

SITE DEVELOPMENT PLANS FOR 1360 WALTON BOULEVARD PROPOSED STARBUCKS

PID: 15-09-476-030

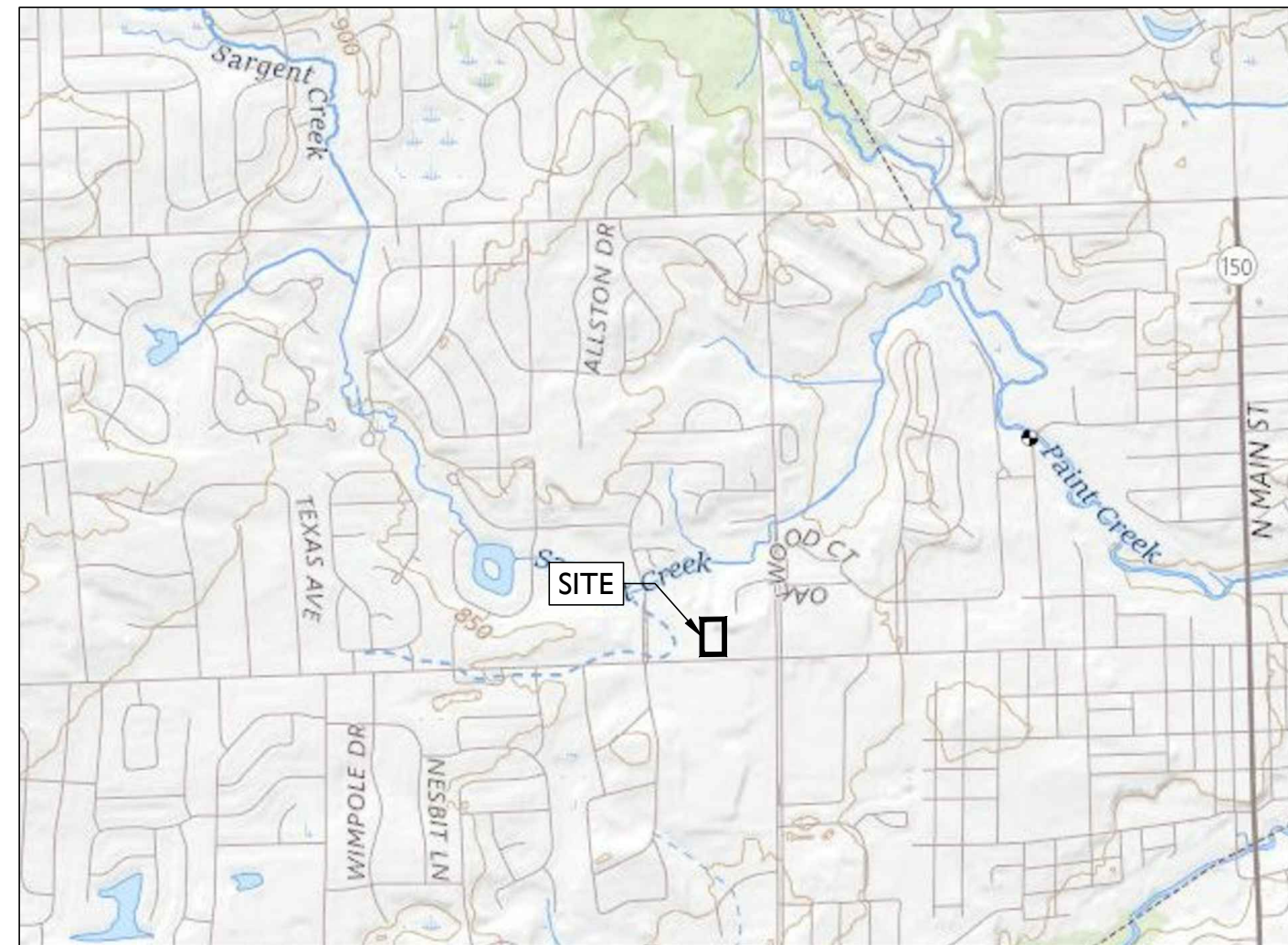
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN

OWNER / APPLICANT

VERUS DEVELOPMENT GROUP
36400 WOODWARD AVE, SUITE 240
BLOOMFIELD HILLS, MI 48304
248-342-5109
FRANK.ARCORI@VERUSDG.COM

ARCHITECT

SERRA-MARKO & ASSOCIATES INC
184 E BIG BEAVER ROAD, SUITE 106
TROY, MI 48063
248-457-6903



SOURCE: USGS NATIONAL MAPPING SYSTEM

LOCATION MAP

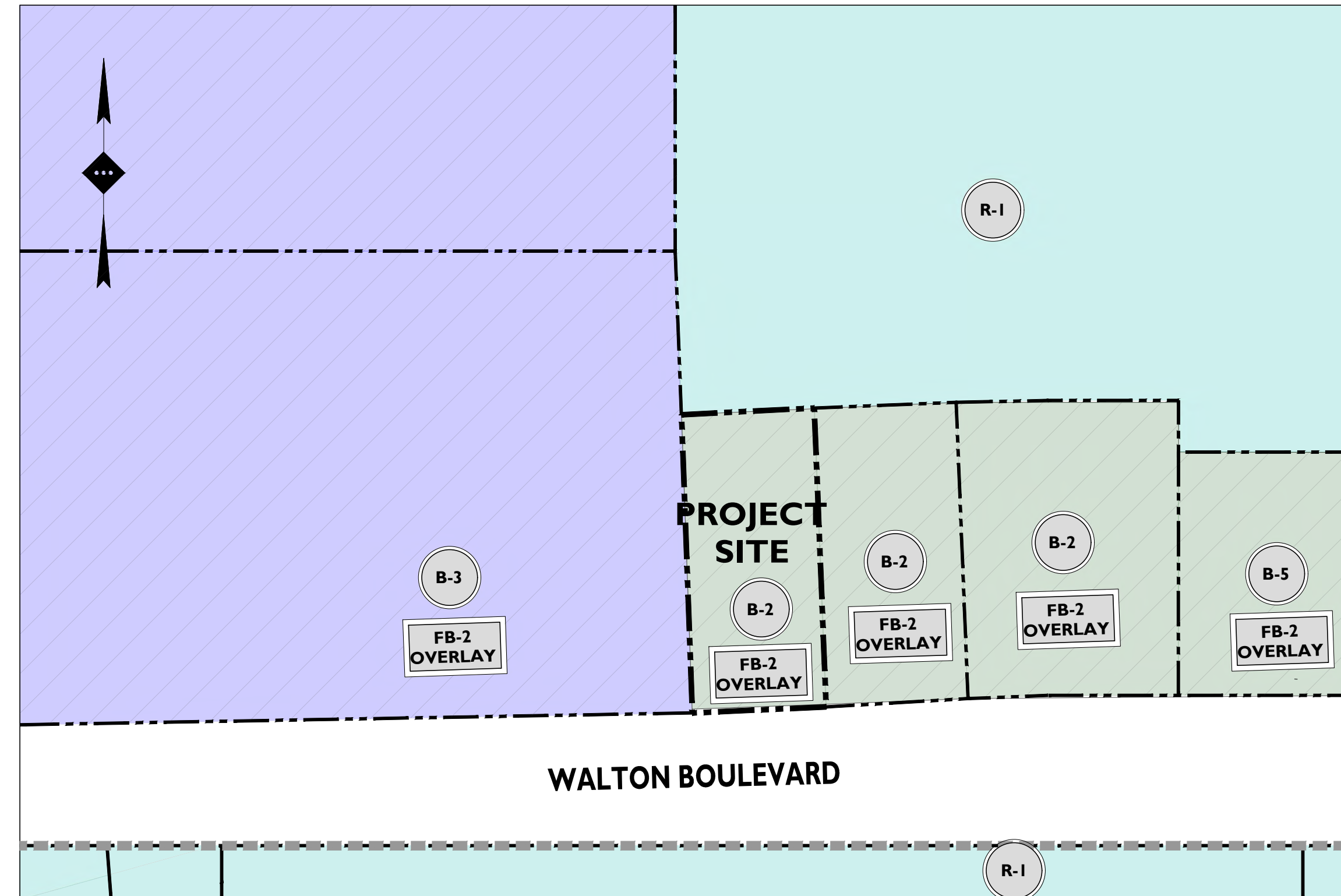
SCALE: 1" = 2,000'±



SOURCE: GOOGLE EARTH PRO

AERIAL MAP

SCALE: 1" = 100'±

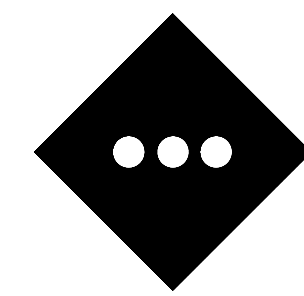


SOURCE: CITY OF ROCHESTER HILLS ZONING MAP

ZONING MAP

SCALE: 1" = 100'±

PLANS PREPARED BY:



STONEFIELD
engineering & design

Detroit, MI · New York, NY · Rutherford, NJ
Princeton, NJ · Tampa, FL · Boston, MA
www.stonefieldeng.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

PLAN REFERENCE MATERIALS:

- THIS PLAN SET REFERENCES THE FOLLOWING DOCUMENTS INCLUDING, BUT NOT LIMITED TO:
 - ALTA/INSPS SURVEY OBTAINED FROM KEM-TEC, DATED 12/27/2021
 - ARCHITECTURAL PLANS OBTAINED FROM SERRA-MARKO & ASSOCIATES, DATED 08/20/2021
 - AERIAL MAP REFERENCED FROM GOOGLE EARTH PRO
 - LOCATION MAP OBTAINED FROM USGS NATIONAL MAPPER
 - ZONING MAP REFERENCED FROM CITY OF ROCHESTER HILLS ZONING MAP
- ALL REFERENCE MATERIAL LISTED ABOVE SHALL BE CONSIDERED A PART OF THIS PLAN SET AND ALL INFORMATION CONTAINED WITHIN THESE MATERIALS SHALL BE UTILIZED IN CONJUNCTION WITH THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF EACH REFERENCE AND REVIEW IT THOROUGHLY PRIOR TO THE START OF CONSTRUCTION.



Know what's below
Call before you dig.

ADDITIONAL SHEETS	
DRAWING TITLE	SHEET #
ALTA / TOPOGRAPHIC SURVEY	1 OF 1
CITY WATER MAIN STANDARD DETAILS	1 OF 3
CITY WATER MAIN STANDARD DETAILS	2 OF 3
CITY WATER MAIN STANDARD DETAILS	3 OF 3
CITY SANITARY SEWER STANDARD DETAILS	1 OF 2
CITY SANITARY SEWER STANDARD DETAILS	2 OF 2
CITY STORM SYSTEM STANDARD DETAILS	1 OF 1

SHEET INDEX	
DRAWING TITLE	SHEET #
COVER SHEET	C-1
DEMOLITION PLAN	C-2
SITE PLAN	C-3
GRADING PLAN	C-4
STORMWATER MANAGEMENT PLAN	C-5
UTILITY PLAN	C-6
FIRE PROTECTION PLAN	C-7
LIGHTING PLAN	C-8
SOIL EROSION & SEDIMENT CONTROL PLAN	C-9
LANDSCAPE PLAN	C-10
TREE REPLACEMENT PLAN	C-11
CONSTRUCTION DETAILS	C-12 TO C-17
SIGHT DISTANCE PLAN	C-18

ISSUE	DATE	BY	DESCRIPTION
8	06/27/2022	JRC	SUBMISSION FOR ENGINEERING APPROVAL
7	05/26/2022	JRC/ECH	SUBMISSION FOR SITE PLAN APPROVAL
6	02/09/2022	JRC/ECH	REVISED PER CITY SECOND SITE PLAN REVIEW
5	12/28/2021	JRC/ECH	REVISED PER CITY SITE PLAN REVIEW
4	09/02/2021	RAC/ECH	SUBMISSION FOR SITE PLAN APPROVAL
3	08/20/2021	RAC	REVISED PER FIRE DEPARTMENT COMMENTS
2	08/02/2021	ECH	REVISED PER CITY COMMENTS
1	07/02/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design

Detroit, MI · New York, NY · Boston, MA
Princeton, NJ · Tampa, FL · Rutherford, NJ
www.stonefieldeng.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

1360 WALTON BLVD

PROPOSED STARBUCKS

PARCEL ID: 15-09-476-030
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

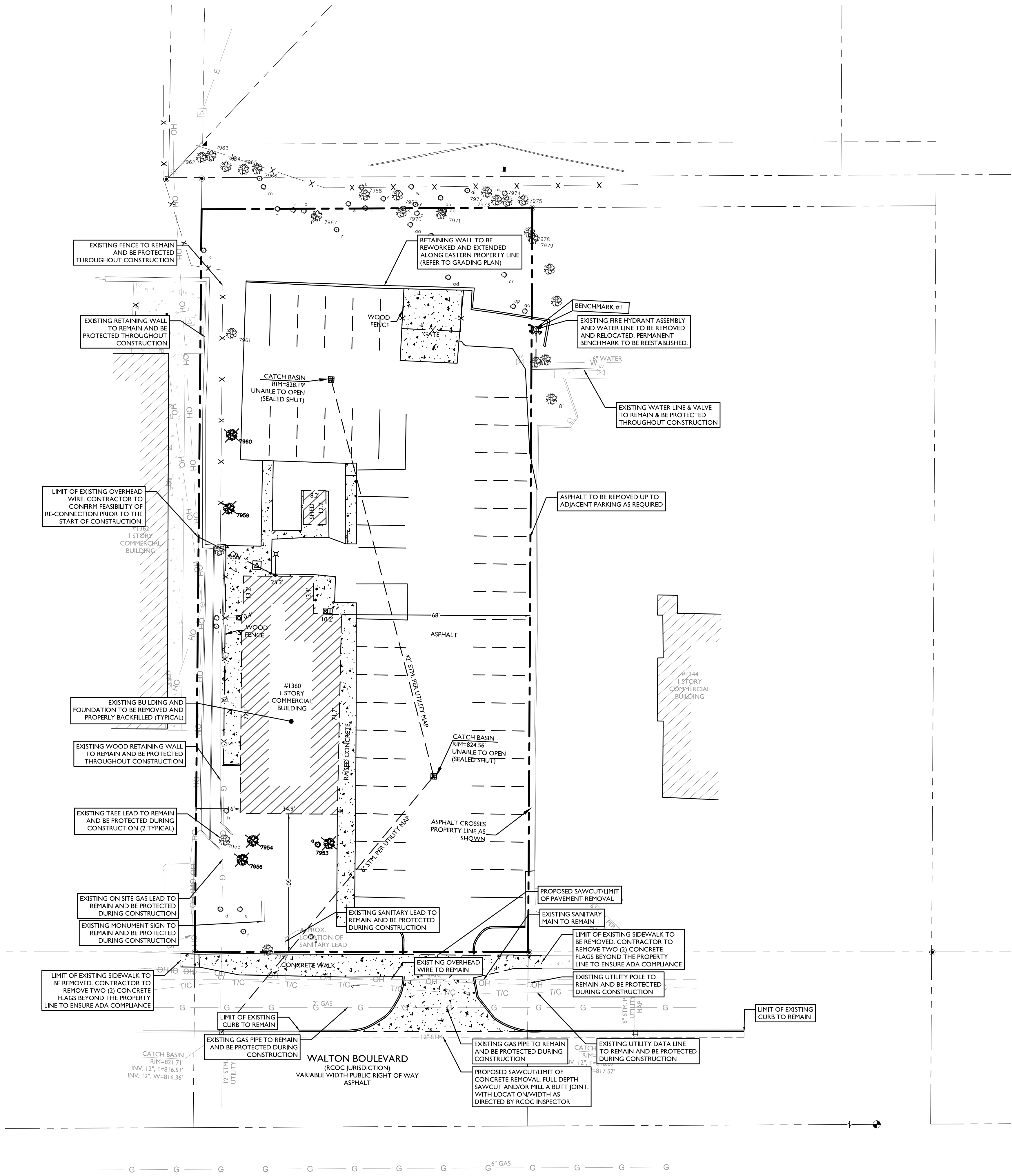
STONEFIELD
engineering & design

CITY FILE #21-030 SECTION #9
SCALE: AS SHOWN PROJECT ID: DET-200412

TITLE:
COVER SHEET

DRAWING:
C-1

NOT TO SCALE. SEE DEVELOPMENT ORDER 188 WALTON BOULEVARD, ROCHSTER HILLS, MICHIGAN FOR FURTHER INFORMATION.



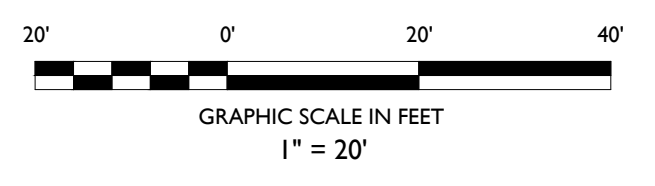
SYMBOL	DESCRIPTION
---	FEATURE TO BE REMOVED / DEMOLISHED
---	LIMIT OF DISTURBANCE
X	TREES TO BE REMOVED
▨	CONCRETE PAVEMENT TO BE REMOVED

ALL SITE FEATURES WITHIN THE LIMIT OF DISTURBANCE INDICATED ON THIS PLAN ARE TO BE REMOVED UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IF SIGNIFICANT DISCREPANCIES ARE DISCERNED BETWEEN THIS PLAN AND FIELD CONDITIONS



**Know what's below
Call before you dig.**

- DEMOLITION NOTES**
1. THE WORK REFLECTED ON THE DEMOLITION PLAN IS TO PROVIDE GENERAL INFORMATION TOWARDS THE EXISTING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR IS RESPONSIBLE TO REVIEW THE ENTIRE PLAN SET AND ASSOCIATED REPORTS/REFERENCE DOCUMENTS INCLUDING ALL DEMOLITION ACTIVITIES AND INCIDENTAL TASKS NECESSARY TO COMPLETE THE SITE IMPROVEMENTS.
 2. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF DEMOLITION ACTIVITIES.
 3. EXPLOSIVES SHALL NOT BE USED UNLESS WRITTEN CONSENT FROM BOTH THE OWNER AND ANY APPLICABLE GOVERNING AGENCY IS OBTAINED. BEFORE THE START OF ANY EXPLOSIVE PROGRAM, THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL LOCAL, STATE, AND FEDERAL PERMITS. ADDITIONALLY, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL SEISMIC TESTING AS REQUIRED AND ANY DAMAGES AS THE RESULT OF SAID DEMOLITION PRACTICES.
 4. ALL DEMOLITION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL CODES. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL UTILITIES ARE DISCONNECTED IN ACCORDANCE WITH THE UTILITY AUTHORITY'S REQUIREMENTS PRIOR TO STARTING THE DEMOLITION OF ANY STRUCTURE. ALL EXCAVATIONS ASSOCIATED WITH DEMOLISHED STRUCTURES OR REMOVED TANKS SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO SUPPORT SITE AND BUILDING IMPROVEMENTS. A GEOTECHNICAL ENGINEER SHOULD BE PRESENT DURING BACKFILLING ACTIVITIES TO OBSERVE AND CERTIFY THAT BACKFILL MATERIAL WAS COMPACTED TO A SUITABLE CONDITION.
 5. DEMOLISHED DEBRIS SHALL NOT BE BURIED ON SITE. ALL WASTE/DEBRIS GENERATED FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL RECORDS OF THE DISPOSAL TO DEMONSTRATE COMPLIANCE WITH THE ABOVE REGULATIONS.



ISSUE	DATE	BY	DESCRIPTION
8	06/27/2022	JRC	SUBMISSION FOR ENGINEERING APPROVAL
7	05/26/2022	JRC/ECH	SUBMISSION FOR SITE PLAN APPROVAL
6	02/09/2022	JRC/ECH	REVISED PER CITY SECOND SITE PLAN REVIEW
5	12/28/2021	JRC/ECH	REVISED PER CITY SITE PLAN REVIEW
4	09/08/2021	RAC/ECH	SUBMISSION FOR SITE PLAN APPROVAL
3	08/20/2021	RAC	REVISION PER FIRE DEPARTMENT COMMENTS
2	08/02/2021	ECM	REVISION PER CITY COMMENTS
1	07/08/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design

Detroit, MI • New York, NY • Boston, MA
Princeton, NJ • Tampa, FL • Rochester, NY
www.stonefielddesign.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE DEVELOPMENT PLANS

1360 WALTON BLVD

PROPOSED STARBUCKS

PARCEL ID: 15-09-474-030
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN



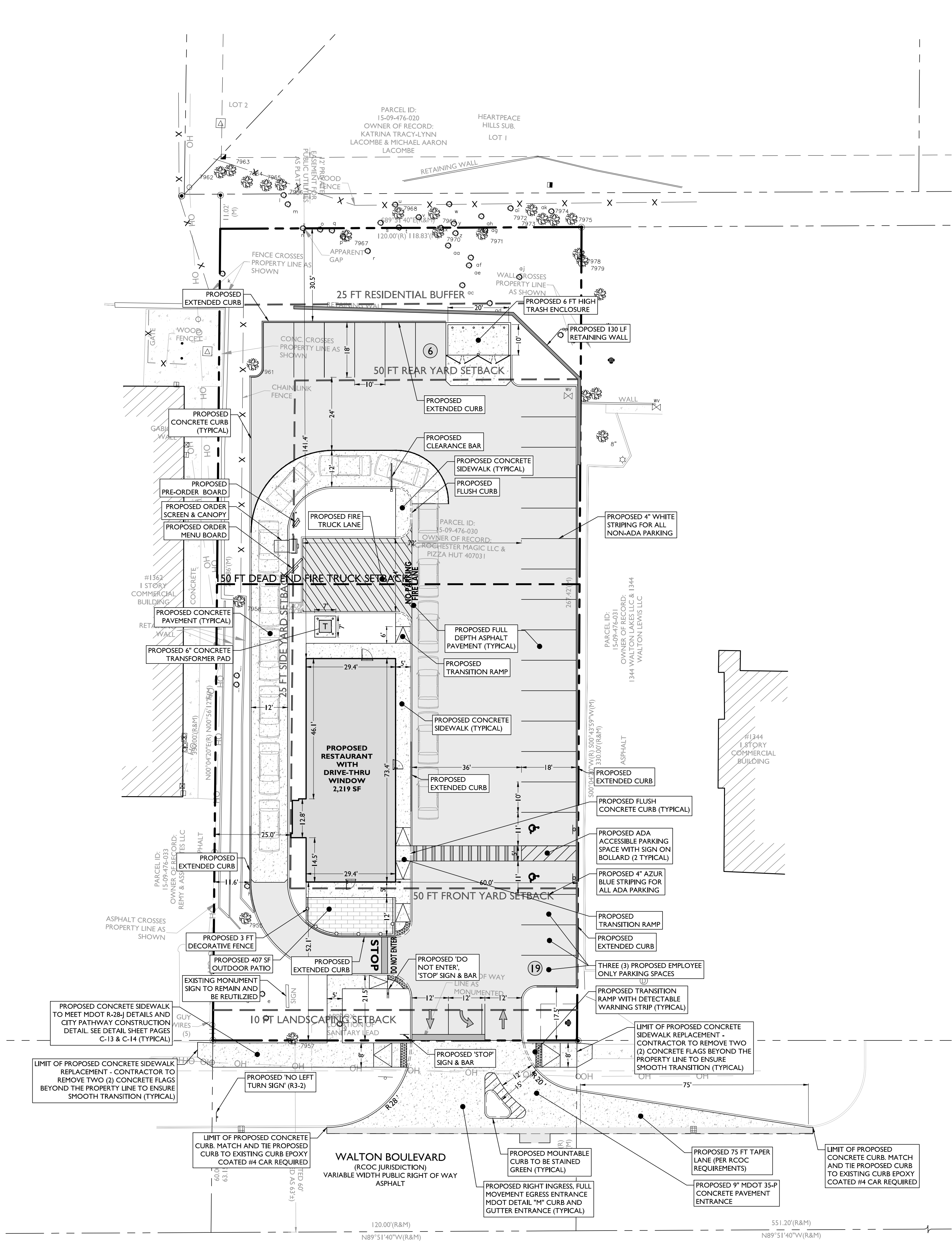
STONEFIELD
engineering & design

CITY FILE #21-030 SECTION #9
SCALE: 1" = 20' PROJECT ID: DET-200412

TITLE:
DEMOLITION PLAN

DRAWING:
C-2

NOT TO SCALE. SEE DEVELOPMENT PLAN FOR 1360 WALTON BOULEVARD, ROCHESTER HILLS, MICHIGAN. FOR SITE PLAN.



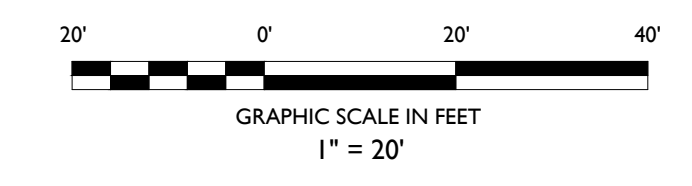
LAND USE AND ZONING		
PARCEL ID: 15-09-476-030		
GENERAL BUSINESS (B-2) & FLEXIBLE BUSINESS OVERLAY (FB-2)		
PROPOSED USE		
ZONING REQUIREMENT	REQUIRED	PROPOSED
RESTAURANT W/ DRIVE-THRU	CONDITIONAL USE	
MINIMUM LOT AREA	N/A	31,868 SF (0.73 AC)
MINIMUM LOT WIDTH	N/A	117.2 FT
MAXIMUM BUILDING HEIGHT	2 STORIES / 30 FT	1 STORY / <30 FT
MINIMUM FRONT YARD SETBACK	50 FT	50.0 FT
MINIMUM SIDE YARD SETBACK (ONE)	0 FT (1)	25.0 FT
MINIMUM SIDE YARD SETBACK (BOTH)	50 FT	85.0 FT
MINIMUM REAR YARD SETBACK	50 FT	141.4 FT
MINIMUM RESIDENTIAL LANDSCAPE BUFFER	25 FT	30.5 FT
MINIMUM DRIVE-THRU WINDOW SETBACK	10 FT FROM BUILDING FRONT	14.5 FT
MINIMUM FRONT PARKING SETBACK	10 FT LANDSCAPE BUFFER	17.5 FT

(1) 25 FT SETBACK IS REQUIRED FOR THE EXTERIOR SIDE OF PARCEL OR LOT ON THE EXTERIOR OF THE DISTRICT

OFF-STREET PARKING REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 138-11.204	REQUIRED RESTAURANT PARKING: 1 SPACE PER 2 PERSONS AT MAX OCCUPANCY (50 PERSONS) (1 SPACE / 2 PERSONS) = 25 SPACES	25 SPACES
§ 138-11.204	REQUIRED DRIVE-THRU STACKING: 10 STACKING SPACES	15 SPACES
§ 138-11.302	DIMENSIONAL REQUIREMENTS: 75'-90" X 18 FT X 10 FT W/ 24 FT TWO-WAY AISLE	18 FT X 10 FT W/ 24 FT AISLE

SYMBOL	DESCRIPTION
---	PROPERTY LINE
---	SETBACK LINE
---	SAWCUT LINE
---	PROPOSED CURB
---	PROPOSED EXTENDED CURB
---	PROPOSED FLUSH CURB
---	PROPOSED SIGNS / BOLLARDS
---	PROPOSED BUILDING
---	PROPOSED CONCRETE
---	PROPOSED ASPHALT
---	PROPOSED AREA LIGHT
---	PROPOSED BUILDING DOORS
---	PROPOSED HANDRAIL

- GENERAL NOTES**
- THE CONTRACTOR SHALL VERIFY AND FAMILIARIZE THEMSELVES WITH THE EXISTING SITE CONDITIONS AND THE PROPOSED SCOPE OF WORK (INCLUDING DIMENSIONS, LAYOUT, ETC.) PRIOR TO INITIATING THE IMPROVEMENTS IDENTIFIED WITHIN THESE DOCUMENTS. SHOULD ANY DISCREPANCY BE FOUND BETWEEN THE EXISTING SITE CONDITIONS AND THE PROPOSED WORK, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND ENSURE THAT ALL REQUIRED APPROVALS HAVE BEEN OBTAINED PRIOR TO THE START OF CONSTRUCTION. COPIES OF ALL REQUIRED PERMITS AND APPROVALS SHALL BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION.
 - ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS STONEFIELD ENGINEERING & DESIGN, LLC, AND ITS SUB-CONSULTANTS FROM AND AGAINST ANY DAMAGES AND LIABILITIES INCLUDING ATTORNEY'S FEES ARISING OUT OF CLAIMS BY EMPLOYEES OF THE CONTRACTOR IN ADDITION TO CLAIMS CONNECTED TO THE PROJECT AS A RESULT OF NOT CARRYING THE PROPER INSURANCE FOR WORKERS COMPENSATION, LIABILITY INSURANCE, AND LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE.
 - THE CONTRACTOR SHALL NOT DEVIATE FROM THE PROPOSED IMPROVEMENTS IDENTIFIED WITHIN THIS PLAN SET UNLESS APPROVAL IS PROVIDED IN WRITING BY STONEFIELD ENGINEERING & DESIGN, LLC.
 - THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF CONSTRUCTION.
 - THE CONTRACTOR SHALL NOT PERFORM ANY WORK OR CAUSE DISTURBANCE ON A PRIVATE PROPERTY NOT CONTROLLED BY THE PERSON OR ENTITY WHO HAS AUTHORIZED THE WORK WITHOUT PRIOR WRITTEN CONSENT FROM THE OWNER OF THE PRIVATE PROPERTY.
 - THE CONTRACTOR IS RESPONSIBLE TO RESTORE ANY DAMAGED OR UNDERMINED STRUCTURE OR SITE FEATURE THAT IS IDENTIFIED TO REMAIN ON THE PLAN SET. ALL REPAIRS SHALL USE NEW MATERIALS TO RESTORE THE FEATURE TO ITS EXISTING CONDITION AT THE CONTRACTOR'S EXPENSE.
 - CONTRACTOR IS RESPONSIBLE TO PROVIDE THE APPROPRIATE SHOP DRAWINGS, PRODUCT DATA, AND OTHER REQUIRED SUBMITTALS FOR REVIEW. STONEFIELD ENGINEERING & DESIGN, LLC, WILL REVIEW THE SUBMITTALS IN ACCORDANCE WITH THE DESIGN INTENT AS REFLECTED WITHIN THE PLAN SET.
 - THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
 - THE CONTRACTOR IS REQUIRED TO PERFORM ALL WORK IN THE PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH THE APPROPRIATE GOVERNING AUTHORITY AND SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF STREET OPENING PERMITS.
 - THE CONTRACTOR IS REQUIRED TO RETAIN AN OSHA CERTIFIED SAFETY INSPECTOR TO BE PRESENT ON SITE AT ALL TIMES DURING CONSTRUCTION & DEMOLITION ACTIVITIES.
 - SHOULD AN EMPLOYEE OF STONEFIELD ENGINEERING & DESIGN, LLC, BE PRESENT ON SITE AT ANY TIME DURING CONSTRUCTION, IT DOES NOT RELIEVE THE CONTRACTOR OF ANY OF THE RESPONSIBILITIES AND REQUIREMENTS LISTED IN THE NOTES WITHIN THIS PLAN SET.



ISSUE	DATE	BY	DESCRIPTION
1	07/02/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING
2	08/02/2021	RAC	REVISED PER CITY COMMENTS
3	09/02/2021	RAC	REVISED PER FIRE DEPARTMENT COMMENTS
4	09/02/2021	RAC	REVISED PER CITY SITE PLAN APPROVAL
5	12/28/2021	JRC/ECH	REVISED PER CITY SITE PLAN REVIEW
6	02/09/2022	JRC/ECH	REVISED PER CITY SECOND SITE PLAN REVIEW
7	05/26/2022	JRC/ECH	SUBMISSION FOR ENGINEERING APPROVAL
8	06/27/2022	JRC	SUBMISSION FOR SITE PLAN APPROVAL

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design

Detroit, MI • New York, NY • Boston, MA
Princeton, NJ • Tampa, FL • Rutherford, NJ
www.stonefielddesign.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE DEVELOPMENT PLANS

1360 WALTON BLVD

PROPOSED STARBUCKS

PARCEL ID: 15-09-476-030
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

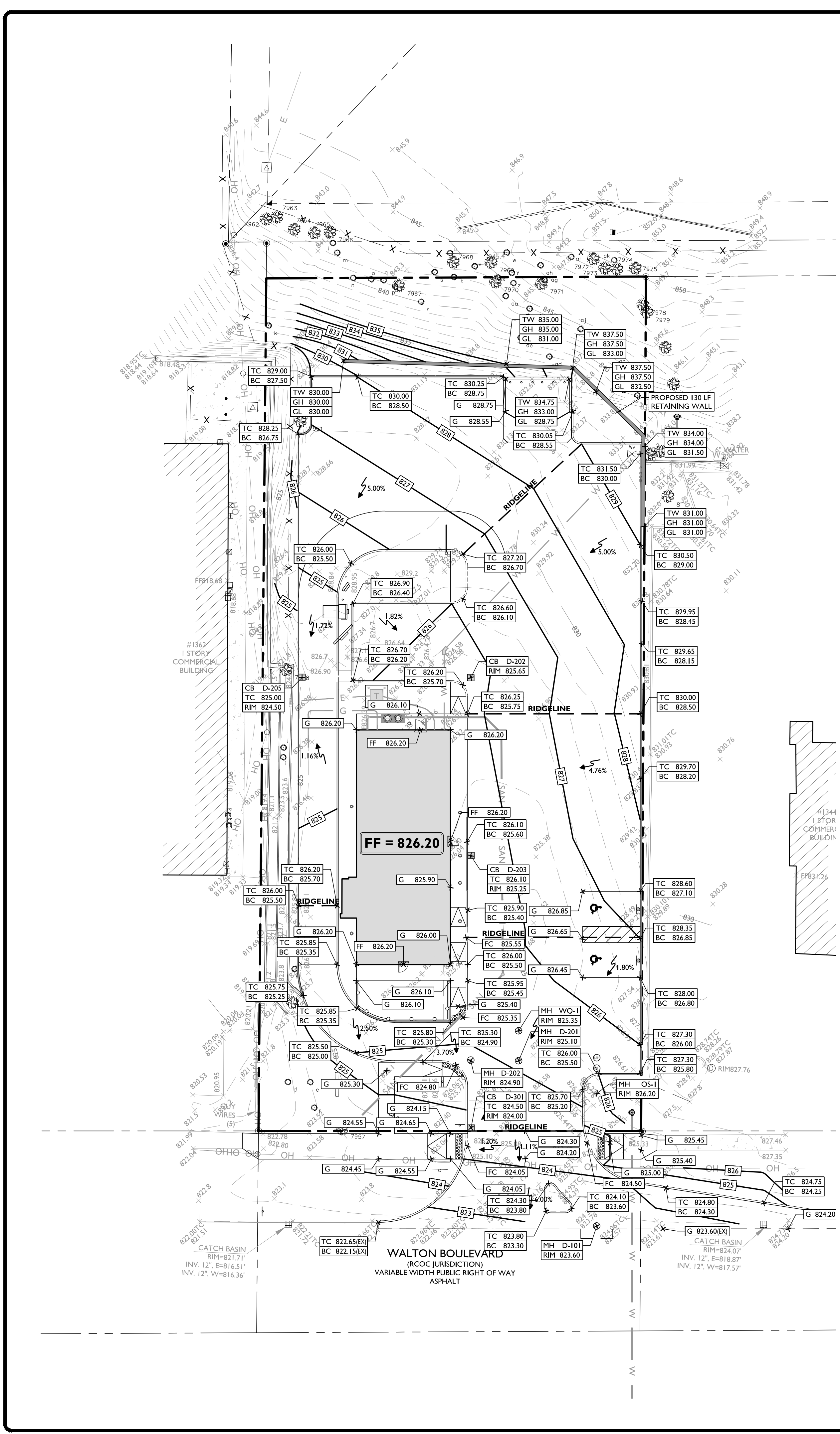
STONEFIELD
engineering & design

CITY FILE #21-030 SECTION #9

SCALE: 1" = 20' PROJECT ID: DET-200412

TITLE: **SITE PLAN**

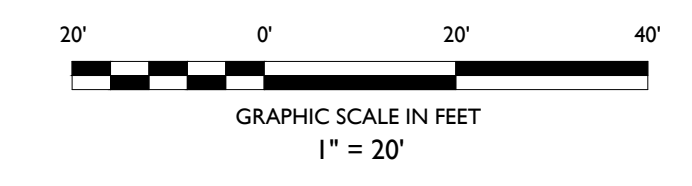
DRAWING: **C-3**



SYMBOL	DESCRIPTION
	PROPERTY LINE
	PROPOSED GRADING CONTOUR
	PROPOSED GRADING RIDGELINE
	PROPOSED DIRECTION OF DRAINAGE FLOW
	PROPOSED GRADE SPOT SHOT
	PROPOSED TOP OF CURB / BOTTOM OF CURB SPOT SHOT
	PROPOSED FLUSH CURB SPOT SHOT
	PROPOSED TOP OF WALL / BOTTOM OF WALL SPOT SHOT

- GRADING NOTES**
- ALL SOIL AND MATERIAL REMOVED FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL STATE AND FEDERAL REQUIREMENTS. ANY GROUNDWATER DEWATERING PRACTICES SHALL BE PERFORMED UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FOR THE DISCHARGE OF DEWATERED GROUNDWATER. ALL SOIL IMPORTED TO THE SITE SHALL BE CERTIFIED CLEAN FILL. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL FILL MATERIALS BROUGHT TO THE SITE.
 - THE CONTRACTOR IS REQUIRED TO PROVIDE TEMPORARY AND/OR PERMANENT SHORING WHERE REQUIRED DURING EXCAVATION ACTIVITIES INCLUDING BUT NOT LIMITED TO UTILITY TRENCHES TO ENSURE THE STRUCTURAL INTEGRITY OF NEARBY STRUCTURES AND STABILITY OF THE SURROUNDING SOILS.
 - PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 4 INCHES TO 7 INCHES ABOVE EXISTING GRADES UNLESS OTHERWISE NOTED. THE CONTRACTOR WILL SUPPLY ALL STAKEOUT CURB GRADE SHEETS TO STONEFIELD ENGINEERING & DESIGN, LLC. FOR REVIEW AND APPROVAL PRIOR TO POURING CURBS.
 - THE CONTRACTOR IS RESPONSIBLE TO SET ALL PROPOSED UTILITY COVERS AND RESET ALL EXISTING UTILITY COVERS WITHIN THE PROJECT LIMITS TO PROPOSED GRADE IN ACCORDANCE WITH ANY APPLICABLE MUNICIPAL COUNTY, STATE AND/OR UTILITY AUTHORITY REGULATIONS.
 - MINIMUM SLOPE REQUIREMENTS TO PREVENT PONDING SHALL BE AS FOLLOWS:
 - CURB GUTTER: 0.50%
 - CONCRETE SURFACES: 1.00%
 - ASPHALT SURFACES: 1.00%
 - A MINIMUM SLOPE OF 1.00% SHALL BE PROVIDED AWAY FROM ALL BUILDINGS. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE FROM THE BUILDING IS ACHIEVED AND SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IF THIS CONDITION CANNOT BE MET. FOR PROJECTS WHERE BASEMENTS ARE PROPOSED, THE DEVELOPER IS RESPONSIBLE TO DETERMINE THE DEPTH TO GROUNDWATER AT THE LOCATION OF THE PROPOSED STRUCTURE. IF GROUNDWATER IS ENCOUNTERED WITHIN THE BASEMENT AREA, SPECIAL CONSTRUCTION METHODS SHALL BE UTILIZED AND REVIEWED/APPROVED BY THE CONSTRUCTION CODE OFFICIAL. IF SUMP PUMPS ARE UTILIZED, ALL DISCHARGES SHALL BE CONNECTED DIRECTLY TO THE PUBLIC STORM SEWER SYSTEM WITH APPROVAL FROM THE GOVERNING STORM SEWER SYSTEM AUTHORITY.

- ADA NOTES**
- THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION WITHIN THE ADA PARKING SPACES AND ACCESS AISLES.
 - THE CONTRACTOR SHALL PROVIDE COMPLIANT SIGNAGE AT ALL ADA PARKING AREAS IN ACCORDANCE WITH STATE GUIDELINES.
 - THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 5.00% RUNNING SLOPE AND A MAXIMUM OF 2.00% CROSS SLOPE ALONG WALKWAYS WITHIN THE ACCESSIBLE PATH OF TRAVEL (SEE THE SITE PLAN FOR THE LOCATION OF THE ACCESSIBLE PATH). THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE ACCESSIBLE PATH OF TRAVEL IS 36 INCHES WIDE OR GREATER UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
 - THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION AT ALL LANDINGS. LANDINGS INCLUDE, BUT ARE NOT LIMITED TO, THE TOP AND BOTTOM OF AN ACCESSIBLE RAMP, AT ACCESSIBLE BUILDING ENTRANCES, AT AN AREA IN FRONT OF A WALK-UP ATM, AND AT TURNING SPACES ALONG THE ACCESSIBLE PATH OF TRAVEL. THE LANDING AREA SHALL HAVE A MINIMUM CLEAR AREA OF 60 INCHES BY 60 INCHES UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
 - THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 0.83% RUNNING SLOPE AND A MAXIMUM 2.00% CROSS SLOPE ON ANY CURB RAMPS ALONG THE ACCESSIBLE PATH OF TRAVEL. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT HAVE A SLOPE GREATER THAN 10.00%. IF A LANDING AREA IS PROVIDED AT THE TOP OF THE RAMP, FOR ALTERATIONS, A CURB RAMP FLARE SHALL NOT HAVE A SLOPE GREATER THAN 8.33% IF A LANDING AREA IS NOT PROVIDED AT THE TOP OF THE RAMP. CURB RAMPS SHALL NOT RISE MORE THAN 6 INCHES IN ELEVATION WITHOUT A HANDRAIL. THE CLEAR WIDTH OF A CURB RAMP SHALL BE NO LESS THAN 36 INCHES WIDE.
 - ACCESSIBLE RAMPS WITH A RISE GREATER THAN 6 INCHES SHALL CONTAIN COMPLIANT HANDRAILS ON BOTH SIDES OF THE RAMP AND SHALL NOT RISE MORE THAN 30" IN ELEVATION WITHOUT A LANDING AREA IN BETWEEN RAMP RUNS. LANDING AREAS SHALL ALSO BE PROVIDED AT THE TOP AND BOTTOM OF THE RAMP.
 - A SLIP RESISTANT SURFACE SHALL BE CONSTRUCTED ALONG THE ACCESSIBLE PATH AND WITHIN ADA PARKING AREAS.
 - THE CONTRACTOR SHALL ENSURE A MAXIMUM OF 1/4 INCHES VERTICAL CHANGE IN LEVEL ALONG THE ACCESSIBLE PATH. WHERE A CHANGE IN LEVEL BETWEEN 1/4 INCHES AND 1/2 INCHES EXISTS, CONTRACTOR SHALL ENSURE THAT THE TOP 1/4 INCH CHANGE IN LEVEL IS BEVELED WITH A SLOPE NOT STEEPER THAN 1 UNIT VERTICAL AND 2 UNITS HORIZONTAL (2:1 SLOPE).
 - THE CONTRACTOR SHALL ENSURE THAT ANY OPENINGS (GAPS OR HORIZONTAL SEPARATION) ALONG THE ACCESSIBLE PATH SHALL NOT ALLOW PASSAGE OF A SPHERE GREATER THAN 1/4 INCH.



ISSUE	DATE	BY	DESCRIPTION
1	07/02/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING
2	08/02/2021	ECM	REVISION PER CITY COMMENTS
3	08/20/2021	RAC	REVISION PER FIRE DEPARTMENT COMMENTS
4	09/08/2021	RAC/ECM	SUBMISSION FOR SITE PLAN APPROVAL
5	12/28/2021	JRC/ECM	REVISION PER CITY SITE PLAN REVIEW
6	02/09/2022	JRC/ECM	REVISION PER CITY SECOND SITE PLAN REVIEW
7	05/26/2022	JRC/ECM	SUBMISSION FOR ENGINEERING APPROVAL
8	06/27/2022	JRC	SUBMISSION FOR SITE PLAN APPROVAL

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design

Detroit, MI • New York, NY • Boston, MA
Princeton, NJ • Tampa, FL • Rutherford, NJ
www.stonefielddesign.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE DEVELOPMENT PLANS

1360 WALTON BLVD

PROPOSED STARBUCKS

PARCEL ID: 15-09-476-030
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

STATE OF MICHIGAN
MICHIGAN DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
REGISTERED PROFESSIONAL ENGINEER
JAMES W. BROWN, P.E.
LICENSE NO. 94585

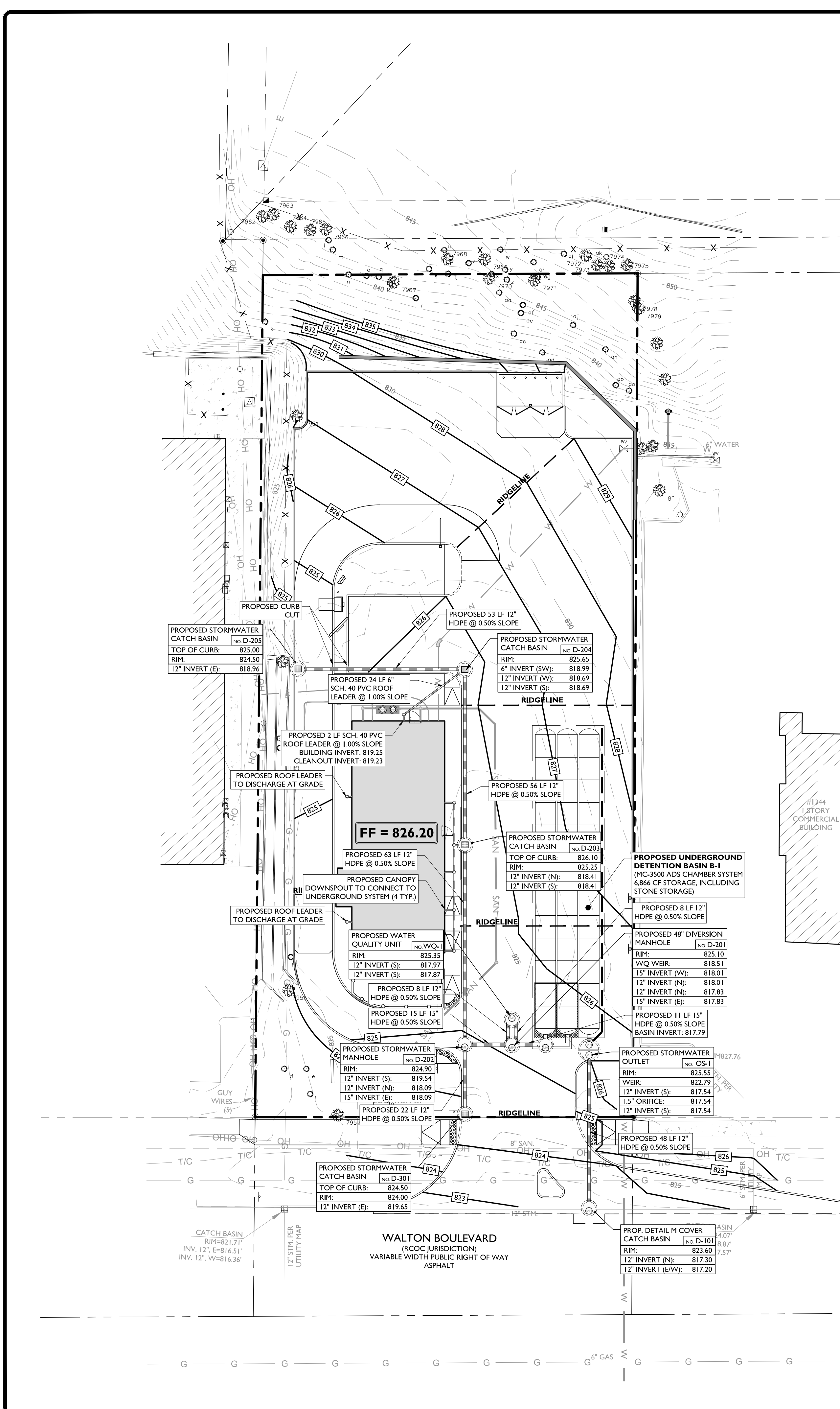
STONEFIELD
engineering & design

CITY FILE #21-030 SECTION #9

SCALE: 1" = 20' PROJECT ID: DET-200412

TITLE:
GRADING PLAN

DRAWING:
C-4



SYMBOL	DESCRIPTION
	PROPERTY LINE
	PROPOSED GRADING CONTOUR
	PROPOSED GRADING RIDGELINE
	PROPOSED STORMWATER STRUCTURES
	PROPOSED STORMWATER PIPING

STORMWATER SYSTEM DESIGN (10-YEAR STORM)

Line #	Line ID	Rim Elevation Downstream (FT)	Rim Elevation Upstream (FT)	Invert Downstream (FT)	Invert Upstream (FT)	Pipe Size (IN)	Pipe Length (FT)	Pipe Slope (%)	Flow Rate (CFS)	Pipe Capacity (CFS)	Velocity Downstream (FPS)	HGL Downstream (FT)	HGL Upstream (FT)	Drainage Area (AC)	Runoff Coefficient	Time of Concentration (MIN)	Rainfall Intensity (IN/HR)
1	D101-OS1	823.60	825.55	817.30	817.54	12.00	48.00	0.50	0.15	2.52	0.19	818.30	818.30	0.00	0.00	15.00	5.21
2	BASIN-D201	825.20	825.10	817.79	817.83	15.00	11.00	0.36	2.68	3.90	2.18	819.04	819.04	0.00	0.00	16.70	4.99
3	D201-D202	825.10	824.90	818.01	818.09	15.00	15.00	0.53	2.68	4.72	2.42	819.07	819.08	0.00	0.00	16.60	5.00
4	D202-D203	824.90	825.25	818.09	818.41	12.00	63.00	0.51	2.11	2.54	2.69	819.19	819.40	0.15	0.95	16.20	5.05
5	D203-D204	825.25	825.65	818.41	818.69	12.00	55.00	0.51	1.41	2.54	1.79	819.45	819.53	0.13	0.87	15.70	5.12
6	D204-D205	825.65	824.50	818.69	818.96	12.00	53.00	0.51	0.85	2.54	1.11	819.62	819.64	0.28	0.58	15.00	5.21
7	D202-D301	824.90	824.00	819.54	819.65	12.00	22.00	0.50	0.62	2.52	2.65	819.88	819.99	0.17	0.70	15.00	5.21

*CValues obtained from Rochester Hills Engineering Design Standards

10 YEAR STORMWATER HYDRAULIC PIPE SUMMARY

STORMWATER MANAGEMENT CALCULATIONS

(Based on the Oakland County Simple Method of Detention Basin Design)

Project: WALTON BLVD ROCHESTER HILLS	Designer: JRC	Date: 06/27/22
---	----------------------	-----------------------

COMPOSITE C VALUE			
Landcover	Area (SF)	C-Value*	Weighted Value
Building / Roof	2,219	0.95	2,108
Pavement / Hardscape	19,609	0.95	18,629
Open Space	10,040	0.25	2,510
Subtotal:	31,868		23,247

*Cvalues obtained from Oakland County Method

Composite C Value, C: 0.73

ALLOWABLE SITE DISCHARGE & BASIN DISCHARGE RATIO	
Site Area, A: 0.73 AC	*Allowable Discharge Ratio: 0.20 CFS/AC
<small>*Allowable discharge ratio based on agricultural runoff</small>	Allowable Site Discharge, Q_a: 0.15 CFS
Q = Q_a / (A * C)	Basin Discharge Ratio, Q: 0.27 CFS/AC/IMP

BASIN STORAGE TIME	
Design Storm Frequency: 100 YR	Basin Storage Time, T: 168.94 MINS
$T = -25 + (10,312.5 / Q)^{0.5}$	

BASIN VOLUME REQUIRED	
Basin Volume Ratio, V: 12.520 CFI/AC/IMP	Basin Volume Required, V_r: 6,882 CF
$V = (16,500 * T / (T + 25)) - 40 * Q * T$	
$V_r = V * A * C$	

INFILTRATION VOLUME REQUIRED	
Re_v = 1,815 * A * C	Infiltration Volume Req'd, Re: 969 CF

UNDERGROUND BASIN VOLUME PROVIDED - ADS CHAMBERS	
Basin Volume Proposed, V_p: 6,866 CF ³	<small>*Refer to attached ADS MC-3500 Stormtech Chamber System specification for capacity details</small>

REQUIRED CONTROL ORIFICE SIZE	
$A_o = Q_a / (0.62 * (2 * 32.2 * H)^{0.5})$	Control Orifice Area, A_o: 1.73 IN ²
$D_o = 2 * (A_o / \pi)^{0.5}$	Control Orifice Diameter, D_o: 1.48 IN
	Orifice Diameter Proposed: 1.50 IN

- #### DRAINAGE AND UTILITY NOTES
- THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR STORMWATER IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING.
 - CONTRACTOR SHALL START CONSTRUCTION OF STORM LINES AT THE LOWEST INVERT AND WORK UPGRADIENT.
 - THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IMMEDIATELY IN WRITING.
 - THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.
- #### EXCAVATION, SOIL PREPARATION, AND DEWATERING NOTES
- THE CONTRACTOR IS REQUIRED TO REVIEW THE REFERENCED GEOTECHNICAL DOCUMENTS PRIOR TO CONSTRUCTION. THESE DOCUMENTS SHALL BE CONSIDERED A PART OF THE PLAN SET.
 - THE CONTRACTOR IS REQUIRED TO PREPARE SUBGRADE SOILS BENEATH ALL PROPOSED IMPROVEMENTS AND BACKFILL ALL EXCAVATIONS IN ACCORDANCE WITH RECOMMENDATIONS BY THE GEOTECHNICAL ENGINEER OF RECORD.
 - THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SHORING FOR ALL EXCAVATIONS AS REQUIRED. CONTRACTOR SHALL HAVE THE SHORING DESIGN PREPARED BY A QUALIFIED PROFESSIONAL SHORING DESIGNER. DESIGNS SHALL BE SUBMITTED TO STONEFIELD ENGINEERING & DESIGN, LLC AND THE OWNER PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL OPEN EXCAVATIONS ARE PERFORMED AND PROTECTED IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS.
 - THE CONTRACTOR IS RESPONSIBLE FOR ANY DEWATERING DESIGN AND OPERATIONS, AS REQUIRED, TO CONSTRUCT THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS FOR DEWATERING OPERATIONS AND GROUNDWATER DISPOSAL.
- #### STORMWATER UNDERGROUND BMP CONSTRUCTION NOTES
- THE CONTRACTOR SHALL INSTALL AND BACKFILL THE UNDERGROUND BMP IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
 - UNDERGROUND BASINS SHALL UTILIZE A STONE BACKFILL WITH A MINIMUM VOID RATIO OF 40%.
 - NO CONSTRUCTION LOADING OR UNDERGROUND BASINS IS PERMITTED UNTIL BACKFILL IS COMPLETE PER THE MANUFACTURER'S SPECIFICATIONS. NO VEHICLES SHALL BE STAGED OR OPERATE FROM A FIXED POSITION OVER THE BASIN.

ISSUE	DATE	BY	DESCRIPTION
1	07/08/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING
2	08/02/2021	ECM	REVISION PER CITY COMMENTS
3	08/20/2021	RAC	SUBMISSION FOR FIRE DEPARTMENT COMMENTS
4	09/08/2021	RAC	SUBMISSION FOR CITY PLAN APPROVAL
5	12/28/2021	JRC/ECM	REVISION PER CITY SITE PLAN REVIEW
6	02/09/2022	JRC/ECM	REVISION PER CITY SECOND SITE PLAN REVIEW
7	05/26/2022	JRC/ECM	SUBMISSION FOR ENGINEERING APPROVAL
8	06/27/2022	JRC	SUBMISSION FOR CITY PLAN APPROVAL

NOT APPROVED FOR CONSTRUCTION

STONEFIELD

engineering & design

Detroit, MI • New York, NY • Boston, MA
 Princeton, NJ • Tampa, FL • Rutherford, NJ
 www.stonefielddesign.com

607 Shelby Suite 200, Detroit, MI 48226
 Phone 248.247.1115

SITE DEVELOPMENT PLANS

1360 WALTON BLVD

PROPOSED STARBUCKS

PARCEL ID: 15-09-476-030
 1360 WALTON BOULEVARD
 CITY OF ROCHESTER HILLS
 OAKLAND COUNTY, MICHIGAN

STONEFIELD

engineering & design

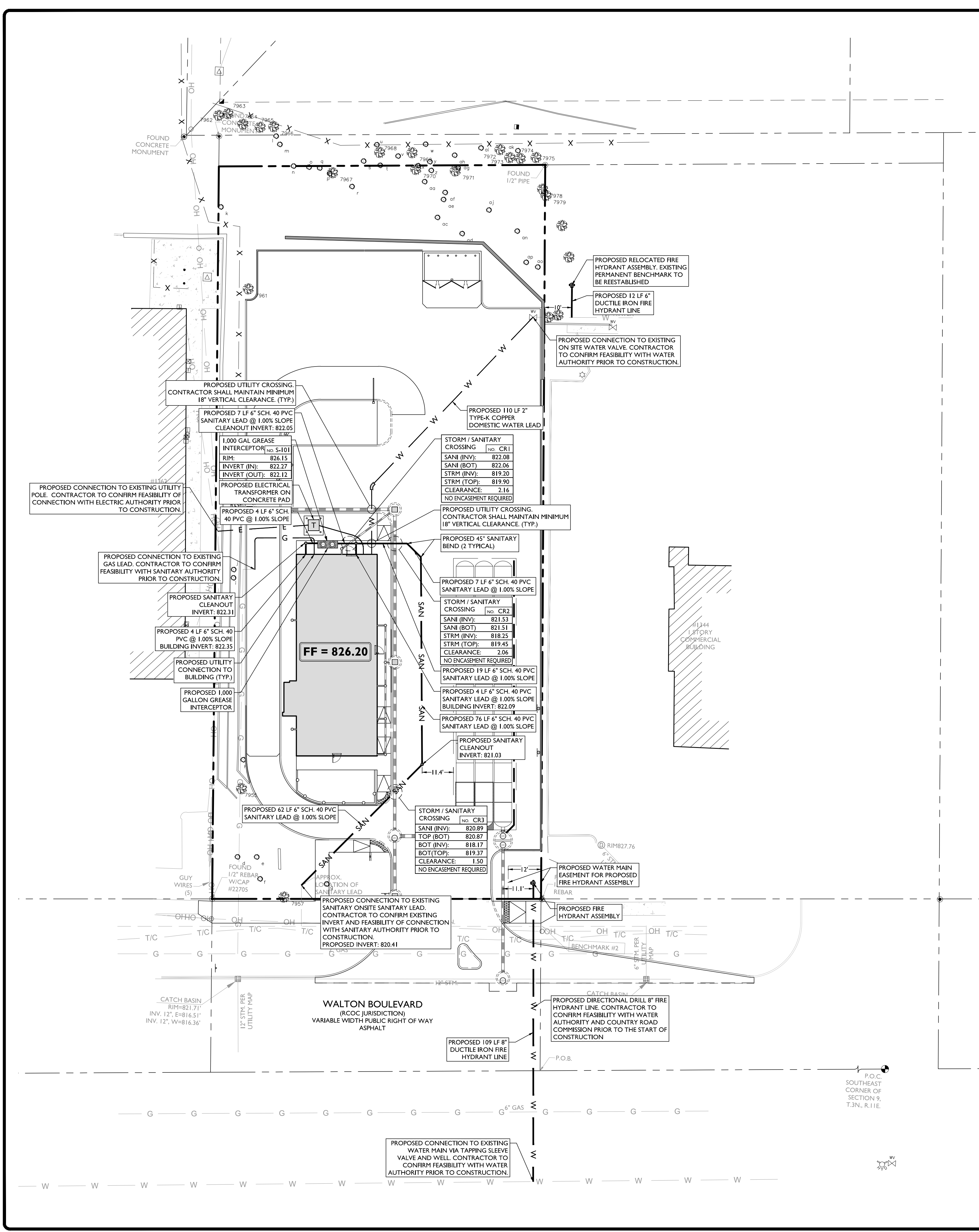
CITY FILE #21-030 SECTION #9

SCALE: 1" = 20' PROJECT ID: DET-200412

TITLE: **STORMWATER MANAGEMENT PLAN**

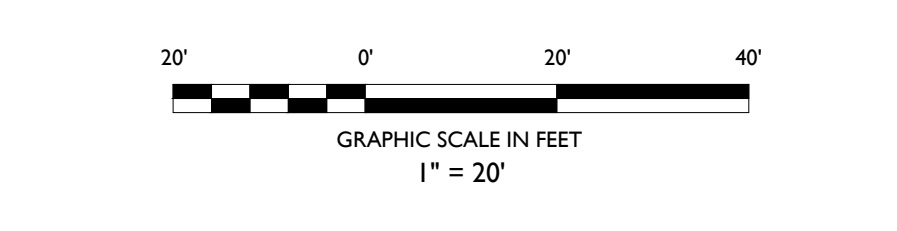
DRAWING: **C-5**

V:\2022\DET-200412\2022-06-27\1360 WALTON BOULEVARD, ROCHESTER HILLS, MICHIGAN\2022-06-27\1360 WALTON BLVD.DWG



SYMBOL	DESCRIPTION
---	PROPERTY LINE
SAN	PROPOSED SANITARY LATERAL
W	PROPOSED DOMESTIC WATER SERVICE
T/C	PROPOSED DATA CONDUITS
E	PROPOSED ELECTRIC CONDUITS
OH	PROPOSED OVERHEAD WIRES
G	PROPOSED GAS LINE
∅	PROPOSED VALVE
T	PROPOSED WATER TEE / BEND
○	PROPOSED FIRE DIRECT CONNECTION (FDC)
○	PROPOSED SANITARY MANHOLE / CLEANOUT
T	PROPOSED TRANSFORMER ON CONCRETE PAD WITH BOLLARDS

- DRAINAGE AND UTILITY NOTES**
1. THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IMMEDIATELY IN WRITING.
 2. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN IN OPERATION ALL UTILITIES NOT DESIGNATED TO BE REMOVED.
 3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO ANY EXISTING UTILITY IDENTIFIED TO REMAIN WITHIN THE LIMITS OF THE PROPOSED WORK DURING CONSTRUCTION.
 4. A MINIMUM HORIZONTAL SEPARATION OF 10 FEET IS REQUIRED BETWEEN ANY SANITARY SEWER SERVICE AND ANY WATER LINES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASUREMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
 5. ALL WATER LINES SHALL BE VERTICALLY SEPARATED ABOVE SANITARY SEWER LINES BY A MINIMUM DISTANCE OF 18 INCHES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASUREMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
 6. THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR WATER AND SANITARY SEWER CONNECTION IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING.
 7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING GAS, ELECTRIC AND TELECOMMUNICATION CONNECTIONS WITH THE APPROPRIATE GOVERNING AUTHORITY.
 8. CONTRACTOR SHALL START CONSTRUCTION OF ANY GRAVITY SEWER AT THE LOWEST INVERT AND WORK UP-GRADE.
 9. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD SET OF PLANS REFLECTING THE LOCATION OF EXISTING UTILITIES THAT HAVE BEEN CAPPED, ABANDONED, OR RELOCATED BASED ON THE NOTATION/REMOVAL ACTIVITIES REQUIRED IN THIS PLAN SET. THIS DOCUMENT SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.
 10. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.
 11. CONTRACTOR TO HAND DIG AROUND ALL EXISTING UTILITIES AND STORM SYSTEMS.
 12. WITHIN THE INFLUENCE OF THE ROAD AND SIDEWALK, MDOT CLASS II SAND COMPACTED TO 95% MAXIMUM UNIT DENSITY IS REQUIRED.



ISSUE	DATE	BY	DESCRIPTION
1	07/02/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING
2	08/02/2021	RAC	REVISION PER FIRE DEPARTMENT COMMENTS
3	09/08/2021	JRC/ECM	REVISION PER CITY COMMENTS
4	12/28/2021	JRC/ECM	REVISION PER CITY SITE PLAN REVIEW
5	02/09/2022	JRC/ECM	REVISION PER CITY SECOND SITE PLAN REVIEW
6	05/26/2022	JRC/ECM	SUBMISSION FOR ENGINEERING APPROVAL
7			
8			

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design

Detroit, MI · New York, NY · Boston, MA
Princeton, NJ · Tampa, FL · Rutherford, NJ
www.stonefielddesign.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

1360 WALTON BLVD
PROPOSED STARBUCKS

STARBUCKS

PARCEL ID: 15-09-476-030
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

STATE OF MICHIGAN
OFFICE OF LAND & WATER UTILITIES
MICHIGAN DEPARTMENT OF NATURE & ENVIRONMENT
LAND & WATER UTILITIES DIVISION
DESIGNED AND PREPARED BY
STONEFIELD ENGINEERING & DESIGN
REGISTERED PROFESSIONAL ENGINEER
NO. 41429

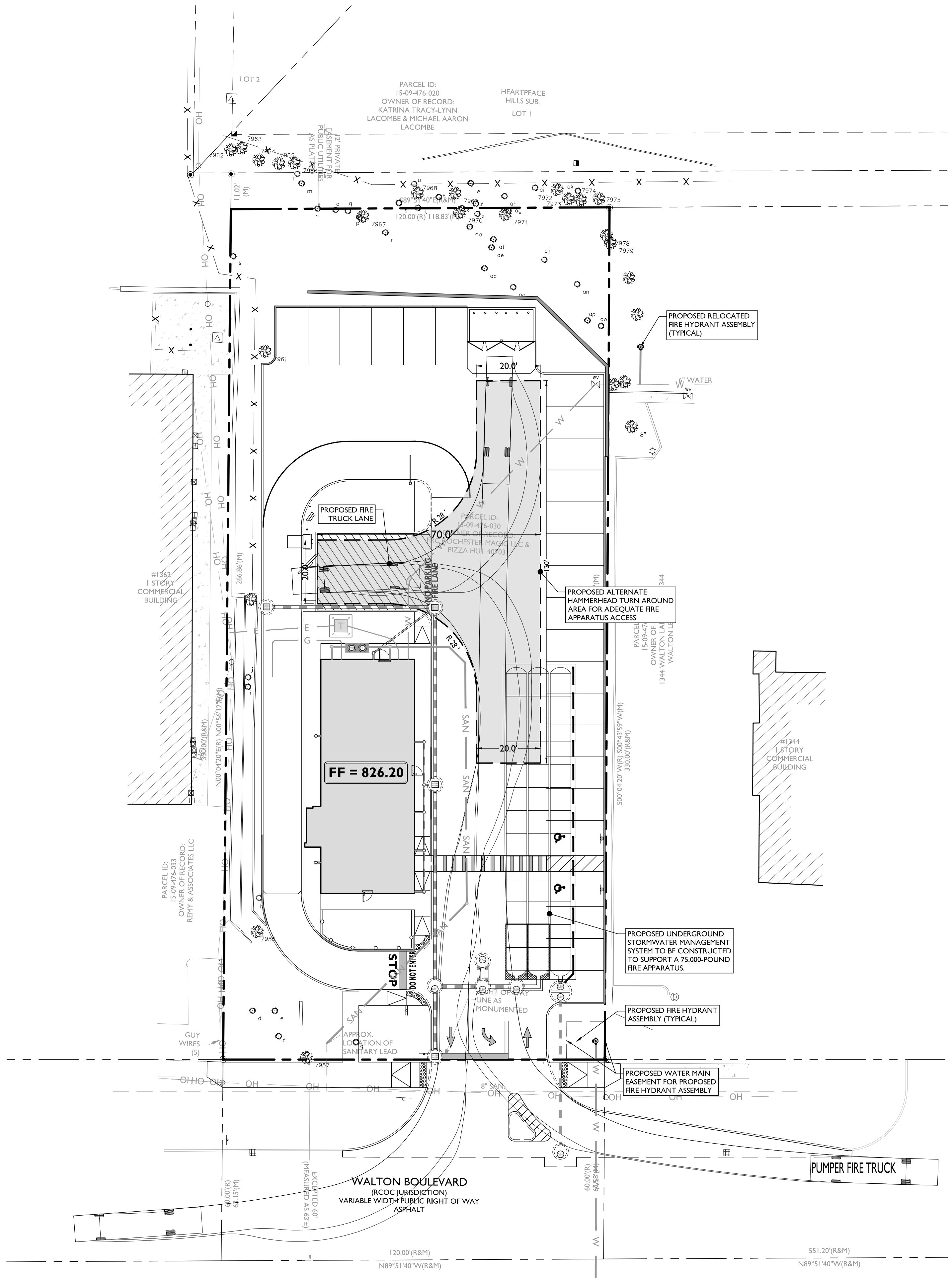
STONEFIELD
engineering & design

CITY FILE #21-030 SECTION #9
SCALE: 1" = 20' PROJECT ID: DET-200412

TITLE:
UTILITY PLAN

DRAWING:
C-6

V:\PROJECTS\2021\15-09-476-030\15-09-476-030-1360 WALTON BOULEVARD, ROCHESTER HILLS, MICHIGAN\DWG\2021-15-09-476-030-1360 WALTON BLVD UTILITY PLAN.dwg

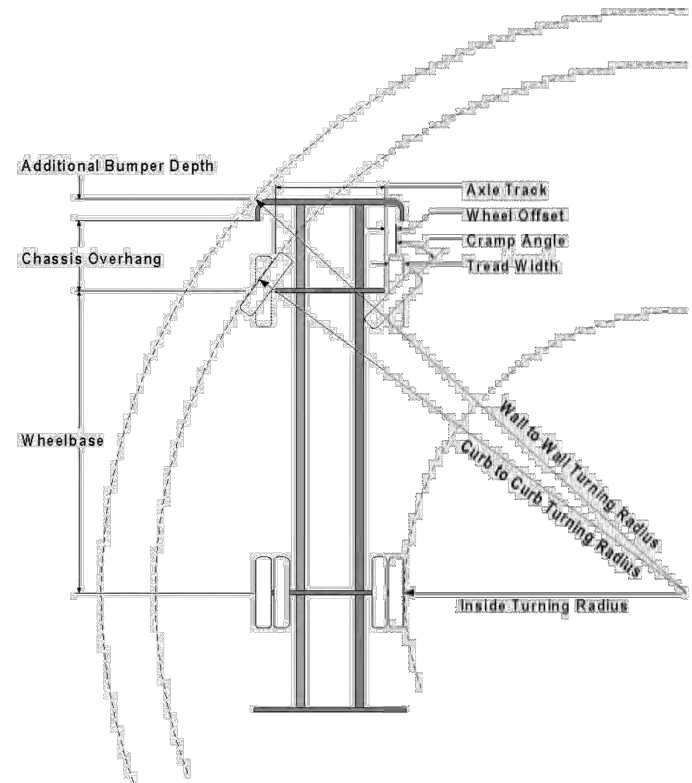


Turning Performance Analysis

02/28/2018

Bid Number: 1102
Department: City of Rochester Hills

Chassis: Arrow XT Chassis, Aerials/Tankers, Tandem Axle
Body: Aerial, HD Ladder 105', Alum Body



Parameters:

Inside Cramp Angle:	45°
Axle Track:	82.92 in.
Wheel Offset:	4.68 in.
Tread Width:	16.3 in.
Chassis Overhang:	68.99 in.
Additional Bumper Depth:	16 in.
Front Overhang:	84.99 in.
Wheelbase:	245.5 in.

Calculated Turning Radii:

Inside Turn:	19 ft. 5 in.
Curb to curb:	35 ft. 3 in.
Wall to wall:	39 ft. 7 in.

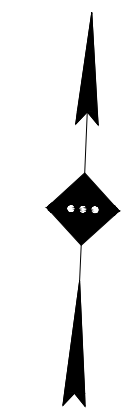
Comments:
RHFD 105' turn radius

Category	Option	Description
Axle, Front, Custom	0018453	Axle, Front, Oshkosh TAK-4, Non Drive, 22,800 lb, Qtm/AXT/DCF
Wheels, Front	0019611	Wheels, Front, Alcoa, 22.50" x 12.25", Aluminum, Hub Pilot
Tires, Front	0594821	Tires, Front, Goodyear, G236 MSA, 425/65R22.50, 20 ply
Bumpers	0606536	Bumper, 16" Extended, Steel Painted, Arrow XT
Aerial Devices	0673137	Aerial, 105' Heavy Duty Ladder (500 dry/500 water)

Notes:
Actual inside cramp angle may be less due to highly specialized options.
Curb to Curb turning radius calculated for 9.00 inch curb.

SYMBOL DESCRIPTION

--- PROPERTY LINE



ISSUE	DATE	BY	DESCRIPTION
8	06/27/2022	JRC	SUBMISSION FOR ENGINEERING APPROVAL
7	05/26/2022	JRC/ECM	SUBMISSION FOR SITE PLAN APPROVAL
6	02/09/2022	JRC/ECM	REVISED PER CITY SECOND SITE PLAN REVIEW
5	12/28/2021	JRC/ECM	REVISED PER CITY SITE PLAN REVIEW
4	09/08/2021	RAC/ECM	SUBMISSION FOR SITE PLAN APPROVAL
3	08/20/2021	RAC	REVISED PER FIRE DEPARTMENT COMMENTS
2	08/02/2021	ECM	REVISED PER CITY COMMENTS
1	07/02/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design

Detroit, MI • New York, NY • Boston, MA
Princeton, NJ • Tampa, FL • Rutherford, NJ
www.stonefielddesign.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE DEVELOPMENT PLANS

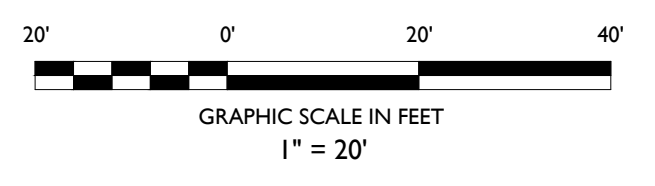
1360 WALTON BLVD
PROPOSED STARBUCKS



PARCEL ID: 15-09-476-030
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

FIRE DEPARTMENT NOTES

- A KNOX KEY SYSTEM SHALL BE INSTALLED IN A LOCATION APPROVED BY THE FIRE CODE OFFICIAL. ORDERING INFORMATION IS AVAILABLE FROM THE KNOX COMPANY AT WWW.KNOXBOX.COM - IFC 2006 SEC. 1028.2
- FIRE LANES SHALL BE DESIGNATED BY THE FIRE CODE OFFICIAL AND SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE, WITH FIRE LANE SIGNS, SPACED NOT MORE THAN 100 FEET APART. FIRE LANE SIGNS SHALL READ "NO STOPPING, STANDING, PARKING, FIRE LANE" AND SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - FIRE PREVENTION ORDINANCE CHAPTER 58, SEC. 503
- CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14
- OPEN BURNING IS NOT PERMITTED, INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS. OPEN BURNING FOR WARMING OF SAND AND / OR WATER FOR THE PREPARATION OF MORTAR SHALL BE WITHIN THE CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES - FIRE PREVENTION ORDINANCE CHAPTER 58, SEC. 307.6.2 & 307.6.2.3



STONEFIELD
engineering & design

CITY FILE #21-030 SECTION #9
SCALE: 1" = 20' PROJECT ID: DET-200412

TITLE:
FIRE PROTECTION PLAN

DRAWING:
C-7

V:\02\2021\2021-030\1360 WALTON BOULEVARD, ROCHESTER HILLS, MICHIGAN\02\FPD\18.DWG

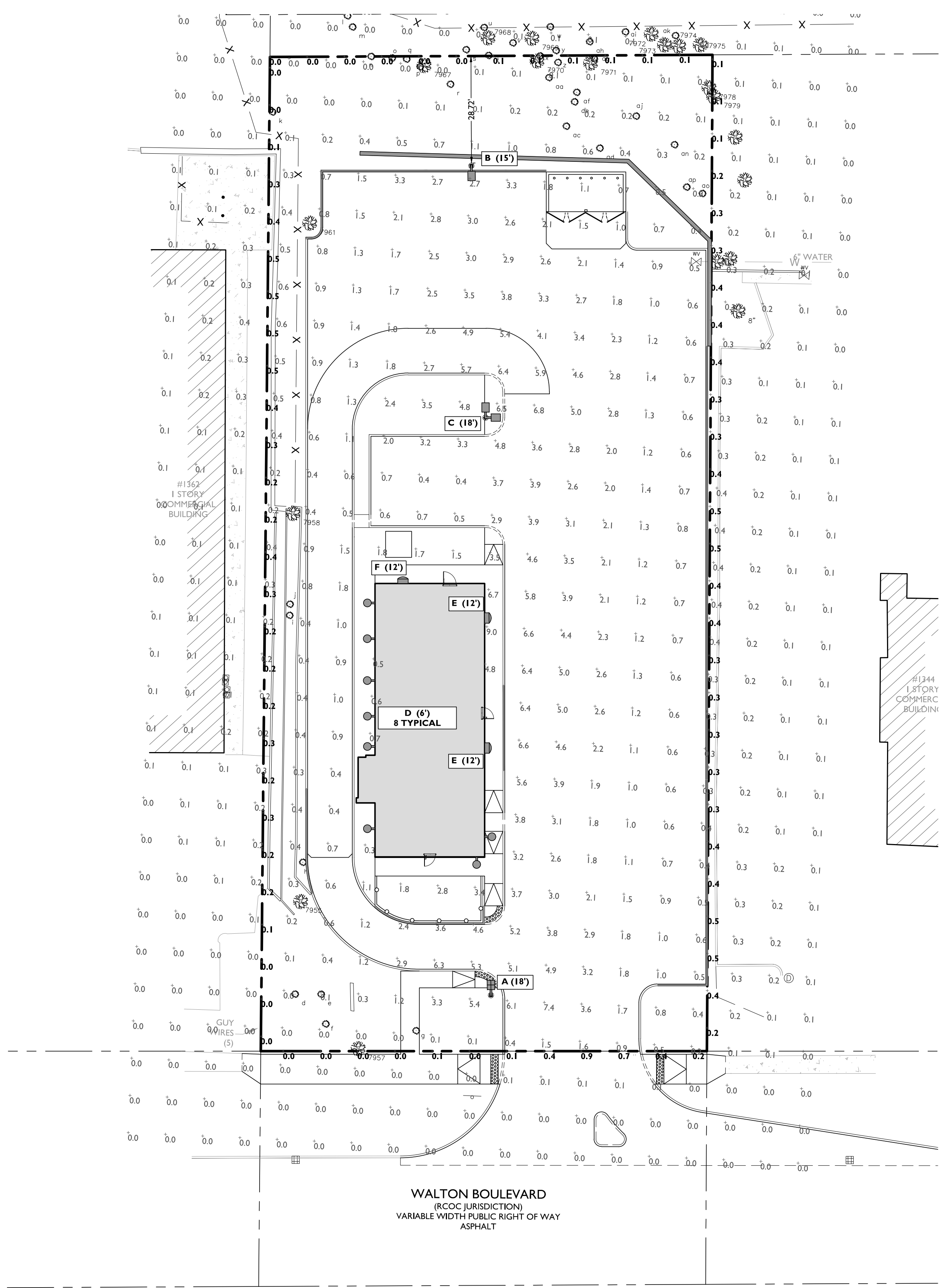
V:\PROJECTS\2024\1360 WALTON BLVD DEVELOPMENT\1360 WALTON BLVD\AS-BUILT\1360 WALTON BLVD\LIGHTING\LIGHTING.DWG

LIGHTING REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 138-10.201.A	ALL OUTDOOR LIGHTING SHALL BE SHIELDED	PROVIDED
§ 138-10.201.B	MAXIMUM ILLUMINATION ON SITE: 10 FC	9.0 FC
§ 138-10.201.B	MAXIMUM ILLUMINATION AT: PROPERTY LINE: 0.5 FC RIGHT OF WAY PROPERTY LINE: 1 FC	0.5 FC 0.9 FC
§ 138-10.202	MINIMUM FIXTURE HEIGHT: 20 FT (1)	18 FT

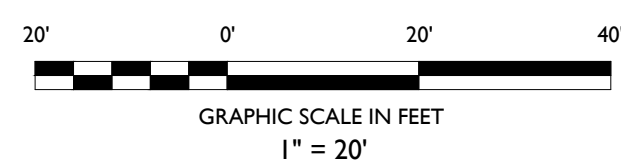
(1) 15 FEET HIGH IF WITHIN 50 FEET OF A RESIDENTIAL PROPERTY

PROPOSED LUMINAIRE SCHEDULE							
SYMBOL	LABEL	QUANTITY	SECURITY LIGHTING	DISTRIBUTION	LLF	MANUFACTURER	IES FILE
	A	1	EATON LUMARK PREVAIL AND FIXTURE COMBO WITH HOUSE SIDE SHIELD	TYPE IV	0.9	EATON	PRV-C40-D-UNV-T4-BZ-7030-HSS.ies
	B	1	EATON LUMARK PREVAIL AND FIXTURE COMBO WITH HOUSE SIDE SHIELD	TYPE IV	0.9	EATON	PRV-C25-D-UNV-T4-BZ-7030-HSS.ies
	C	1	EATON LUMARK PREVAIL AND FIXTURE COMBO WITH HOUSE SIDE SHIELD (2 @ 90°)	TYPE IV	0.9	EATON	PRV-C25-D-UNV-T4-BZ-7030-HSS.ies
	D	8	OXYGEN LEDA OUTDOOR SCNCE	TYPE IV	0.9	EATON	3-712-222 Leda.ies
	E	2	MIRADA LED WALL SCNCE - 8K LUMEN PACKAGE	FT	0.9	LSI INDUSTRIES	XWM-FT-LED-12L-40
	F	1	MIRADA LED WALL SCNCE - 8K LUMEN PACKAGE	FT	0.9	LSI INDUSTRIES	XWM-3-LED-03-30

SYMBOL	DESCRIPTION
A (XX')	PROPOSED LIGHTING FIXTURE (MOUNTING HEIGHT)
XX'	PROPOSED LIGHTING INTENSITY (FOOTCANDLES)
	PROPOSED AREA LIGHT
	PROPOSED BUILDING MOUNTED LIGHT



- GENERAL LIGHTING NOTES**
- THE LIGHTING LEVELS DEPICTED WITHIN THE PLAN SET ARE CALCULATED UTILIZING DATA OBTAINED FROM THE LISTED MANUFACTURER. ACTUAL ILLUMINATION LEVELS AND PERFORMANCE OF ANY PROPOSED LIGHTING FIXTURE MAY VARY DUE TO UNCONTROLLABLE VARIABLES SUCH AS WEATHER, VOLTAGE SUPPLY, LAMP TOLERANCE, EQUIPMENT SERVICE LIFE AND OTHER VARIABLE FIELD CONDITIONS.
 - WHERE APPLICABLE, THE EXISTING LIGHT LEVELS DEPICTED WITHIN THE PLAN SET SHALL BE CONSIDERED APPROXIMATE. THE EXISTING LIGHT LEVELS ARE BASED ON FIELD OBSERVATIONS AND THE MANUFACTURER'S DATA OF THE ASSUMED OR MOST SIMILAR LIGHTING FIXTURE MODEL.
 - UNLESS NOTED ELSEWHERE WITHIN THIS PLAN SET, THE LIGHT LOSS FACTORS USED IN THE LIGHTING ANALYSIS ARE AS FOLLOWS:
 - LIGHT EMITTING DIODES (LED): 0.90
 - HIGH PRESSURE SODIUM: 0.72
 - METAL HALIDE: 0.72
 - THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING, PRIOR TO THE START OF CONSTRUCTION, OF ANY PROPOSED LIGHTING LOCATIONS THAT CONFLICT WITH EXISTING PROPOSED DRAINAGE, UTILITY, OR OTHER IMPROVEMENTS.
 - THE CONTRACTOR IS RESPONSIBLE TO PREPARE A WIRING PLAN AND PROVIDE ELECTRIC SERVICE TO ALL PROPOSED LIGHTING FIXTURES. THE CONTRACTOR IS REQUIRED TO PREPARE AN AS-BUILT PLAN OF WIRING AND PROVIDE COPIES TO THE OWNER AND STONEFIELD ENGINEERING & DESIGN, LLC.
- ATM LIGHTING NOTES:**
- THE CONTRACTOR SHALL REPLACE LAMP COVERS, RE-LAMP AND RE-BALLAST EXISTING LIGHT FIXTURES AS INDICATED WITHIN THE PLAN SET. THE EXISTING FIXTURE HEIGHT SHALL BE MAINTAINED UNLESS INDICATED OTHERWISE. THE LIGHTING DESIGN IS SUBJECT TO CHANGE IF THE EXISTING LIGHT FIXTURES ARE NOT GREATER THAN OR EQUAL TO THE FOLLOWING WATTAGE:
 - FIXTURE 'X' = MINIMUM X WATTS
 - PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING IF THE EXISTING LIGHT FIXTURES ARE NOT THE MINIMUM WATTAGE SPECIFIED WITHIN THE PLAN SET.
 - THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY EXISTING LIGHT POLES IDENTIFIED FOR REUSE WITH A PROPOSED LIGHT FIXTURE(S) SHALL BE IN ACCEPTABLE WORKING CONDITION AND HAVE THE CAPACITY TO SUPPORT THE PROPOSED LIGHT FIXTURE(S). ANY MOUNTING EQUIPMENT REQUIRED TO ATTACH THE PROPOSED LIGHTING FIXTURE TO THE EXISTING LIGHT POLE SHALL BE PROVIDED BY THE CONTRACTOR.
 - THE CONTRACTOR SHALL CONFIRM THAT THE LOCATION OF ANY PROPOSED BUILDING MOUNTED LIGHTING FIXTURE WILL NOT CONFLICT WITH ANY EXISTING OR PROPOSED STRUCTURAL ELEMENT (E.G. CANOPY SUPPORT BEAMS). THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING OF ANY FIXTURE CONFLICT PRIOR TO THE START OF CONSTRUCTION.
 - ALL EXISTING TREE LIMBS WITHIN THE 60 FOOT ATM RADIUS SHOWN IN THE PLAN SET SHALL BE TRIMMED TO A MINIMUM OF 6 FEET ABOVE GRADE. ALL SHRUBS WITHIN THE 60 FOOT ATM RADIUS SHALL BE TRIMMED TO A MINIMUM OF 36 INCHES ABOVE GRADE. ALL BRUSH SHALL BE REMOVED. THE CONTRACTOR SHALL CONSIDER ALL FUTURE GROWTH AND FULL BLOOM WHEN TRIMMING LANDSCAPING. EXISTING TREE LIMBS ADJACENT TO LIGHTING FIXTURES SHALL BE TRIMMED AS REQUIRED TO PREVENT LIGHT INTERFERENCE.
 - PRIOR TO BID, CONTRACTOR SHALL VERIFY EXISTING EXTERIOR LIGHTING CONDITIONS AFTER DUSK AND NOTIFY THE DEVELOPER/OWNER AND STONEFIELD ENGINEERING & DESIGN, LLC OF DAMAGED OR INOPERABLE LIGHTS. THE CONTRACTOR SHALL REPAIR ALL INOPERABLE LIGHTS UNLESS OTHERWISE NOTED WITHIN THIS PLAN SET.
 - THE ILLUMINATION LEVELS DEPICTED WITHIN THE PLAN SET ARE BASED ON REGULATORY STATE STANDARDS FOR SAFETY LIGHTING AND ON CLIENT STANDARDS.
 - ALL LIGHTING FIXTURES, UNLESS OTHERWISE NOTED WITHIN THIS PLAN SET, HAVE THE PHOTOCELL OPTION ENABLED.
 - EXISTING LIGHTING FIXTURES CONTROLLED BY OUTSIDE ENTITIES (E.G. LANDLORD) HAVE BEEN EXCLUDED FROM THE LIGHTING ANALYSIS REFLECTED WITHIN THE PLAN SET. THE PROPOSED LIGHT LEVELS HAVE BEEN DESIGNED TO COMPLY WITH ALL APPLICABLE ATM AND SAFETY LIGHTING REQUIREMENTS INDEPENDENT OF ANY UNCONTROLLED LIGHT FIXTURES.



ISSUE	DATE	BY	DESCRIPTION
8	06/27/2022	JRC	SUBMISSION FOR ENGINEERING APPROVAL
7	05/26/2022	JRC/ECM	SUBMISSION FOR SITE PLAN APPROVAL
6	02/09/2022	JRC/ECM	REVISED PER CITY SECOND SITE PLAN REVIEW
5	12/28/2021	JRC/ECM	REVISED PER CITY SITE PLAN REVIEW
4	09/08/2021	RAC/ECM	SUBMISSION FOR SITE PLAN APPROVAL
3	08/20/2021	RAC	SUBMISSION PER FIRE DEPARTMENT COMMENTS
2	08/02/2021	ECM	REVISED PER CITY COMMENTS
1	07/08/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design

Detroit, MI • New York, NY • Boston, MA
Princeton, NJ • Tampa, FL • Rutherford, NJ
www.stonefielddesign.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE DEVELOPMENT PLANS

1360 WALTON BLVD

PROPOSED STARBUCKS

PARCEL ID: 15-09-476-030
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

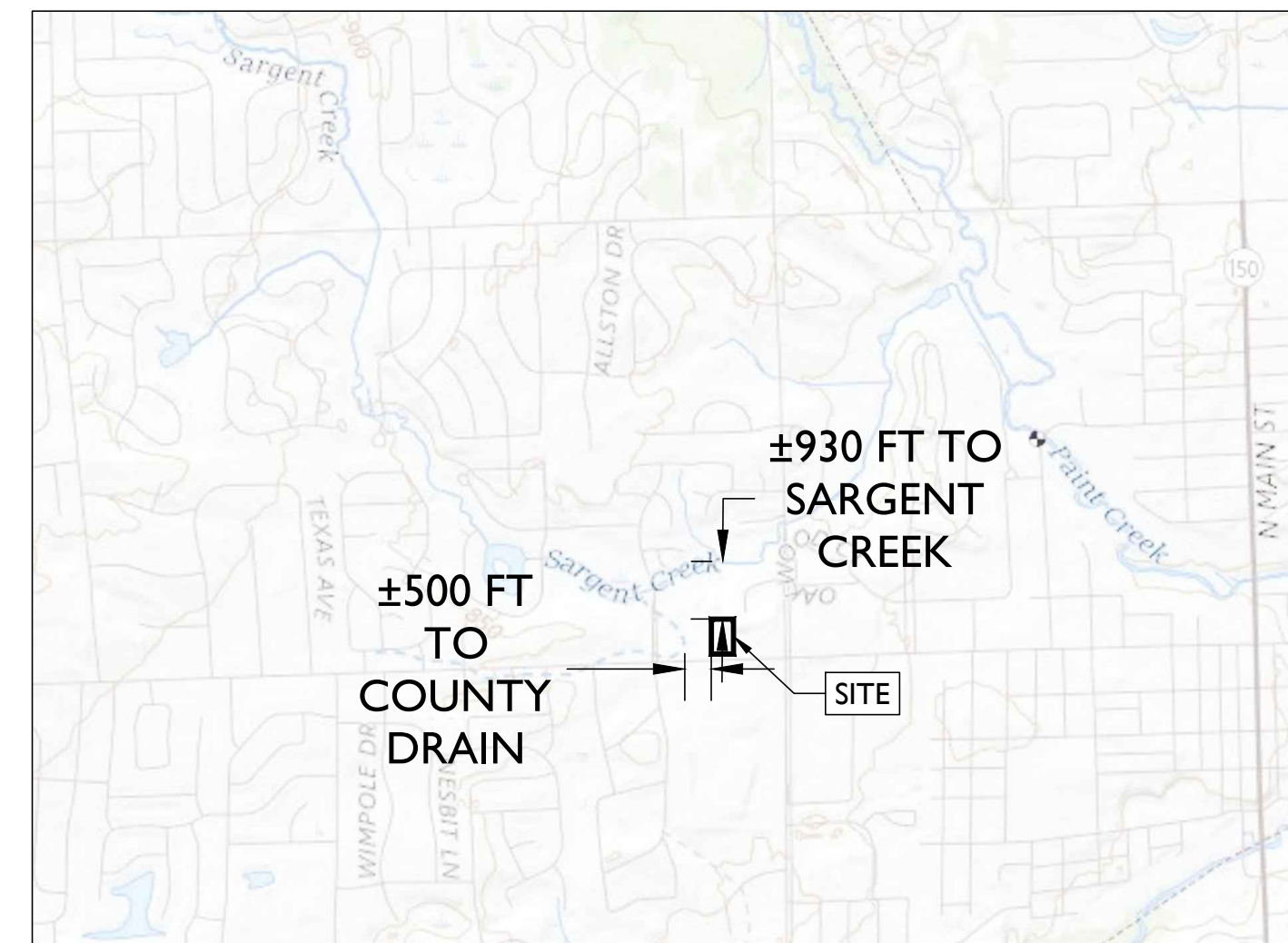
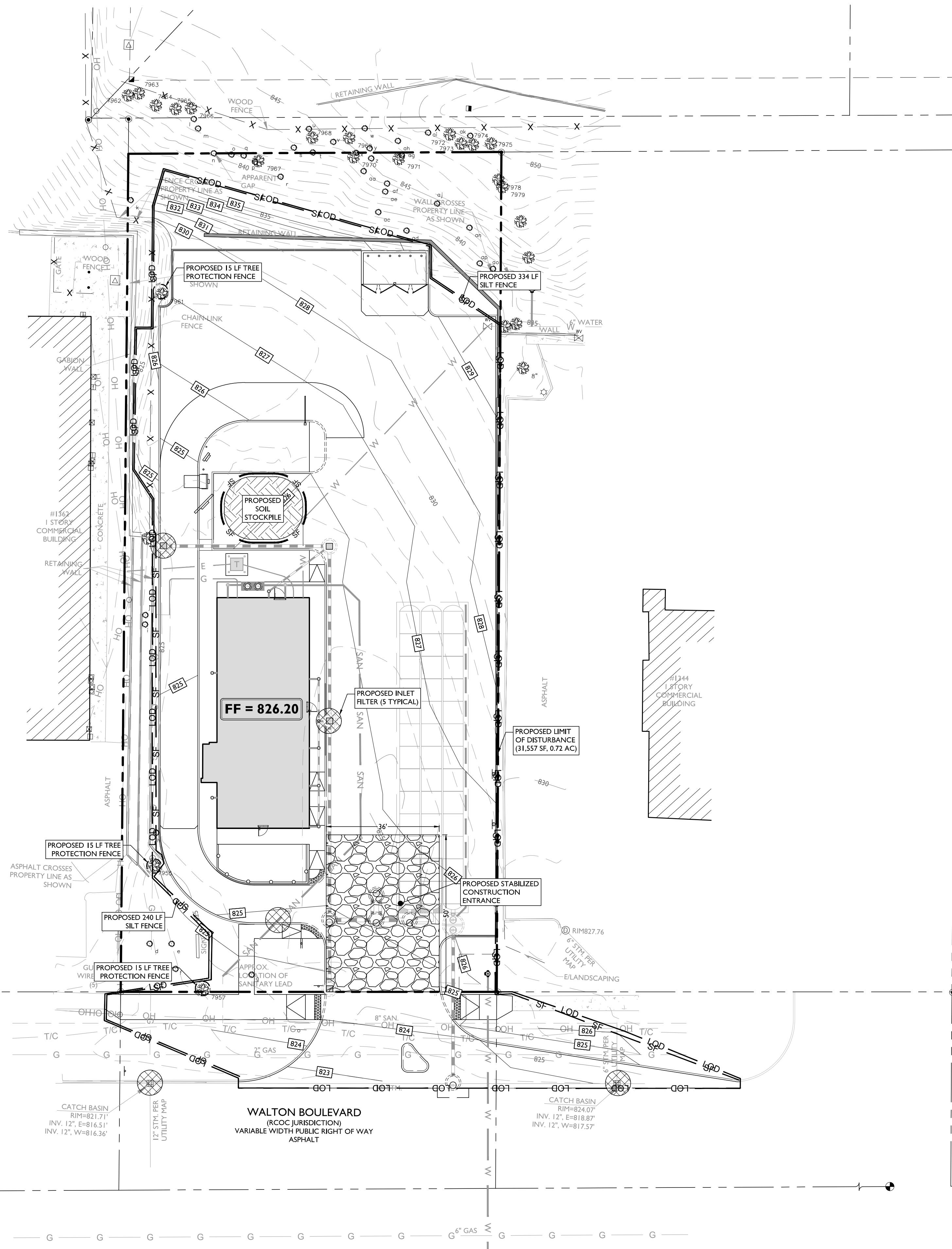


STONEFIELD
engineering & design

CITY FILE #21-030 SECTION #9
SCALE: 1" = 20' PROJECT ID: DET-200412

TITLE:
LIGHTING PLAN

DRAWING:
C-8



SOURCE: USGS NATIONAL MAPPING SYSTEM

LOCATION MAP

SCALE: 1" = 2,000'±

LEGAL DESCRIPTION:

THE LAND IS DESCRIBED AS FOLLOWS: CITY OF ROCHESTER HILLS, COUNTY OF OAKLAND, STATE OF MICHIGAN

TOWN 3 NORTH, RANGE 11 EAST, SECTION 9, PART OF SOUTHEAST 1/4 BEGINNING AT POINT DISTANCE NORTH 89 DEGREES 51 MINUTES 40 SECONDS WEST 551.20 FEET FROM SOUTHEAST SECTION CORNER, THENCE NORTH 89 DEGREES 51 MINUTES 40 SECONDS WEST 120 FEET, THENCE NORTH 00 DEGREES 04 MINUTES 20 SECONDS EAST 330 FEET, THENCE SOUTH 89 DEGREES 51 MINUTES 40 SECONDS EAST 120 FEET, THENCE SOUTH 00 DEGREES 04 MINUTES 20 SECONDS WEST 330 FEET TO BEGINNING, EXCEPT SOUTH 60 FEET IN ROAD.

SYMBOL	DESCRIPTION
---	PROPERTY BOUNDARY
- - -	ADJACENT PROPERTY BOUNDARY
---	LOD
---	PROPOSED LIMIT OF DISTURBANCE
---	PROPOSED SILT FENCE
---	PROPOSED TREE PROTECTION FENCE
---	PROPOSED STOCKPILE & EQUIPMENT STORAGE
---	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
---	PROPOSED INLET PROTECTION FILTER

SOIL CHARACTERISTICS CHART

TYPE OF SOIL	S9 - URBAN LAND
PERCENT OF SITE COVERAGE	100%
HYDROLOGIC SOIL GROUP	N/A
DEPTH TO RESTRICTIVE LAYER	N/A
SOIL PERMEABILITY	N/A
DEPTH TO WATER TABLE	N/A

SEQUENCE OF CONSTRUCTION

1. INSTALL SILT FENCE AND CONSTRUCTION ENTRANCE (2 DAYS).
2. ROUGH GRADING AND TEMPORARY SEEDING (20 DAYS).
3. EXCAVATE AND INSTALL DRAINAGE PIPING, AND INLETS (20 DAYS).
4. INSTALL INLET FILTERS (1 DAY).
5. BUILDING CONSTRUCTION AND SITE IMPROVEMENTS (90 DAYS).
6. CONSTRUCT RIGHT OF WAY IMPROVEMENTS (2 DAYS).
7. LANDSCAPING IMPROVEMENTS AND FINAL SEEDING (7 DAYS).
8. REMOVE SOIL EROSION MEASURES (1 DAY).

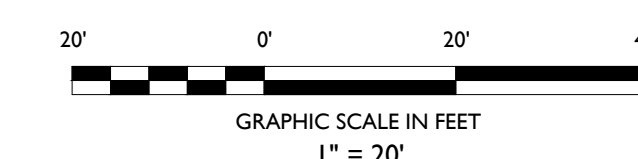
NOTE: TIME DURATIONS ARE APPROXIMATE AND ARE INTENDED TO ACT AS A GENERAL GUIDE TO THE CONSTRUCTION TIMELINE. ALL DURATIONS ARE SUBJECT TO CHANGE BY CONTRACTOR. CONTRACTOR SHALL SUBMIT CONSTRUCTION SCHEDULE TO TOWNSHIP AND ENGINEER. CONTRACTOR SHALL PHASE CONSTRUCTION ACCORDINGLY.



Know what's below
Call before you dig.

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR SOIL EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL AIR QUALITY STANDARDS.
3. THE CONTRACTOR IS RESPONSIBLE TO INSPECT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES WEEKLY AND AFTER A PRECIPITATION EVENT GREATER THAN 1 INCH. THE CONTRACTOR SHALL MAINTAIN AN INSPECTION LOG ON SITE AND DOCUMENT CORRECTIVE ACTION TAKEN THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED.



ISSUE	DATE	BY	DESCRIPTION
1	07/02/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING
2	08/02/2021	ECM	REVISED PER CITY COMMENTS
3	08/20/2021	RAC	REVISED PER FIRE DEPARTMENT COMMENTS
4	09/08/2021	JRC/ECM	SUBMISSION FOR SITE PLAN APPROVAL
5	12/28/2021	JRC/ECM	REVISED PER CITY SITE PLAN REVIEW
6	02/09/2022	JRC/ECM	REVISED PER CITY SECOND SITE PLAN REVIEW
7	05/26/2022	JRC/ECM	SUBMISSION FOR ENGINEERING APPROVAL
8	06/27/2022	JRC	SUBMISSION FOR SITE PLAN APPROVAL

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design

Detroit, MI • New York, NY • Boston, MA
Princeton, NJ • Tampa, FL • Rutherford, NJ
www.stonefielddesign.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE DEVELOPMENT PLANS

1360 WALTON BLVD

PROPOSED STARBUCKS



PARCEL ID: 15-09-476-030
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN



STONEFIELD
engineering & design

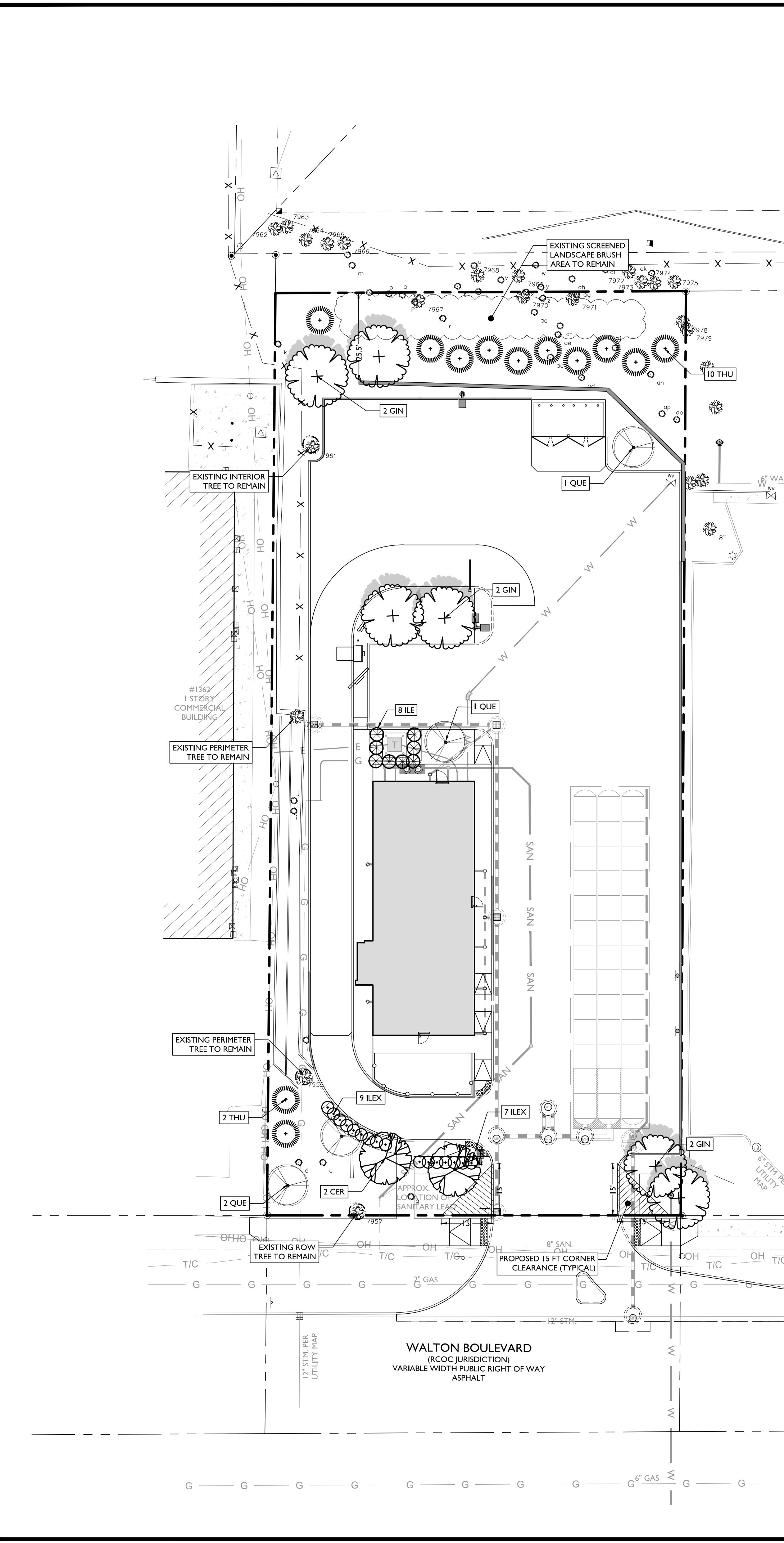
CITY FILE #21-030 SECTION #9

SCALE: 1" = 20' PROJECT ID: DET-200412

TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN

DRAWING:

C-9



EXISTING TREE SCHEDULE

Tree #	d.b.h.	Canopy		Common Name	Condition	Comments	(N) Not Regulated (s = size, c = condition)	(R) Regulated Tree (>6" or listed)	(S) Specimen Tree (>24" or listed)
		Radius	Botanical Name						
7953	7	10'	Malus spp.	Crabapple	fair	- Dead branch(es)		R	
7954	5 / 4 / 3 / 3	10'	Magnolia spp.	Magnolia	fair	- Dead branch(es)	N (s)		S
7955	20	25'	Pinus nigra	Austrian Pine	fair	- Thinning			S
7956	20	25'	Pinus nigra	Austrian Pine	fair	- Thinning			S
7957	11	10'	Morus alba	Weeping Mulberry	fair	- Dead branch(es)		R	
7958	5 / 5 / 4 / 4	10'	Gleditsia triacanthos 'Inermis'	Thornless Honeylocust	fair	- V-shaped crotch(es)	N (s)		
7959	12	15'	Gleditsia triacanthos 'Inermis'	Thornless Honeylocust	good			R	
7960	13	15'	Gleditsia triacanthos 'Inermis'	Thornless Honeylocust	good			R	
7961	7 / 7	10'	Gleditsia triacanthos 'Inermis'	Thornless Honeylocust	good			R	
7962	4	5'	Juglans spp.	Walnut	fair	- Contorted crown	N (s)		
7963	5	10'	Juglans spp.	Walnut	good		N (s)		
7964	15 / 9 / 6	20'	Picea pungens	Colorado Spruce	fair	- Stunted & thinning foliage		R	
7965	6	10'	Morus spp.	Mulberry	fair	- Bent/crooked/bowed leader		R	
7966	5	10'	Morus spp.	Mulberry	fair	- Bent/crooked/bowed leader	N (s)		
7967	10 / 10	10'	Picea pungens	Colorado Spruce	fair	- Stunted & thinning foliage		R	
7968	9	10'	Ulmus pumila	Siberian Elm	fair	- Dead branch(es)		R	
7969	12	15'	Ulmus pumila	Siberian Elm	fair	- Grown into fence/wires		R	
7970	7 / 3	10'	Ulmus pumila	Siberian Elm	fair	- Rot in trunk		R	
7971	10 / 7	15'	Ulmus pumila	Siberian Elm	fair	- Rot in trunk		R	
7972	5	10'	Ulmus pumila	Siberian Elm	fair	- Bent/crooked/bowed leader	N (s)		
7973	3	5'	Ulmus pumila	Siberian Elm	fair	- Rot in trunk	N (s)		
7974	2.5	5'	Ulmus pumila	Siberian Elm	fair	- Rot in trunk	N (s)		
7975	2 / 1 / ...	5'	Ulmus pumila	Siberian Elm	fair	- Rot in trunk	N (s)		
7976	2 / 2 / ...	5'	Acer negundo	Boxelder	poor	- 50% or more dead	N (s, c)		
7977	2	5'	Ulmus pumila	Siberian Elm	fair	- Rot in trunk	N (s)		
7978	5 / 3 / ...	10'	Elaeagnus umbellata	Autumn-olive	fair	- Contorted crown	N (s)		
7979	4	5'	Ulmus pumila	Siberian Elm	fair	- Contorted crown	N (s)		

TOTAL: 13 12 2 (40" dbh)
REMOVED: 0 3 1 (20" dbh)
REMAINING: 13 9 1 (20" dbh)

SYMBOL DESCRIPTION



TREE MITIGATION REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 126-327(2)	MINIMUM PRESERVATION PERCENTAGE: 40% PRESERVATION OF REGULATED TREES 12 REGULATED TREES 12 TREES X 0.40 = 5 REGULATED TREES TO BE PRESERVED	9 REGULATED TREES TO BE PRESERVED (75%)
§ 126-397	REGULATED TREE REPLACEMENT: 1:1 3 TREES REMOVED = 3 TREES REQUIRED	3 TREES
§ 126-397(3)	SPECIMEN TREE REPLACEMENT: 50% OF TOTAL DBH TO BE REPLACED (20" TOTAL DBH) X (0.50) = 10" DBH 1 SPECIMEN TREE PRESERVED = 2" CREDIT (10" DBH) X (2" CREDIT) = 8" DBH REQUIRED	8" DBH (4 TREES @ 2" EACH)

LANDSCAPE AND BUFFER REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 138-12.300	BUFFER REQUIREMENTS, B-2 TO R-2 BUFFER WIDTH W/O 6 FT WALL: 25 FT DECIDUOUS TREES PER 100 LF: 2.5 EA (1.19 LF / 100) = 1.19 (1.19 * 25) = 3 TREES REQUIRED ORNAMENTAL TREES PER 100 LF: 1.5 EA (1.19 * 1.5) = 2 TREES REQUIRED EVERGREEN TREES PER 100 LF: 5 EA (1.19 * 5) = 6 TREES REQUIRED SHRUBS PER 100 LF: 8 EA (1.19 * 8) = 10 SHRUBS REQUIRED	25.0 FT 3 EXISTING TREES 2 EXISTING TREES 6 PROPOSED TREES 10 EXISTING SHRUBS
§ 138-12.301(A)(1)	INTERIOR LANDSCAPING: 5% OF PARKING LOT AREA (15,530 SF) X (0.05) = 777 SF 1 TREE PER 150 SF (777 SF / 150 SF) = 5 TREES	1,272 SF 5 TREES (1 EXISTING)
§ 138-12.301(A)(2)	TERMINAL ISLANDS: MIN. 144 SF, 18 FT LONG 1 TREE PER ISLAND	PROVIDED
§ 138-12.301(A)(3)	INTERIOR ISLANDS: MIN. 160 SF, 8 FT WIDTH 1 TREE PER ISLAND	PROVIDED
§ 138-12.301(B)(1)	PERIMETER LANDSCAPING: 1 DECIDUOUS TREE PER 25 LF (18.5 LF / 25) = 1 TREE 1 ORNAMENTAL TREE PER 35 LF (18.5 LF / 35) = 1 TREE	1 EXISTING TREE 1 EXISTING TREE
§ 138-12.301(B)(2)	PARKING LOT WITHIN 30 FT OF ROW: CONTINUOUS SHRUB HEDGE 30" O.C.	PROVIDED
§ 138-12.304(A)(1)	RIGHT-OF-WAY LANDSCAPING: 1 DECIDUOUS TREE PER 35 LF (120 LF / 35 LF) = 4 TREES	4 TREES (1 EXISTING)
§ 138-12.304(B)	1 ORNAMENTAL TREE PER 60 LF (120 LF / 60 LF) = 2 TREES	2 PROPOSED TREES

PROPOSED PLANT SCHEDULE

DECIDUOUS TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	GIN	6	GINCKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD MAIDENHAIR TREE	2.5" - 3" CAL	B&B	AS SHOWN
ORNAMENTAL TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	QUE	4	MALLUS X 'INDIAN SUMMER'	INDIAN SUMMER CRABAPPLE	2.5" - 3" CAL	B&B	AS SHOWN
	CER	2	CERCIS CANADENSIS	EASTERN REDBUD	2.5" - 3" CAL	B&B	AS SHOWN
EVERGREEN TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	THU	12	THUJA X 'GREEN GIANT'	GREEN GIANT ARBORVITAE	8"-10" (2" DBH MINIMUM FOR REPLACEMENT TREES)	B&B	AS SHOWN
EVERGREEN SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	ILE	8	ILEX CRENATA 'COMPACTA'	DWARF JAPANESE HOLLY	24" - 30"	B&B	AS SHOWN
	ILEX	16	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY HOLLY	24" - 30"	POT	AS SHOWN

NOTE: IF ANY DISCREPANCIES OCCUR BETWEEN AMOUNTS SHOWN ON THE LANDSCAPE PLAN AND WITHIN THE PLANT LIST, THE PLAN SHALL DICTATE.

IRRIGATION NOTES:

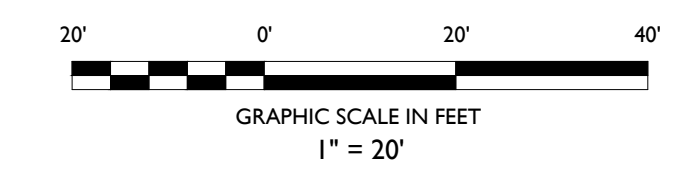
- IRRIGATION CONTRACTOR TO PROVIDE A DESIGN FOR AN IRRIGATION SYSTEM SEPARATING PLANTING BEDS FROM LAWN AREA. PRIOR TO CONSTRUCTION, DESIGN IS TO BE SUBMITTED TO THE PROJECT LANDSCAPE DESIGNER FOR REVIEW AND APPROVAL. WHERE POSSIBLE, DRIP IRRIGATION AND OTHER WATER CONSERVATION TECHNIQUES SUCH AS RAIN SENSORS SHALL BE IMPLEMENTED. CONTRACTOR TO VERIFY MAXIMUM ON SITE DYNAMIC WATER PRESSURE AVAILABLE MEASURED IN PSI. PRESSURE REDUCING DEVICES OR BOOSTER PUMPS SHALL BE PROVIDED TO MEET SYSTEM PRESSURE REQUIREMENTS. DESIGN TO SHOW ALL VALVES, PIPING, HEADS, BACKFLOW PREVENTION, METERS, CONTROLLERS, AND SLEEVES WITHIN HARDSCAPE AREAS.
- ALL LANDSCAPE AREAS MUST BE IRRIGATED. WATERING WILL ONLY OCCUR BETWEEN THE HOURS OF 12:00 AM AND 5:00 AM.
- IRRIGATION OVERSPRAY SHALL NOT BE BROADCAST ONTO CITY PATHWAYS

MAINTENANCE NOTES:

- LANDSCAPING SHALL BE KEPT IN A NEAT, ORDERLY AND HEALTHY GROWING CONDITION, FREE FROM DEBRIS AND REFUSE.
- 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.
- ALL DEAD, DAMAGED, OR DISEASED PLANT MATERIAL SHALL BE REMOVED IMMEDIATELY AND REPLACED WITHIN SIX (6) MONTHS AFTER IT DIES OR IN THE NEXT PLANTING SEASON, WHICHEVER OCCURS FIRST. FOR PURPOSES OF THIS SECTION, 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. THE CITY MAY NOTIFY PROPERTY OWNERS OF THE NEED TO REPLACE DEAD, DAMAGED, OR DISEASED MATERIAL.
- THE APPROVED LANDSCAPE PLAN SHALL BE CONSIDERED A PERMANENT RECORD AND INTEGRAL PART OF THE SITE PLAN APPROVAL. UNLESS OTHERWISE APPROVED IN ACCORDANCE WITH THE AFORESAID PROCEDURES, ANY REVISIONS TO OR REMOVAL OF PLANT MATERIALS, OR NON-COMPLIANCE WITH THE MAINTENANCE REQUIREMENTS OF THIS SECTION 138-12.109 WILL PLACE THE PARCEL IN NON-COMPLIANCE WITH THE APPROVED LANDSCAPE PLAN AND BE A VIOLATION OF THIS ORDINANCE.
- IF PROTECTED TREES ARE DAMAGED, A FINE SHALL BE ISSUED ON AN INCH-BY-INCH BASIS AT A MONETARY RATE AS DEFINED BY THE FORESTRY DEPARTMENT.

LANDSCAPING NOTES

- THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AND LANDSCAPED AREAS TO MATCH EXISTING CONDITIONS UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
- THE CONTRACTOR SHALL RESTORE ALL DISTURBED LAWN AREAS WITH A MINIMUM 4 INCH LAYER OF TOPSOIL AND SEED.
- THE CONTRACTOR SHALL RESTORE MULCH AREAS WITH A MINIMUM 3 INCH LAYER OF MULCH.
- THE MAXIMUM SLOPE ALLOWABLE IN LANDSCAPE RESTORATION AREAS SHALL BE AT LEAST 10' FROM THE EDGE OF THE PUBLIC WALKWAY. NO TREES OR SHRUBS MAY BE PLANTED IN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY DRIVEWAY WITH A PUBLIC WALKWAY AT A DISTANCE ALONG EACH LINE OF 15' FROM THEIR POINT OF INTERSECTION. NO TREES OR SHRUBS MAY BE PLANTED IN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY DRIVEWAY WITH A PUBLIC WALKWAY AT A DISTANCE ALONG EACH LINE OF 15' FROM THEIR POINT OF INTERSECTION. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM ANY FIRE HYDRANT. SHADE AND EVERGREEN TREES MUST BE AT LEAST 15' AWAY FROM THE NEAREST OVERHEAD WIRE. TREES MUST BE PLANTED A MINIMUM OF 5' FROM AN UNDERGROUND UTILITY, UNLESS THE CITY'S LANDSCAPE ARCHITECT REQUIRES A GREATER DISTANCE. PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS FORESTRY UNIT NEEDS TO INSPECT ALL TREES, EXISTING OR PLANTED, TO IDENTIFY ANY THAT POSE A HAZARD TO THE SAFE USE OF THE PUBLIC RIGHT-OF-WAY. FORESTRY MAY REQUIRE THE DEVELOPER TO REMOVE AND POSSIBLY REPLACE ANY SUCH TREES. THE ABOVE REQUIREMENTS ARE INCORPORATED INTO THE PLAN.
- PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS MUST INSPECT ALL LANDSCAPING PLANTINGS.



STONEFIELD engineering & design

DETROIT, MI • NEW YORK, NY • BOSTON, MA
 PRINCETON, NJ • TAMPA, FL • RUTHERFORD, NJ
 WWW.STONEFIELDENG.COM

607 Shelby Suite 200, Detroit, MI 48226
 Phone 248.247.1115

STARBUCKS

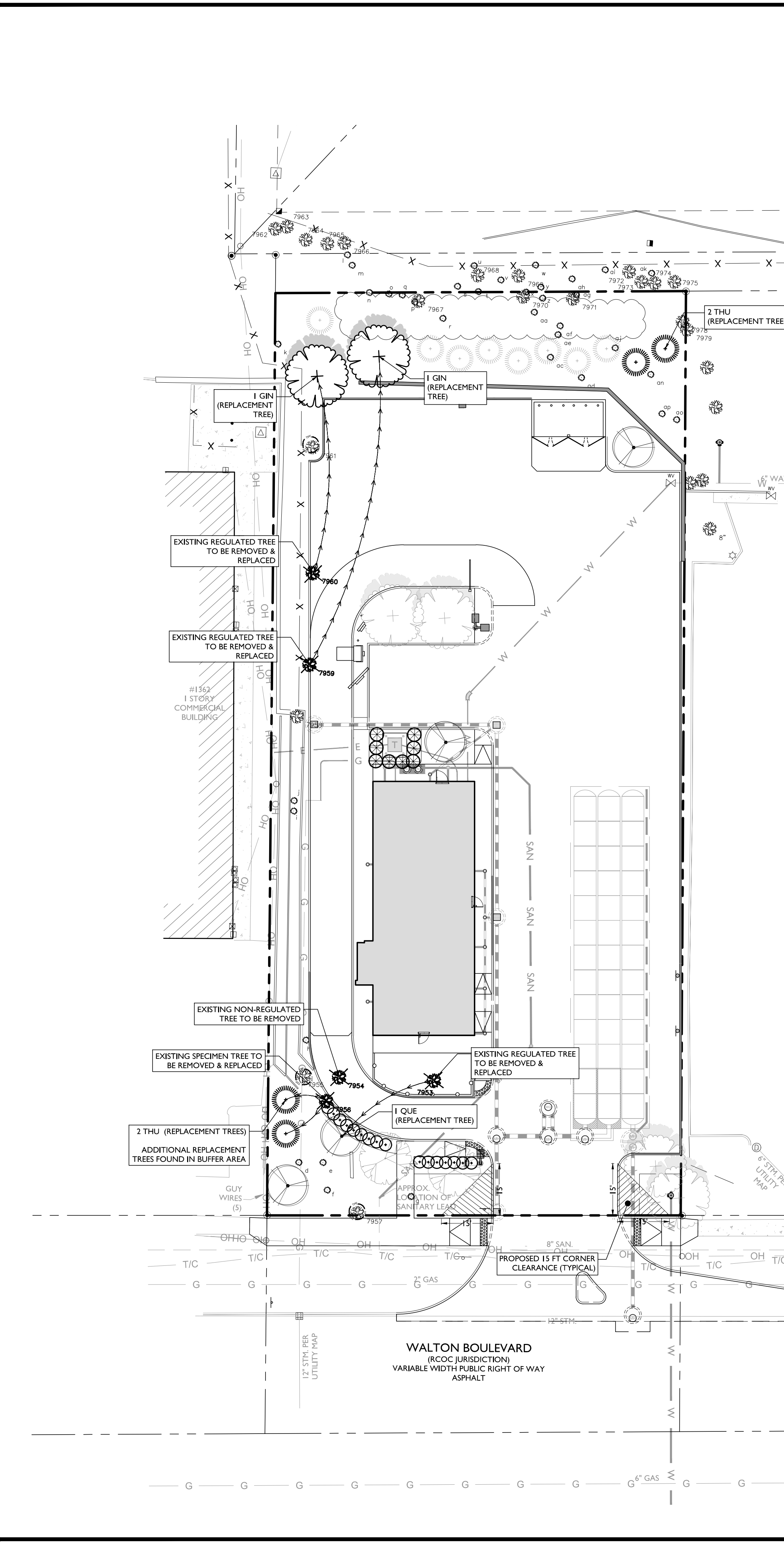
PARCEL ID: 15-09-476-030
 1360 WALTON BOULEVARD
 CITY OF ROCHESTER HILLS
 OAKLAND COUNTY, MICHIGAN

STONEFIELD engineering & design

CITY FILE #21-030 SECTION #9
 SCALE: 1" = 20' PROJECT ID: DET-200412

TITLE:
LANDSCAPING PLAN

DRAWING:
C-10

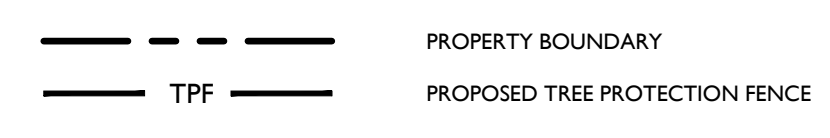


EXISTING TREE SCHEDULE

Tree #	d.b.h.	Canopy		Common Name	Condition	Comments	(N) Not Regulated (s = size, c = condition)	(R) Regulated Tree (>6" or listed)	(S) Specimen Tree (>24" or listed)
		Radius	Botanical Name						
7953	7	10'	<i>Malus spp.</i>	Crabapple	fair	- Dead branch(es)		R	
7954	5 / 4 / 3 / 3	10'	<i>Magnolia spp.</i>	Magnolia	fair	- Dead branch(es)	N (s)		S
7955	20	25'	<i>Pinus nigra</i>	Austrian Pine	fair	- Thinning			S
7956	20	25'	<i>Pinus nigra</i>	Austrian Pine	fair	- Thinning			S
7957	11	10'	<i>Morus alba</i>	Weeping Mulberry	fair	- Dead branch(es)		R	
7958	5 / 5 / 4 / 4	10'	<i>Gleditsia triacanthos 'Inermis'</i>	Thornless Honeylocust	fair	- V-shaped crotch(es)	N (s)		
7959	12	15'	<i>Gleditsia triacanthos 'Inermis'</i>	Thornless Honeylocust	good			R	
7960	13	15'	<i>Gleditsia triacanthos 'Inermis'</i>	Thornless Honeylocust	good			R	
7961	7 / 7	10'	<i>Gleditsia triacanthos 'Inermis'</i>	Thornless Honeylocust	good			R	
7962	4	5'	<i>Juglans spp.</i>	Walnut	fair	- Contorted crown	N (s)		
7963	5	10'	<i>Juglans spp.</i>	Walnut	good		N (s)		
7964	15 / 9 / 6	20'	<i>Picea pungens</i>	Colorado Spruce	fair	- Stunted & thinning foliage		R	
7965	6	10'	<i>Morus spp.</i>	Mulberry	fair	- Bent/crooked/bowed leader		R	
7966	5	10'	<i>Morus spp.</i>	Mulberry	fair	- Bent/crooked/bowed leader	N (s)		
7967	10 / 10	10'	<i>Picea pungens</i>	Colorado Spruce	fair	- Stunted & thinning foliage		R	
7968	9	10'	<i>Ulmus pumila</i>	Siberian Elm	fair	- Dead branch(es)		R	
7969	12	15'	<i>Ulmus pumila</i>	Siberian Elm	fair	- Grown into fence/wires		R	
7970	7 / 3	10'	<i>Ulmus pumila</i>	Siberian Elm	fair	- Rot in trunk		R	
7971	10 / 7	15'	<i>Ulmus pumila</i>	Siberian Elm	fair	- Rot in trunk		R	
7972	5	10'	<i>Ulmus pumila</i>	Siberian Elm	fair	- Bent/crooked/bowed leader	N (s)		
7973	3	5'	<i>Ulmus pumila</i>	Siberian Elm	fair	- Rot in trunk	N (s)		
7974	2.5	5'	<i>Ulmus pumila</i>	Siberian Elm	fair	- Rot in trunk	N (s)		
7975	2 / 1 / ...	5'	<i>Ulmus pumila</i>	Siberian Elm	fair	- Rot in trunk	N (s)		
7976	2 / 2 / ...	5'	<i>Acer negundo</i>	Boxelder	poor	- 50% or more dead	N (s, c)		
7977	2	5'	<i>Ulmus pumila</i>	Siberian Elm	fair	- Rot in trunk	N (s)		
7978	5 / 3 / ...	10'	<i>Elaeagnus umbellata</i>	Autumn-olive	fair	- Contorted crown	N (s)		
7979	4	5'	<i>Ulmus pumila</i>	Siberian Elm	fair	- Contorted crown	N (s)		

TOTAL: 13 12 2 (40" dbh)
REMOVED: 0 3 1 (20" dbh)
REMAINING: 13 9 1 (20" dbh)

SYMBOL DESCRIPTION



TREE MITIGATION REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 126-327(2)	MINIMUM PRESERVATION PERCENTAGE: 40% PRESERVATION OF REGULATED TREES 12 REGULATED TREES TO BE PRESERVED 12 TREES X 0.40 = 5 REGULATED TREES	9 REGULATED TREES TO BE PRESERVED (75%)
§ 126-397	REGULATED TREE REPLACEMENT: 1:1 3 TREES REMOVED = 3 TREES REQUIRED	3 TREES
§ 126-397(3)	SPECIMEN TREE REPLACEMENT: 50% OF TOTAL DBH TO BE REPLACED (20" TOTAL DBH) X (0.50) = 10" DBH 1 SPECIMEN TREE PRESERVED = 2" CREDIT (10" DBH) X (2" CREDIT) = 8" DBH REQUIRED	8" DBH (4 TREES @ 2" EACH)

LANDSCAPE AND BUFFER REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 138-12.300	BUFFER REQUIREMENTS, B-2 TO R-2 BUFFER WIDTH W/O 6 FT WALL: 25 FT DECIDUOUS TREES PER 100 LF: 2.5 EA (1.19 LF / 100) = 1.19 (1.19 * 2.5) = 3 TREES REQUIRED ORNAMENTAL TREES PER 100 LF: 1.5 EA (1.19 * 1.5) = 2 TREES REQUIRED EVERGREEN TREES PER 100 LF: 5 EA (1.19 * 5) = 6 TREES REQUIRED SHRUBS PER 100 LF: 8 EA (1.19 * 8) = 10 SHRUBS REQUIRED	25.0 FT 3 EXISTING TREES 2 EXISTING TREES 6 PROPOSED TREES 10 EXISTING SHRUBS
§ 138-12.301(A)(1)	INTERIOR LANDSCAPING: 5% OF PARKING LOT AREA (15,530 SF) X (0.05) = 777 SF 1 TREE PER 150 SF (777 SF / 150 SF) = 5 TREES	1,272 SF 5 TREES (1 EXISTING)
§ 138-12.301(A)(2)	TERMINAL ISLANDS: MIN. 144 SF, 18 FT LONG 1 TREE PER ISLAND	PROVIDED
§ 138-12.301(A)(3)	INTERIOR ISLANDS: MIN. 160 SF, 8 FT WIDTH 1 TREE PER ISLAND	PROVIDED
§ 138-12.301(B)(1)	PERIMETER LANDSCAPING: 1 DECIDUOUS TREE PER 25 LF (18.5 LF / 25) = 1 TREE 1 ORNAMENTAL TREE PER 35 LF (18.5 LF / 35) = 1 TREE	1 EXISTING TREE 1 EXISTING TREE
§ 138-12.301(B)(2)	PARKING LOT WITHIN 30 FT OF ROW: CONTINUOUS SHRUB HEDGE 30" O.C.	PROVIDED
§ 138-12.304(A)(1)	RIGHT-OF-WAY LANDSCAPING: 1 DECIDUOUS TREE PER 35 LF (120 LF / 35 LF) = 4 TREES	4 TREES (1 EXISTING)
§ 138-12.304(B)	1 ORNAMENTAL TREE PER 60 LF (120 LF / 60 LF) = 2 TREES	2 PROPOSED TREES

PROPOSED PLANT SCHEDULE

DECIDUOUS TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	GIN	6	GINCKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD MAIDENHAIR TREE	2.5" - 3" CAL	B&B	AS SHOWN
ORNAMENTAL TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	QUE	4	MALLUS X 'INDIAN SUMMER'	INDIAN SUMMER CRABAPPLE	2.5" - 3" CAL	B&B	AS SHOWN
	CER	2	CERCIS CANADENSIS	EASTERN REDBUD	2.5" - 3" CAL	B&B	AS SHOWN
EVERGREEN TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	THU	12	THUJA X 'GREEN GIANT'	GREEN GIANT ARBORVITAE	8"-10" (2" DBH MINIMUM FOR REPLACEMENT TREES)	B&B	AS SHOWN
EVERGREEN SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
	ILE	8	ILEX CRENATA 'COMPACTA'	DWARF JAPANESE HOLLY	24" - 30"	B&B	AS SHOWN
	ILEX	16	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY HOLLY	24" - 30"	POT	AS SHOWN

NOTE: IF ANY DISCREPANCIES OCCUR BETWEEN AMOUNTS SHOWN ON THE LANDSCAPE PLAN AND WITHIN THE PLANT LIST, THE PLAN SHALL DICTATE.

IRRIGATION NOTES:

- IRRIGATION CONTRACTOR TO PROVIDE A DESIGN FOR AN IRRIGATION SYSTEM SEPARATING PLANTING BEDS FROM LAWN AREA. PRIOR TO CONSTRUCTION, DESIGN IS TO BE SUBMITTED TO THE PROJECT LANDSCAPE DESIGNER FOR REVIEW AND APPROVAL. WHERE POSSIBLE, DRIP IRRIGATION AND OTHER WATER CONSERVATION TECHNIQUES SUCH AS RAIN SENSORS SHALL BE IMPLEMENTED. CONTRACTOR TO VERIFY MAXIMUM ON SITE DYNAMIC WATER PRESSURE AVAILABLE MEASURED IN PSI. PRESSURE REDUCING DEVICES OR BOOSTER PUMPS SHALL BE PROVIDED TO MEET SYSTEM PRESSURE REQUIREMENTS. DESIGN TO SHOW ALL VALVES, PIPING, HEADS, BACKFLOW PREVENTION, METERS, CONTROLLERS, AND SLEEVES WITHIN HARDSCAPE AREAS.
- ALL LANDSCAPE AREAS MUST BE IRRIGATED. WATERING WILL ONLY OCCUR BETWEEN THE HOURS OF 12:00 AM AND 5:00 AM.
- IRRIGATION OVERSPRAY SHALL NOT BE BROADCAST ONTO CITY PATHWAYS

MAINTENANCE NOTES:

- LANDSCAPING SHALL BE KEPT IN A NEAT, ORDERLY AND HEALTHY GROWING CONDITION, FREE FROM DEBRIS AND REFUSE.
- 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.
- ALL DEAD, DAMAGED, OR DISEASED PLANT MATERIAL SHALL BE REMOVED IMMEDIATELY AND REPLACED WITHIN SIX (6) MONTHS AFTER IT DIES OR IN THE NEXT PLANTING SEASON, WHICHEVER OCCURS FIRST. FOR PURPOSES OF THIS SECTION, 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. THE CITY MAY NOTIFY PROPERTY OWNERS OF THE NEED TO REPLACE DEAD, DAMAGED, OR DISEASED MATERIAL.
- THE APPROVED LANDSCAPE PLAN SHALL BE CONSIDERED A PERMANENT RECORD AND INTEGRAL PART OF THE SITE PLAN APPROVAL. UNLESS OTHERWISE APPROVED IN ACCORDANCE WITH THE AFOREMENTIONED PROCEDURES, ANY REVISIONS TO OR REMOVAL OF PLANT MATERIALS, OR NON-COMPLIANCE WITH THE MAINTENANCE REQUIREMENTS OF THIS SECTION 138-12.109 WILL PLACE THE PARCEL IN NON-COMPLIANCE WITH THE APPROVED LANDSCAPE PLAN AND BE A VIOLATION OF THIS ORDINANCE.
- IF PROTECTED TREES ARE DAMAGED, A FINE SHALL BE ISSUED ON AN INCH-BY-INCH BASIS AT A MONETARY RATE AS DEFINED BY THE FORESTRY DEPARTMENT.

LANDSCAPING NOTES

- THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AND LANDSCAPED AREAS TO MATCH EXISTING CONDITIONS UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
- THE CONTRACTOR SHALL RESTORE ALL DISTURBED LAWN AREAS WITH A MINIMUM 4 INCH LAYER OF TOPSOIL AND SEED.
- THE CONTRACTOR SHALL RESTORE MULCH AREAS WITH A MINIMUM 3 INCH LAYER OF MULCH.
- THE MAXIMUM SLOPE ALLOWABLE IN LANDSCAPE RESTORATION AREAS SHALL BE 3 FEET HORIZONTAL TO 1 FOOT VERTICAL (3:1) SLOPE UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
- THE CONTRACTOR IS REQUIRED TO LOCATE ALL SPRINKLER HEADS IN AREA OF LANDSCAPING DISTURBANCE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL RELOCATE SPRINKLER HEADS AND LINES IN ACCORDANCE WITH OWNER'S DIRECTION WITHIN AREAS OF DISTURBANCE.
- THE CONTRACTOR SHALL ENSURE THAT ALL DISTURBED LANDSCAPED AREAS ARE GRADED TO MEET FURSH AT THE ELEVATION OF WALKWAYS AND TOP OF CURB ELEVATIONS EXCEPT UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET. NO ABRUPT CHANGES IN GRADE ARE PERMITTED IN DISTURBED LANDSCAPING AREAS.
- PRIOR APPROVAL IS REQUIRED TO PLANT ANY TREE OR SHRUB ON THE PUBLIC RIGHT-OF-WAY. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF THE PUBLIC ROAD. (TREES MUST BE PLANTED AT LEAST 15' AWAY FROM CURB OR ROAD EDGE WHERE THE SPEED LIMIT IS MORE THAN 35 MPH.) SHADE TREES AND SHRUBS MUST BE PLANTED AT LEAST 5' FROM THE EDGE OF THE PUBLIC WALKWAY. EVERGREEN AND ORNAMENTAL TREES MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF THE PUBLIC WALKWAY. NO TREES OR SHRUBS MAY BE PLANTED WITHIN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY DRIVEWAY WITH A PUBLIC WALKWAY AT A DISTANCE ALONG EACH LINE OF 15' FROM THEIR POINT OF INTERSECTION. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM ANY FIRE HYDRANT. SHADE AND EVERGREEN TREES MUST BE AT LEAST 15' AWAY FROM THE NEAREST OVERHEAD WIRE. TREES MUST BE PLANTED A MINIMUM OF 5' FROM AN UNDERGROUND UTILITY, UNLESS THE CITY'S LANDSCAPE ARCHITECT REQUIRES A GREATER DISTANCE. PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS FORESTRY UNIT NEEDS TO INSPECT ALL TREES, EXISTING OR PLANTED, TO IDENTIFY ANY THAT POSE A HAZARD TO THE SAFE USE OF THE PUBLIC RIGHT-OF-WAY. FORESTRY MAY REQUIRE THE DEVELOPER TO REMOVE AND POSSIBLY REPLACE ANY SUCH TREES. THE ABOVE REQUIREMENTS ARE INCORPORATED INTO THE PLAN.
- PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS MUST INSPECT ALL LANDSCAPING PLANTINGS.

SITE DEVELOPMENT PLANS

**1360 WALTON BLVD
PROPOSED STARBUCKS**



PARCEL ID: 15-09-476-030
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN



CITY FILE #21-030 SECTION #9

SCALE: 1" = 20' PROJECT ID: DET-200412

TREE REPLACEMENT PLAN

DRAWING: C-11

C-11

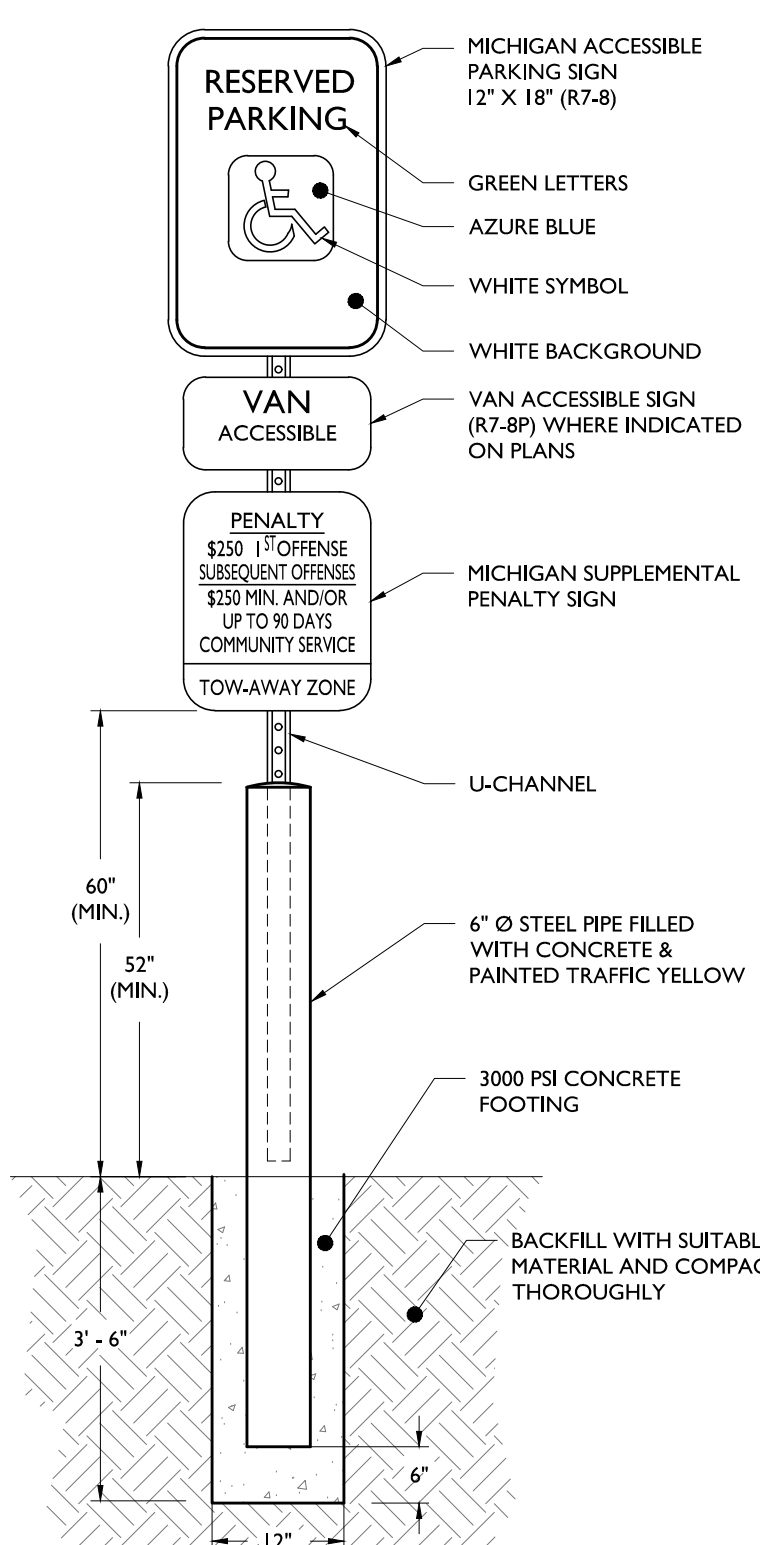
ISSUE	DATE	BY	DESCRIPTION
8	06/27/2022	JRC	SUBMISSION FOR ENGINEERING APPROVAL
7	05/26/2022	JRC/ECM	SUBMISSION FOR SITE PLAN APPROVAL
6	02/09/2022	JRC/ECM	REVISION PER CITY SECOND SITE PLAN REVIEW
5	12/28/2021	JRC/ECM	REVISION PER CITY SITE PLAN REVIEW
4	09/08/2021	RAC/ECM	SUBMISSION FOR SITE PLAN APPROVAL
3	08/20/2021	RAC	REVISION PER FIRE DEPARTMENT COMMENTS
2	08/02/2021	ECM	REVISION PER CITY COMMENTS
1	07/08/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design

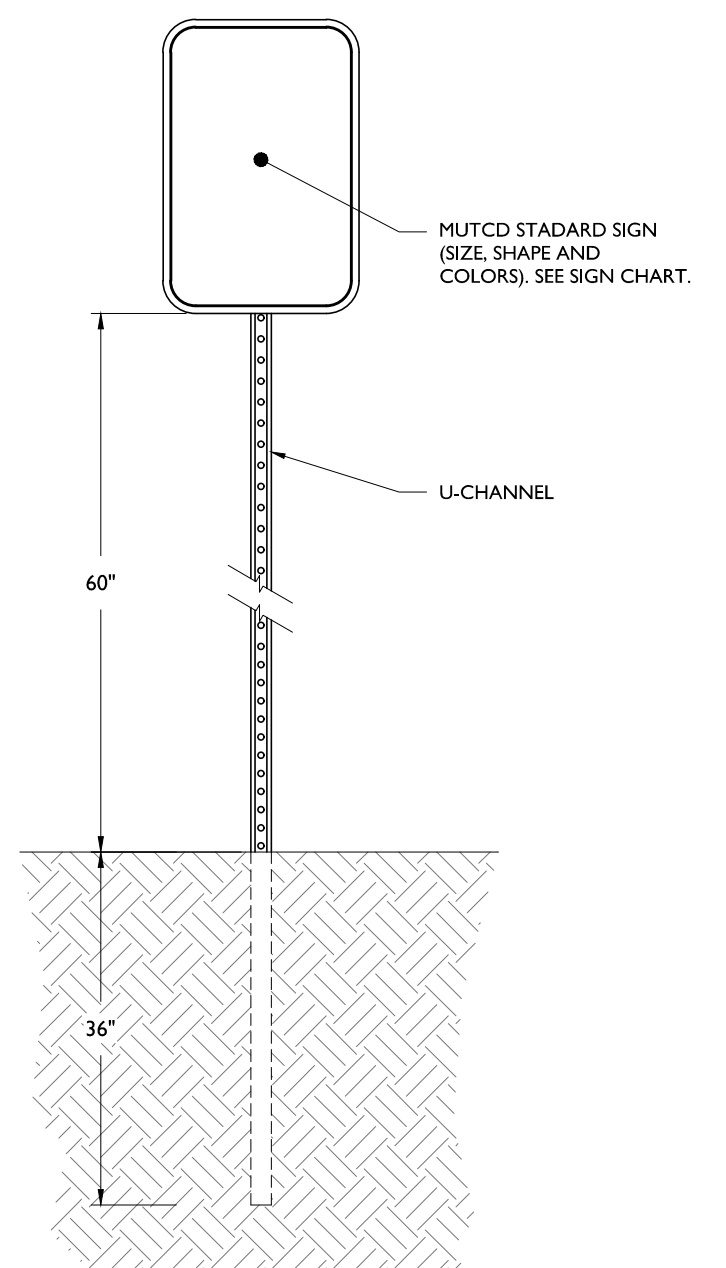
Detroit, MI • New York, NY • Boston, MA
Princeton, NJ • Tampa, FL • Rutherford, NJ
www.stonefielddesign.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115



ACCESSIBLE PARKING SIGN WITH BOLLARD DETAIL
NOT TO SCALE

1



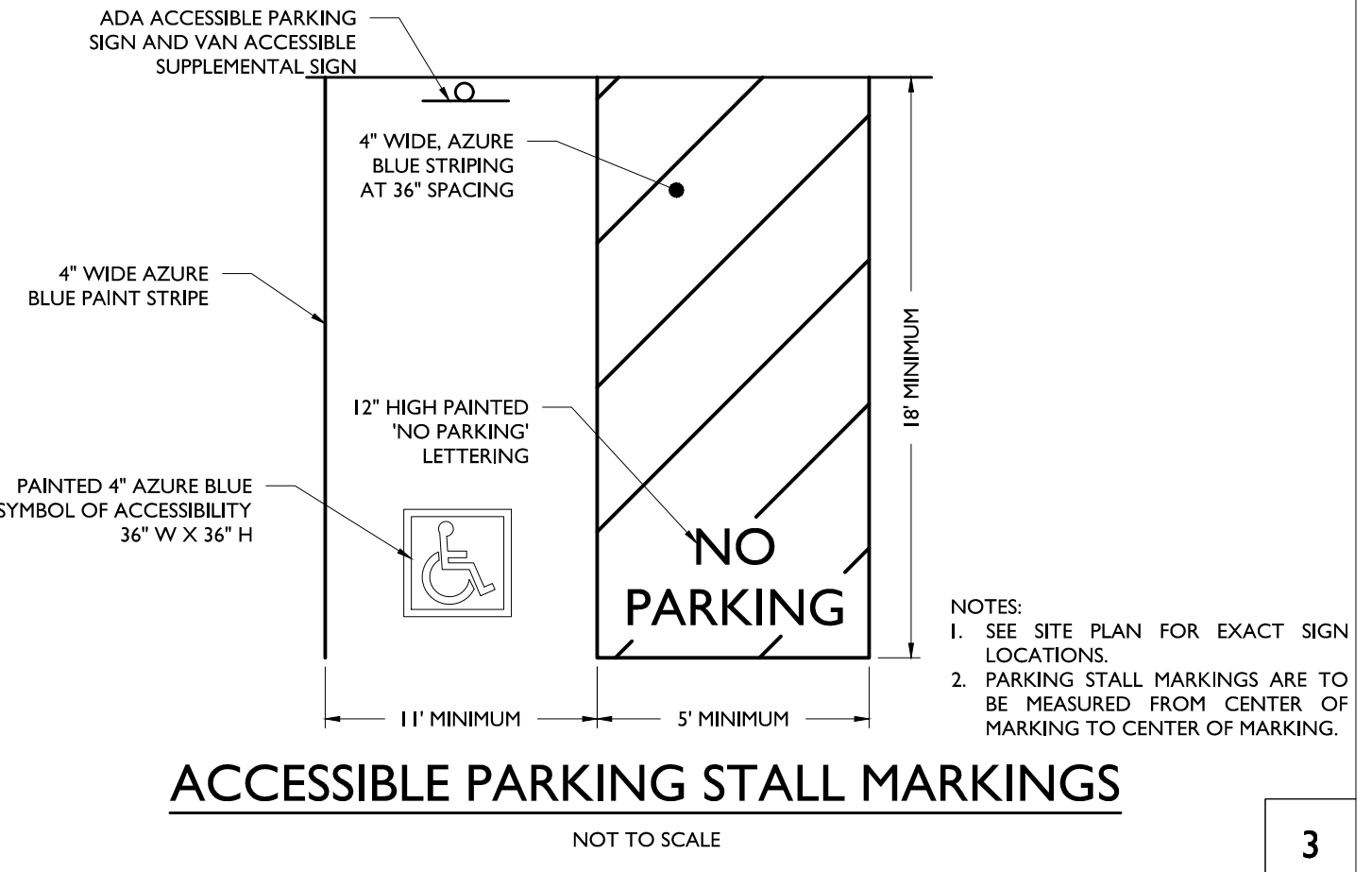
SIGN POST DETAIL
NOT TO SCALE

2

M.U.T.C.D. NUMBER	TEXT	COLOR		SIZE OF SIGN (WIDTH X HEIGHT)	TYPE OF MOUNT
		LEGEND	BACKGROUND		
STOP SIGN (R1-1)		RED	WHITE	36" x 36"	GROUND

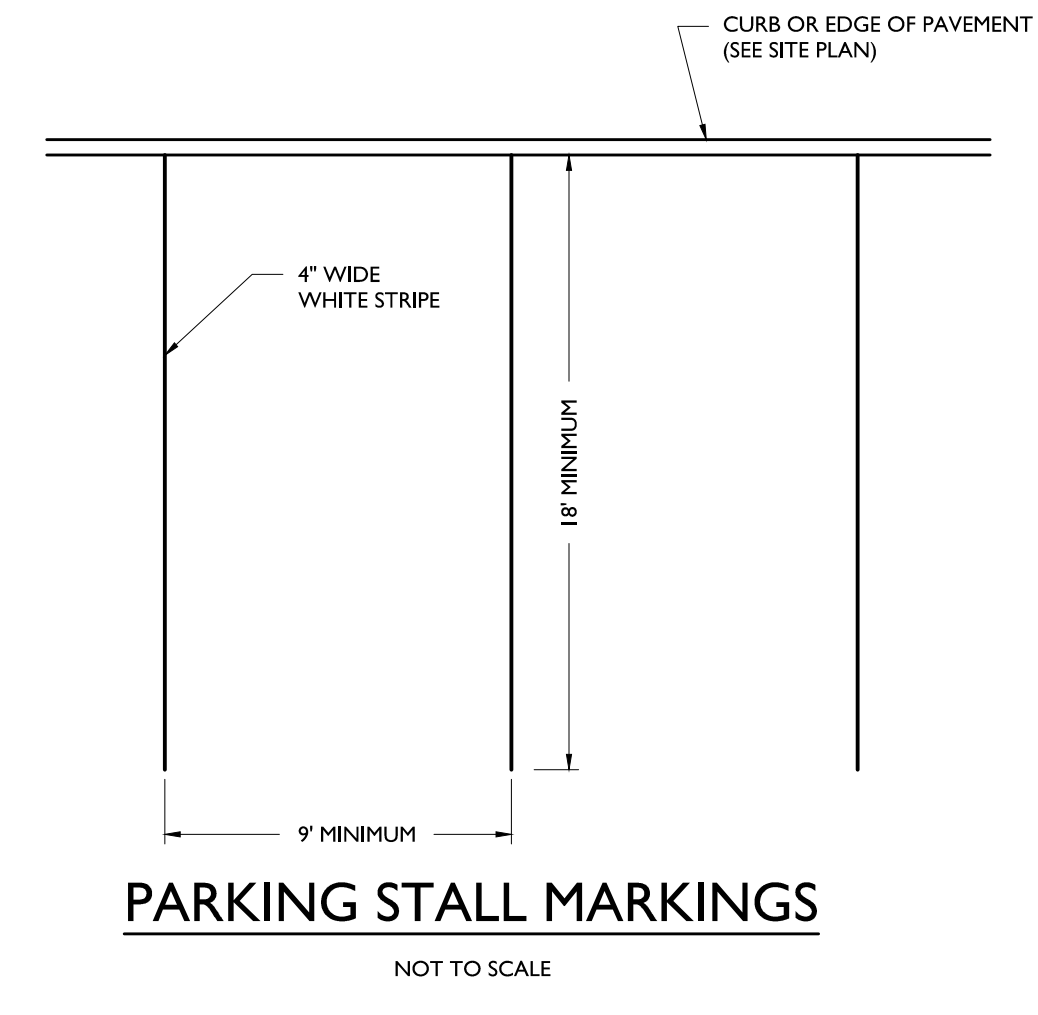
NOTE:
1. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), EXCEPT AS NOTED.
2. ALL SIGNS SHALL BE MOUNTED AS TO NOT OBSTRUCT THE SHAPE OF "STOP" (R1-1) AND "YIELD" (R1-2) SIGNS.

SIGN DATA TABLE
NOT TO SCALE



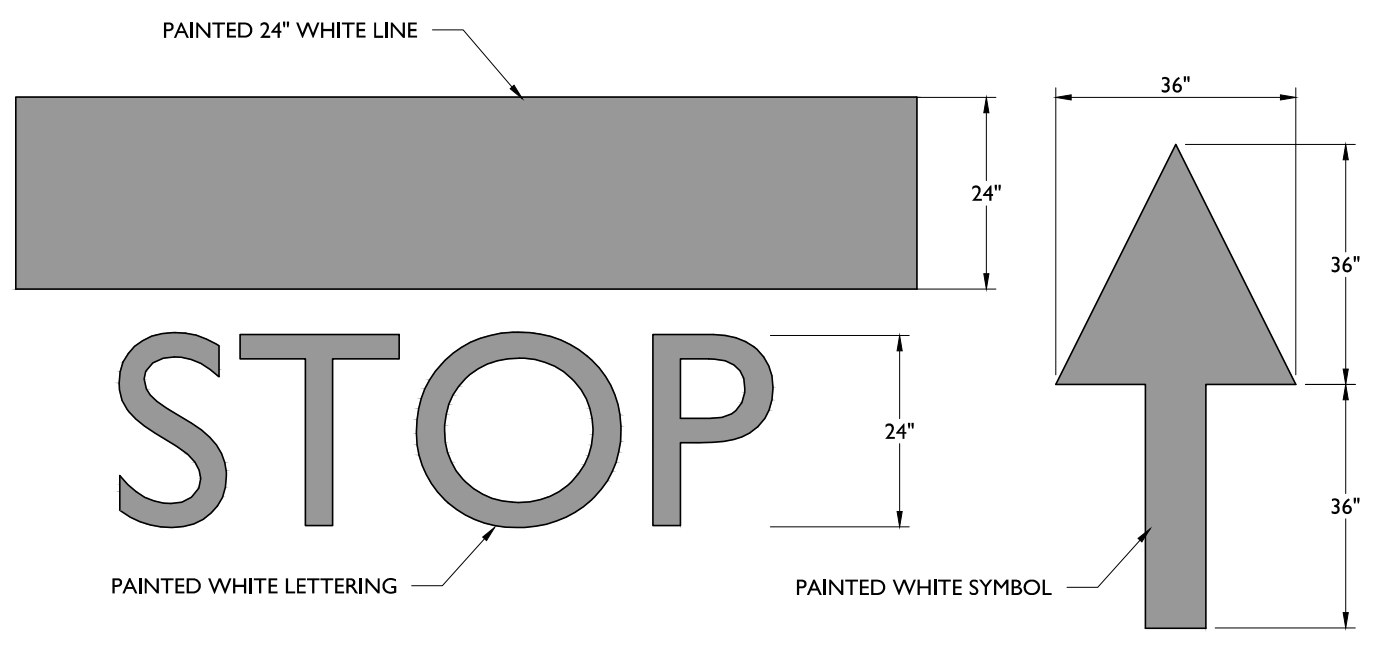
ACCESSIBLE PARKING STALL MARKINGS
NOT TO SCALE

3



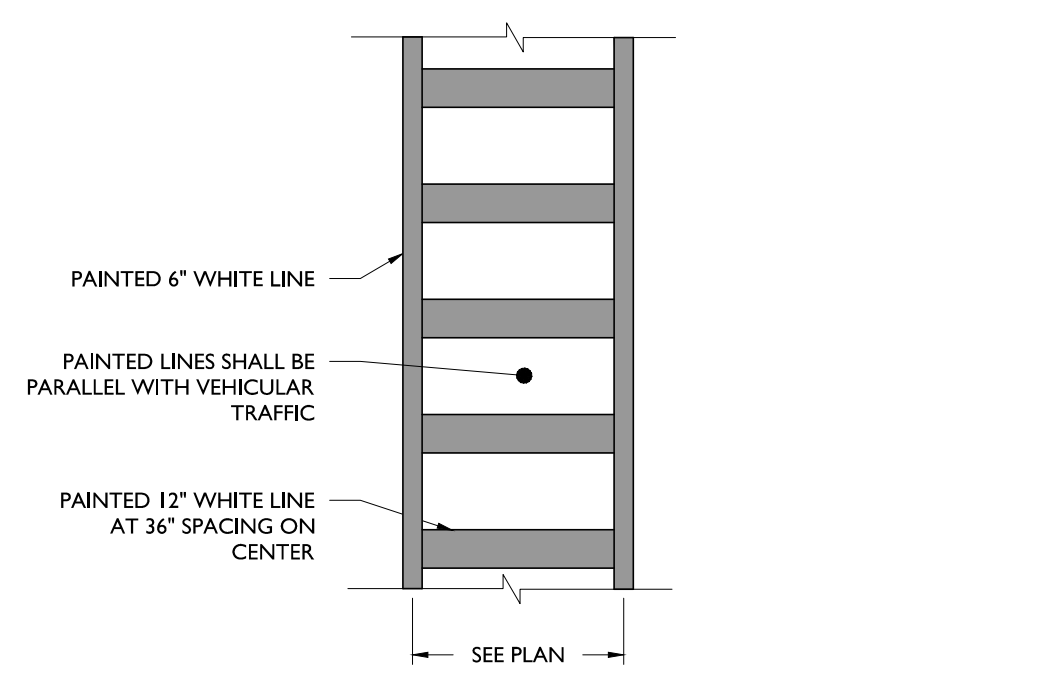
PARKING STALL MARKINGS
NOT TO SCALE

4



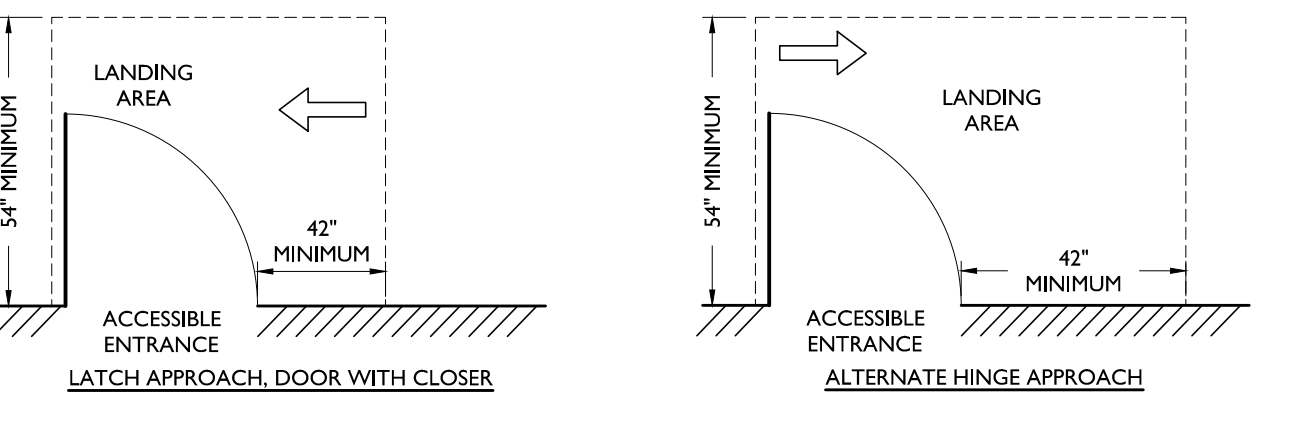
STOP BAR & ARROW DETAILS
NOT TO SCALE

5



CROSSWALK DETAIL
NOT TO SCALE

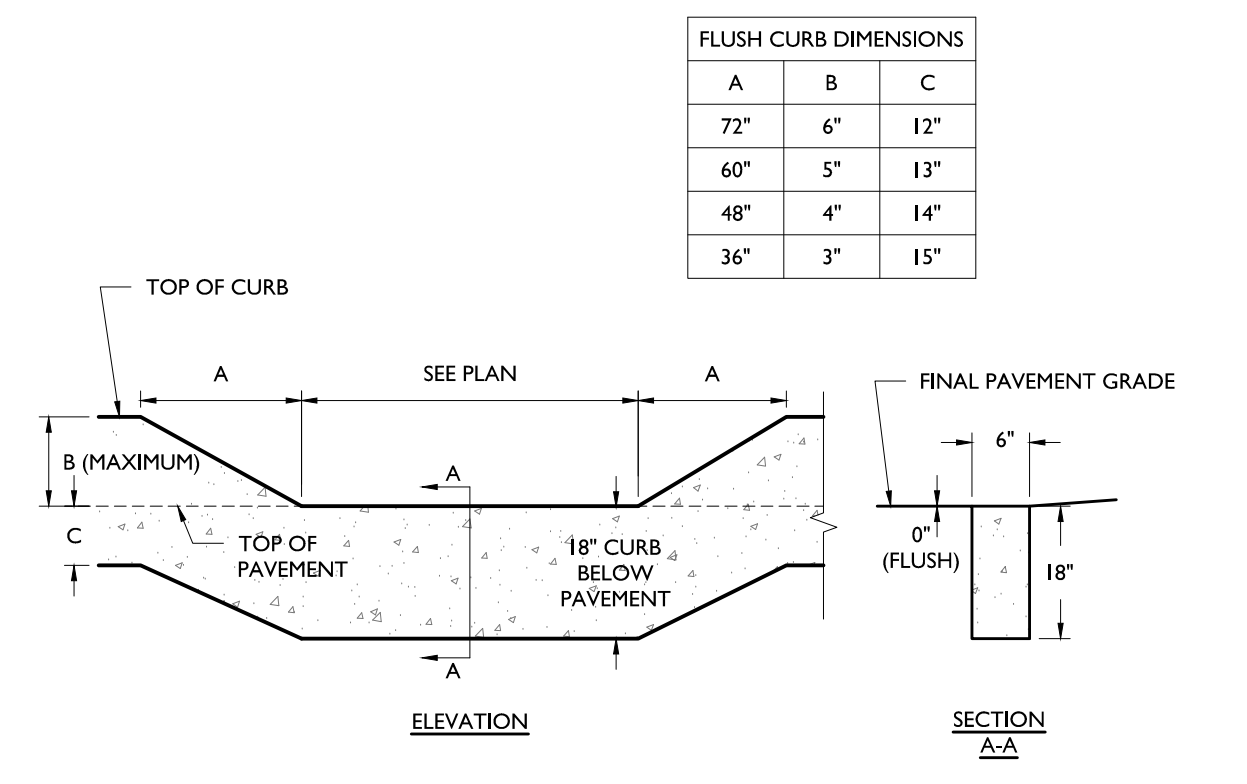
6



ACCESSIBLE ENTRANCE LANDING DETAIL
NOT TO SCALE

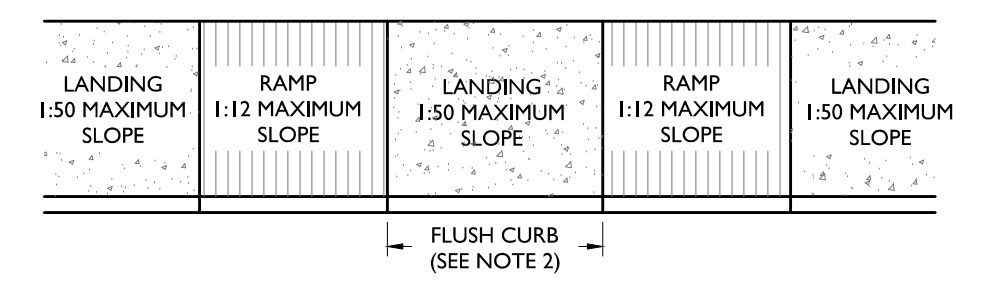
NOTES:
1. MAXIMUM SLOPE ON LANDING SHALL BE 1:50 IN ALL DIRECTIONS.
2. DIMENSIONS SHOWN HERE ARE THE MINIMUM DIMENSIONS REQUIRED FOR AN ADA COMPLIANT LANDING AT THE ACCESSIBLE ENTRANCE. REFER TO SITE PLAN FOR SPECIFIC DIMENSIONS THAT MAY SPECIFY A LARGER LANDING AREA.
3. CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE CONSTRUCTION IF THE ACCESSIBLE ENTRANCE ON SITE DOES NOT MATCH THE SCENARIO SHOWN ABOVE.

7



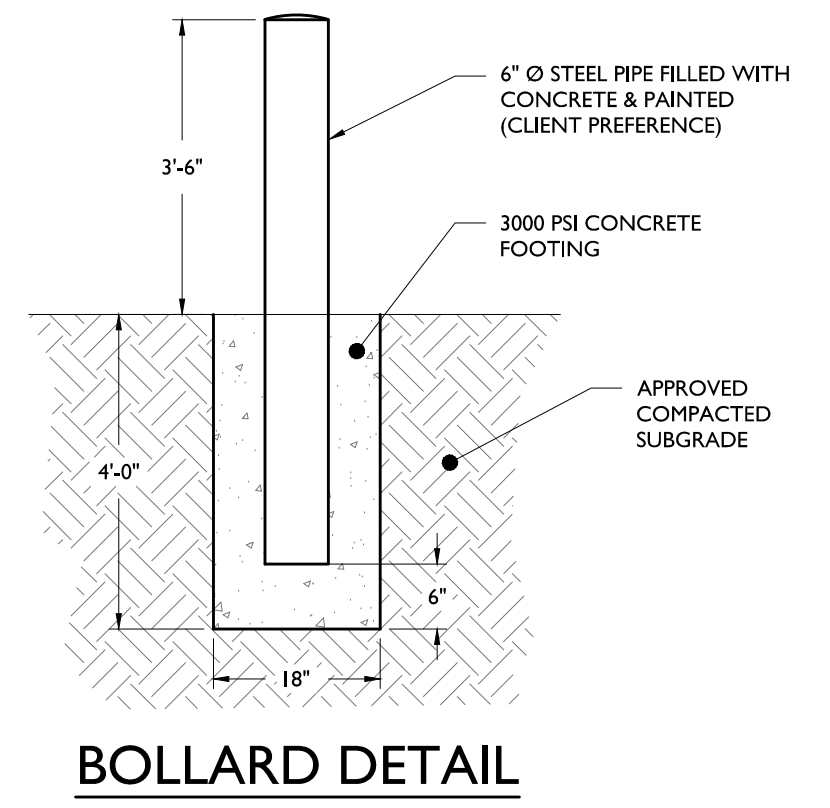
FLUSH CURB DETAIL
NOT TO SCALE

8



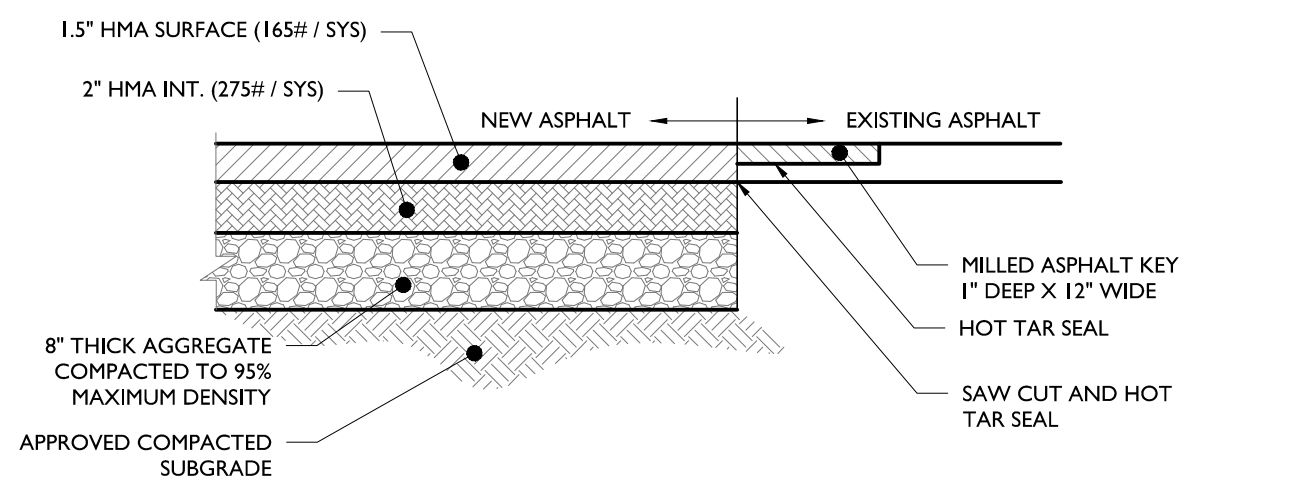
TRANSITION RAMP DETAIL
NOT TO SCALE

9



BOLLARD DETAIL
NOT TO SCALE

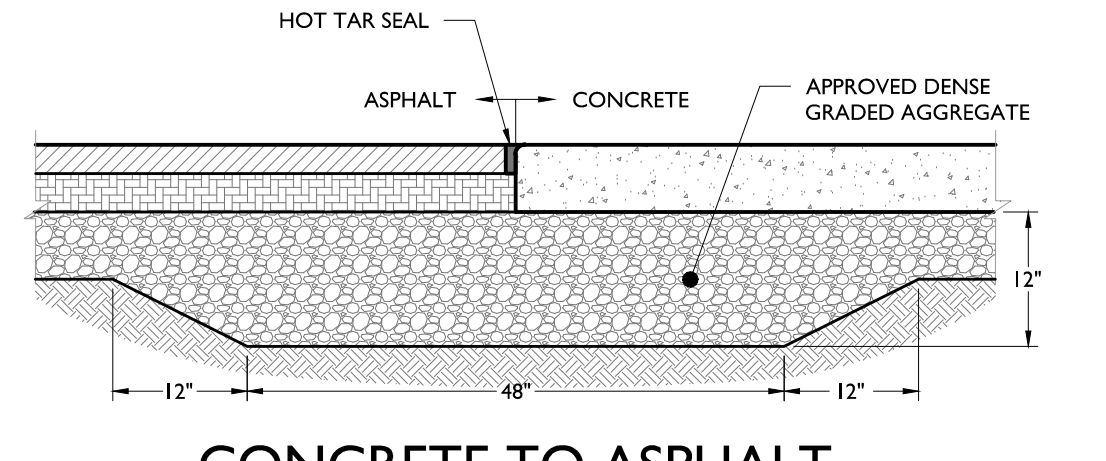
10



FULL DEPTH PARKING LOT ASPHALT PAVEMENT DETAIL
NOT TO SCALE

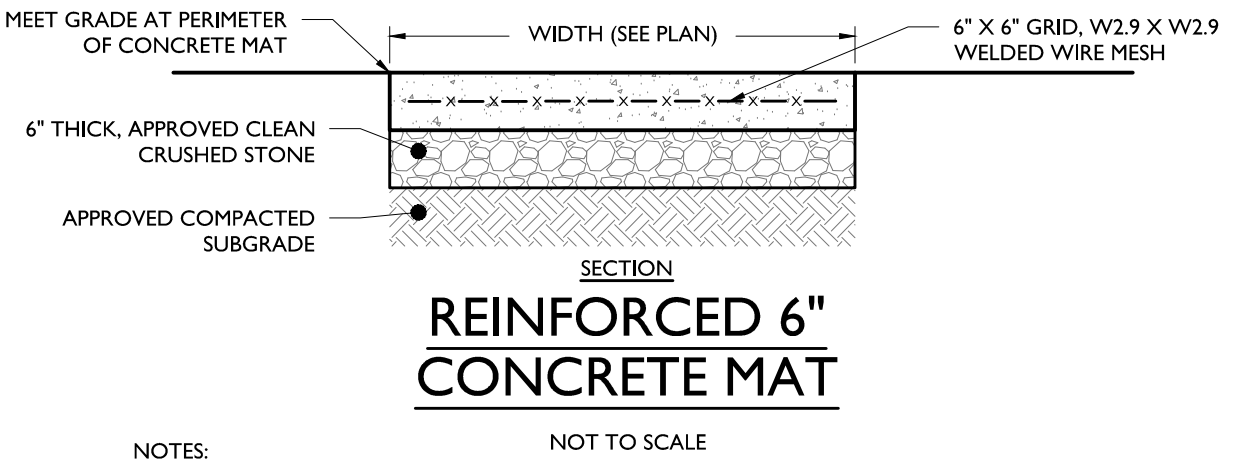
NOTE:
1. CONTRACTOR TO REFER TO GEOTECHNICAL REPORT FOR PAVEMENT SPECIFICS AND DESIGN/CONSTRUCTION RECOMMENDATIONS.
2. HMA MIX AND DENSE GRADED AGGREGATE SHALL CONFORM TO STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

11



CONCRETE TO ASPHALT TRANSITION DETAIL
NOT TO SCALE

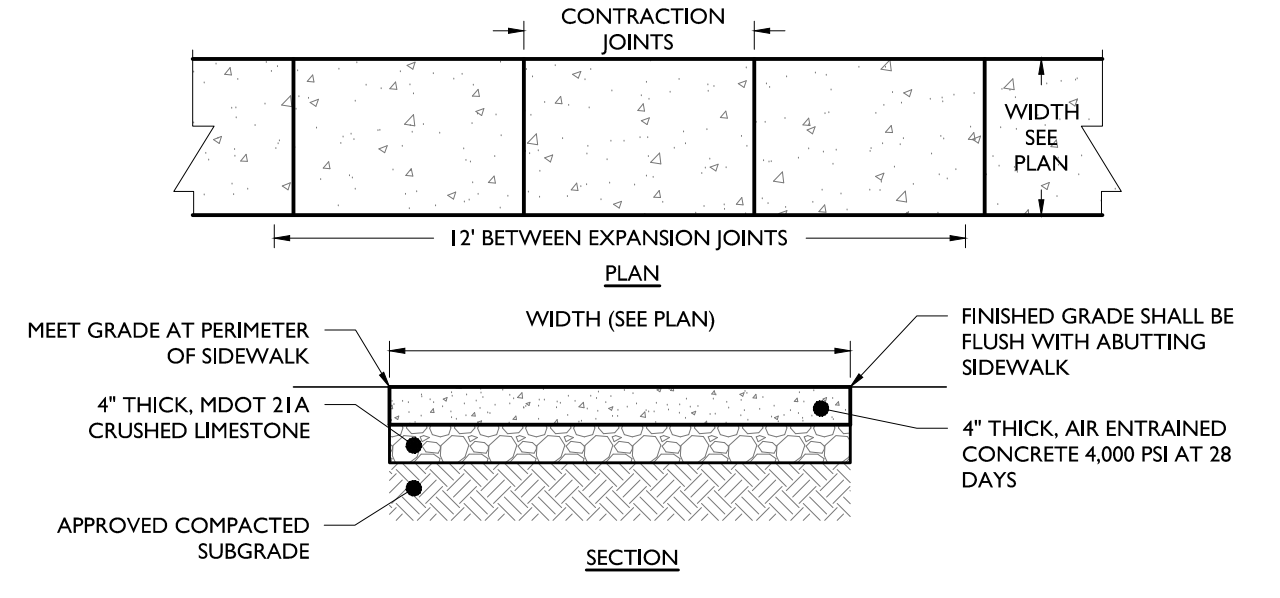
12



REINFORCED 6" CONCRETE MAT
NOT TO SCALE

NOTES:
1. 1/2" EXPANSION JOINTS WITH WATER SEAL SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM THE SURFACE. LONGITUDINAL REBAR TO BE CUT AT EXPANSION JOINTS.
2. 1" DEEP BY 1/2" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT MID-POINT BETWEEN EXPANSION JOINTS OR 6' INTERVALS MAX.
3. CONCRETE SHALL RECEIVE BROOM FINISH.
4. ALL EXPOSED CORNERS TO HAVE 12" CHAMFER.

13



CONCRETE WALKWAY DETAIL
NOT TO SCALE

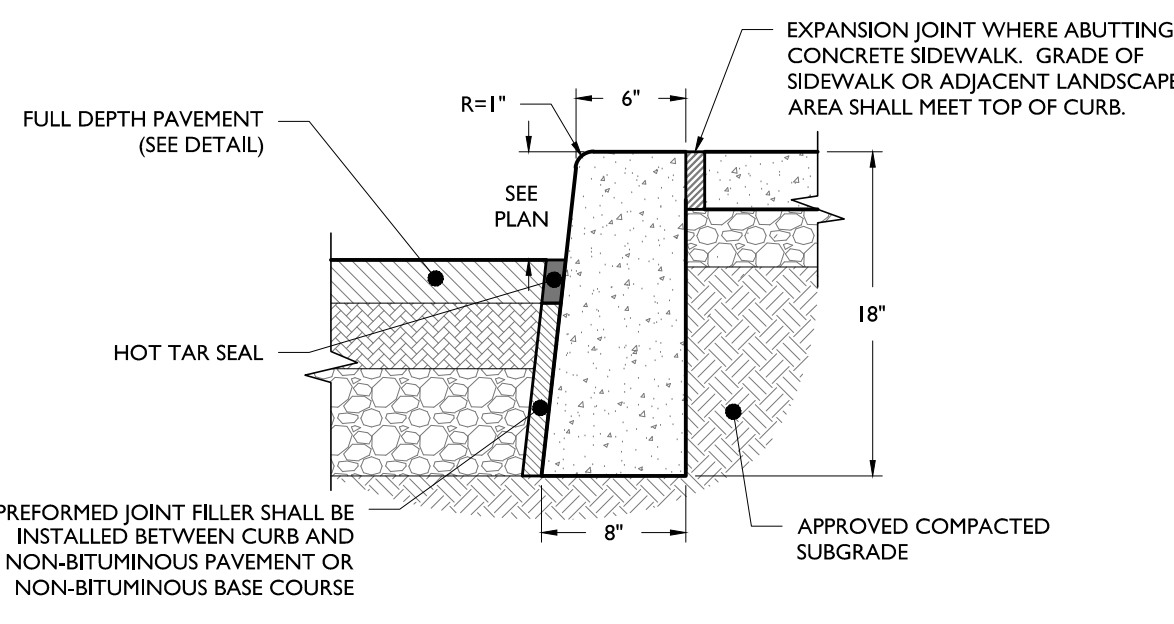
NOTES:
1. MAXIMUM CROSS SLOPE SHALL BE 1/4" PER FOOT.
2. 1/2" EXPANSION JOINTS SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM THE SURFACE.
3. 1" DEEP BY 1/2" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT 4' INTERVALS.
4. EXPANSION JOINT SHALL BE PROVIDED WHERE ADJACENT TO A BUILDING.

14

STONEFIELD engineering & design
 Detroit, MI • New York, NY • Boston, MA
 Princeton, NJ • Tampa, FL • Rochester, NJ
 www.stonefielddesign.com
 607 Shelby Suite 200, Detroit, MI 48226
 Phone 248.247.1115

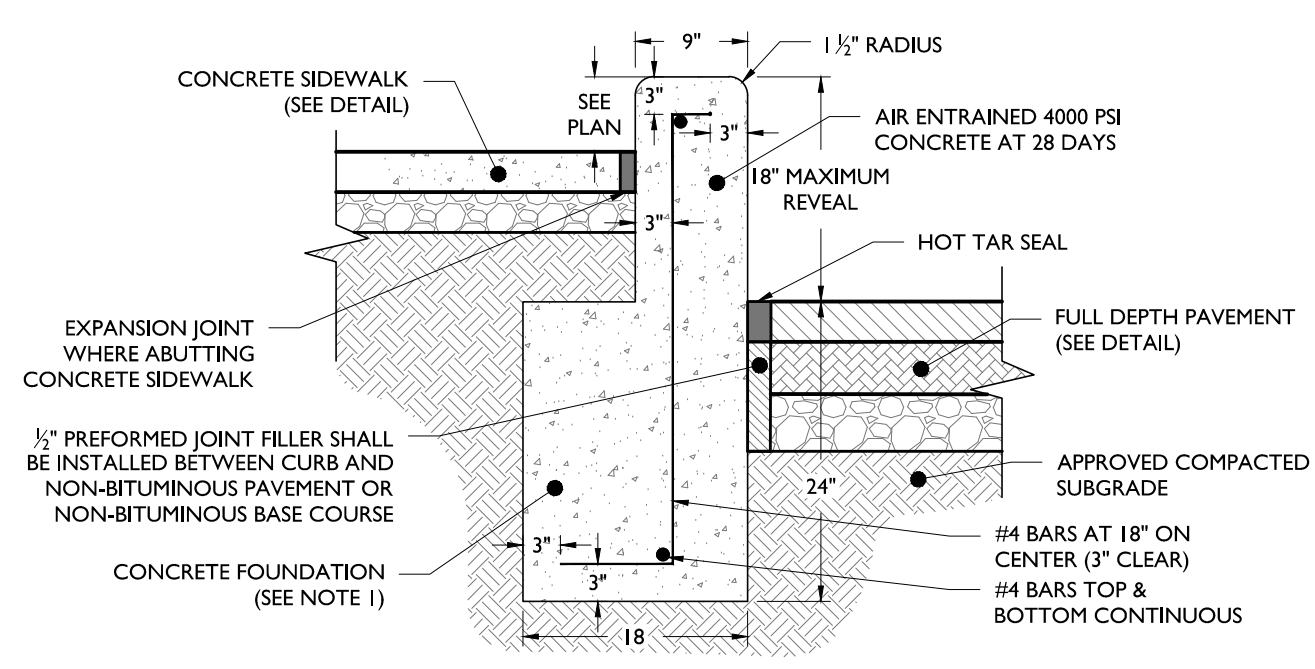
SITE DEVELOPMENT PLANS
1360 WALTON BLVD
PROPOSED STARBUCKS
 STARBUCKS logo
 PARCEL ID: 15-09-476-030
 1360 WALTON BOULEVARD
 CITY OF ROCHESTER HILLS
 OAKLAND COUNTY, MICHIGAN

STONEFIELD engineering & design
 CITY FILE #21-030 SECTION #9
 SCALE: AS SHOWN PROJECT ID: DET-200412
 TITLE:
CONSTRUCTION DETAILS
 DRAWING:
C-12



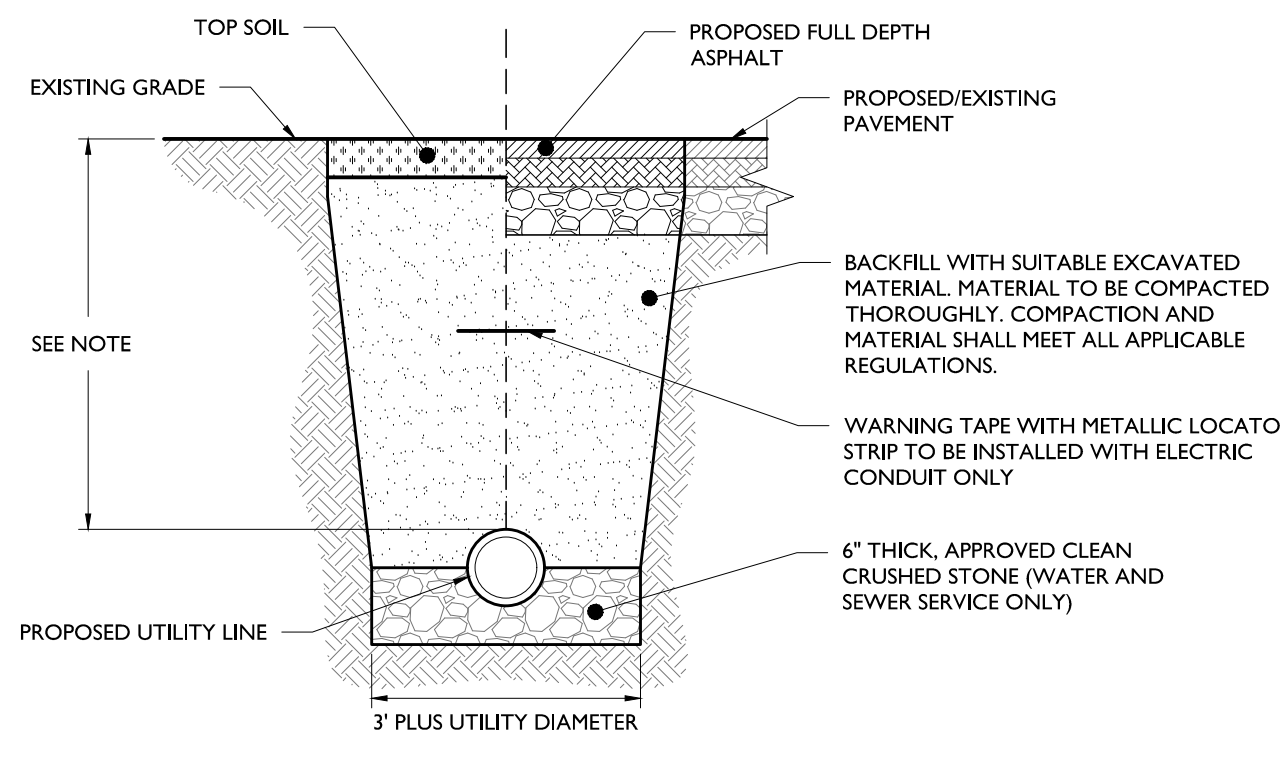
CONCRETE CURB DETAIL
NOT TO SCALE

- NOTES:
1. CONCRETE SHALL BE 3500 PSI AT 28 DAYS, AIR-ENTRAINED.
 2. TRANSVERSE EXPANSION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM SURFACE.
 3. HALF DEPTH CONTRACTION JOINTS SHALL BE PROVIDED AT 10 FOOT INTERVALS.
 4. 18" CURB DEPTH SHALL BE MAINTAINED AT DEPRESSED OR FLUSH CURBED AREAS.



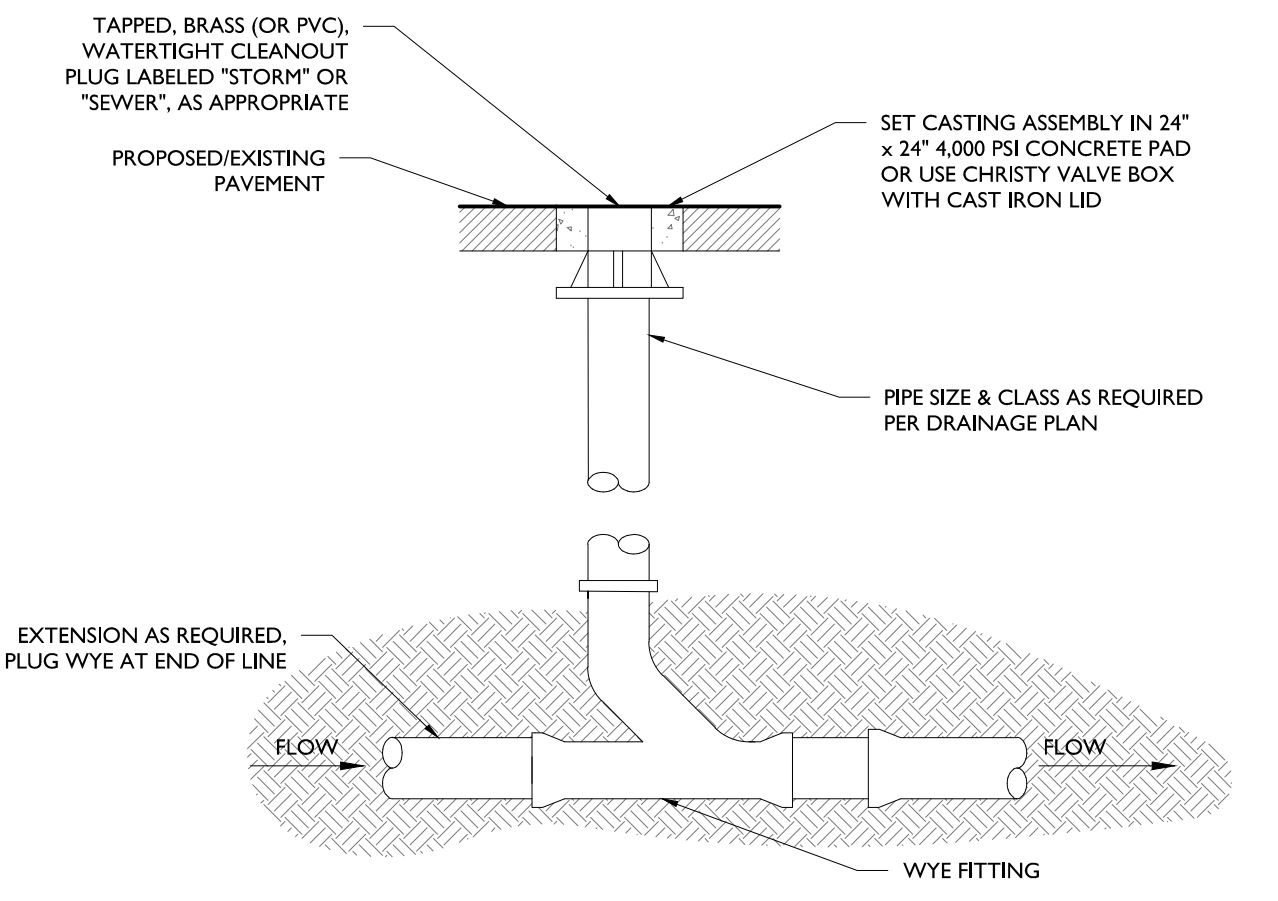
EXTENDED CONCRETE CURB DETAIL
NOT TO SCALE

- NOTES:
1. CONCRETE SHALL BE 4000 PSI AT 28 DAYS, AIR-ENTRAINED.
 2. 1/2" EXPANSION JOINTS WITH WATER SEAL SHALL BE PROVIDED AT 50 FOOT INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM SURFACE. LONGITUDINAL REBAR TO BE CUT AT EXPANSION JOINTS.
 3. 1" DEEP AND 1/2" WIDE TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT MID-POINT BETWEEN EXPANSION JOINTS, OR 30 FOOT MAX.



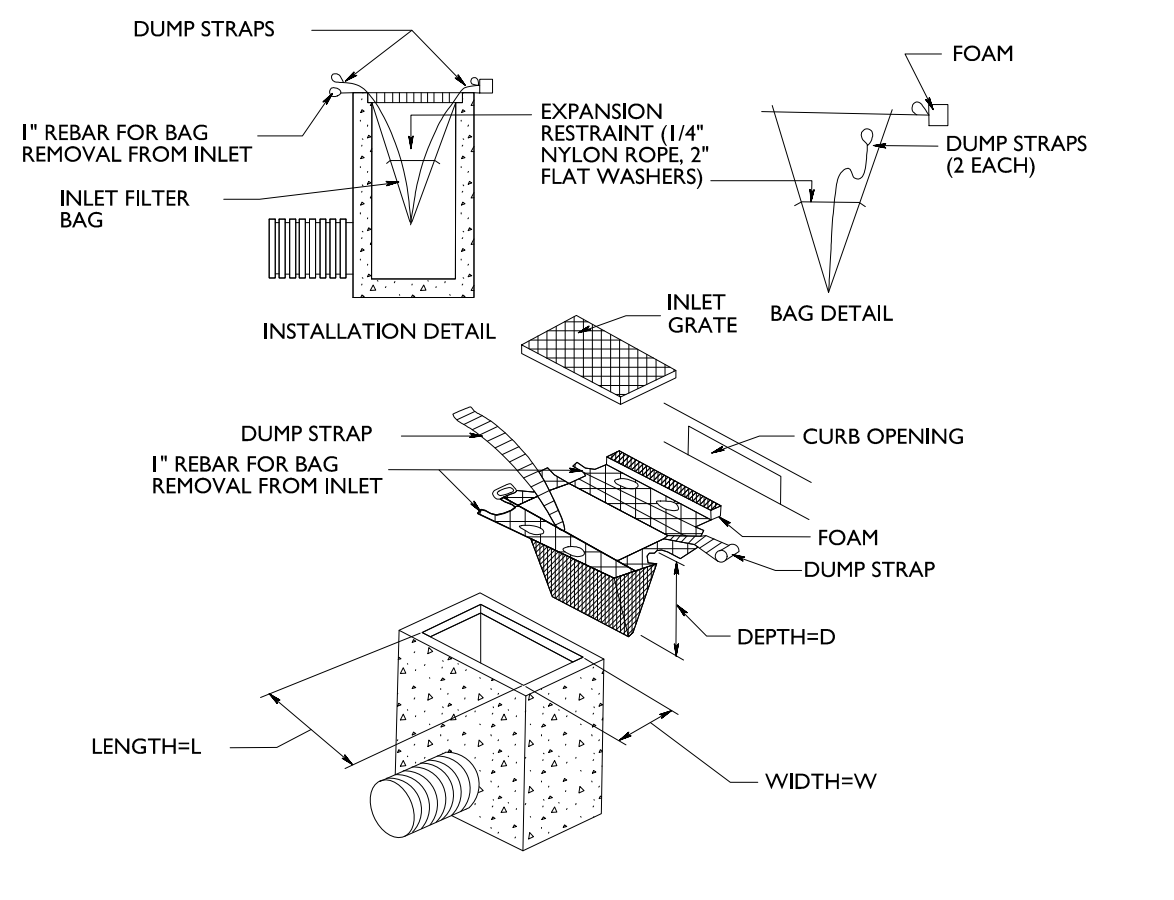
UTILITY TRENCH DETAIL
NOT TO SCALE

- NOTE:
- MINIMUM PIPE COVER SHALL BE AS FOLLOWS:
- ELECTRIC SERVICE - PER APPLICABLE UTILITY AUTHORITY
 - GAS SERVICE - PER APPLICABLE UTILITY AUTHORITY
 - SEWER SERVICE - 36" MINIMUM
 - WATER SERVICE - 48" MINIMUM

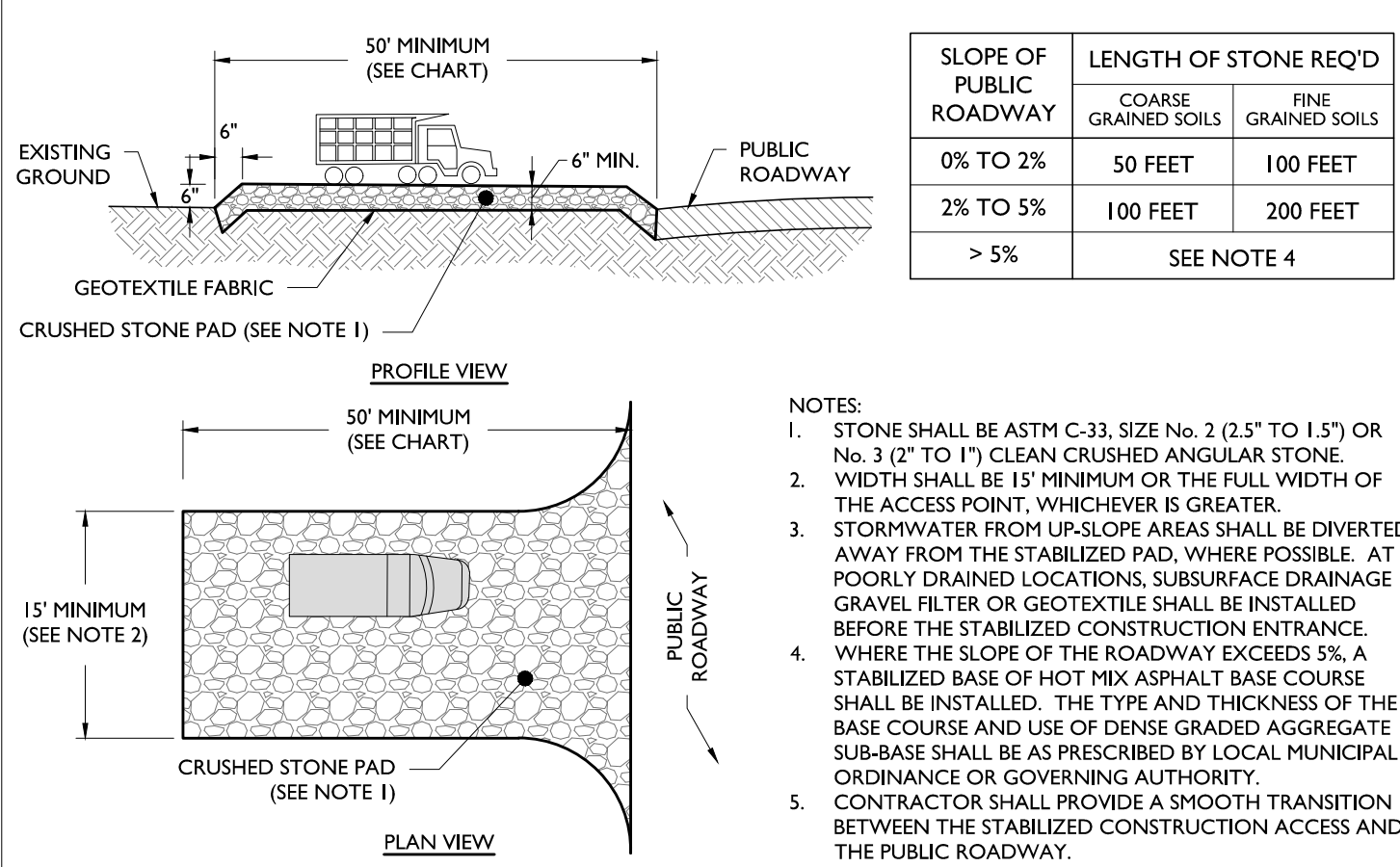


HARDSCAPE CLEAN-OUT
NOT TO SCALE

8



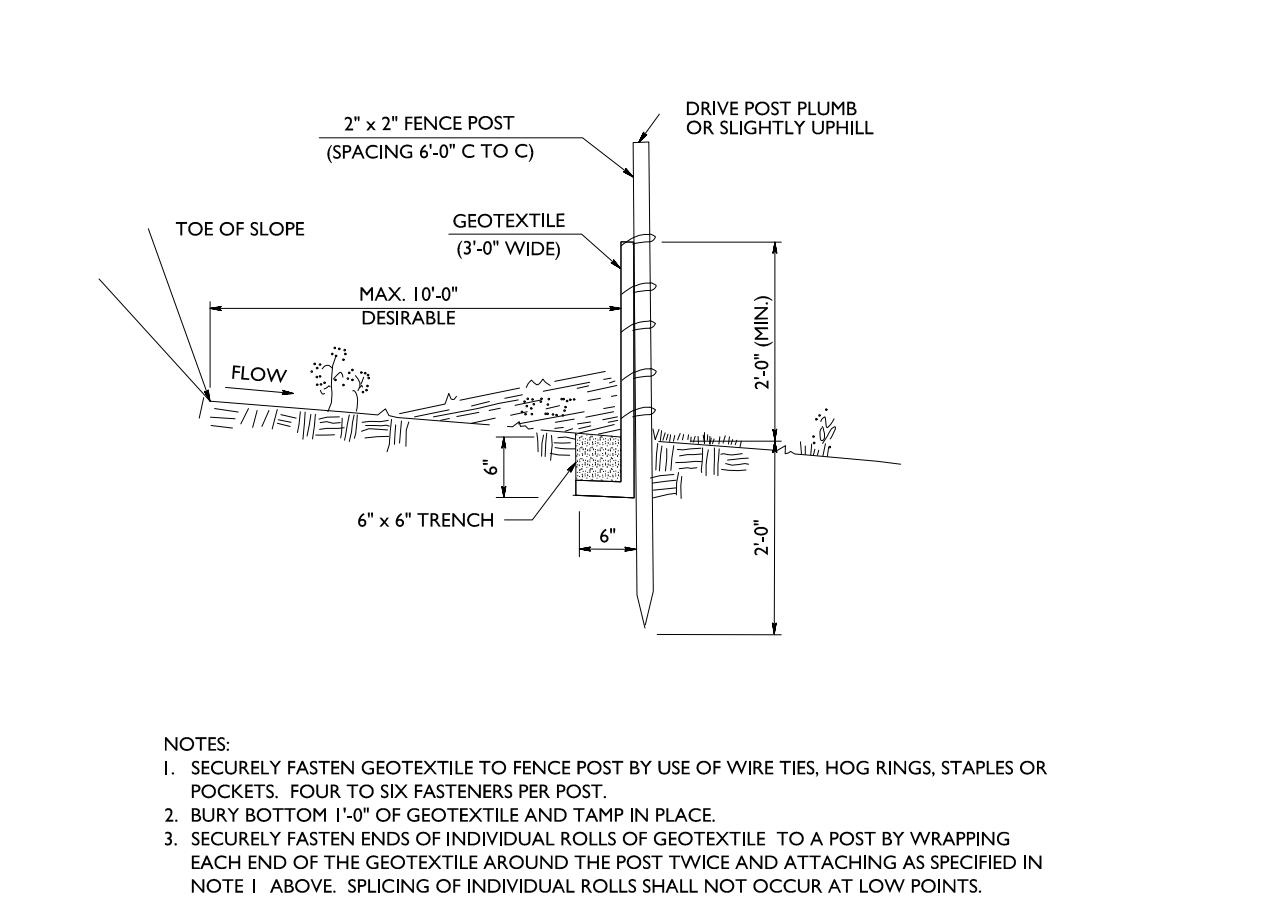
INLET FILTER BAG DETAIL
NOT TO SCALE



STABILIZED CONSTRUCTION ACCESS DETAIL
NOT TO SCALE

- NOTES:
1. STONE SHALL BE ASTM C-33, SIZE No. 2 (2.5" TO 1.5") OR No. 3 (2" TO 1") CLEAN CRUSHED ANGULAR STONE.
 2. WIDTH SHALL BE 15' MINIMUM OR THE FULL WIDTH OF THE ACCESS POINT, WHICHEVER IS GREATER.
 3. STORMWATER FROM UP-SLOPE AREAS SHALL BE DIVERTED AWAY FROM THE STABILIZED PAD, WHERE POSSIBLE. AT POORLY DRAINED LOCATIONS, SUBSURFACE DRAINAGE GRAVEL FILTER OR GEOTEXTILE SHALL BE INSTALLED BEFORE THE STABILIZED CONSTRUCTION ENTRANCE.
 4. WHERE THE SLOPE OF THE ROADWAY EXCEEDS 5%, A STABILIZED BASE OF HOT MIX ASPHALT BASE COURSE SHALL BE INSTALLED. THE TYPE AND THICKNESS OF THE BASE COURSE AND USE OF DENSE GRADED AGGREGATE SUB-BASE SHALL BE AS PRESCRIBED BY LOCAL MUNICIPAL ORDINANCE OR GOVERNING AUTHORITY.
 5. CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE STABILIZED CONSTRUCTION ACCESS AND THE PUBLIC ROADWAY.

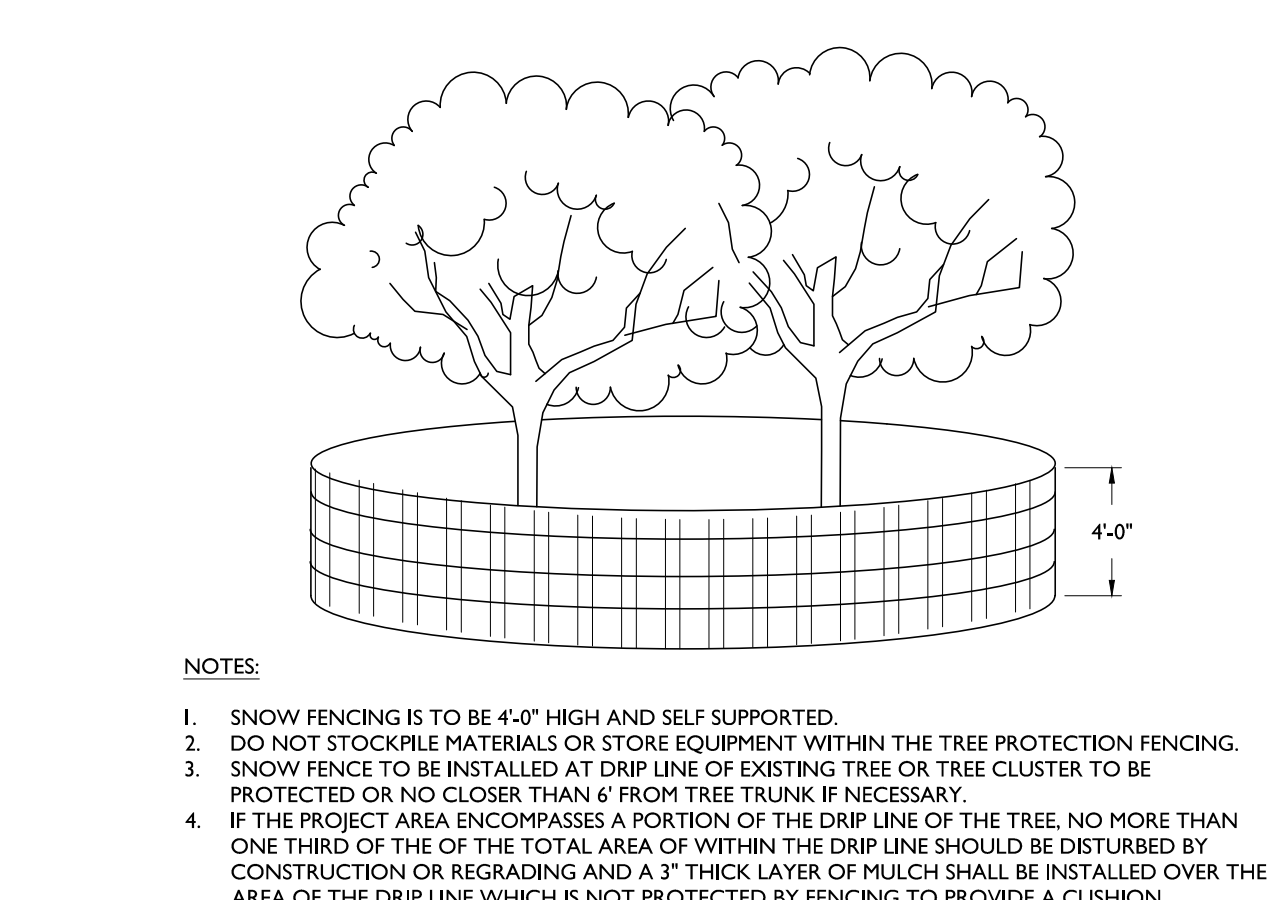
2



SILT FENCE DETAIL
NOT TO SCALE

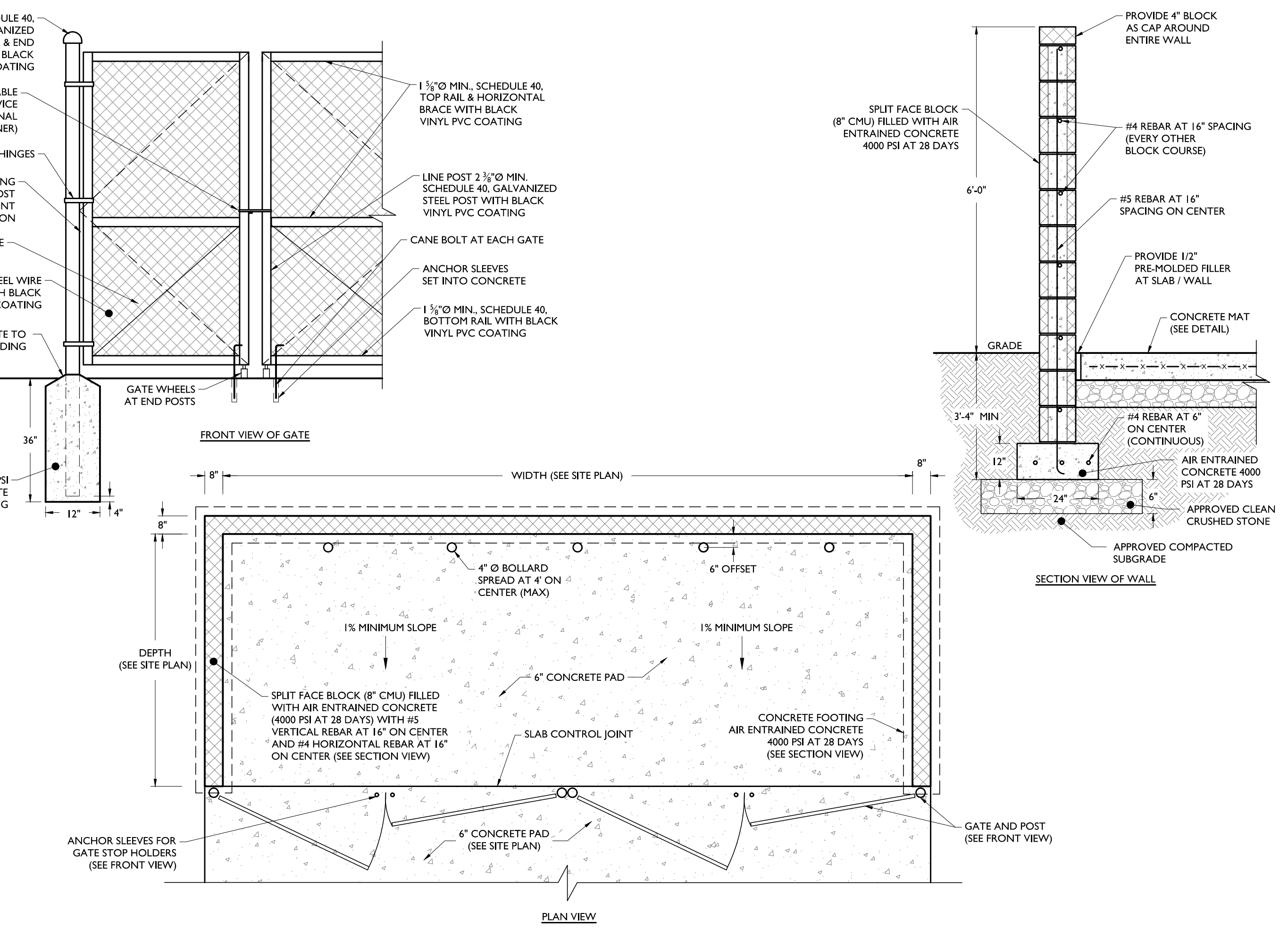
- NOTES:
1. SECURELY FASTEN GEOTEXTILE TO FENCE POST BY USE OF WIRE TIES, HOG RINGS, STAPLES OR POCKETS. FOUR TO SIX FASTENERS PER POST.
 2. BURY BOTTOM 1'-0" OF GEOTEXTILE AND TAMP IN PLACE.
 3. SECURELY FASTEN ENDS OF INDIVIDUAL ROLLS OF GEOTEXTILE TO A POST BY WRAPPING EACH END OF THE GEOTEXTILE AROUND THE POST TWICE AND ATTACHING AS SPECIFIED IN NOTE 1 ABOVE. SPLICING OF INDIVIDUAL ROLLS SHALL NOT OCCUR AT LOW POINTS.
 4. SET SILT FENCE WITHIN PROJECT LIMITS. 10'-0" IS DESIRABLE.

3



TREE PROTECTION DETAIL
NOT TO SCALE

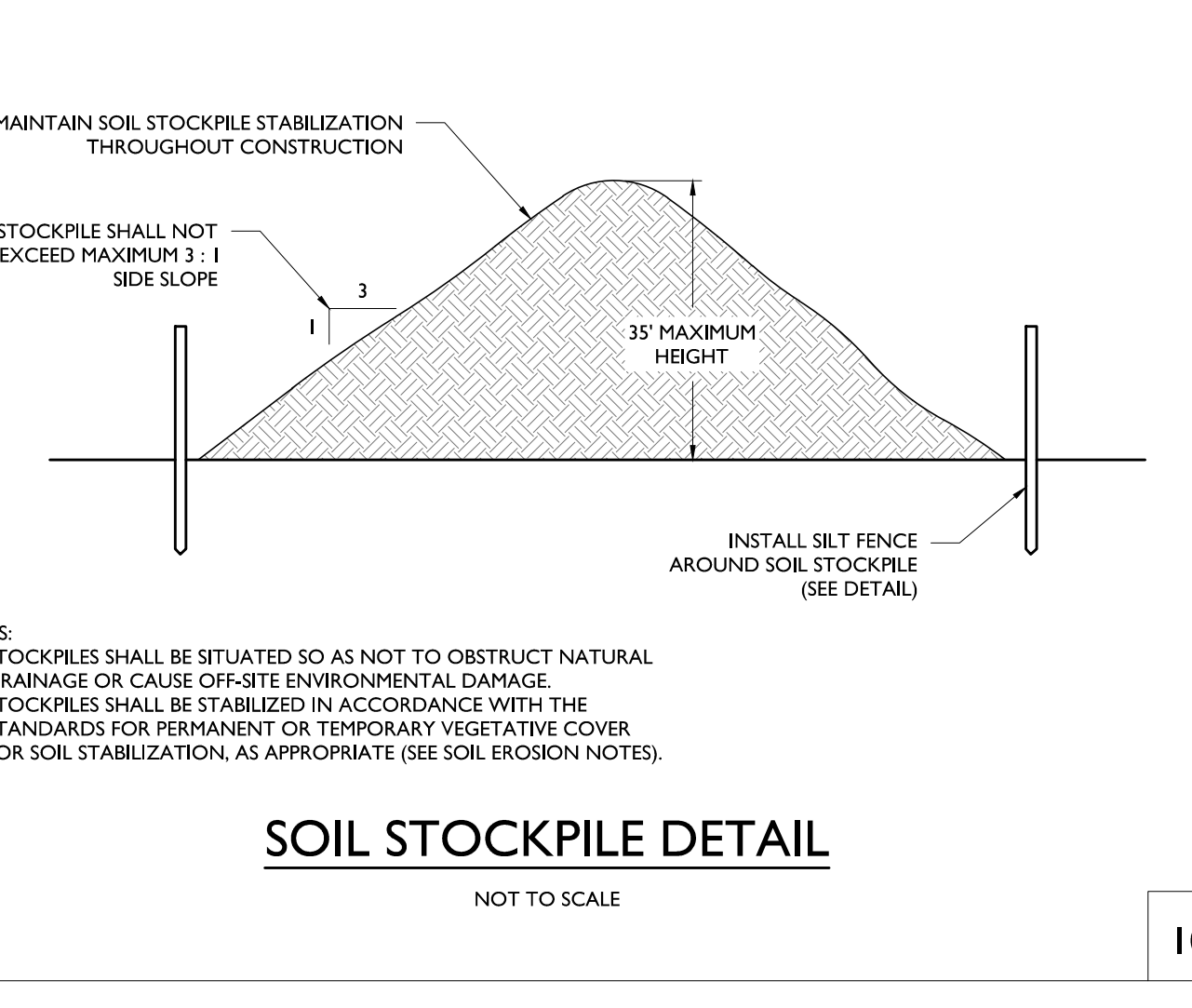
8



DOUBLE TRASH / RECYCLE ENCLOSURE DETAIL
NOT TO SCALE

- NOTE:
- BLOCK COLOR TO MATCH BLOCKING OR AS SPECIFIED BY OWNER

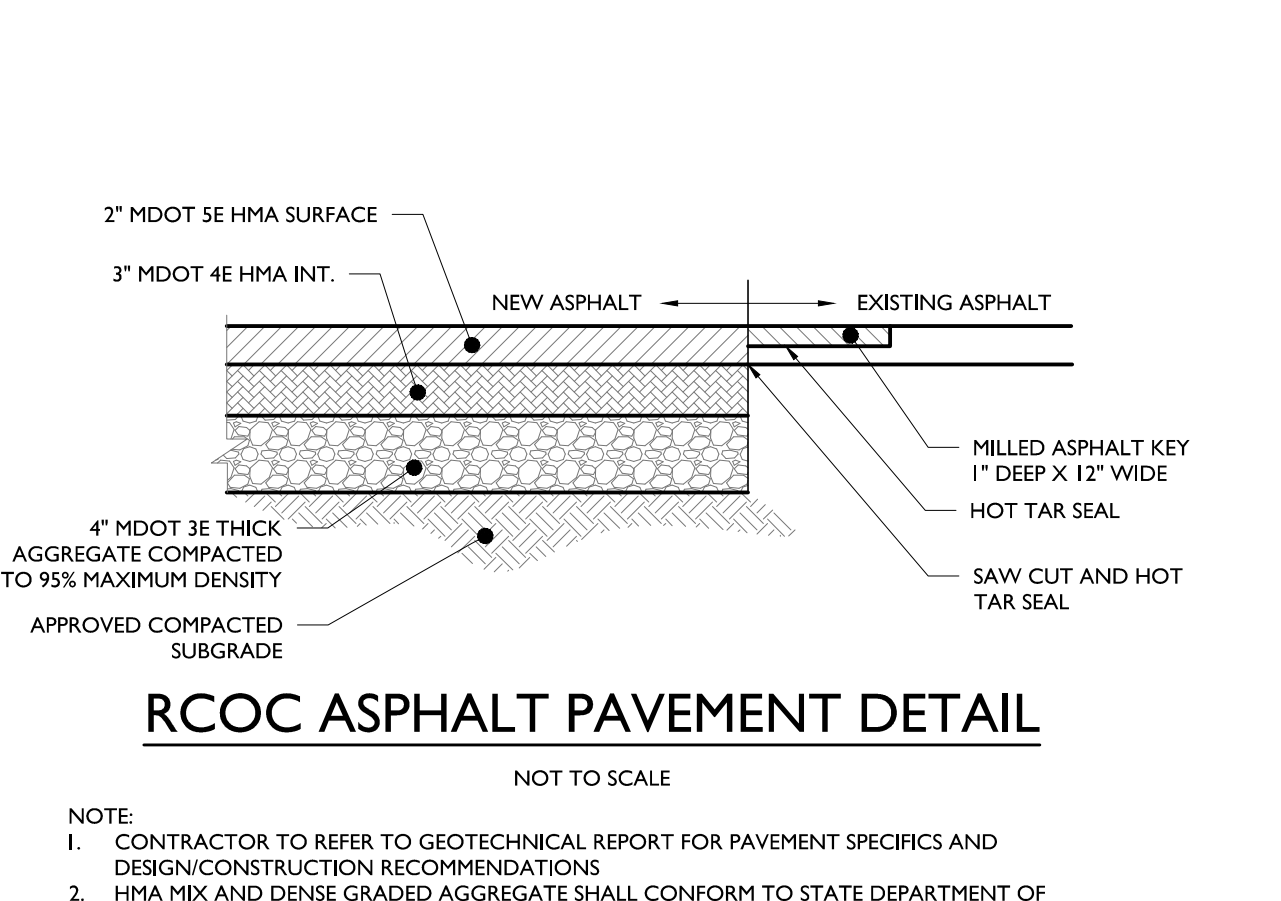
9



SOIL STOCKPILE DETAIL
NOT TO SCALE

- NOTES:
1. STOCKPILES SHALL BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
 2. STOCKPILES SHALL BE STABILIZED IN ACCORDANCE WITH THE STANDARDS FOR PERMANENT OR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, AS APPROPRIATE (SEE SOIL EROSION NOTES).

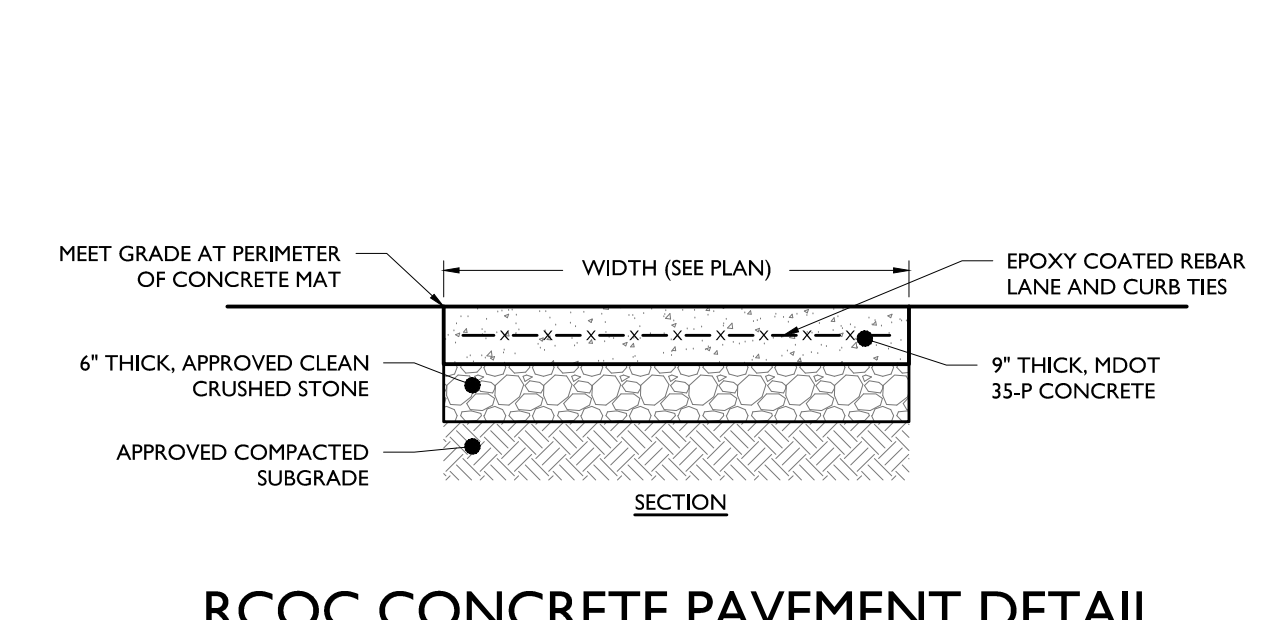
10



RCOC ASPHALT PAVEMENT DETAIL
NOT TO SCALE

- NOTE:
1. CONTRACTOR TO REFER TO GEOTECHNICAL REPORT FOR PAVEMENT SPECIFICS AND DESIGN/CONSTRUCTION RECOMMENDATIONS
 2. HMA MIX AND DENSE GRADED AGGREGATE SHALL CONFORM TO STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

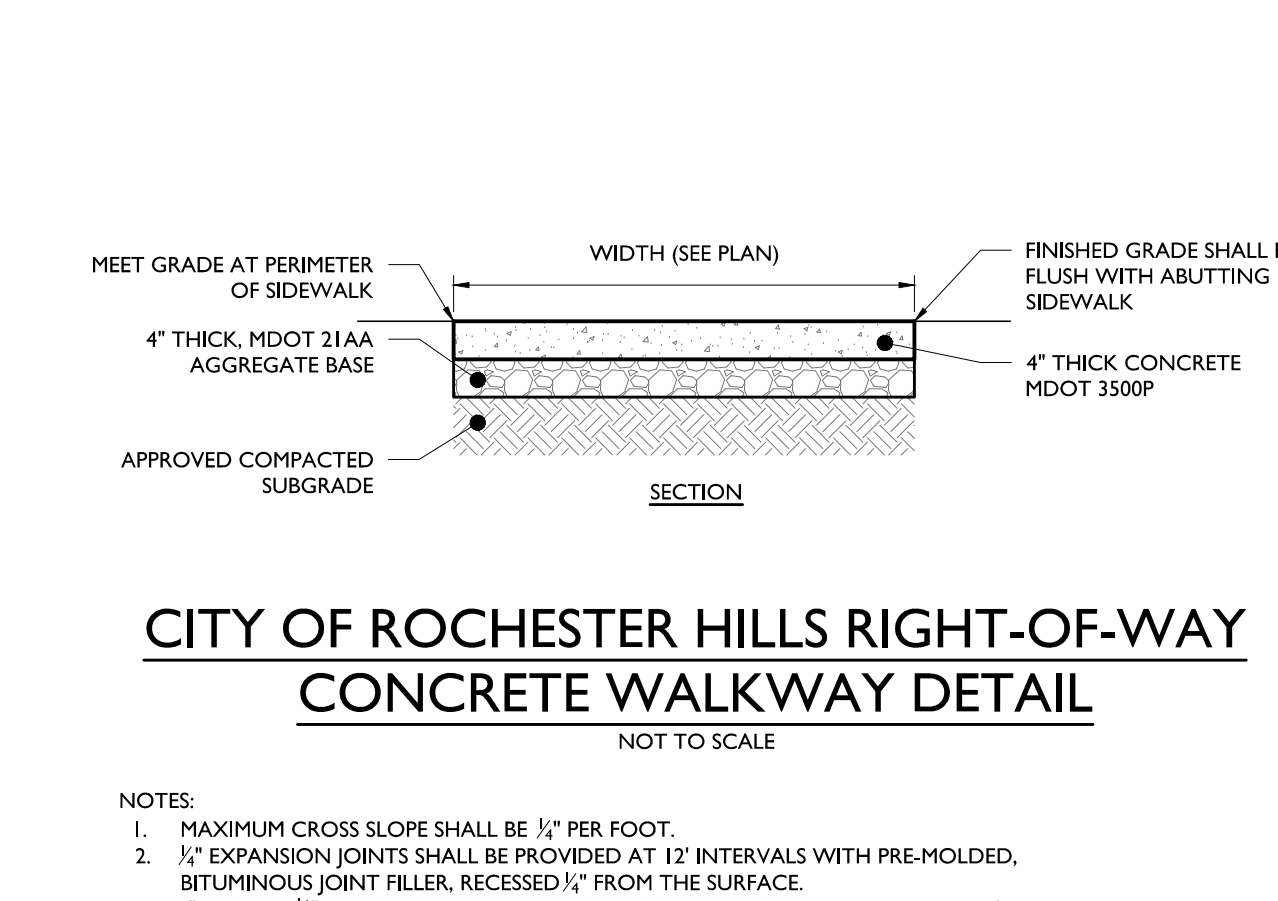
12



RCOC CONCRETE PAVEMENT DETAIL
NOT TO SCALE

- NOTES:
1. 1/2" EXPANSION JOINTS WITH WATER SEAL SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM THE SURFACE. LONGITUDINAL REBAR TO BE CUT AT EXPANSION JOINTS.
 2. 1" DEEP BY 1/2" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT MID-POINT BETWEEN EXPANSION JOINTS OR 6' INTERVALS MAX.
 3. CONCRETE SHALL RECEIVE BROOM FINISH.
 4. ALL EXPOSED CORNERS TO HAVE 12" CHAMFER.

11



CITY OF ROCHESTER HILLS RIGHT-OF-WAY CONCRETE WALKWAY DETAIL
NOT TO SCALE

- NOTES:
1. MAXIMUM CROSS SLOPE SHALL BE 1/2" PER FOOT.
 2. 1/2" EXPANSION JOINTS SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED 1/2" FROM THE SURFACE.
 3. 1" DEEP BY 1/2" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT 4' INTERVALS.
 4. EXPANSION JOINT SHALL BE PROVIDED WHERE ADJACENT TO A BUILDING.

13

ISSUE	DATE	BY	DESCRIPTION
1	07/02/2021	JRC	SUBMISSION FOR PRE-APPLICATION MEETING
2	08/02/2021	ECM	REVISION PER CITY COMMENTS
3	08/02/2021	RAC	REVISION PER FIRE DEPARTMENT COMMENTS
4	09/08/2021	JRC/ECM	SUBMISSION FOR SITE PLAN APPROVAL
5	12/28/2021	JRC/ECM	REVISION PER CITY SITE PLAN REVIEW
6	02/09/2022	JRC/ECM	REVISION PER CITY SECOND SITE PLAN REVIEW
7	05/26/2022	JRC/ECM	SUBMISSION FOR SITE PLAN APPROVAL
8	06/27/2022	JRC	SUBMISSION FOR ENGINEERING APPROVAL

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design

Detroit, MI • New York, NY • Boston, MA
Princeton, NJ • Tampa, FL • Rutherford, NJ
www.stonefielddesign.com

607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

STARBUCKS

1360 WALTON BLVD

PROPOSED STARBUCKS

PARCEL ID: 15-09-474-030
1360 WALTON BOULEVARD
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

STONEFIELD
engineering & design

CITY FILE #21-030 SECTION #9
SCALE: AS SHOWN PROJECT ID: DET-200412

TITLE:
CONSTRUCTION DETAILS

DRAWING:
C-13

V:\2023\0821\2023-08-21\2023-08-21\1360 WALTON BOULEVARD, ROCHESTER HILLS, MICHIGAN\08210821-13-1321-01.DWG