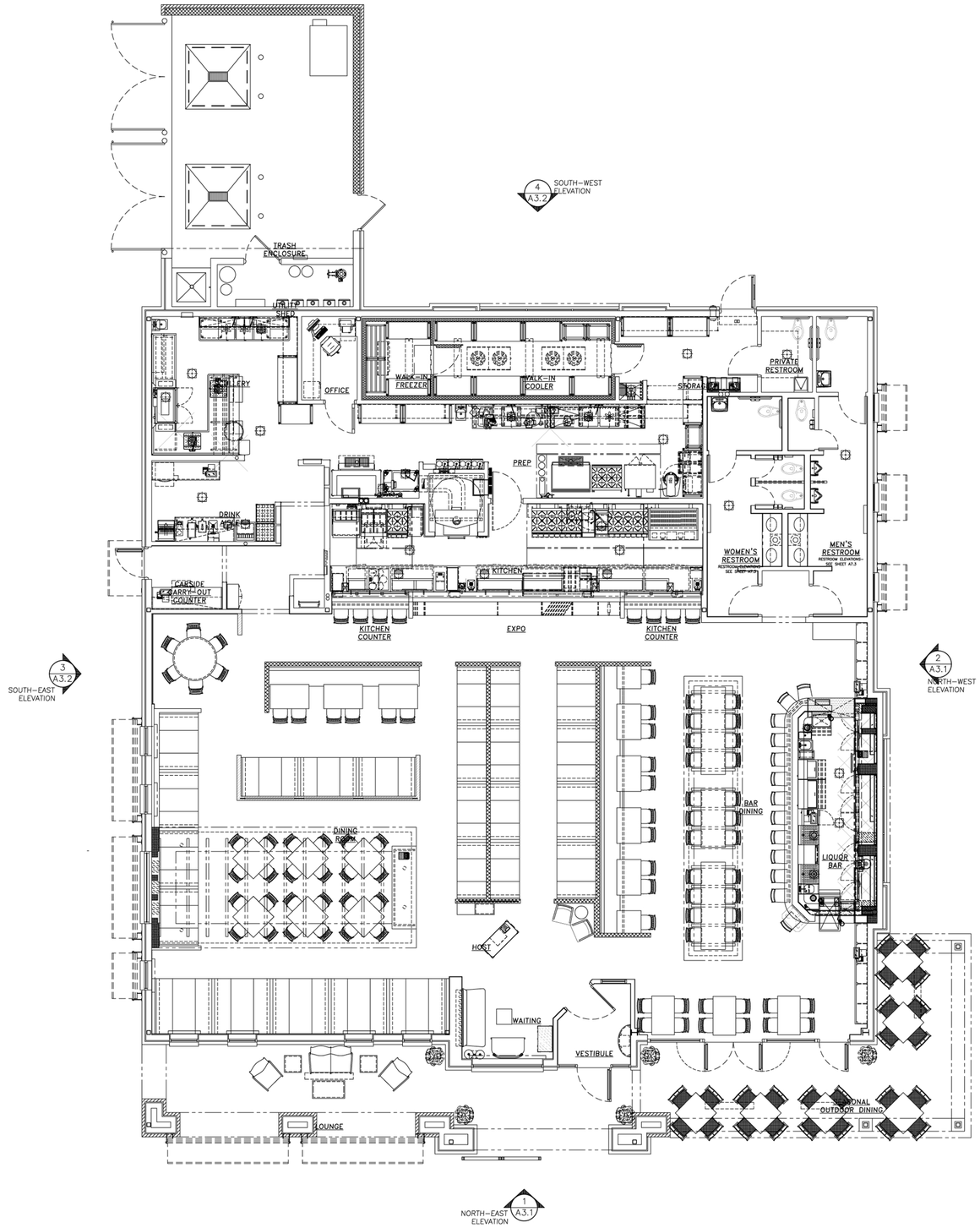
SCALE: 1/4" = 1'-0" U.N.O

PROJECT NO. CBAA_1303

SHEET TITLE: EXTERIOR ELEVATIONS

SHEET 58 OF



TRUE NORTH

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ITALIAN GRILL

ANN ARBOR, MICHIGAN

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SCALE: 1/4" = 1'-0" U.N.O

PROJECT NO. CBAA_1303

SHEET TITLE: FLOOR PLAN

SHEET 59 OF

FRONT ELEVATION

RIGHT ELEVATION

CORONADO STONE "OLD COUNTRY - LEDGE"

EXTERIOR STAIN BY OLYMPIC "708 WALNUT"

BENJAMIN MOORE PAINT "2126-10 TAR"

BENJAMIN MOORE PAINT "1155 CAPPCCINO MUFFIN"

BENJAMIN MOORE PAINT "RME-23 COUNTRY REDWOOD"

BENJAMIN MOORE PAINT "2166-40 SOFT PUMPKIN"

SHEET 60

REAR ELEVATION

EXTERIOR FINISH LEGEND	
PAINT	
P 3	TAR
P 10	CAPPUCCIONO MUFFIN
P 12	SOFT PUMPKIN
P 13	COUNTRY REDWOOD
P 15	HASBROOK BROWN
P 16	MARSH BROWN
STAIN	
ST 5	WALNUT STAIN
STONE	
STN 1	CORONADO STONE - OLD COUNTRY LEDGE
EIFS	
EF 1	NA05-0022 TO MATCH P-10
EF 2	NA08-0022 TO MATCH P-12
EF 3	NA09-0004 TO MATCH P-13
ROOF	
R 1	STANDING SEAM METAL ROOF, GALVALUME FINISH

LEFT ELEVATION

CORONADO STONE "OLD COUNTRY - LEDGE"

EXTERIOR STAIN BY OLYMPIC "708 WALNUT"

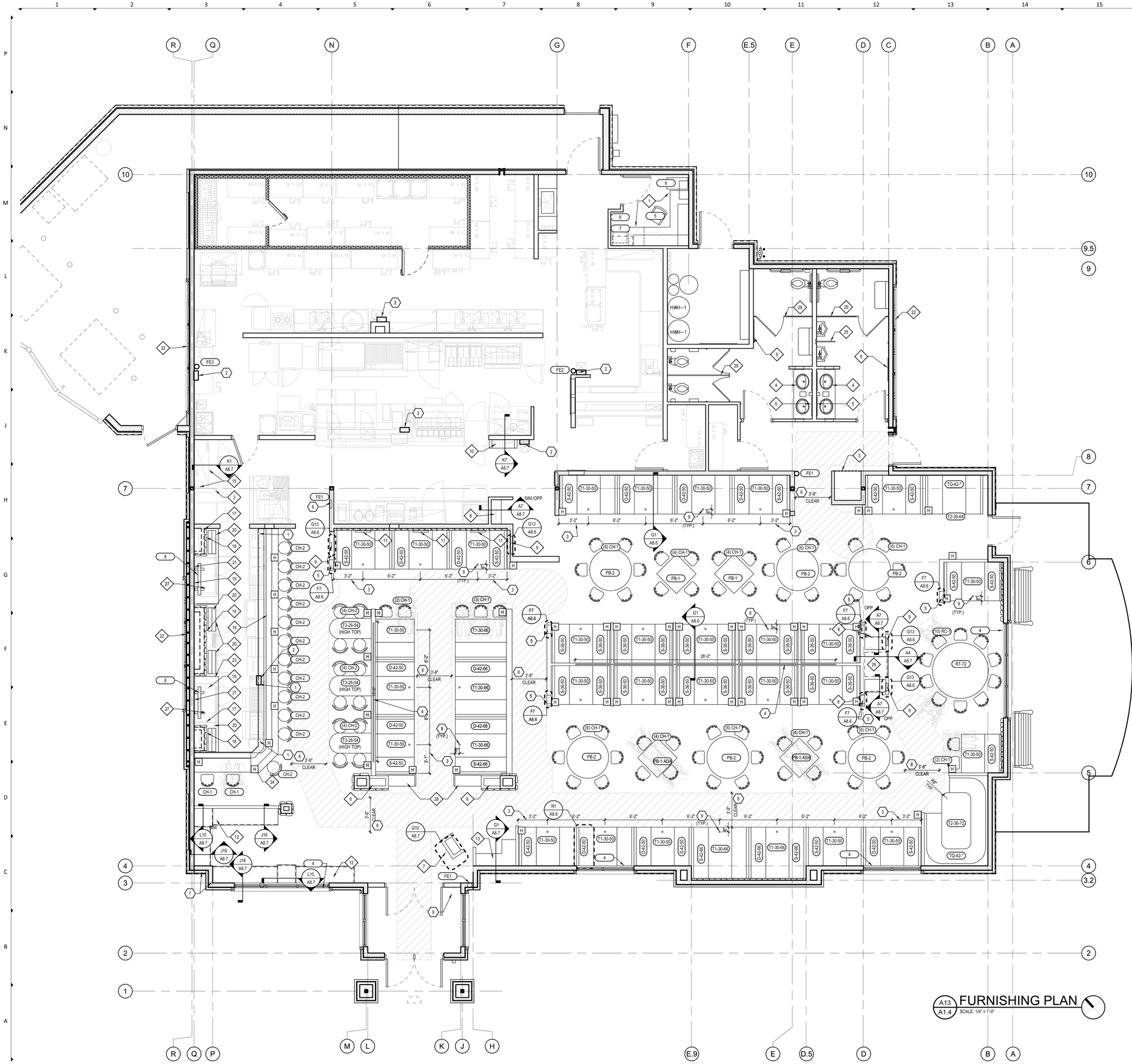
BENJAMIN MOORE PAINT "2126-10 TAR"

BENJAMIN MOORE PAINT "1155 CAPPCCINO MUFFIN"

BENJAMIN MOORE PAINT "RME-23 COUNTRY REDWOOD"

BENJAMIN MOORE PAINT "2166-40 SOFT PUMPKIN"

SHEET 61



A13 / A1.4 FURNISHING PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A. SECURE BOOTHS TO FLOOR WITH CLEATS. SEE DETAIL N1/A8.6 FOR MORE INFORMATION.
B. G.C. TO COORDINATE WITH MILLWORKER FOR LOCATION OF BLOCKING AS REQUIRED.
C. COAT AND PURSE HOOKS TO BE PROVIDED BY AND INSTALLED BY GENERAL CONTRACTOR. TO BE INSTALLED 44" A.F.F. HOOK LOCATIONS MARKED ON PLAN BY H

KEY NOTES

1. 3" NOTCH IN BAR DRINK RAIL. REFER TO DETAIL A7/A8.6
2. SERVICE AREA PAPER TOWEL DISPENSER
3. DIMENSION IS FROM FINISHED WALL TO CENTERLINE OF TABLE
4. IRON DECOR PIECE. REFER TO M10/A8.6
5. RECESSED UTILITY STATION - REFER TO F7/A8.6
6. RECESSED FIRE EXTINGUISHER CABINET
7. G.C. TO ADD 1X4 HORIZONTAL TRIM WHERE BENCH ABUTS. REFER TO DETAIL J16/A8.7
8. 44" CLEAR EGRESS PATH
9. GUN SIGN. CENTER HORIZONTALLY ON WALL. REFER TO A4.1 FOR ADDITIONAL INFORMATION.
10. TABLE LEG.

SEATING CAPACITIES

TYPES	PARTIES	SEATS	PERCENTAGE
BAR			
BARSTOOLS	-	14	
4 TOPS	9	36	
6 TOPS	3	18	
BAR TOTAL	12	68	28%
DINING			
4 TOPS	26	104	
6 TOPS	10	60	
10 TOPS	1	10	
DINING TOTAL	37	174	72%
BUILDING TOTAL	49	242	

ACCESSIBILITY REQUIREMENTS:
242 TOTAL SEATING
REQUIRED: 5% TOTAL SEATING
PROVIDED: 12 ACCESSIBLE LOCATIONS

FURNISHINGS SCHEDULE

ITEM	DESCRIPTION	MANUFACTURER	NOTE
S-**-**	SINGLE BOOTH (HEIGHT-LENGTH)	ABR WOODWORK	REF. TAG
D-**-**	DOUBLE BOOTH (HEIGHT-LENGTH)	ABR WOODWORK	REG. TAG
TQ-**-*	THREE QUARTER BOOTH CUSTOM SIZED (HEIGHT-*)	ABR WOODWORK	REF. TAG
CH-1	NEW PUB STYLE CHAIRS		STANDARD
CH-2	NEW PUB STYLE STOOLS		HIGH STYLE
RC-1	UPHOLSTERED RANCHERS CHAIR		RANCHERS
T1-**-**	RECTANGULAR BOOTH TABLE (WIDTH-LENGTH)	TABLE TOPICS	REF. TAG
T2-**-**	CORNER BOOTH TABLE (WIDTH-LENGTH)	TABLE TOPICS	REF. TAG
T3-**-**	HIGH TOP TABLE (WIDTH-LENGTH)	ABR WOODWORK	REF. TAG
PB-1	36" SQUARE PUB TABLE	WILDWOOD	4 TOP
PB-1 ADA	36" SQUARE TABLE w/ LEGS	WILDWOOD	4 TOP
PB-2	54" DIAMETER PUB TABLE	WILDWOOD	6 TOP
RT-72	72" DIAMETER RANCHERS TABLE	TOP - TABLE TOPICS BASE - WILDWOOD	10 TOP
4	WINDOW BLINDS		
5	OFFICE CHAIR		
6	FILE CABINET		
7	SAFE		
8	TELEVISION		
9	MEDICAL FIRST AID KIT		
FE1	FIRE EXTINGUISHER	SEE SPEC SECTION 10520	
FE2	FIRE EXTINGUISHER	SEE SPEC SECTION 10520	
FE3	FIRE EXTINGUISHER	SEE SPEC SECTION 10520	

MILLWORK SCHEDULE

ITEM	DESCRIPTION
1	OFFICE WALL CABINETS W/TOP & BASE CABINET AND CORK BOARD
2	SERVICE AREA CABINET
3	ALCOVE CABINET
4	SOLID SURFACE VANITY TOPS W/ AMERICAN STANDARD SINKS (0496.221)
5	DECORATIVE MIRRORS
6	DISPLAY UNIT
7	HOSTESS STAND
8	POS CABINET WITH DOOR, SHELF, AND LAMINATE TOP
9	MENU HOLDER
10	CORRIDOR SHELVING
11	LEATHERETTE WALL PANELS
12	LOBBY BENCHES AND CENTER TABLE
13	WRAPPED SILVER STATION AND STORAGE BOXES
14	TIMBER MANTEL
15	SERVICE AREA LIQUOR CABINET AND WALL SHELVING
16	SOLID SURFACE DRINK RAIL
17	BACK BAR WINE BOX
18	BACK BAR DISPLAY BOX
19	BACK BAR SHELVES WITH STEMWARE SLIDES
20	LIQUOR STEPS
21	BLACK PLASTIC LAMINATE BEHIND TVS
22	EXTERIOR SHUTTERS
23	BACK BAR UNDER COUNTER CABINET
24	BAR TOP AND BAR FASCIA WITH COPPER INSERT
25	URINAL PARTITION / SOLID SURFACE WITH 2"x2" ALUM. POST SUPPORT FROM FLOOR TO CEILING
26	DINING ROOM CABINET
27	BACK BAR SOLID SURFACE COUNTERTOP
28	LOBBY CABINET
29	TOILET PARTITION / SOLID SURFACE WITH 2"x2" ALUM. POST SUPPORT FROM FLOOR TO CEILING

FRCH DESIGN WORLDWIDE
311 Elm Street Suite 600
Cincinnati OH 45202
513 241 3000
www.frch.com

ARCHITECTS PROJECT #: 26799.000

LONGHORN STEAKHOUSE

Issue Date: XX.XX.XX

REVISION INFORMATION
1
2
3
4
5
6
7
8

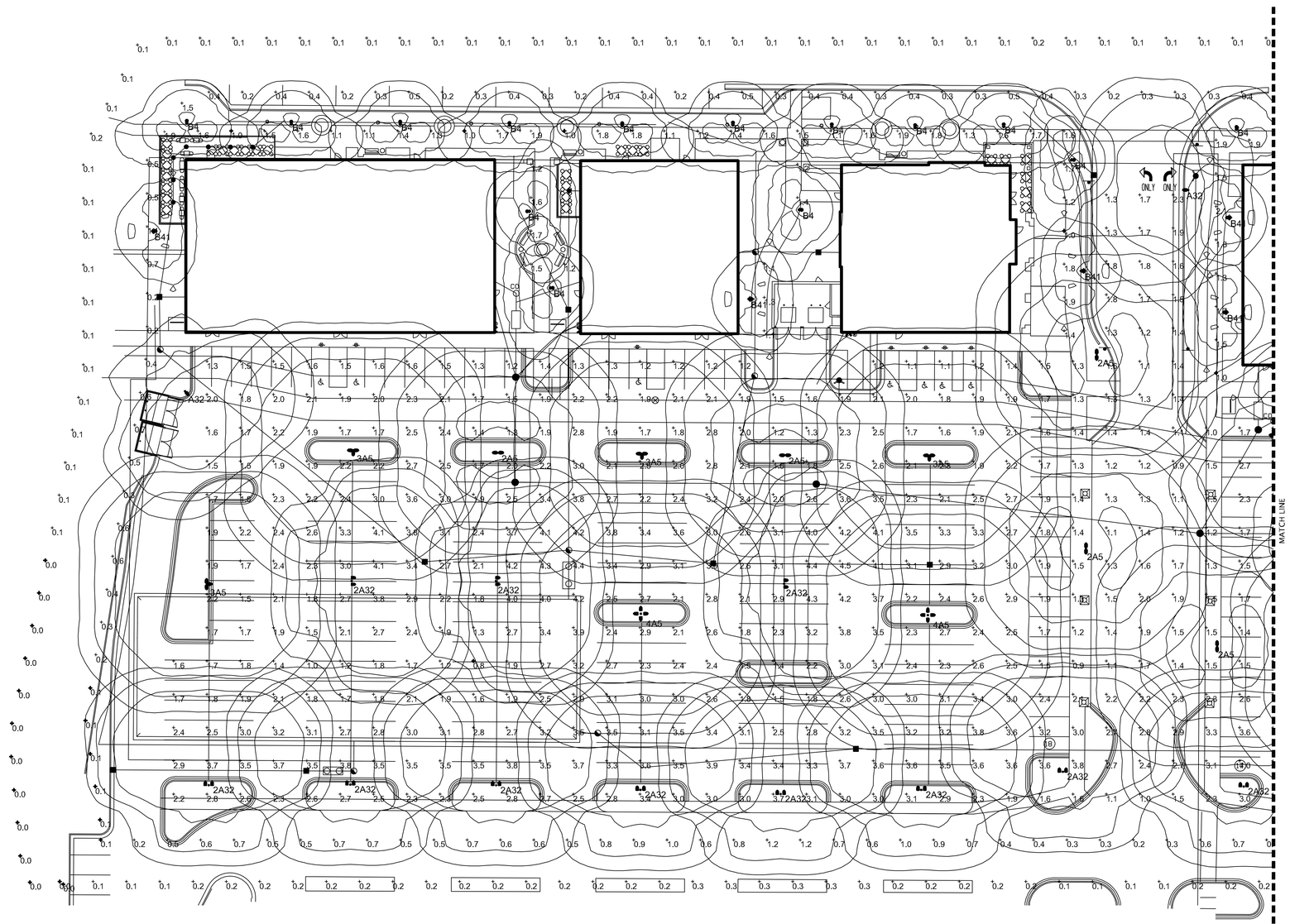
Restaurant #: T.B.D.

LONGHORN
LH-7.5L
Prototype current thru - 06-03-2013
ANN ARBOR-SALINE ROAD
ANN ARBOR, MI

AUTHORIZED FOR:
PERMIT / BID

ANN ARBOR, MI

Drawing
FURNISHING FLOOR PLAN



1 SOUTHWEST PHOTOMETRIC PLAN

Scale: 1" = 30'-0"

NORTH

NORR

CONSULTANT:

GWE

Giffels-Webster Engineers, Inc.

ENGINEERS · LAND SURVEYORS
PLANNERS · LANDSCAPE ARCHITECTS
2871 BOND STREET
ROCHESTER HILLS, MI 48309
PHONE (248) 852-3100
FAX (248) 852-6372

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08/20/2013	TENANT COORDINATION	
01/30/2014	RE-SUBMITTAL SITE PLAN	

Project Manager A.RICCIUTI	Drawn B.COLBURN
Project Leader B.COLBURN	Checked
Date 06/21/2013	Dept Mgr Approval A.RICCIUTI

Client

VERSA DEVELOPMENT

25900 W. 11 Mile Road
Southfield, MI - Sutie 250 48034
Office: (248) 996-1412

Contact: Steve Robinson

Project

PITTSFIELD DEVELOPMENT
Ann Arbor-Saline Road
Pittsfield Township, Michigan

Drawing Title

SOUTHWEST PHOTOMETRIC PLAN

DO NOT SCALE DRAWING

Project No.	Drawing No.
JCDT.12.0314	63-SP7

Luminaire Locations

		Location						Aim		
No.	Label	X	Y	Z	MH	Orientation	Tilt	X	Y	Z
1	2A5	430.13	94.30	23.00	23.00	180.00	0.00			
2	2A5	434.96	181.58	23.00	23.00	180.00	0.00			
5	2A5	165.39	137.41	23.00	23.00	90.00	0.00			
6	2A5	294.68	136.32	23.00	23.00	90.00	0.00			
8	2A5	489.19	50.22	23.00	23.00	180.00	0.00			
1	2A32	35.14	-12.33	23.00	23.00	0.00	0.00			
2	2A32	164.53	-12.38	23.00	23.00	0.00	0.00			
3	2A32	292.67	-16.36	23.00	23.00	0.00	0.00			
4	2A32	419.69	-6.32	23.00	23.00	0.00	0.00			
5	2A32	865.11	-19.56	23.00	23.00	0.00	0.00			
6	2A32	501.16	-12.94	23.00	23.00	0.00	0.00			
7	2A32	602.02	-19.42	23.00	23.00	0.00	0.00			
8	2A32	760.26	-19.41	23.00	23.00	0.00	0.00			
14	2A32	98.88	-12.08	23.00	23.00	0.00	0.00			
15	2A32	229.56	-14.49	23.00	23.00	0.00	0.00			
16	2A32	356.02	-14.49	23.00	23.00	0.00	0.00			
18	2A32	99.49	79.63	23.00	23.00	90.00	0.00			
20	2A32	164.50	79.63	23.00	23.00	90.00	0.00			
21	2A32	294.26	78.42	23.00	23.00	90.00	0.00			
23	2A32	806.92	141.42	23.00	23.00	186.63	0.00			
24	2A32	684.88	-19.71	23.00	23.00	0.00	0.00			
28	2A32	514.48	146.46	23.00	23.00	148.78	0.00			
1	3A5	34.17	78.23	23.00	23.00	0.00	0.00			
2	3A5	100.15	138.53	23.00	23.00	90.00	0.00			
3	3A5	230.16	136.98	23.00	23.00	90.00	0.00			
4	3A5	359.56	136.16	23.00	23.00	90.00	0.00			
5	3A5	617.64	114.07	23.00	23.00	90.00	0.00			
6	3A5	748.96	114.29	23.00	23.00	90.00	0.00			
8	3A5	694.13	151.65	23.00	23.00	270.00	0.00			
2	4A5	358.93	64.28	23.00	23.00	0.00	0.00			
3	4A5	229.70	64.90	23.00	23.00	0.00	0.00			
4	4A5	864.50	81.83	23.00	23.00	0.00	0.00			
5	4A5	684.06	42.78	23.00	23.00	0.00	0.00			
6	4A5	555.89	45.68	23.00	23.00	0.00	0.00			
1	A32	476.13	255.77	23.00	23.00	270.00	0.00	474.96	255.77	0.00
4	A32	24.51	165.11	23.00	23.00	139.04	0.00	25.28	164.22	0.00
7	A32	747.81	208.76	23.00	23.00	254.05	0.00	746.68	208.44	0.00
8	A32	636.36	214.88	23.00	23.00	129.29	0.00	637.27	214.14	0.00
9	A32	815.19	36.14	23.00	23.00	270.00	0.00	814.01	36.14	0.00
10	A32	750.52	36.14	23.00	23.00	270.00	0.00	749.35	36.14	0.00
11	A32	618.88	37.44	23.00	23.00	270.00	0.00	617.71	37.44	0.00
14	A32	555.53	116.24	23.00	23.00	180.00	0.00	555.53	115.06	0.00
1	B4	789.98	283.37	13.00	13.00	180.00	0.00	789.98	283.37	0.00
2	B4	740.62	282.87	13.00	13.00	180.00	0.00	740.62	282.87	0.00
3	B4	691.84	283.87	13.00	13.00	180.00	0.00	691.84	283.87	0.00
4	B4	645.71	283.87	13.00	13.00	180.00	0.00	645.71	283.87	0.00
5	B4	598.21	283.87	13.00	13.00	180.00	0.00	598.21	283.87	0.00
6	B4	548.75	283.39	13.00	13.00	180.00	0.00	548.75	283.39	0.00
7	B4	838.61	282.87	13.00	13.00	180.00	0.00	838.61	282.87	0.00
8	B4	497.91	284.17	13.00	13.00	180.00	0.00	497.91	284.17	0.00
9	B4	932.04	280.86	13.00	13.00	193.63	0.00	932.04	280.86	0.00
1	B5	918.11	146.80	13.00	13.00	191.31	0.00	918.11	146.80	0.00
2	B5	875.86	156.84	13.00	13.00	-68.87	0.00	875.86	156.84	0.00
3	B5	890.83	183.95	13.00	13.00	-63.43	0.00	890.83	183.95	0.00
4	B5	907.27	210.17	13.00	13.00	-63.43	0.00	907.27	210.17	0.00
5	B5	932.34	209.14	13.00	13.00	6.84	0.00	932.34	209.14	0.00
6	B5	948.64	237.22	13.00	13.00	-38.66	0.00	948.64	237.22	0.00
7	B5	888.97	243.89	13.00	13.00	46.70	0.00	888.97	243.89	0.00
8	B5	898.51	266.18	13.00	13.00	131.29	0.00	898.51	266.18	0.00
10	B4	882.49	281.16	13.00	13.00	180.00	0.00	882.49	281.16	0.00
11	B4	72.31	286.52	13.00	13.00	180.00	0.00	72.31	286.52	0.00
12	B4	121.36	286.52	13.00	13.00	180.00	0.00	121.36	286.52	0.00
13	B4	170.53	285.97	13.00	13.00	180.00	0.00	170.53	285.97	0.00
14	B4	221.30	285.83	13.00	13.00	180.00	0.00	221.30	285.83	0.00
15	B4	271.16	286.13	13.00	13.00	180.00	0.00	271.16	286.13	0.00
16	B4	424.69	269.33	13.00	13.00	270.00	0.00	424.69	269.33	0.00
17	B4	393.10	285.34	13.00	13.00	180.00	0.00	393.10	285.34	0.00
18	B4	353.21	284.95	13.00	13.00	180.00	0.00	353.21	284.95	0.00
19	B4	315.67	285.34	13.00	13.00	180.00	0.00	315.67	285.34	0.00
9	B41	278.87	206.65	13.00	13.00	90.00	0.00	278.87	206.65	0.00
20	B4	25.25	286.94	13.00	13.00	180.00	0.00	25.25	286.94	0.00
21	B4	178.52	246.16	13.00	13.00	90.00	0.00	178.52	246.16	0.00
23	B4	190.00	211.67	13.00	13.00	270.00	0.00	190.00	211.67	0.00
24	B4	302.11	246.84	13.00	13.00	270.00	0.00	302.11	246.84	0.00
11	B41	429.10	219.32	13.00	13.00	270.00	0.00	429.10	219.32	0.00
26	B41	819.10	164.16	13.00	13.00	180.00	0.00	819.10	164.16	0.00
27	B41	736.96	238.79	13.00	13.00	180.00	0.00	736.96	238.79	0.00
28	B41	583.68	170.84	13.00	13.00	180.00	0.00	583.68	170.84	0.00
31	B41	493.20	200.68	13.00	13.00	270.00	0.00	493.20	200.68	0.00
32	B41	494.70	243.33	13.00	13.00	270.00	0.00	494.70	243.33	0.00
33	B41	522.70	171.01	13.00	13.00	180.00	0.00	522.70	171.01	0.00
34	B41	10.30	237.21	13.00	13.00	90.00	0.00	10.30	237.21	0.00

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
10Ft BEYOND PROP LINE	+	0.1 fc	0.4 fc	0.0 fc	N/A	N/A	0.3:1
PAVED AREA	+	2.4 fc	4.5 fc	0.8 fc	5.6:1	3.0:1	0.5:1
Property Line	+	0.5 fc	1.9 fc	0.1 fc	19.0:1	5.0:1	0.3:1
sidewalk A	+	1.4 fc	1.9 fc	1.0 fc	1.9:1	1.4:1	0.7:1
sidewalk B	+	1.4 fc	2.4 fc	1.0 fc	2.4:1	1.4:1	0.6:1

Luminaire Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	2A5	5	Lithonia Lighting	KAD LED 1 49B350/40K SR5	KAD LED WITH HLM MODULE, 49 LED's, 350mA DRIVER, 4000K COLOR TEMPERATURE, TYPE 5 LENS	ONE 59-WATT LED , DOWNLIGHT POS.	1	KAD_LED_1_49B350_40K_SR5.ies	4853.241	0.92	118.6
	A32	8	Lithonia Lighting	KAD LED 1 63B350/40K SR3	KAD LED WITH HLM MODULE, 63 LED's, 350mA DRIVER, 4000K COLOR TEMPERATURE, TYPE 3 LENS	ONE 74-WATT LED, DOWNLIGHTPOS.	1	KAD_LED_1_63B350_40K_SR3.ies	6373.479	0.92	74.5
	3A5	7	Lithonia Lighting	KAD LED 1 49B350/40K SR5	KAD LED WITH HLM MODULE, 49 LED's, 350mA DRIVER, 4000K COLOR TEMPERATURE, TYPE 5 LENS	ONE 59-WATT LED , DOWNLIGHT POS.	1	KAD_LED_1_49B350_40K_SR5.ies	4853.241	0.92	177.9
	B41	9	Antique Street Lamps	RGXL X 32LED 350MA 3K ARF R3	RG LED ACORN POST TOP WITH ALUM COVER. RGS, RGR & RGC Included.	32 LED ARRAY	1	RGXL_X_32LED_350MA_3K_ARF_R3.ies	2453.672	0.92	37.7
	B5	8	Antique Street Lamps	RGXL X 32LED 530MA 3K ARF R5	RG LED ACORN POST TOP WITH ALUM TOP. RGS, RGR & RGC Series Included.	32 LED ARRAY	1	RGXL_X_32LED_530MA_3K_ARF_R5.ies	3468.549	0.92	56
	B4	23	Antique Street Lamps	RGXL X 32LED 530MA 3K ARF R3	RG LED ACORN POST TOP WITH ALUM COVER . RGS, RGR, RGC LED Series included.	32 LED ARRAY	1	RGXL_X_32LED_530MA_3K_ARF_R3.ies	3245.397	0.92	56
	4A5	5	Lithonia Lighting	KAD LED 1 49B350/40K SR5	KAD LED WITH HLM MODULE, 49 LED's, 350mA DRIVER, 4000K COLOR TEMPERATURE, TYPE 5 LENS	ONE 59-WATT LED , DOWNLIGHT POS.	1	KAD_LED_1_49B350_40K_SR5.ies	4853.241	0.92	237.2
	2A32	17	Lithonia Lighting	KAD LED 1 63B350/40K SR3	KAD LED WITH HLM MODULE, 63 LED's, 350mA DRIVER, 4000K COLOR TEMPERATURE, TYPE 3 LENS	ONE 74-WATT LED, DOWNLIGHTPOS.	1	KAD_LED_1_63B350_40K_SR3.ies	6373.479	0.92	149

NORR

CONSULTANT:

GWE
Giffels-Webster Engineers, Inc.
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06/21/2013	RE-SUBMITTAL SITE PLAN	
08/20/2013	TENANT COORDINATION	
11/22/2013	RE-SUBMITTAL SITE PLAN	
12/02/2013	TENANT COORDINATION	

Project Manager A.RICCIUTI	Drawn B.COLBURN
Project Leader B.COLBURN	Checked
Date 06/21/2013	Dept Mgr Approval A.RICCIUTI

Client

VERSA DEVELOPMENT
25900 W. 11 Mile Road
Southfield, MI - Sutie 250 48034
Office: (248) 996-1412

Contact: Steve Robinson

Project

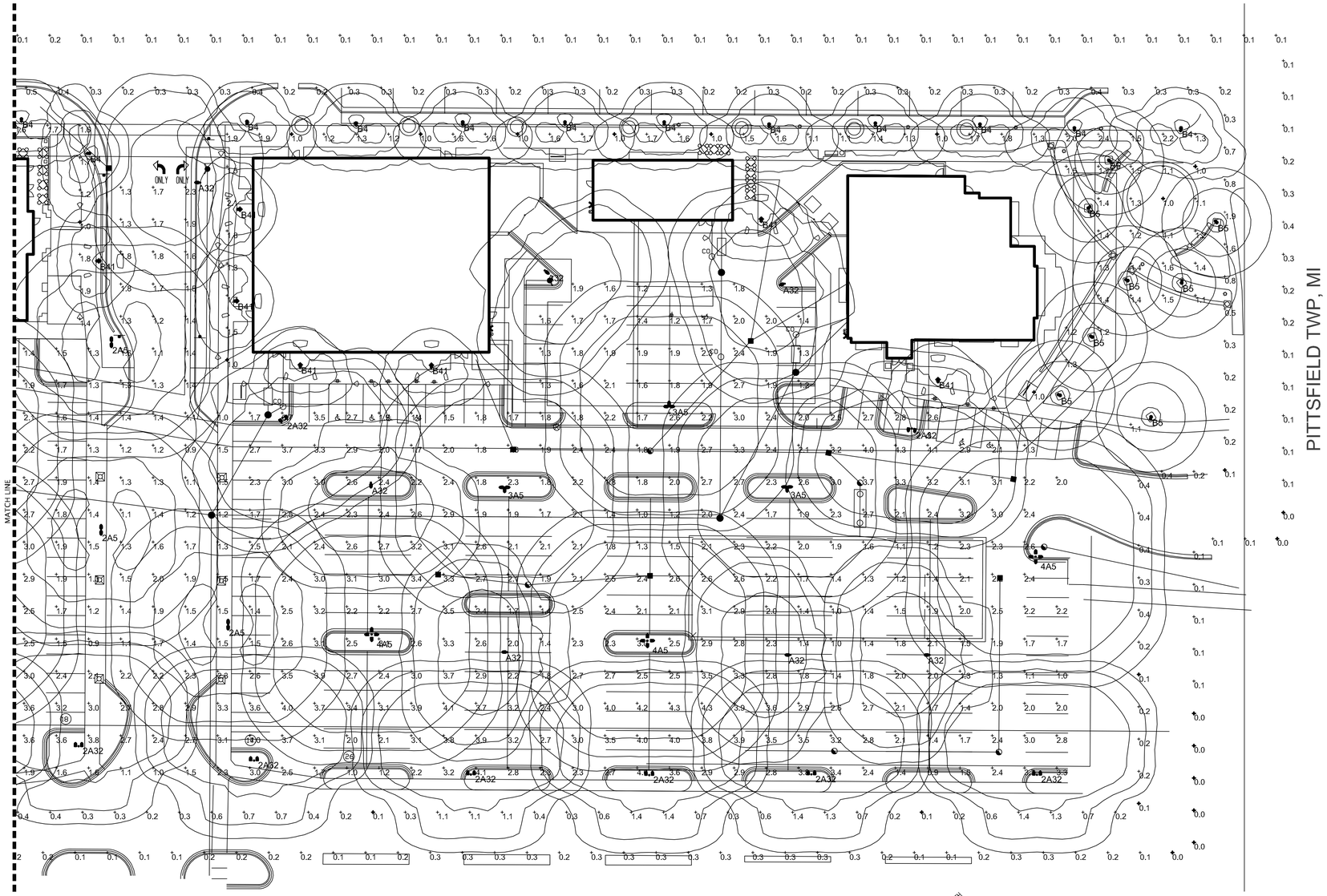
PITTSFIELD DEVELOPMENT
Ann Arbor-Saline Road
Pittsfield Township, Michigan

Drawing Title

DATA TABLES
PHOTOMETRIC

DO NOT SCALE DRAWING

Project No.	Drawing No.
JCDT.12.0314	66-SP10



1 NORTHWEST PHOTOMETRIC PLAN

Scale: 1" = 30'-0"

NORTH

NORR

CONSULTANT:

GWE

Giffels-Webster Engineers, Inc.

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Project Manager A.RICCIUTI	Drawn B.COLBURN
Project Leader B.COLBURN	Checked
Date 06/21/2013	Dept Mgr Approval A.RICCIUTI

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Contact: Steve Robinson

Project

PITTSFIELD DEVELOPMENT
Ann Arbor-Saline Road
Pittsfield Township, Michigan

Drawing Title

NORTHWEST
PHOTOMETRIC PLAN

DO NOT SCALE DRAWING

Project No.	Drawing No.
JCDT.12.0314	64-SP8

LITHONIA LIGHTING®

FEATURES & SPECIFICATIONS

INTENDED USE — Square straight steel pole for up to 39-foot mounting height.

CONSTRUCTION — Weldable-grade, hot-rolled, commercial-quality carbon steel tubing with a minimum yield of 55,000 psi (11-gauge), or 50,000 psi (7-gauge). Uniform wall thickness of .1196" or .1793". Shaft is one-piece with a full-length longitudinal high-frequency electric resistance weld. Uniformly square in cross-section with flat sides, small corner radii and excellent torsional qualities. Available shaft widths are 4, 5 and 6 inches.

Anchor base is fabricated from hot-rolled carbon steel plate conforming to ASTM A36, that meets or exceeds a minimum-yield strength of 36,000 psi. Base plate and shaft are circumferentially welded top and bottom. Base cover is finished to match pole.

A handhole having nominal dimensions of 3" x 5" for all shafts. Included is a cover with attachment screws.

Top cap provided with all drill-mount and open top "PT" poles.

Fasteners are high-strength galvanized, zinc-plated or stainless steel.

Finish: Must specify finish.

Grounding: Provision located immediately inside handhole rim. Grounding hardware is not included (provided by others).

Anchor bolts: Top portion of anchor bolt is galvanized per ASTM A-153. Made of steel rod having a minimum yield strength of 55,000 psi.

Note: Specifications subject to change without notice.

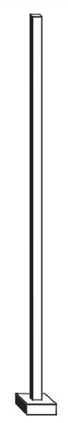
Actual performance may differ as a result of end-user environment and application.

Catalog Number	
Notes	
Type	

Anchor Base Poles

SSS

SQUARE STRAIGHT STEEL



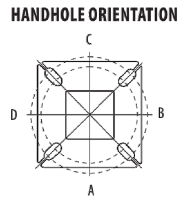
ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: SSS 20 5C DM19 DDB

SSS Series	Nominal fixture mounting height	Nominal shaft base size/wall thickness	Mounting[1]		Options	Finish[10]
SSS	10 – 39 feet (See back page.)	(See back page.)	Tenon mounting PT Open top (includes top cap) T20 2-3/8" O.D. (2" NPS) T25 2-7/8" O.D. (2-1/2" NPS) T30 3-1/2" O.D. (3" NPS) T35 4" O.D. (3-1/2" NPS) Drill mounting[2] DM19 1 at 90° DM28 2 at 180° DM28 PL 2 at 180° with one side plugged DM29 2 at 90° DM39 3 at 90° DM49 4 at 90° CSX/DSX/AERIS™/OMERO™ Drill mounting[2] DM19AS 1 at 90° DM28AS 2 at 180° DM29AS 2 at 90° DM39AS 3 at 90° DM49AS 4 at 90°	AERIS™ Suspend drill mounting[2,3] DM19AST_ 1 at 90° DM28AST_ 2 at 180° DM29AST_ 2 at 90° DM39AST_ 3 at 90° DM49AST_ 4 at 90° OMERO™ Suspend drill mounting[2,3] DM19MRT_ 1 at 90° DM28MRT_ 2 at 180° DM29MRT_ 2 at 90° DM39MRT_ 3 at 90° DM49MRT_ 4 at 90°	Shipped installed L/AB Less anchor bolts VD Vibration damper TP Tamper proof H1-18Sxx Horizontal arm bracket (1 fixture)[4,5] FDLxx Festoon outlet less electrical[4] CPL12xx 1/2" coupling[4] CPL34xx 3/4" coupling[4] CPL1xx 1" coupling[4] NPL12xx 1/2" threaded nipple[4] NPL34xx 3/4" threaded nipple[4] NPL1xx 1" threaded nipple[4] EHHxx Extra handhole[4,6] MAEX Match existing[7] USPOM United States point of manufacture[8] IC Interior coating[9]	Standard colors DDB Dark bronze DWH White DBL Black DMB Medium bronze DNA Natural aluminum Classic colors DSS Sandstone DGC Charcoal gray DTG Tennis green DBR Bright red DSB Steel blue Architectural colors (powder finish)[10]

NOTES:
1. PT open top poles include top cap. When ordering tenon mounting and drill mounting for the same pole, follow this example: DM28/T20. The combination includes a required extra handhole.
2. The drilling template to be used for a particular luminaire depends on the luminaire that is used. Refer to the Technical Data Section of the Outdoor Binder for Drilling Templates.
3. Insert "1" or "2" to designate fixture size; e.g. DM19AST2.
4. Specify location and orientation when ordering option.
   For 1st "x": Specify the height in feet above base of pole.
   Example: 5ft = 5 and 20ft = 20
   For 2nd "x": Specify orientation from handhole (A,B,C,D)
   Refer to the Handhole Orientation diagram above.
5. Horizontal arm is 18" x 2-3/8" O.D. tenon standard.
6. Combination of tenon-top and drill mount includes extra handhole.
7. Must add original order number
8. Use when mill certifications are required.
9. Provides enhanced corrosion resistance.
10. Additional colors available; see www.lithonia.com/archcolors or Architectural Colors brochure (Form No. 794.3). Powder finish standard.

HANDHOLE ORIENTATION



IMPORTANT INSTALLATION NOTES:
- **Do not** erect poles without having fixtures installed.
- Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates.
- If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage.
- Lithonia Lighting is not responsible for the foundation design.

KAD LED
LED Area Luminaire

Catalog Number	
Notes	
Type	

Hit the Tab key or mouse over the page to see all interactive elements.

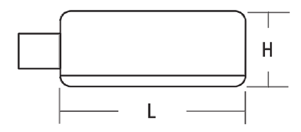
Introduction

The Contour® Series luminaires offer traditional square dayforms with softened edges for a versatile look that complements many applications.

The KAD LED combines the latest in LED technology with the familiar aesthetic of the Contour® Series for stylish, high-performance illumination that lasts. It is ideal for replacing 100-250W metal halide in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Specifications

EPA:	1.2 ft² (0.11 m²)
Length:	17-1/2" (44.5 cm)
Width:	17-1/2" (44.5 cm)
Height:	7-1/8" (18.1 cm)
Weight (max):	36 lbs (16.4 kg)



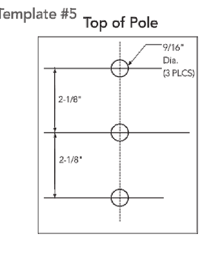
Ordering Information

EXAMPLE: KAD LED 1 63B350/40K SR5 MVOLT SPD04 DDBXD

KAD LED Series	Light Engines	Performance Package[1]	Distribution	Voltage	Mounting	Options	Finish (required)
KAD LED	1 One engine (49 or 63 LEDs)	350 mA options: 49B350/30K 3000K 49B350/40K 4000K 49B350/50K 5000K 63B350/30K 3000K 63B350/40K 4000K 63B350/50K 5000K 530 mA options: 63B530/30K 3000K 63B530/40K 4000K 63B530/50K 5000K	SR2 Type II SR3 Type III SR4 Type IV SR5 Type V	MVOLT[2] 120[3] 208[3] 240[3] 277[3] 347 480	Shipped included Type / Length SPD__ Square pole 04 4" arm RPD__ Round pole 06 6" arm WBD__ Wall bracket 09 9" arm WWD__ Wood pole or wall 12 12" arm	Shipped installed PER NEMA twist-lock receptacle only (no controls) SF Single fuse (120, 277, 347V)[3] DF Double fuse (208, 240, 480V)[3] DMG 0-10V dimming driver (no controls)[4] DFL Diffusing lens BL30 Switched dimming, 30%[5] BL50 Switched dimming, 50%[5] Shipped separately VG Vandal guard[6] WG Wire guard[6]	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

Drilling

Template #5 Top of Pole



Accessories
Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V)[7]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V)[7]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V)[7]
SC U	Shorting cap[7]
KMA DDBXD U	Mast arm adapter (specify finish)
KADWG U	Wire guard accessory
KADVG U	Vandal guard accessory

For more control options, visit DTL and ROAM online.

Tenon Mounting Slipfitter*

Tenon O.D.	Single Unit	2 at 180°	2 at 90°†	3 at 120°†	3 at 90°†	4 at 90°†
2-3/8"	T20-190	T20-280	T20-290	T20-320†	T20-390	T20-490
2-7/8"	T25-190	T25-280	T25-290	T25-320	T25-390	T25-490
4"	T35-190	T35-280	T35-290	T35-320	T35-390	T35-490

* For round pole mounting (RPA) only. † Requires 9" or 12" arm.

NOTES
1. Configured with 4000K (/40K) provides the shortest lead times. Consult factory for 3000K (/30K) and 5000K (/50K) lead times.
2. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
3. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
4. Not available with 347 or 480V.
5. Requires an additional switched line. Dimming driver standard. MVOLT only.
6. Also available as a separate accessory; see Accessories information at left.
7. Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.

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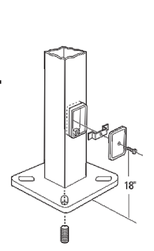
SSS Square Straight Steel Poles

TECHNICAL INFORMATION

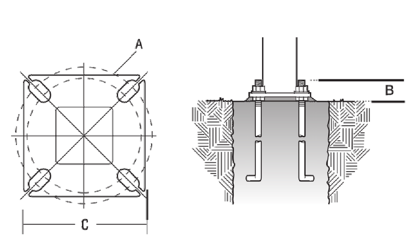
Catalog Number	Nominal mount ht. (ft)	Pole Shaft Size (in x ft)	Wall Thickness (in)	Gauge	EPA (ft²) with 1.3 gust: 80 mph	Max. weight	90 mph	Max. weight	100 mph	Max. weight	Bolt Circle (in)	Bolt Size (in x in x in)	Approximate ship (lbs)
SSS 10 4C	10	4.0 x 10.0	0.1196	11	30.6	765	23.8	595	18.9	473	8--9	3/4 x 18 x 3	75
SSS 12 4C	12	4.0 x 12.0	0.1196	11	24.4	610	18.8	470	14.8	370	8--9	3/4 x 18 x 3	90
SSS 14 4C	14	4.0 x 14.0	0.1196	11	19.9	498	15.1	378	11.7	293	8--9	3/4 x 18 x 3	100
SSS 16 4C	16	4.0 x 16.0	0.1196	11	15.9	398	11.8	295	8.9	223	8--9	3/4 x 18 x 3	115
SSS 18 4C	18	4.0 x 18.0	0.1196	11	12.6	315	9.2	230	6.7	168	8--9	3/4 x 18 x 3	125
SSS 20 4C	20	4.0 x 20.0	0.1196	11	9.6	240	6.7	167	4.5	150	8--9	3/4 x 18 x 3	140
SSS 20 4G	20	4.0 x 20.0	0.1793	7	14	350	11	275	8	200	8--9	3/4 x 30 x 3	198
SSS 20 5C	20	5.0 x 20.0	0.1196	11	17.7	443	12.7	343	9.4	235	10--12	1 x 36 x 4	185
SSS 20 5G	20	5.0 x 20.0	0.1793	7	28.1	703	21.4	535	16.2	405	10--12	1 x 36 x 4	265
SSS 25 4C	25	4.0 x 25.0	0.1196	11	4.8	150	2.6	100	1	50	8--9	3/4 x 18 x 3	170
SSS 25 4G	25	4.0 x 25.0	0.1793	7	10.8	270	7.7	188	5.4	135	8--9	3/4 x 30 x 3	245
SSS 25 5C	25	5.0 x 25.0	0.1196	11	9.8	245	6.3	157	3.7	150	10--12	1 x 36 x 4	225
SSS 25 5G	25	5.0 x 25.0	0.1793	7	18.5	463	13.3	333	9.5	238	10--12	1 x 36 x 4	360
SSS 30 4G	30	4.0 x 30.0	0.1793	7	6.7	168	4.4	110	2.6	65	8--9	3/4 x 30 x 3	295
SSS 30 5C	30	5.0 x 30.0	0.1196	11	4.7	150	2	50	--	--	10--12	1 x 36 x 4	265
SSS 30 5G	30	5.0 x 30.0	0.1793	7	10.7	267	6.7	167	3.9	100	10--12	1 x 36 x 4	380
SSS 30 6G	30	6.0 x 30.0	0.1793	7	19	475	13.2	330	9	225	11--13	1 x 36 x 4	520
SSS 35 5G	35	5.0 x 35.0	0.1793	7	5.9	150	2.5	100	--	--	10--12	1 x 36 x 4	440
SSS 35 6G	35	6.0 x 35.0	0.1793	7	12.4	310	7.6	190	4.2	105	11--13	1 x 36 x 4	540
SSS 39 6G	39	6.0 x 39.0	0.1793	7	7.2	180	3	75	--	--	11--13	1 x 36 x 4	605

BASE DETAIL



POLE DATA

Shaft base size	Bolt circle A	Bolt projection B	Base square C	Template description	Anchor bolt description	Anchor bolt and template number
4"C	8-1/2"	2-3/4"–4"	8"	ABTEMPLATE PJ50004	AB18-0	ABSSS-4C
4"G	8-1/2"	2-3/4"–4"	8"	ABTEMPLATE PJ50004	AB30-0	ABSSS-4G
5"	10"–12"	3-3/8"–4"	11"	ABTEMPLATE PJ50010	AB36-0	ABSSS-5
6"	11"–13"	3-3/8"–4"	12-1/2"	ABTEMPLATE PJ50011	AB36-0	N/A



IMPORTANT:
- These specifications are intended for general purposes only. Lithonia reserves the right to change material or design, without prior notice, in a continuing effort to upgrade its products.

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%. Contact factory for performance data on any configurations not shown here.

Light Engines	Drive Current (mA)	Performance Package	System Watts	Dist. Type	40K (4000K, 67 CRI) Lumens	B	U	G	LPW
1 (49 LEDs)	350	49B350/--K	59W	SR2	5068	1	0	1	86
				SR3	4663	1	0	1	80
				SR4	4667	1	0	1	80
				SR5	4853	3	0	1	82
1 (63 LEDs)	350	63B350/--K	74W	SR2	6148	1	0	1	83
				SR3	6374	1	0	1	86
				SR4	6250	1	0	1	84
				SR5	6464	3	0	1	87
	530	63B530/--K	109W	SR2	8353	2	0	2	77
				SR3	8595	2	0	2	79
				SR4	8246	2	0	2	76
				SR5	8452	3	0	1	78

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	**77°F**	**1.00**
30°C	86°F	1.00
40°C	104°F	0.99

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **KAD LED 1 63B530** platform in a **40°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate **LLF**, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.92	0.87

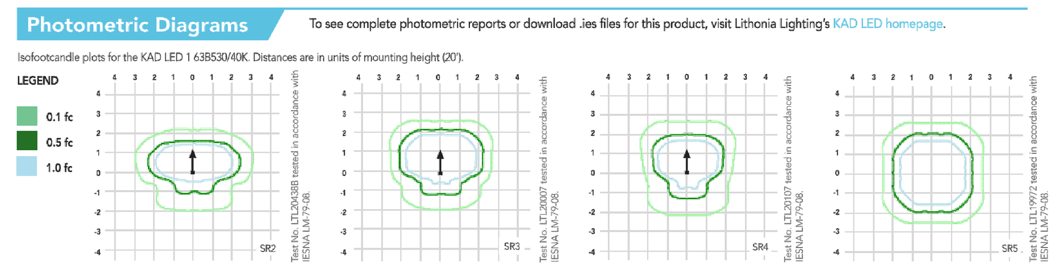
Electrical Load

Light Engines	Drive Current (mA)	System Watts	Current (A) 120	208	240	277	347	480
1 (49)	350	59W	0.55	0.32	0.27	0.24	0.19	0.14
1 (63)	350	74W	0.69	0.40	0.34	0.30	0.24	0.17
	530	109W	1.01	0.58	0.50	0.44	0.35	0.25

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's KAD LED homepage.

Isofootcandle plots for the KAD LED 1 63B530/40K. Distances are in units of mounting height (20').



FEATURES & SPECIFICATIONS

INTENDED USE
The energy savings and long life of the KAD LED area luminaire make it a reliable choice for illuminating streets, walkways, parking lots, and surrounding areas.

CONSTRUCTION
Single-piece die-cast, aluminum housing with contoured edges has a 0.12" nominal wall thickness. Die-cast door frame has an impact-resistant, tempered glass lens that is fully gasketed with one-piece tubular silicone.

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling.

OPTICS
Precision-molded refractive acrylic lenses housed behind the door frame lens are available in four distributions. Light engines are available in standard 4000K (67 CRI) or optional 3000K (80 CRI) or 5000K (67 CRI) configurations.

ELECTRICAL
Light engine consists of 49 or 63 high-efficacy LEDs mounted to a metal-core circuit board and aluminum heat sink, ensuring optimal thermal management and long life. Class 1 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Easily-serviceable surge protection device meets a minimum Category C Low (per ANSI/IEEE C62.41.2).

INSTALLATION
Extruded aluminum arm for pole or wall mounting.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. Rated for -40°C minimum ambient.

WARRANTY
Five year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Specifications subject to change without notice.

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2 FIXTURES 2A5, A32, 3A5, 4A5, 2A32

Scale: NTS

SHOE BOX STYLE FIXTURES
LED LAMP TYPE
20'-0" POLES
3'-0" AFG CONCRETE BASE X 2'-0" DIA
COLOR BLACK

ANTIQUE STREET LAMPS™ RG LED SERIES ROUND METAL TOP

CATALOG #
PROJECT
TYPE

This acorn styled luminaire consists of a decorative luminaire base with an integral globe holder/gear housing and an acorn shaped globe.

- Injection molded, refractive, clear acrylic or polycarbonate base with curved metal top
- Optional trim selection: Finials, Bands, Medallions
- Tool-less gear housing option
- Stainless steel hardware
- 9 Different styles of bases coordinate with this luminaire
- CSA listed and labeled as suitable for wet locations
- Powder coat finish
- 3" O.D. x 3" tall tenon required for mounting

Max EPA:	1.52 sq feet
Max Height:	44-1/2" (113.0cm)
Max Width:	19-1/8" (48.5cm)
Max Weight:	30 lbs (13.6 kg)
Listing:	CSA listed for wet locations

Sample Catalog number as it might appear when ordering below:

RGRL	A	32LED 525 MA	4K	ARF	R5	MVOLT	ANBK	RF
Series	Decorative Base	Wattage/ Lamp	Color Temperature	Lens Options	Distribution Options	Voltage	Finish	Finial Options

ARH	MD8	BS21	—
Arm Options	Med Options	Band Options	Photocontrol Options

Ordering Guide:

Series	Decorative Base	LED/ Driver	Color Temperature	Lens Options	Distribution Options	Voltage	Finial Options	Arm Options[1]
RGR4L RGRL RGR1L RGR2L RGR23L	A AU[2] D E K M N[2] W X	32LED 525MA 32LED 700MA	3K 4K 5K	ARF PRF	R5 R3	MVOLT[3] 347 480	FPF SMF SFF PDF GF RF FSF SAF RPF AMF PGF	ARH ARY ARU ARV

Med Options[1]	Band Options[1]	Photocontrol Options	Fuse Options	Finish
MD3 MD12 MD4 MD13 MD5 MD14 MD6 MD15 MD7 MD16 MD8 MD17 MD9 MD18 MD10 MD19 MD11	BS1 BS71 BL41 BS2 BS81 BL51 BS3 BL1 BL61 BS4 BL2 BL71 BS5 BL3 BL81 BS6 BL4 BS7 BL5 BS8 BL6 BS21 BL7 BS41 BL8 BS51 BL21 BS61 BL31	PEB1 PEB2 PE1[4] PE3[4] PE4[4] PE7[4] PER[4]	SF DF	DBL DDB DNA DWH CS CM ANBK ANDB ANDG ANVG

Notes:
1. Arm, medallion and band must be selected together. None of these options can be selected alone.
2. Not available with photocontrol options PEBI and PEB2.
3. Electronic multivolt driver capable of handling any line voltage from 120V to 277V, 50 or 60HZ.
4. Twist-lock photo control only available with AU and N bases.

Historic / Progressive **RG LED SERIES**

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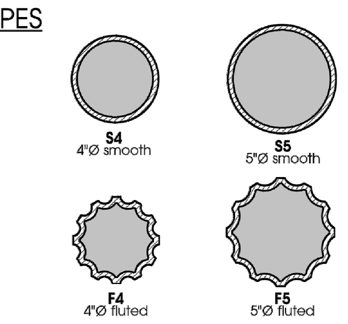
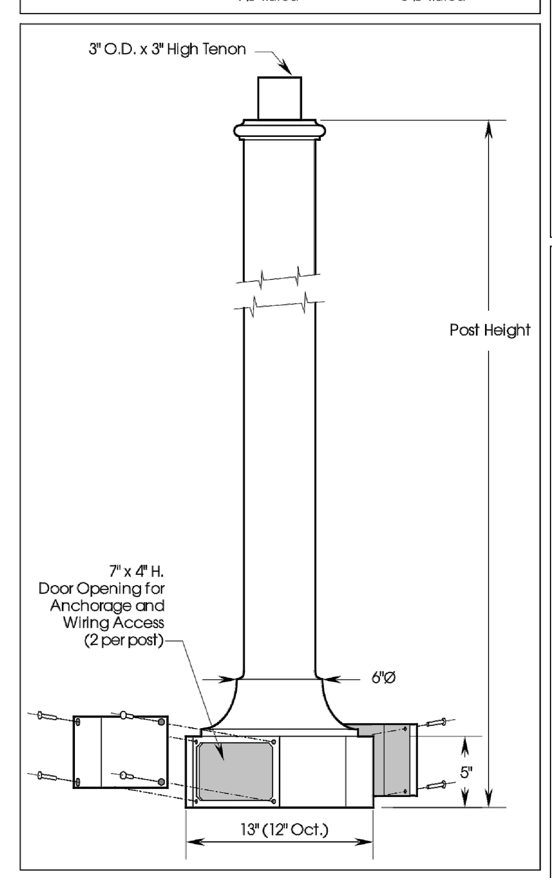
CENTURY OAK Series
Cast Aluminum Posts

SHAFT TYPES





ORDERING INFORMATION

Choose the **boldface** catalog nomenclature that best suits your needs and write it on the appropriate line.

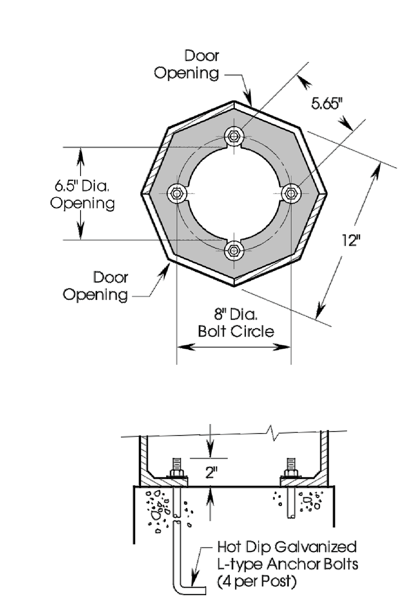
Example: **PX CO12 12 S4 ANBK Options**

Post Series	Height	Finish[1]
PX CO12 Post, Cast Aluminum, Extruded Shaft CENTURY OAK 12" base	**8** **10** **12** **14** **16**[2]	**ANBK** Black **ANDB** Dark Bronze **ANDG** Dark Green **ANVG** Verde Green **ANPP** Prime Painted **CM** Custom Match **CS** Custom Select RAL colors

Shaft Type	Options
S4 Smooth 4"Ø **S5** Smooth 5"Ø **F4** Fluted 4"Ø **F5** Fluted 5"Ø	____ Receptacles ____ Banner Arms ____ Flagpole Holders ____ Custom Logos ____ Signage (see Signage & Accessories section in the catalog or contact Antique Street Lamps)

NOTES:
*1. For finish specifications and color options, see **Finish** section in catalog or contact Antique Steet Lamps.*
*2. 16' height not available for **S4**, **F4**, or **T4** (any 4"Ø) Shaft Type.*

ANCHORAGE GUIDE



ANTIQUE Street Lamps

1 FIXTURES B41, B5, B4

Scale: NTS

ACORN STYLE FIXTURES
LED LAMP TYPE
12'-0" POLES
0'-6" AFG CONCRETE BASE X 1'-6" DIA
COLOR BLACK

NORR

CONSULTANT:

GWE
Giffels-Webster Engineers, Inc.
ENGINEERS-LAND SURVEYORS
PLANNERS-LANDSCAPE ARCHITECTS
2871 BOND STREET
ROCHESTER HILLS, MI 48309
PHONE (248) 852-3100
FAX (248) 852-6372

SEAL:

NOT FOR CONSTRUCTION

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL THE SEAL AND SIGNATURE OF THE RESPONSIBLE REGISTRANT APPEARS ON THE DRAWING, AND PROPER PERMIT FORMS AND RELATED FEES ARE TRANSMITTED BY THE OWNER, OWNER'S AGENT OR CONTRACTOR TO THE AUTHORITY HAVING JURISDICTION.

DATE	ISSUED FOR	REV
11/08/2012	OWNER REVIEW	
12/14/2012	SITE PLAN SUBMITTAL	
04/25/2012	RE-SUBMITTAL SITE PLAN	1
06/21/2013	RE-SUBMITTAL SITE PLAN	
08/20/2013	TENANT COORDINATION	
11/22/2013	RE-SUBMITTAL SITE PLAN	
12/02/2013	TENANT COORDINATION	

Project Manager A.RICCIUTI	**Drawn** B.COLBURN
Project Leader B.COLBURN	**Checked**
Date 06/21/2013	**Dept Mgr Approval** A.RICCIUTI

Client

VERSA DEVELOPMENT
25900 W. 11 Mile Road
Southfield, MI - Sutie 250 48034
Office: (248) 996-1412

Contact: Steve Robinson

Project

PITTSFIELD DEVELOPMENT
Ann Arbor-Saline Road
Pittsfield Township, Michigan

Drawing Title

FIXTURE CUT SHEETS

DO NOT SCALE DRAWING

Project No.	**Drawing No.**
JCDT.12.0314	65-SP9