

SOURCE: USGS MAPPING SYSTEM

LOCATION MAP

SCALE: 1" = 2,000'±

SITE DEVELOPMENT PLANS

FOR



PROPOSED CAR WASH

PID: 4715-22-400-024

VACANT E-M36

TOWNSHIP OF HAMBURG, LIVINGSTON COUNTY, MICHIGAN

APPLICANT

EROP, LLC
3130 NORTH KANDY LANE
DECATUR, ILLINOIS 62526
217-972-4296

ARCHITECT

REB ARCHITECTS
103 WINDHAVEN DRIVE, SUITE 101
NICHOLASVILLE, KY 40356
859-523-1500

OWNER

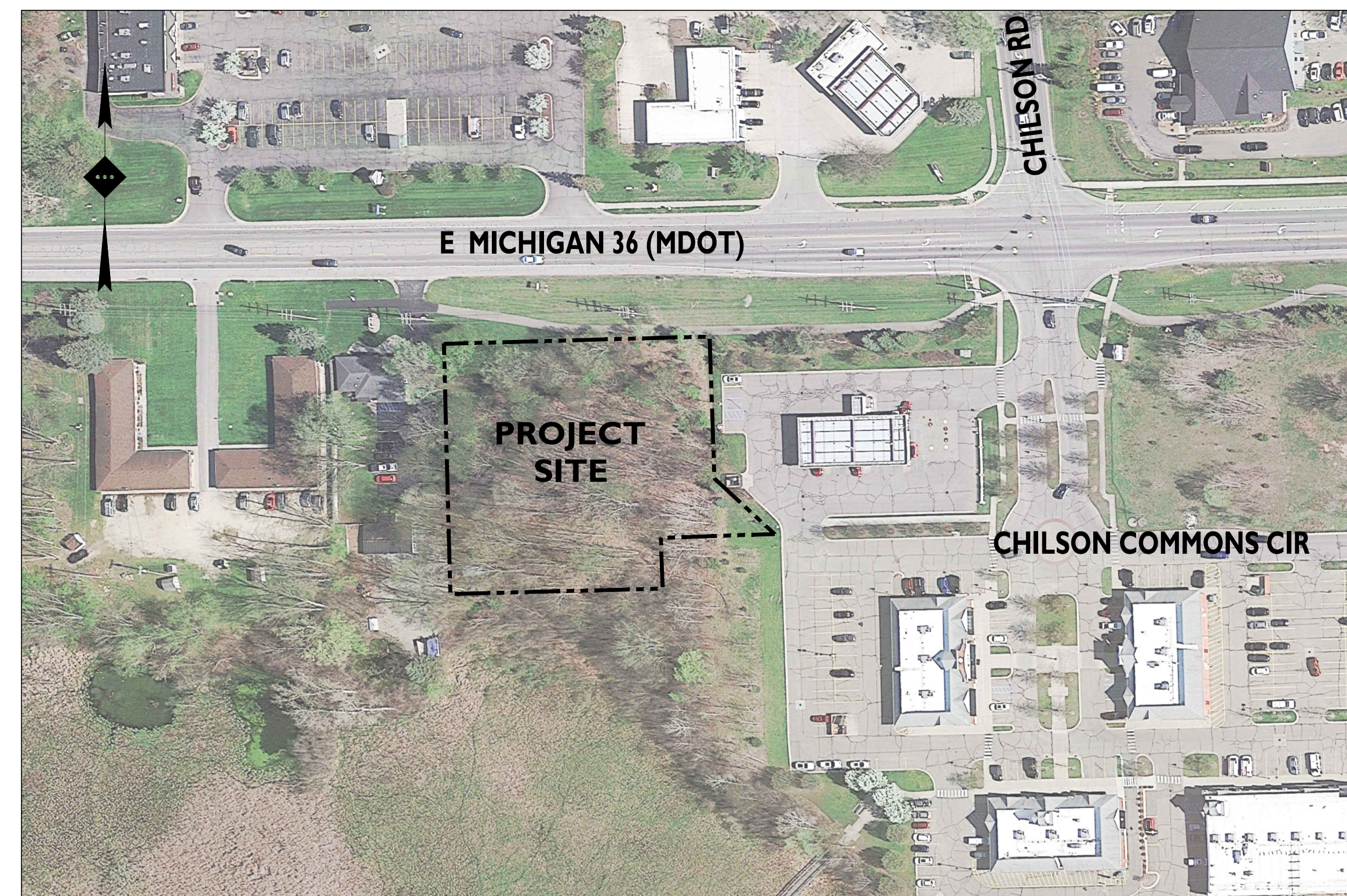
CHILLSON COMMONS LLC
27600 NORTHWESTERN HWY STE 200
SOUTHFIELD, MI, 48034

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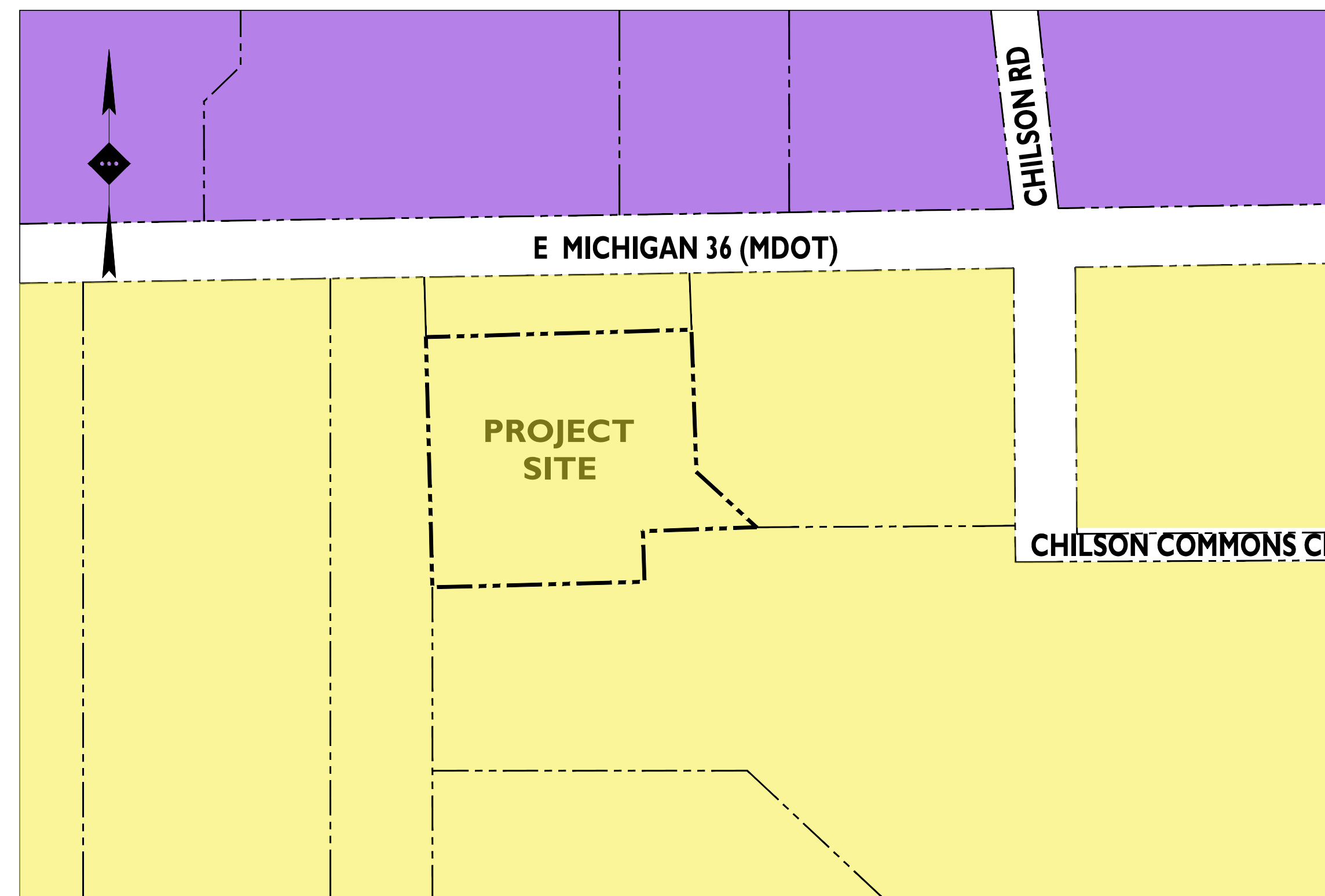
607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115



SOURCE: GOOGLE EARTH PRO

AERIAL MAP

SCALE: 1" = 100'±



SOURCE: TOWNSHIP OF HAMBURG, LIVINGSTON COUNTY, MICHIGAN OFFICIAL ZONING MAP

ZONING MAP

SCALE: 1" = 100'±

ZONING KEY

- WFR: WATERFRONT RESIDENTIAL
- CS: COMMUNITY SERVICE

PROPERTY DESCRIPTION:

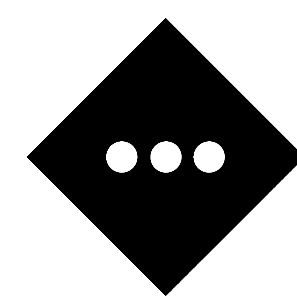
THE LAND SITUATED IN THE TOWNSHIP OF HAMBURG, COUNTY OF LIVINGSTON, STATE OF MICHIGAN, AND IS DESCRIBED AS FOLLOWS:

RECONFIGURED UNIT 9 DESCRIPTION:
A PARCEL OF LAND BEING PART OF UNIT 9 AND PART OF UNIT 7 OF CHILSON COMMONS SHOPPING CENTER, A CONDOMINIUM, ACCORDING TO THE MASTER DEED RECORDED IN LIBER 4366, PAGE 944, AS AMENDED BY FIRST AMENDMENT TO MASTER DEED RECORDED IN LIBER 4738, PAGE 533, SECOND AMENDMENT TO MASTER DEED RECORDED IN INSTRUMENT NO. 2011R-000963 AND THIRD AMENDMENT TO MASTER DEED RECORDED IN INSTRUMENT NO. 2022R-022074, AS AMENDED AND DESIGNATED AS LIVINGSTON COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 303, TOGETHER WITH RIGHTS IN THE GENERAL COMMON ELEMENTS AND THE LIMITED COMMON ELEMENTS AS SHOWN ON THE MASTER DEED AND AS DESCRIBED IN ACT 59 OF THE PUBLIC ACTS OF 1978, AS AMENDED, DESCRIBED AS FOLLOWS: COMMENCING AT THE EAST 1/4 CORNER OF SECTION 22; THENCE ALONG THE EAST LINE OF SAID SECTION 22, SOUTH 01 DEGREE 08 MINUTES 26 SECONDS EAST, 95.25 FEET TO THE SOUTH LINE OF M-36; THENCE ALONG SAID SOUTH LINE OF M-36 THE FOLLOWING SEVEN (7) COURSES: 1.) 180.08 FEET ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 482.60 FEET AND A CHORD THAT BEARS NORTH 73 DEGREES 10 MINUTES 10 SECONDS WEST, 179.03 FEET; 2.) ALONG A RADIAL LINE SOUTH 06 DEGREES 08 MINUTES 27 SECONDS WEST, 33.00 FEET; 3.) 63.17 FEET ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 449.60 FEET AND A CHORD THAT BEARS NORTH 87 DEGREES 53 MINUTES 03 SECONDS WEST, 63.11 FEET; 4.) SOUTH 88 DEGREES 05 MINUTES 53 SECONDS WEST, 679.77 FEET; 5.) SOUTH 02 DEGREES 19 MINUTES 50 SECONDS EAST, 22.89 FEET; 6.) SOUTH 87 DEGREES 40 MINUTES 10 SECONDS WEST, 385.42 FEET; 7.) SOUTH 88 DEGREES 31 MINUTES 32 SECONDS WEST, 374.14 FEET TO THE POINT-OF-BEGINNING OF THIS PARCEL DESCRIPTION; THENCE SOUTH 01 DEGREE 59 MINUTES 56 SECONDS EAST, 127.85 FEET; THENCE SOUTH 47 DEGREES 18 MINUTES 25 SECONDS EAST, 73.48 FEET TO THE SOUTH LINE OF SAID UNIT 7; THENCE SOUTH 88 DEGREES 00 MINUTES 02 SECONDS WEST, ALONG THE SOUTH LINE OF SAID UNIT 7, 102.24 FEET TO THE EAST LINE OF SAID UNIT 9; THENCE SOUTH 01 DEGREES 59 MINUTES 56 SECONDS EAST, ALONG THE EAST LINE OF SAID UNIT 9, 45.57 FEET; THENCE SOUTH 88 DEGREES 31 MINUTES 32 SECONDS WEST, PARALLEL WITH THE SOUTH LINE OF M-36, 191.17 FEET TO A POINT ON THE WEST LINE OF SAID UNIT 9; THENCE NORTH 01 DEGREES 08 MINUTES 26 SECONDS WEST, ALONG THE WEST LINE OF SAID UNIT 9, 225.55 FEET TO THE SOUTH LINE OF M-36; THENCE NORTH 88 DEGREES 31 MINUTES 32 SECONDS EAST, ALONG THE SOUTH LINE OF M-36, 237.80 FEET TO THE POINT-OF-BEGINNING OF THIS PARCEL DESCRIPTION.



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PLANS PREPARED BY:



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PLAN REFERENCE MATERIALS:

1. THIS PLAN SET REFERENCES THE FOLLOWING DOCUMENTS INCLUDING, BUT NOT LIMITED TO:
 - ALTA/NSPS LAND TITLE SURVEY PREPARED BY KEM-TEC, DATED 05/15/2023
 - ARCHITECTURAL FLOORPLAN AND ELEVATIONS PREPARED BY REB ARCHITECTS DATED XX/XX/2023
 - AERIAL MAP OBTAIN FROM GOOGLE EARTH PRO
 - LOCATION MAP OBTAINED FROM USGS NATIONAL MAPPER
2. 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.

SHEET INDEX

DRAWING TITLE	SHEET #
COVER SHEET	C-1
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ADDITIONAL SHEETS

DRAWING TITLE	SHEET #
ALTA / NSPS LAND TITLE SURVEY	I OF I

SITE DEVELOPMENT PLANS

WHITEWATER EXPRESS
CARWASH



PROPOSED CAR WASH

PARCEL ID: 4715-22-400-024
VACANT E-M36
HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

STONEFIELD
engineering & design

SCALE: AS SHOWN PROJECT ID: DET-220416

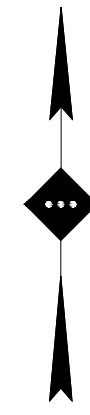
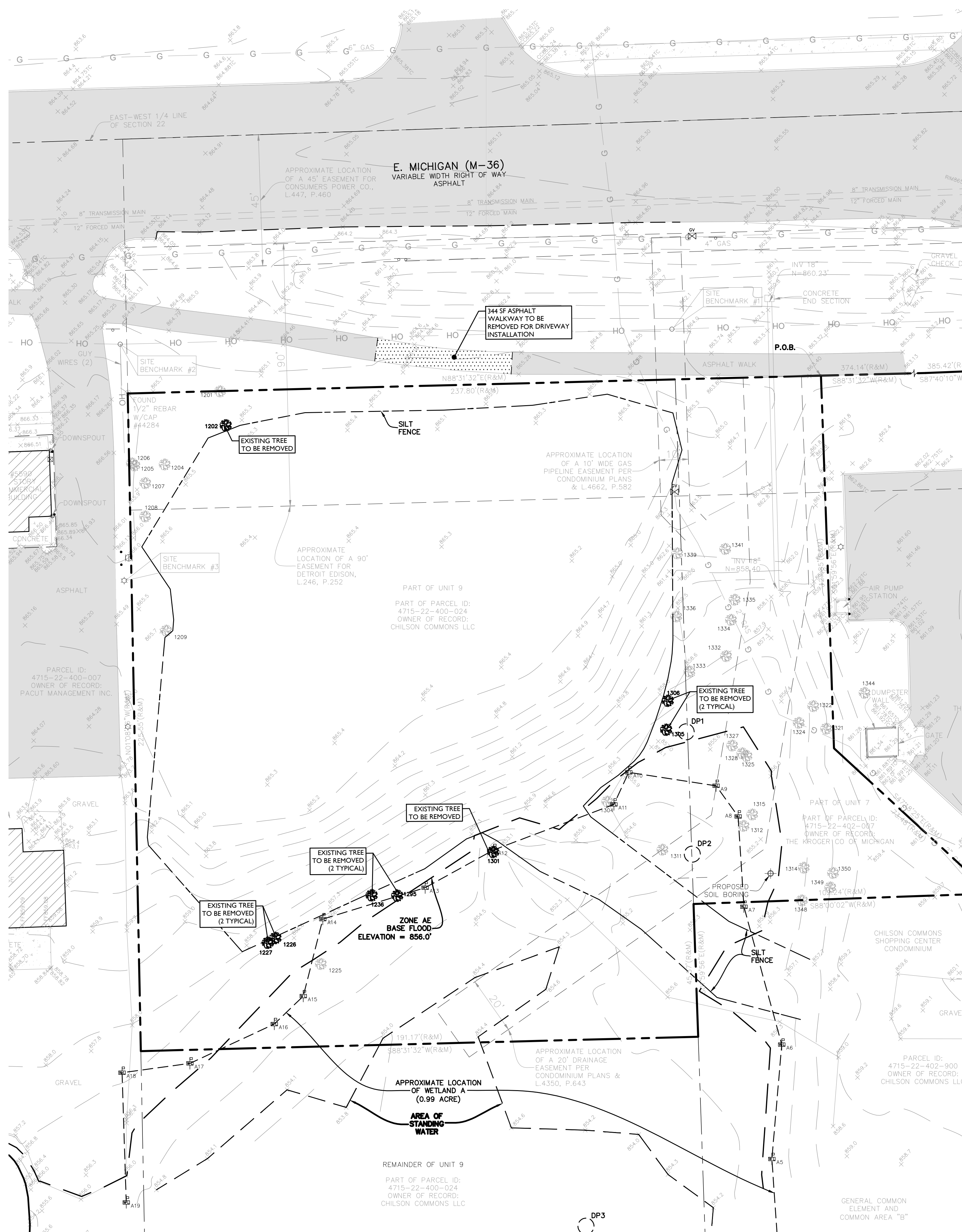
TITLE:

COVER SHEET

DRAWING:

C-1

V:\2022\220416-1603-LLC\979-CHILSON COMMONS CIRCLE-HAMBURG TOWNSHIP-RECD\2022\220416-1603.DWG



SYMBOL	DESCRIPTION
---	PROPERTY LINE
- - - - -	FEATURE TO BE REMOVED / DEMOLISHED

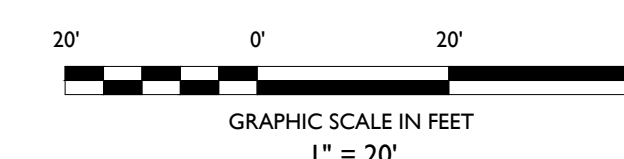
ALL SITE FEATURES WITHIN THE LIMIT OF DISTURBANCE INDICATED ON THIS PLAN ARE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IF SIGNIFICANT DISCREPANCIES ARE DISCERNED BETWEEN THIS PLAN AND FIELD CONDITIONS

STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE ARE REQUIRED TO BE INSTALLED PRIOR TO CONSTRUCTION. SEE SOIL EROSION PLAN.



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- 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
2	07/05/2023	JCI/EM	FOR PRE-APPLICATION CONFERENCE
1	05/08/2023	JPI/EM	FOR CLIENT REVIEW

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WHITEWATER EXPRESS
CARWASH

PROPOSED CAR WASH

PARCEL ID: 4715-22-400-024
HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

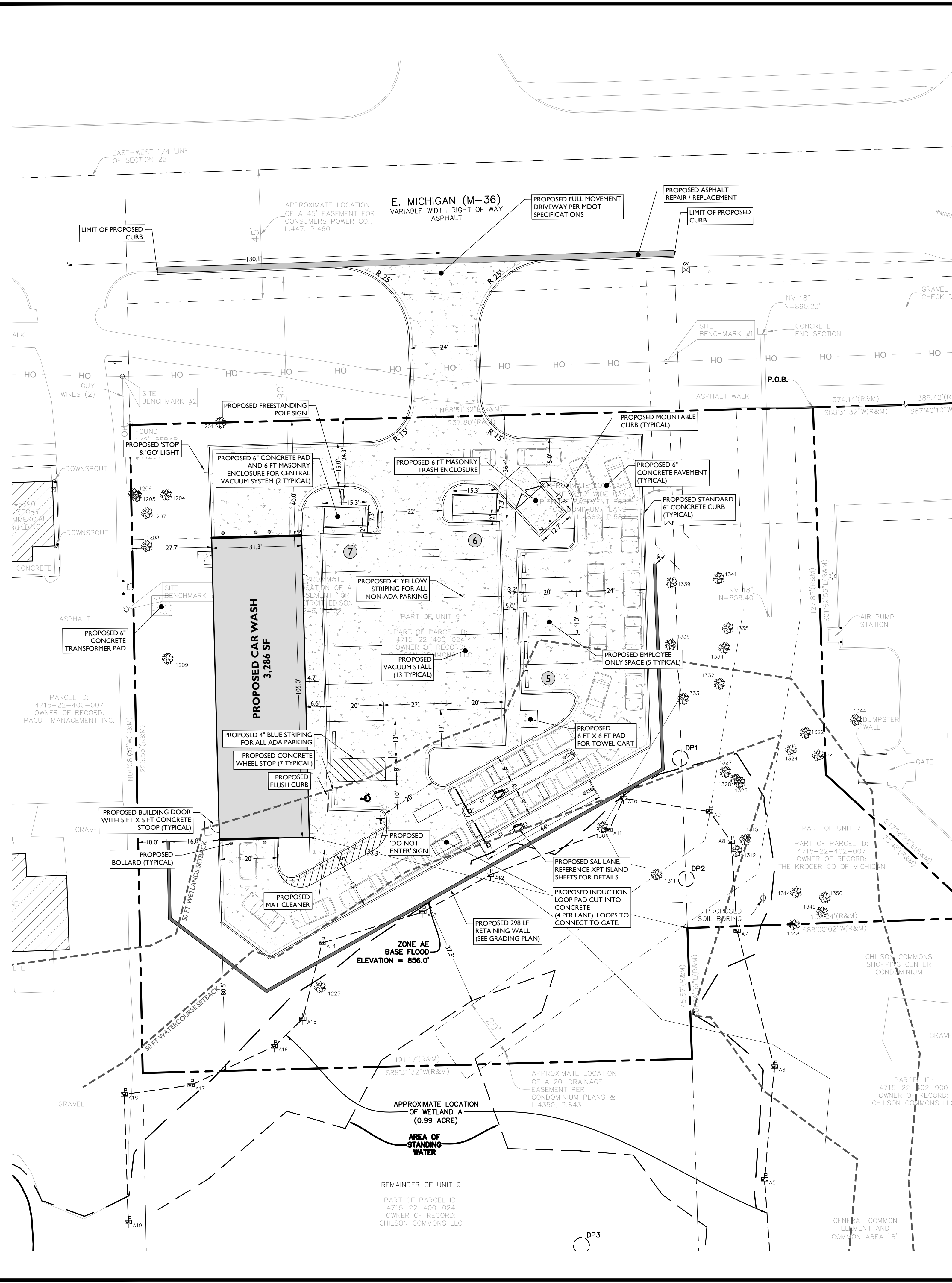
J. REID COOKSEY, P.E.
MICHIGAN LICENSE No. 6201069428
LICENSED PROFESSIONAL ENGINEER

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SCALE: 1" = 20' PROJECT ID: DET-220416

TITLE:
DEMOLITION PLAN

DRAWING:
C-2



LAND USE AND ZONING			
PARCEL ID: 4715-22-400-024 (UNIT 9)			
WATERFRONT RESIDENTIAL (WFR) & HARDSHIP PLANNED UNIT DEVELOPMENT (HPUD)			
PROPOSED USE	SPECIAL LAND USE	REQUIRED (WFR)	REQUIRED (HPUD)
CAR WASH			
MINIMUM LOT AREA	43,560 SF	N/A	53,075 SF
MINIMUM LOT WIDTH AT STREET	125 FT	N/A	237.8 FT
MINIMUM LOT COVERAGE (BUILDING)	35% (18,576 SF)	N/A	6.2% (3,286 SF)
MINIMUM LOT COVERAGE (PARKING)	40% (21,230 SF)	N/A	35% (18,607 SF)
MAXIMUM BUILDING HEIGHT	2.5 STORIES / 35 FT	N/A	1 STORY / 22 FT
MINIMUM FRONT YARD SETBACK	25 FT	N/A	40.0 FT
MINIMUM SIDE YARD SETBACK	10 FT	N/A	27.7 FT
MINIMUM REAR YARD SETBACK	30 FT	N/A	80.5 FT
MINIMUM PARKING SETBACK (M-36 ROW)	N/A	50 FT (1)	36.4 (W)
M-36 ACCESS	N/A		(W) (DENIED BY BOTH ADJACENT PROPERTIES, NO ALTERNATIVE, MDOOT APPROVED ACCESS)
WETLANDS SETBACK	50 FT	50 FT	0.0 FT (W) ⁽²⁾
WATERCOURSE SETBACK	50 FT	50 FT	37.3 FT (W) ⁽²⁾

- (1) OR MUST BE LOCATED SOUTH OF PROPOSED BUILDING
- (2) THE ZONING ADMINISTRATOR OR BODY UNDERTAKING PLAN REVIEW MAY REDUCE OR ELIMINATE THE FOLLOWING SETBACKS UPON REVIEW OF A REQUEST WHICH DETAILS THE FUTURE PROTECTION OF THE NATURAL FEATURE AND OR MITIGATION OF THE NATURAL FEATURE.
- (W) WAIVER / MODIFICATION TO BE REQUESTED AS PERMITTED BY THE HARDSHIP PLANNED UNIT DEVELOPMENT

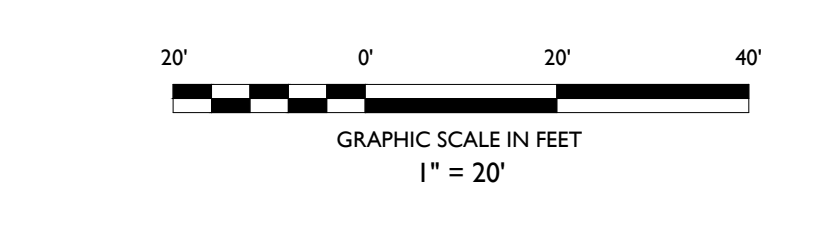
OFF-STREET PARKING REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§36-330.c	MINIMUM VEHICLE PARKING SPACE: 200 SF	200 SF
§36-334.23	GASOLINE FILLING AND SERVICE STATIONS: 1 SPACE PER SERVICE STALL 1 WASH LANE = 1 SPACE PLUS 1 SPACE PER EMPLOYEE 5 EMP. = 5 SPACES TOTAL: 1 + 5 = 6 SPACES	13 VACUUMS +5 EMPLOYEE 18 TOTAL SPACES
§36-339.a.1.	DRIVEWAY SPACING (45 MPH): 300 FT	130.1 FT (W)

(W) WAIVER / MODIFICATION TO BE REQUESTED AS PERMITTED BY THE HARDSHIP PLANNED UNIT DEVELOPMENT

SIGNAGE REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 36.472.f.	ROW SETBACK: 10 FT	10 FT
§ 36.472.q.2.	POLE SIGN MAX HEIGHT: 15 FT	15 FT
§ 36.477.1.a.	POLE SIGN MAX AREA (COMMERCIAL): 25 SF	25 SF
§ 36.474.2.	PARKING LOT SIGNS MAX AREA: 1.5 SF	1.5 SF

SYMBOL	DESCRIPTION
---	PROPERTY LINE
- - - - -	SETBACK LINE
- . - . - .	SAWCUT LINE
=====	PROPOSED CURB
=====	PROPOSED FLUSH CURB
=====	PROPOSED MOUNTABLE CURB
○ ○ ○	PROPOSED SIGNS / BOLLARDS
▭	PROPOSED BUILDING
▭	PROPOSED CONCRETE
○	PROPOSED AREA LIGHT
▭	PROPOSED RETAINING WALL
▭	PROPOSED GUIDERAIL
▭	PROPOSED BUILDING DOORS

- 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 RESPONSIBLE 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.



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2	07/05/2023	JCIEM	FOR PRE-APPLICATION CONFERENCE
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SITE DEVELOPMENT PLANS

**WHITEWATER EXPRESS
CAR WASH**

PROPOSED CAR WASH

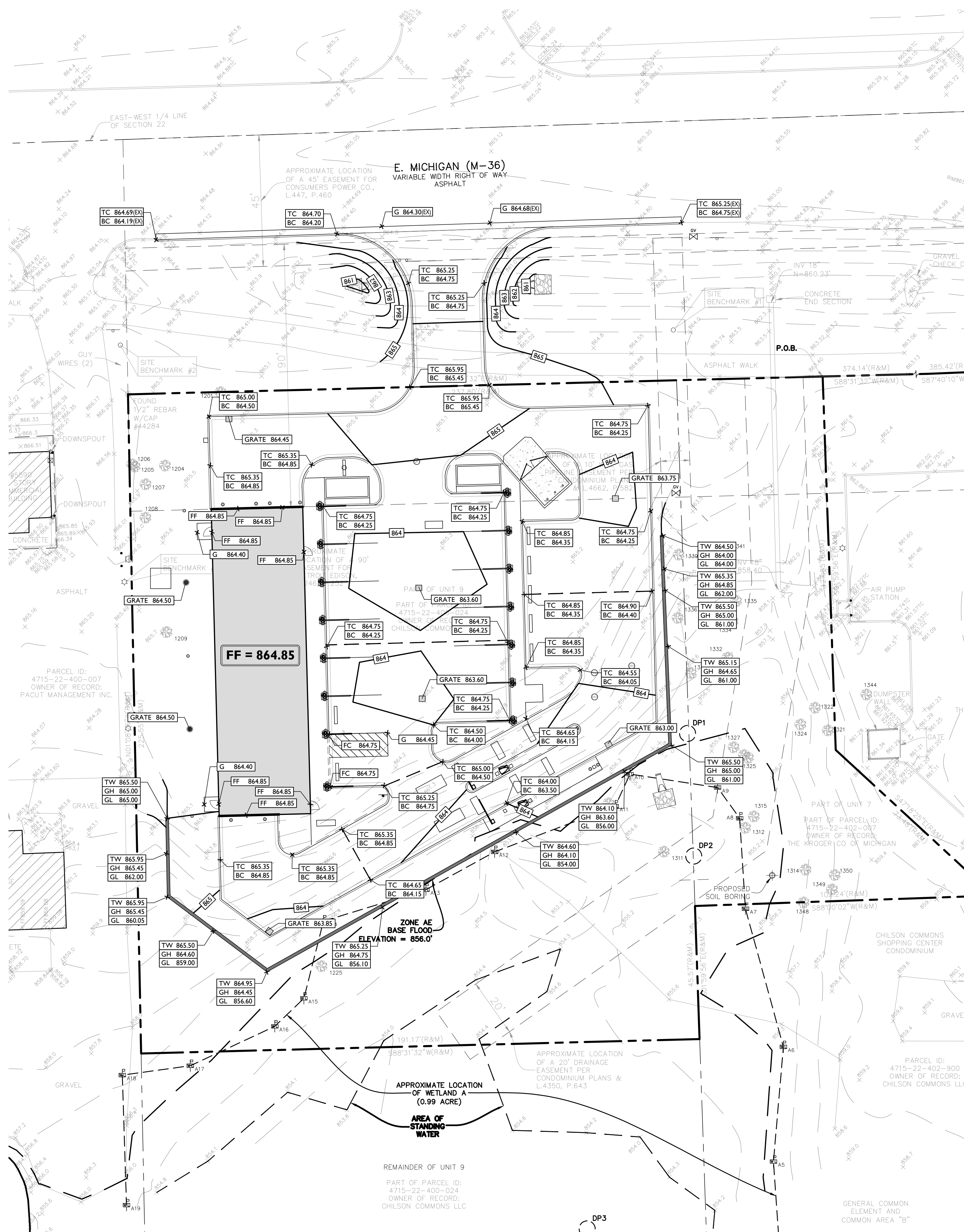
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LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 20' PROJECT ID: DET-220416

TITLE: **SITE PLAN**

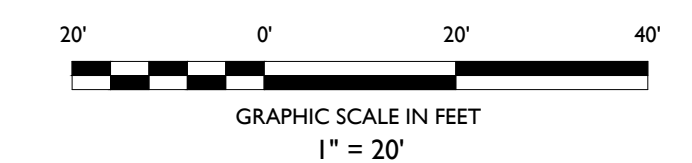
DRAWING: **C-3**



SYMBOL	DESCRIPTION
---	PROPERTY LINE
—100—	PROPOSED GRADING CONTOUR
—RIDGELINE—	PROPOSED GRADING RIDGELINE
←	PROPOSED DIRECTION OF DRAINAGE FLOW
X G 100.00	PROPOSED GRADE SPOT SHOT
X TC 100.50 BC 100.00	PROPOSED TOP OF CURB / BOTTOM OF CURB SPOT SHOT
X FC 100.00	PROPOSED FLUSH CURB SPOT SHOT
X TW 102.00 BW 100.00	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 DE-WATERING PRACTICES SHALL BE PERFORMED UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FOR THE DISCHARGE OF DE-WATERED 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 8.33% 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.



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		2	07/05/2023	JCEM	
		1	05/02/2023	JPEM	

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MICHIGAN LICENSE No. 6201069428
LICENSED PROFESSIONAL ENGINEER

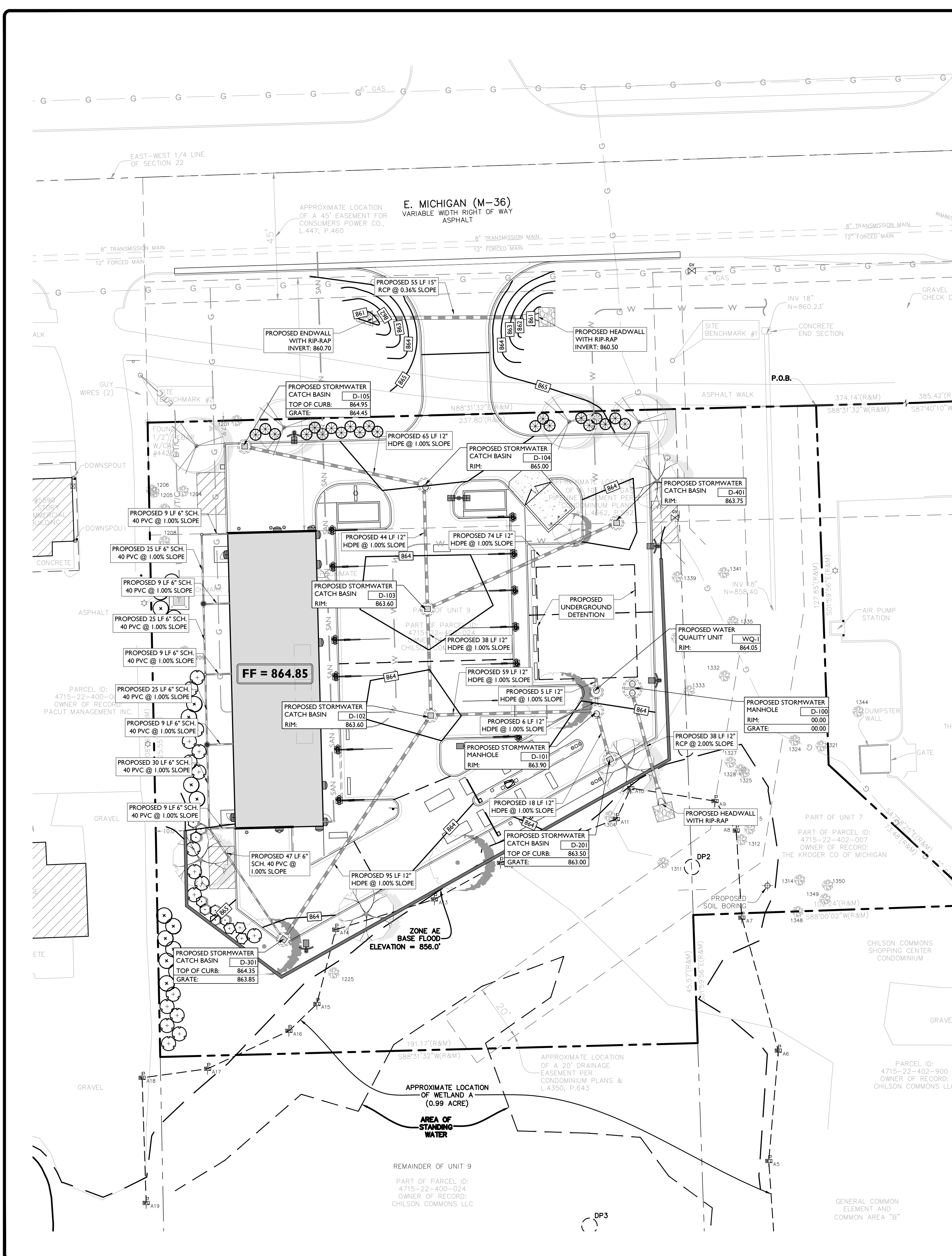
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SCALE: 1" = 20' PROJECT ID: DET-22016

TITLE:
GRADING PLAN

DRAWING:
C-4

V:\2023\DET-22016-H360-LLC\079-CHILSON COMMONS CIRCLE-HAMBURG TOWNSHIP-MICHIGAN\DET-22016-CARWASH



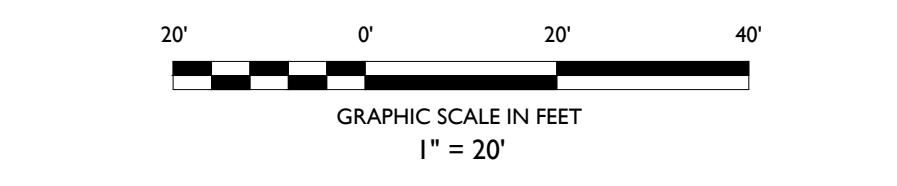
SYMBOL	DESCRIPTION
---	PROPERTY LINE
---	PROPOSED GRADING CONTOUR
---	PROPOSED GRADING RIDGELINE
---	PROPOSED STORMWATER STRUCTURES
---	PROPOSED STORMWATER PIPING
---	PROPOSED UNDERGROUND OUTLET STRUCTURE

- 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 UP-GRADIENT.
 - 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 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 INFILTRATION BMP CONSTRUCTION NOTES**
- PRIOR TO THE START OF CONSTRUCTION, ANY AREA DESIGNATED TO BE USED FOR AN INFILTRATION BMP (E.G. BASIN, BIOTENTION AREA, ETC.) SHALL BE FENCED OFF AND SHALL NOT BE UTILIZED AS STORAGE FOR CONSTRUCTION EQUIPMENT OR AS A STOCKPILE AREA FOR CONSTRUCTION MATERIALS. NO ACTIVITY SHALL BE PERMITTED WITHIN THE INFILTRATION BASIN AREA UNLESS RELATED TO THE CONSTRUCTION OF THE INFILTRATION BASIN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ALL SUBCONTRACTORS OF BASIN AREA RESTRICTIONS.
 - THE CONTRACTOR SHALL MAKE EVERY EFFORT, WHERE PRACTICAL, TO AVOID SUBGRADE SOIL COMPACTION IN THE AREAS DESIGNATED TO BE USED FOR AN INFILTRATION BMP.
 - ALL EXCAVATION WITHIN THE LIMITS OF ANY INFILTRATION BMP SHALL BE PERFORMED WITH THE LIGHTEST PRACTICAL EXCAVATION EQUIPMENT. ALL EXCAVATION EQUIPMENT SHALL BE PLACED OUTSIDE THE LIMITS OF THE BASIN WHERE FEASIBLE. THE USE OF LIGHT-WEIGHT, RUBBER-TIRED EQUIPMENT (LESS THAN 8 PSI APPLIED TO THE GROUND SURFACE) IS RECOMMENDED WITHIN THE BASIN LIMITS.
 - THE SEQUENCE OF SITE CONSTRUCTION SHALL BE COORDINATED WITH BASIN CONSTRUCTION TO ADHERE TO SEQUENCING LIMITATIONS.
 - DURING THE FINAL GRADING OF AN INFILTRATION BASIN, THE BOTTOM OF THE BASIN SHALL BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW AND THEN SMOOTHED OUT WITH A LEVELING DRAW OR EQUIVALENT GRADING EQUIPMENT. ALL GRADING EQUIPMENT SHALL BE LOCATED OUTSIDE OF THE BASIN BOTTOM WHERE FEASIBLE.
 - FOLLOWING CONSTRUCTION OF AN INFILTRATION BASIN, SOIL INFILTRATION TESTING BY A LICENSED GEOTECHNICAL ENGINEER IS REQUIRED TO CERTIFY COMPLIANCE WITH THE DESIGN INFILTRATION RATES IN ACCORDANCE WITH APPENDIX E OF THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION'S BEST MANAGEMENT PRACTICES MANUAL, LATEST EDITION. IF THE FIELD INFILTRATION RATES ARE LOWER THAN THE RATE USED DURING DESIGN, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING IMMEDIATELY TO DETERMINE THE APPROPRIATE COURSE OF ACTION.
 - THE CONTRACTOR SHALL NOTIFY THE MUNICIPALITY TO DETERMINE IF WITNESS TESTING IS REQUIRED DURING INFILTRATION BASIN EXCAVATION AND/OR SOIL INFILTRATION TESTING.

- 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 OVER 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.



NO.	DATE	ISSUE	BY	DESCRIPTION
1	07/05/2023	FOR PRE-APPLICATION CONFERENCE		
2	05/08/2023	FOR CLIENT REVIEW		

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LIVINGSTON COUNTY, MICHIGAN

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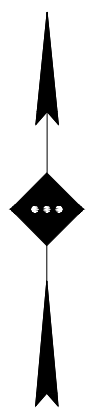
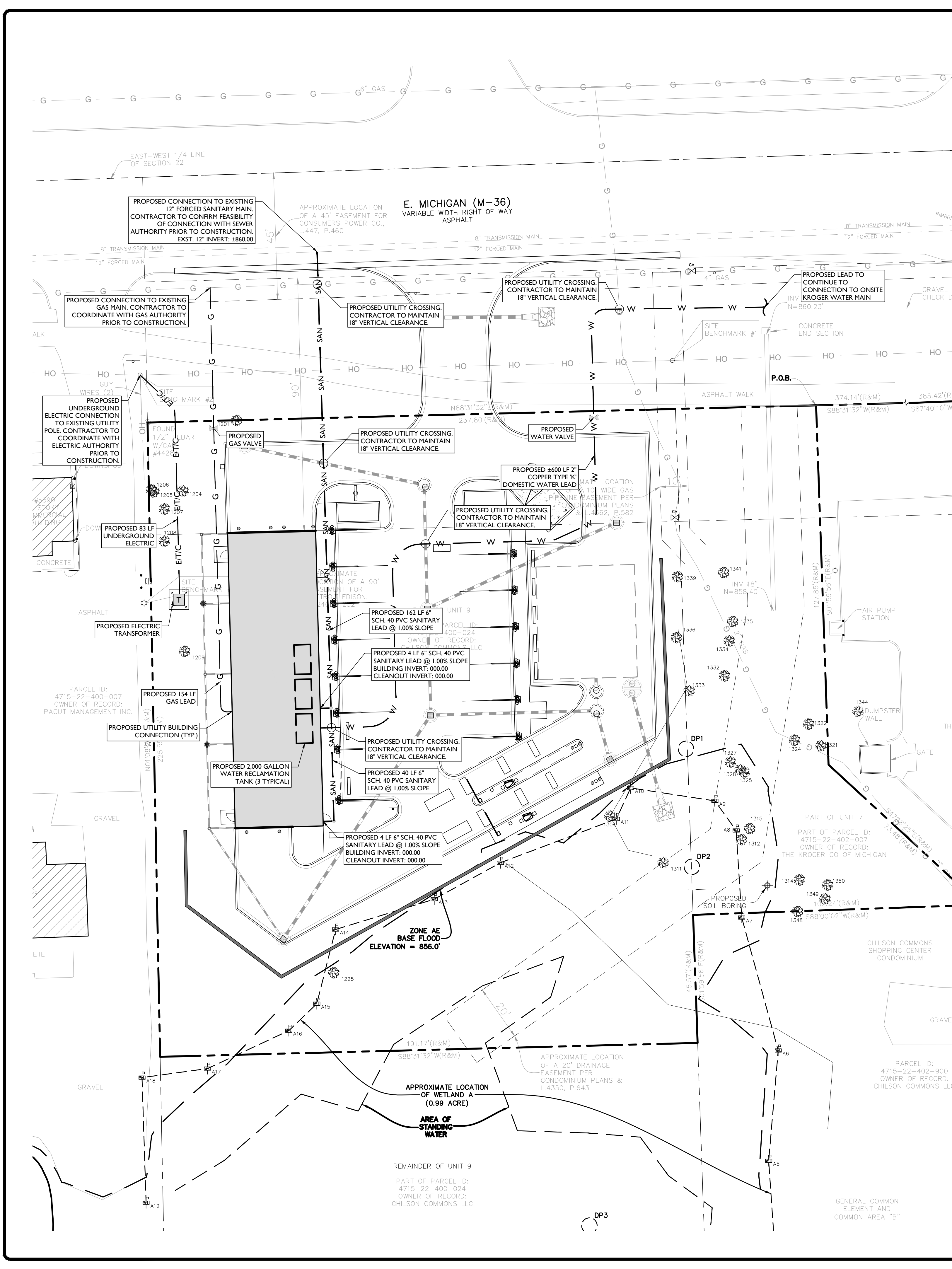
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SCALE: 1" = 20' PROJECT ID: DET-220416

TITLE:
STORMWATER MANAGEMENT PLAN

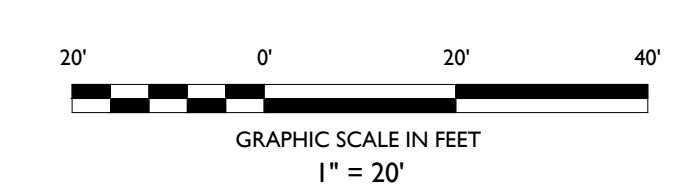
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SYMBOL	DESCRIPTION
---	PROPERTY LINE
— SAN —	PROPOSED SANITARY LATERAL
— W —	PROPOSED DOMESTIC WATER SERVICE
— E/T/C —	PROPOSED ELECTRICAL/DATA CONDUITS
— G —	PROPOSED GAS LINE
⊗	PROPOSED VALVE
T	PROPOSED WATER TEE / BEND
⊙	PROPOSED SANITARY MANHOLE / CLEANOUT
T	PROPOSED TRANSFORMER ON CONCRETE PAD WITH BOLLARDS

- DRAINAGE AND UTILITY NOTES**
- 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 PROTECT AND MAINTAIN IN OPERATION ALL UTILITIES NOT DESIGNATED TO BE REMOVED.
 - THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO ANY EXISTING UTILITY IDENTIFIED TO REMAIN WITHIN THE LIMITS OF THE PROPOSED WORK DURING CONSTRUCTION.
 - 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 ENCASMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
 - 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 ENCASMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
 - 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.
 - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING GAS, ELECTRIC AND TELECOMMUNICATION CONNECTIONS WITH THE APPROPRIATE GOVERNING AUTHORITY.
 - CONTRACTOR SHALL START CONSTRUCTION OF ANY GRAVITY SEWER AT THE LOWEST INVERT AND WORK UP-GRADE.
 - 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 DEMOLITION/REMOVAL ACTIVITIES REQUIRED IN THIS PLAN SET. THIS DOCUMENT SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.
 - 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 DISPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.



NO.	DATE	BY	DESCRIPTION
2	07/05/2023	JCEM	FOR PRE-APPLICATION CONFERENCE
1	05/02/2023	JPEM	FOR CLIENT REVIEW

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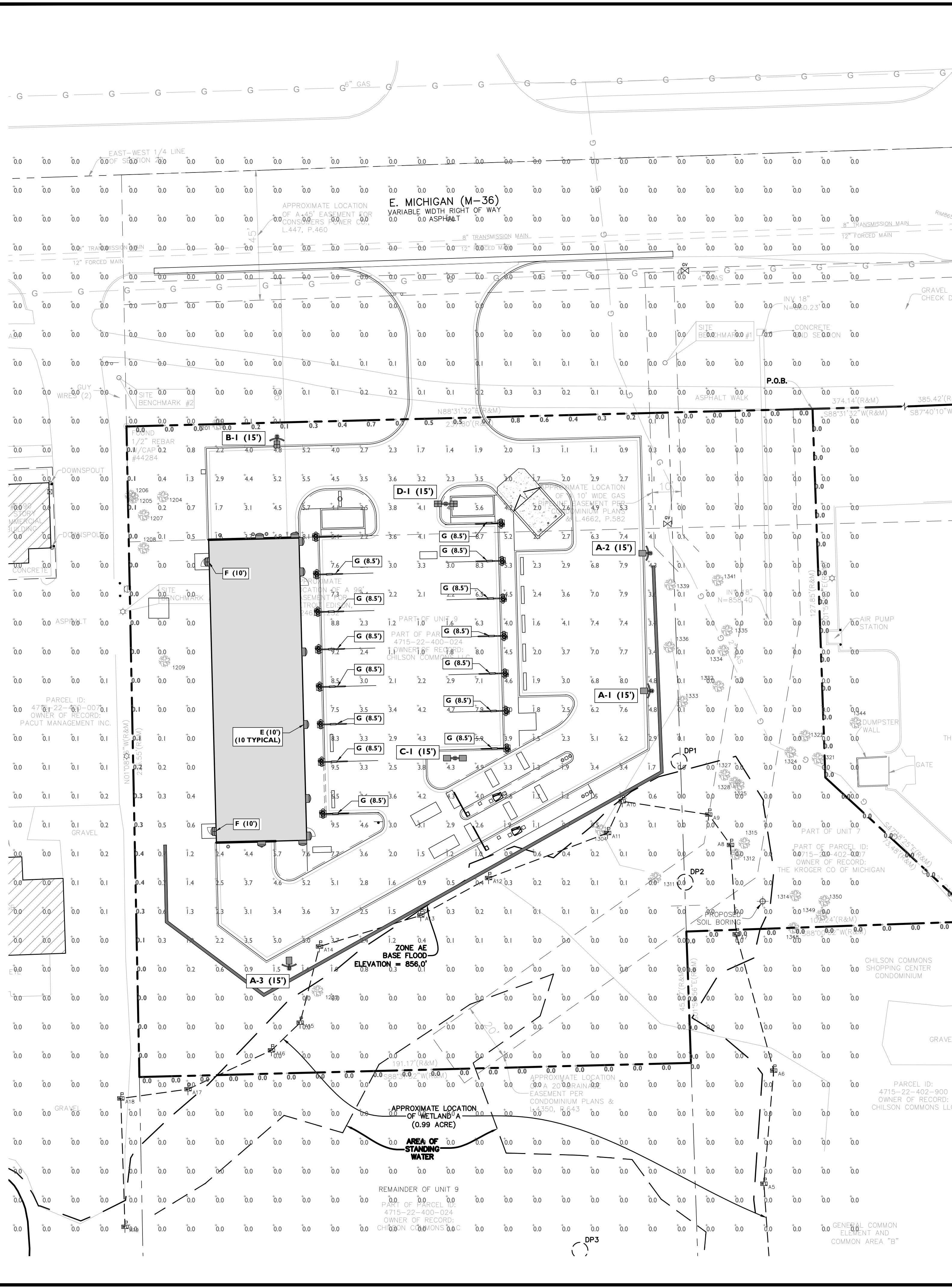
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SCALE: 1" = 20' PROJECT ID: DET-220416

TITLE:
UTILITY PLAN

DRAWING:
C-6

NOT TO SCALE. SEE CHILSON COMMONS CIRCLE IN HAMBURG TOWNSHIP, MICHIGAN FOR MORE DETAILS.



PROPOSED LUMINAIRE SCHEDULE						
SYMBOL	LABEL	QUANTITY	LIGHTING	DISTRIBUTION	LLF	MANUFACTURER / IES FILE
	A	3	MIRADA MEDIUM LED AREA LIGHT 18L LUMEN PACKAGE W/ HOUSE-SIDE SHIELD - SINGLE	FT	0.90	LSI INDUSTRIES / MRM-LED-18L-SIL-FT-30-70CRI-I
	B	1	MIRADA MEDIUM LED AREA LIGHT 9L LUMEN PACKAGE W/ HOUSE-SIDE SHIELD - SINGLE	FT	0.90	LSI INDUSTRIES / MRM-LED-9L-SIL-FT-30-70CRI-I
	C	1	MIRADA MEDIUM LED AREA LIGHT 18L LUMEN PACKAGE W/ HOUSE-SIDE SHIELD - DOUBLE @ 180°	FT	0.90	LSI INDUSTRIES / MRM-LED-18L-SIL-FT-30-70CRI-I
	D	1	MIRADA MEDIUM LED AREA LIGHT 9L LUMEN PACKAGE W/ HOUSE-SIDE SHIELD - DOUBLE @ 180°	FT	0.90	LSI INDUSTRIES / MRM-LED-9L-SIL-FT-30-70CRI-I
	E	10	MIRADA SMALL OUTDOOR LED WALL SCONCE 2L LUMEN PACKAGE	FT	0.90	LSI INDUSTRIES / XWS-LED-02L-SIL-2-30-70CRI
	F	2	MIRADA MEDIUM OUTDOOR LED WALL SCONCE 8L LUMEN PACKAGE	FT	0.90	LSI INDUSTRIES / XWM-FT-LED-08L-30
	G	14	VACUUM MOUNTED - LOW-PROFILE DRIVERLESS LINKABLE LED LINEAR LUMINAIRE - 2 FT	N/A	0.90	LSI INDUSTRIES / GPX2-SO

* SECURITY LIGHTING NOT INCLUDED WITHIN LIGHTING CALCULATIONS

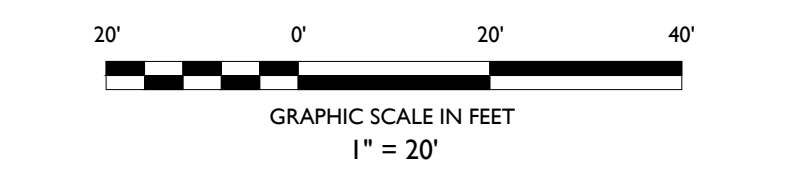
LIGHTING STATISTICS			
DESCRIPTION	AVERAGE	MINIMUM	MAXIMUM
OVERALL PARCEL	1.44 FC	0.0 FC	9.5 FC
PROPERTY LINE (RESIDENTIAL ZONE)	0.03 FC	0.0 FC	0.4 FC
PROPERTY LINE (ROW)	0.27 FC	0.0 FC	0.8 FC

LIGHTING REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 36-295.d(1)	EXTERIOR LIGHTING SHALL BE FULLY SHIELDED AND DIRECTED DOWNWARD	COMPLIES
§ 36-295.d(3)	MAXIMUM POLE HEIGHT: 15 FT	15 FT
§ 36-295.d(5)	MAXIMUM INTENSITY: 10 FC	9.5 FC
	MAXIMUM SPILLOVER (NON-RESIDENTIAL ZONE): 1.0 FC	0.8 FC
	MAXIMUM SPILLOVER (RESIDENTIAL ZONE): 0.5 FC	0.4 FC

SECURITY CAMERAS TO BE MOUNTED ON EACH POLE 10 FT ABOVE GRADE		
POLE LABEL	NUMBER OF CAMERAS	DIRECTION OF CAMERAS
A-1		
A-2		
A-3		
B-1		
C-1		
D-1		

EXCEPT WHERE USED FOR SECURITY PURPOSES, ALL OUTDOOR LIGHTING FIXTURES, EXISTING OR HEREAFTER INSTALLED AND MAINTAINED SHALL BE TURNED OFF BETWEEN 11:00 P.M. AND SUNRISE, EXCEPT WHEN USED FOR COMMERCIAL AND INDUSTRIAL USES, SUCH AS IN SALES, ASSEMBLY AND REPAIR AREAS, WHERE SUCH USE IS OPEN FOR BUSINESS AFTER 11:00 P.M. BUT ONLY FOR SO LONG AS SUCH USE OPEN FOR BUSINESS. BUSINESSES WITH LIGHT FIXTURES USED FOR SECURITY PURPOSES ARE ENCOURAGED TO USE A MOTION DETECTION DEVICE WHICH IS DIRECTED TO DETECT MOTION WITHIN THE PROPERTY.

- 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.



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05/03/2023	2	JCEM	FOR CLIENT REVIEW

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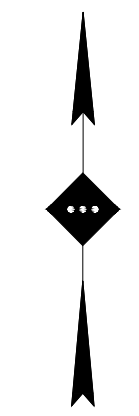
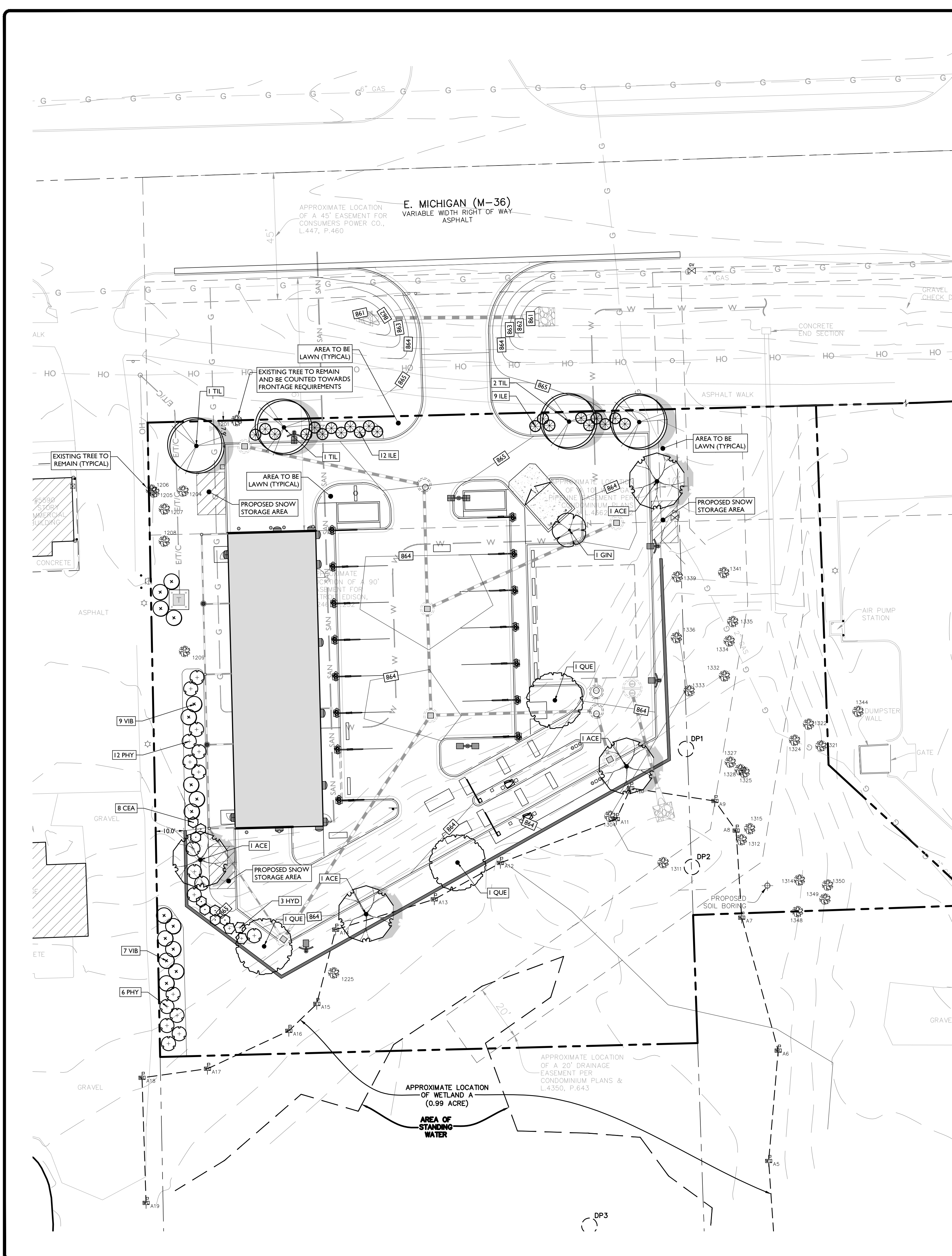
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SCALE: 1" = 20' PROJECT ID: DET-220416

TITLE: LIGHTING PLAN

DRAWING: C-7



PLANT SCHEDULE						
DECIDUOUS TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
	ACE	4	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2" - 2.5" CAL	B&B
	GIN	1	GINKGO BILOBA 'PRINCETON SENTRY'	PRINCETON SENTRY GINKGO	2" - 2.5" CAL	B&B
	QUE	3	QUERCUS PHELLOS	WILLOW OAK	2" - 2.5" CAL	B&B
	TIL	4	TILIA CORDATA	LITTLELEAF LINDEN	2.5" - 3" CAL	B&B
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
	CEA	8	CEANOTHUS AMERICANUS	NEW JERSEY TEA	24" - 30"	POT
	HYD	3	HYDRANGEA MACROPHYLLA 'BLOOMSTRUCK'	BLOOMSTRUCK HYDRANGEA	3 GAL	POT
	PHY	18	PHYSOCARPUS OPULIFOLIUS	NINEBARK	24" - 30"	POT
	VIB	16	VIBURNUM DENTATUM	VIBURNUM	24" - 30"	POT
EVERGREEN SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
	ILE	21	ILEX CRENATA 'COMPACTA'	DWARF JAPANESE HOLLY	24" - 30"	B&B

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

LANDSCAPING AND BUFFER REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 36-281(b)(1)	GREENBELT REQUIREMENTS 20 FT WIDE GREENBELT ALONG RIGHT-OF-WAY 1 CANOPY TREE AND 4 SHRUBS PER 40 LF OF FRONTAGE EAST MICHIGAN: 209 LF TREE: (209 LF) / (40 LF) = 5 REQUIRED TREES SHRUBS: (209 LF) / (40 LF) = 5.25 * (4) = 21 SHRUBS	7.9 FT (W) 5 TREES ⁽¹⁾ 21 SHRUBS
§ 36-281(e)(1)	BUFFER ZONES COMMERCIAL BUFFER C REQUIRED BUFFER WIDTH: 10 FEET 1 CANOPY OR EVERGREEN TREE OR 4 SHRUBS PER 20 LF OF FRONTAGE WEST PROPERTY BOUNDARY: 225 LF SHRUBS: (225 LF) / (20 LF) = 11.25 * (4) = 45 SHRUBS	10.0 FT 45 SHRUBS
§ 36-283(a)(1)	PARKING LOT LANDSCAPING 1 CANOPY TREE PER 2,000 SF OF ASPHALT (15,641 SF)/(2,000 SF) = 8 REQUIRED TREES 150 SF OF LANDSCAPE AREA PER TREE ⁽¹⁾	8 TREES COMPLIES
§ 36-283(a)(2)	LANDSCAPE STANDARDS NO MORE THAN 33% OF ANY ONE SPECIES SHALL BE PERMITTED	COMPLIES
§ 36-284(3)		

(W) WAIVER
 (1) (OPEN LAND PER TREE CAN BE REDUCED TO 75 SF PER TREE IF IRRIGATION IS PROVIDED.)
 (2) (5 PROPOSED STREET TREES: 4 PROPOSED & 1 EXISTING TREE TO REMAIN)

PER THE DEVELOPER AGREEMENT RECORDED ON 04/14/2021 (2021R-017179) THE FOLLOWING LANDSCAPE PROVISIONS SHALL BE IN EFFECT FOR PARCEL 9:

- ALL LANDSCAPING SHALL BE IN COMPLIANCE WITH ALL APPLICABLE ZONING ORDINANCE REQUIREMENTS AS WELL AS THE HPIUD PLAN AND AGREEMENT.
- FUTURE DEVELOPMENT SHALL MEET THE LANDSCAPE STANDARDS IN THE ZONING ORDINANCE INCLUDING THE REGULATIONS UNDER SECTION 7.75 & SECTION 9.4.
- EXISTING VEGETATION ON UNITS 9 AND 11 SHALL NOT BE ALTERED UNTIL SITE PLAN APPROVAL IS GRANTED.

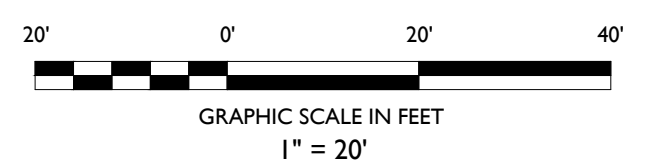


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IRRIGATION NOTE:
 IRRIGATION CONTRACTOR TO PROVIDE A DESIGN FOR AN IRRIGATION SYSTEM SEPARATING PLANTING BEDS FROM LAWN AREA PRIOR TO CONSTRUCTION. DESIGN IS TO BE SUBMITTED TO THE PROJECT LANDSCAPE DESIGNER FOR REVIEW AND APPROVAL. WHERE POSSIBLE, 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.

LANDSCAPING NOTES

- THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AND LANDSCAPED AREAS WITH SOIL.
- THE CONTRACTOR SHALL RESTORE ALL DISTURBED LAWN AREAS WITH A MINIMUM 4 INCH LAYER OF TOPSOIL AND SOIL.
- 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 FISH 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.
- PAINTED STEEL METAL EDGING TO BE PROVIDED AROUND ALL MULCH BEDS.
- ALL MULCH AREAS MUST BE TREATED WITH PRE-EMERGENT HERBICIDE AND THEN OVERLAIN WITH LANDSCAPE WEED BARRIER MATERIAL.



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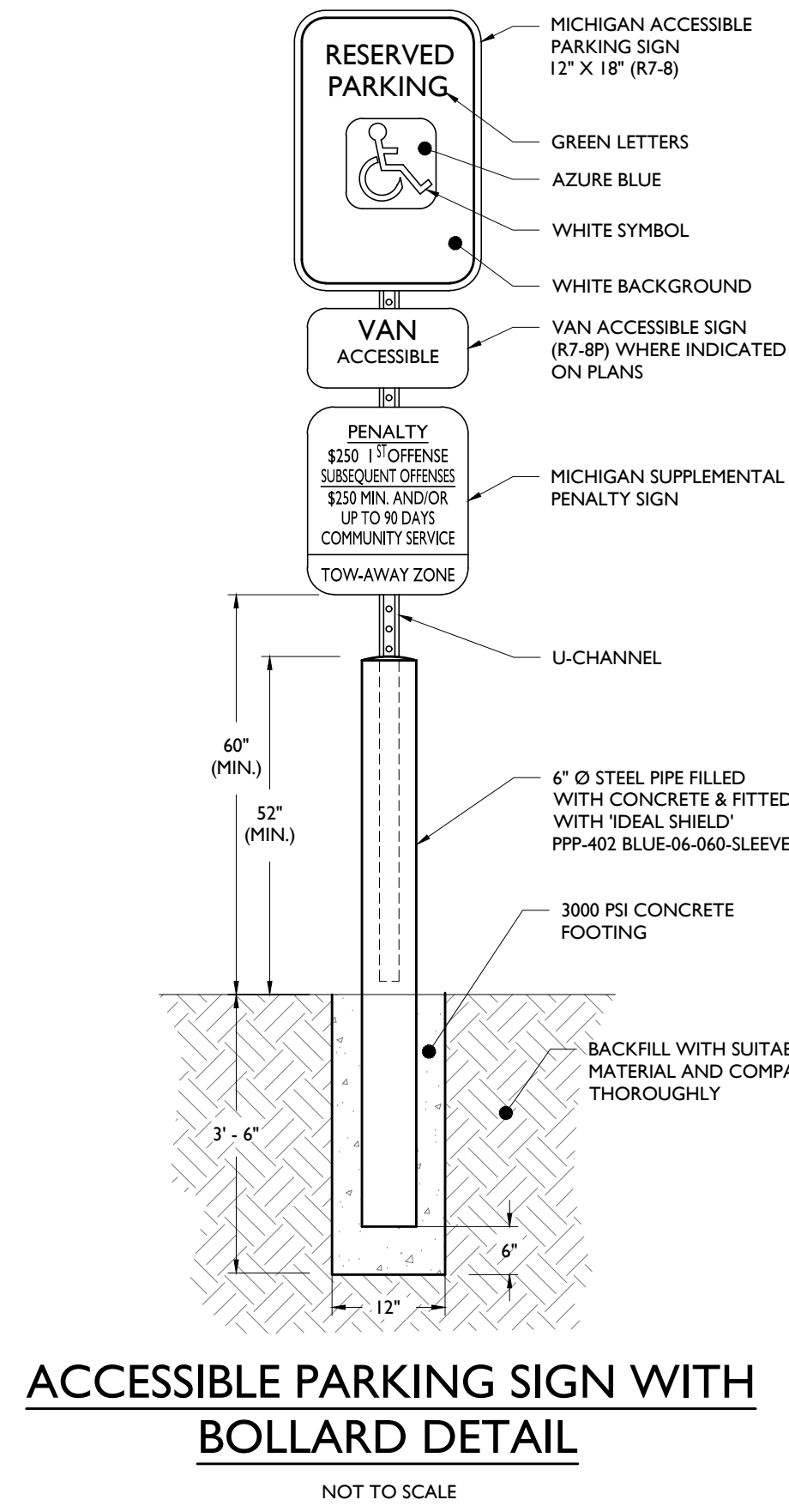
J. REID COOKSEY, P.E.
 MICHIGAN LICENSE No. 6201069428
 LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 20' PROJECT ID: DET-220416

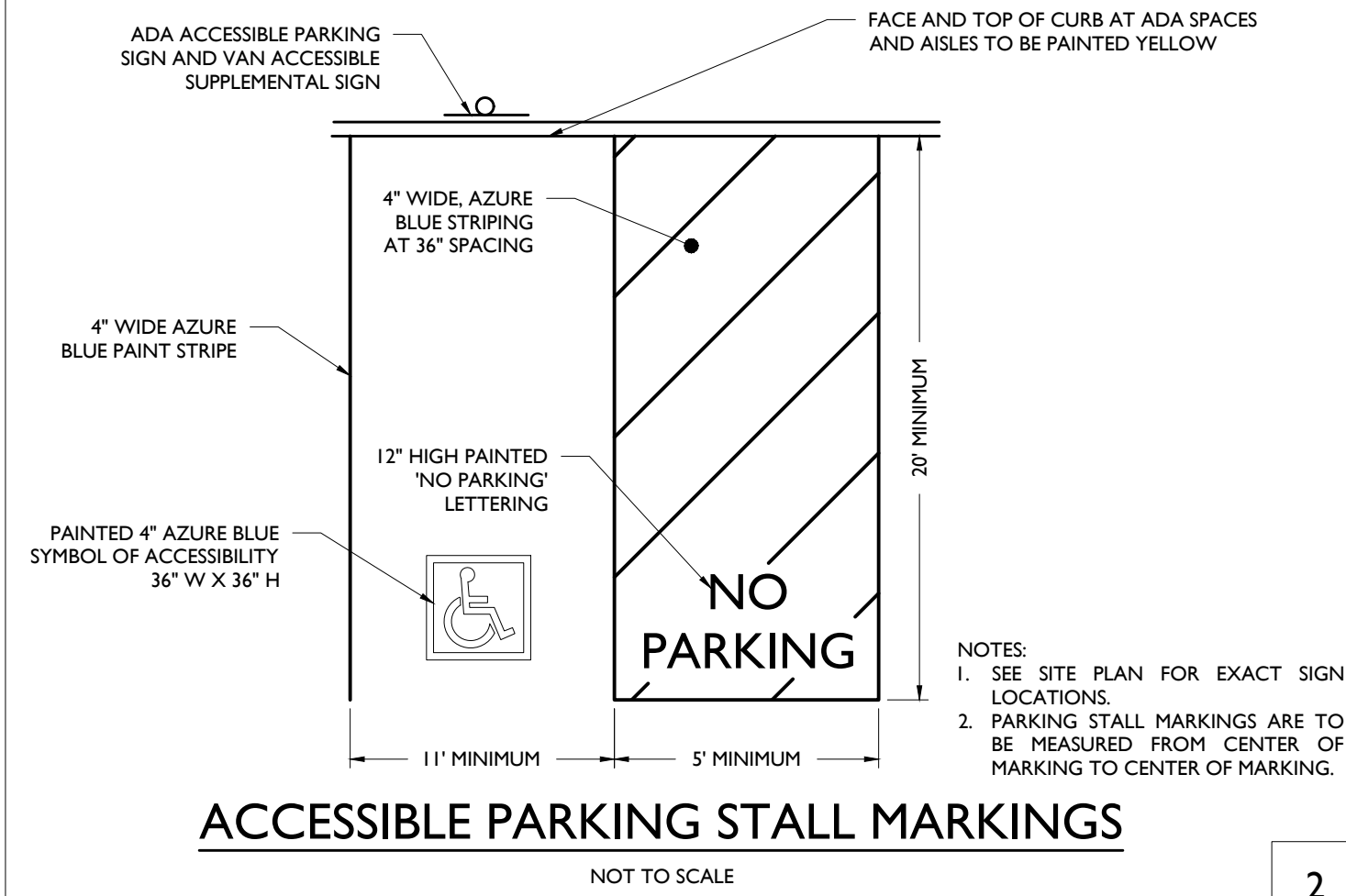
TITLE:
LANDSCAPING PLAN

DRAWING:
C-8

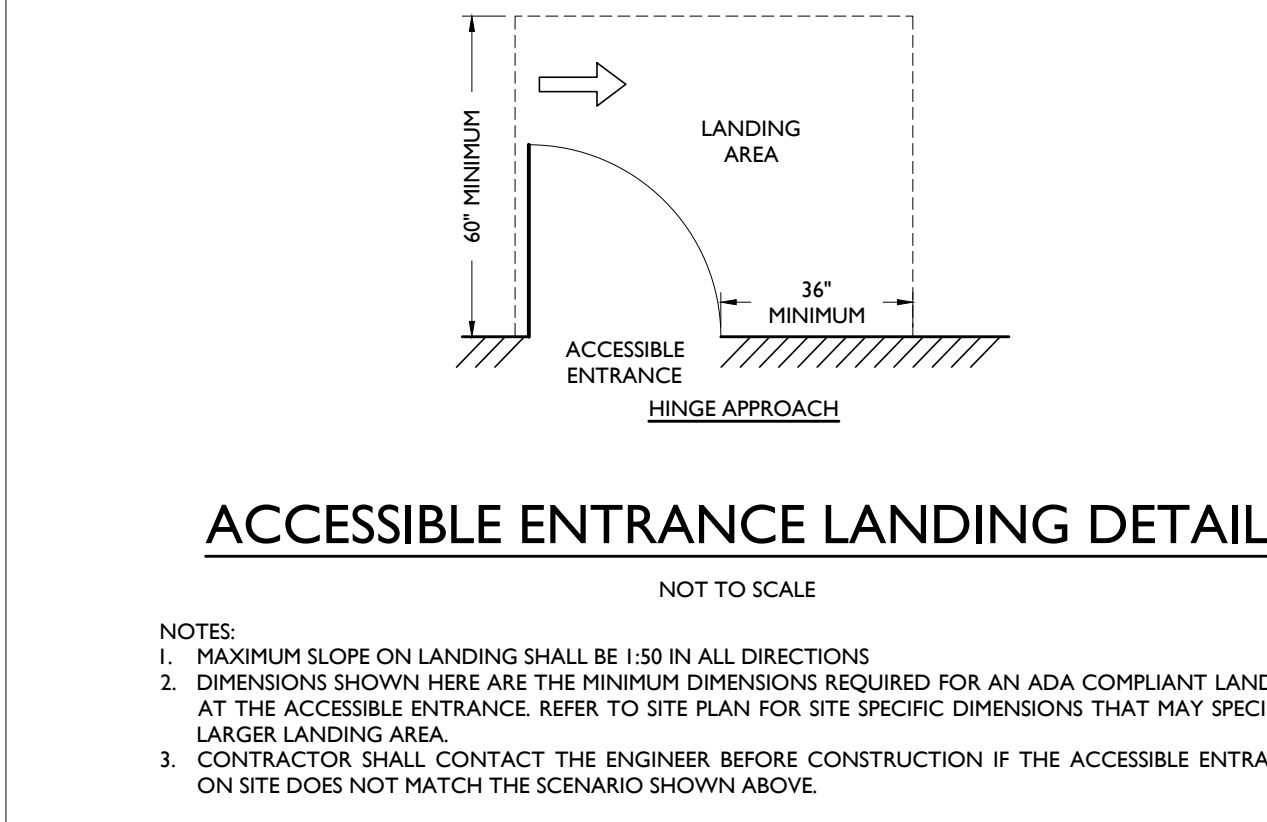
V:\072023\DET22416\024\11\02\03\CH2001\CONCEPT CIRCLE\HAMBURG TOWNSHIP\PROJECT\DET22416-08.LANDSCAPING



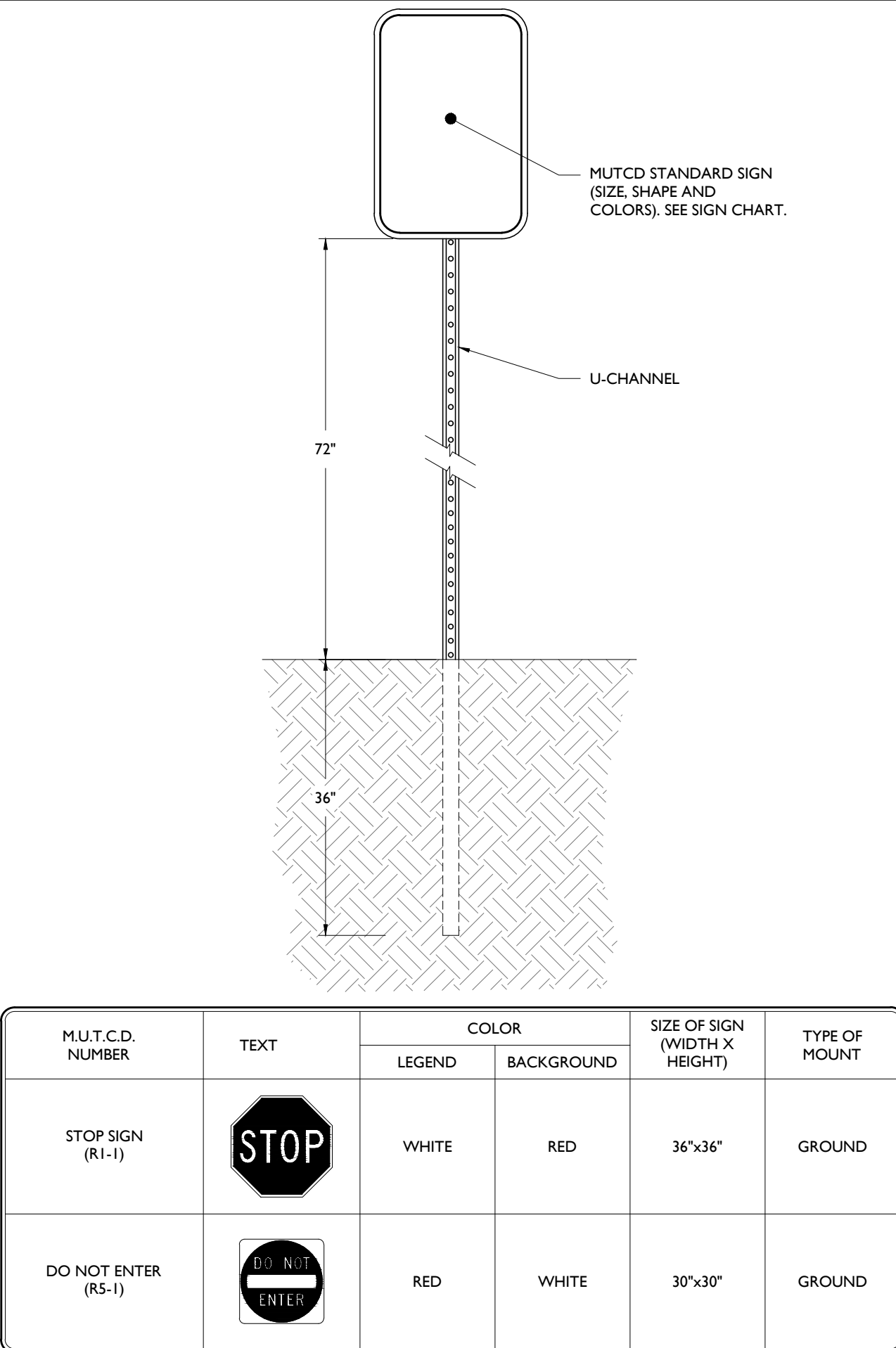
ACCESSIBLE PARKING SIGN WITH BOLLARD DETAIL
NOT TO SCALE



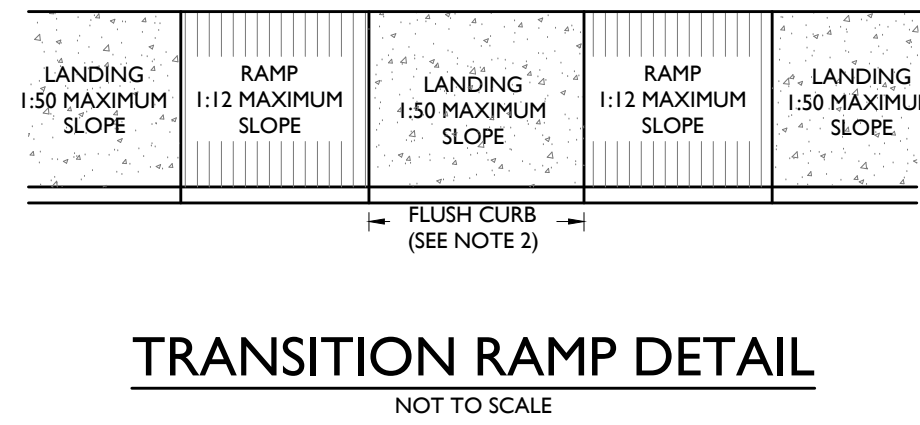
ACCESSIBLE PARKING STALL MARKINGS
NOT TO SCALE



ACCESSIBLE ENTRANCE LANDING DETAIL
NOT TO SCALE

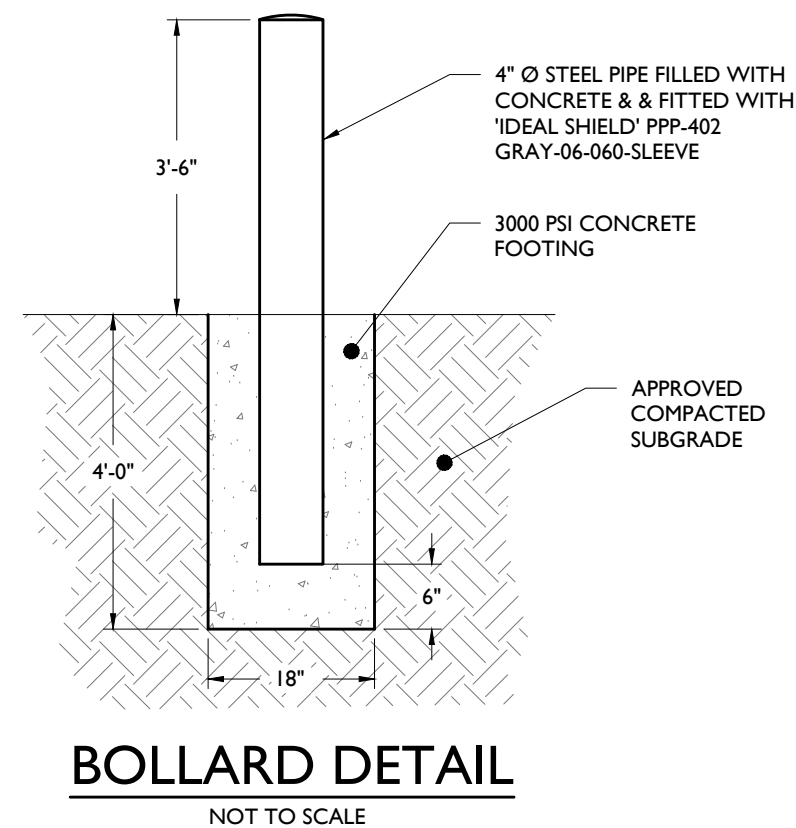


SIGN DETAIL & DATA TABLE
NOT TO SCALE

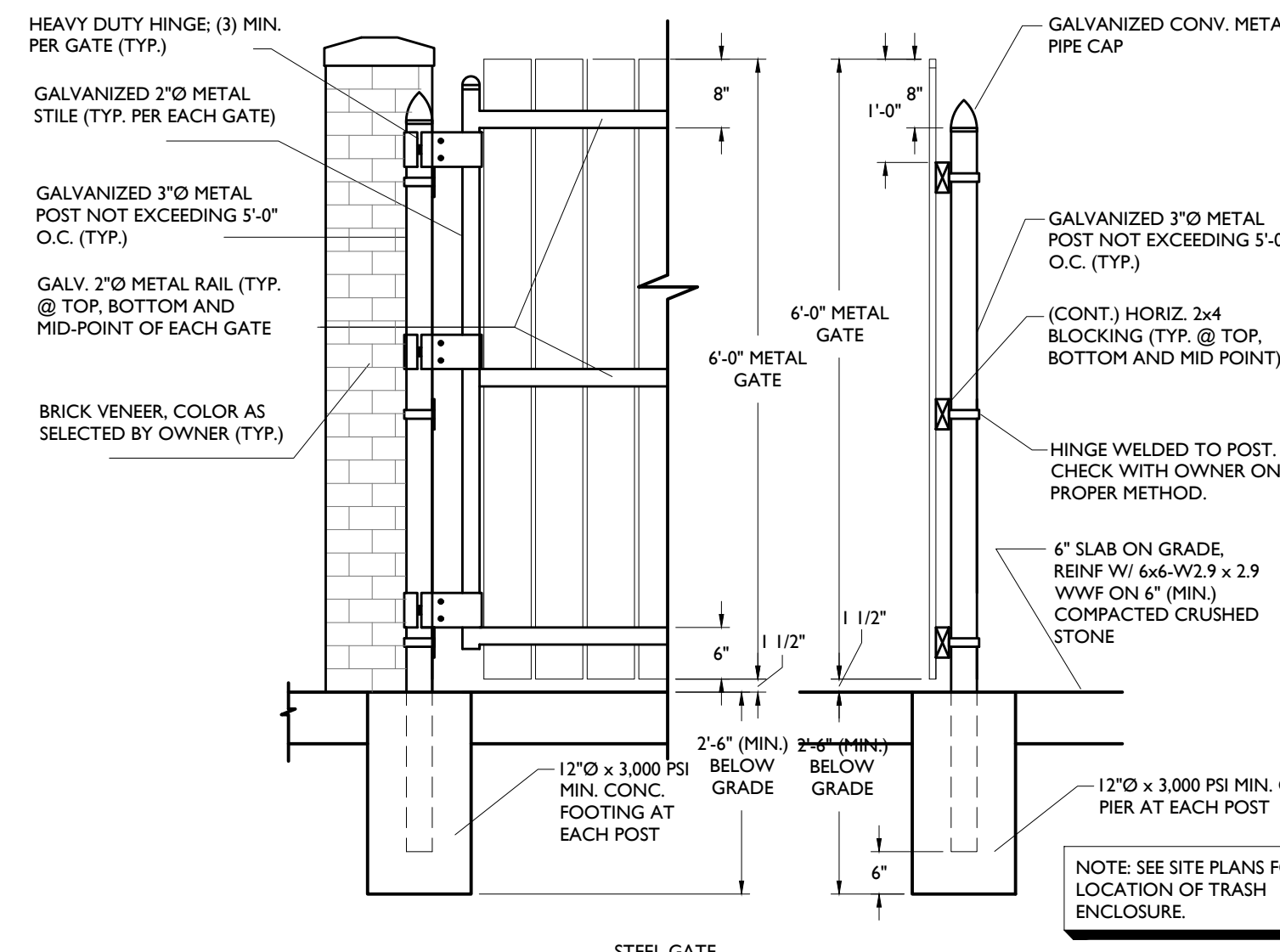


TRANSITION RAMP DETAIL
NOT TO SCALE

- NOTES:
1. CROSS SLOPE ON RAMP SHALL NOT EXCEED 2%.
2. A FLUSH CURB SHALL HAVE A MINIMUM WIDTH OF 36". SEE PLAN FOR EXACT WIDTH.
3. RAMP SHALL HAVE A MAXIMUM RISE OF 6" WITHOUT A HANDRAIL.

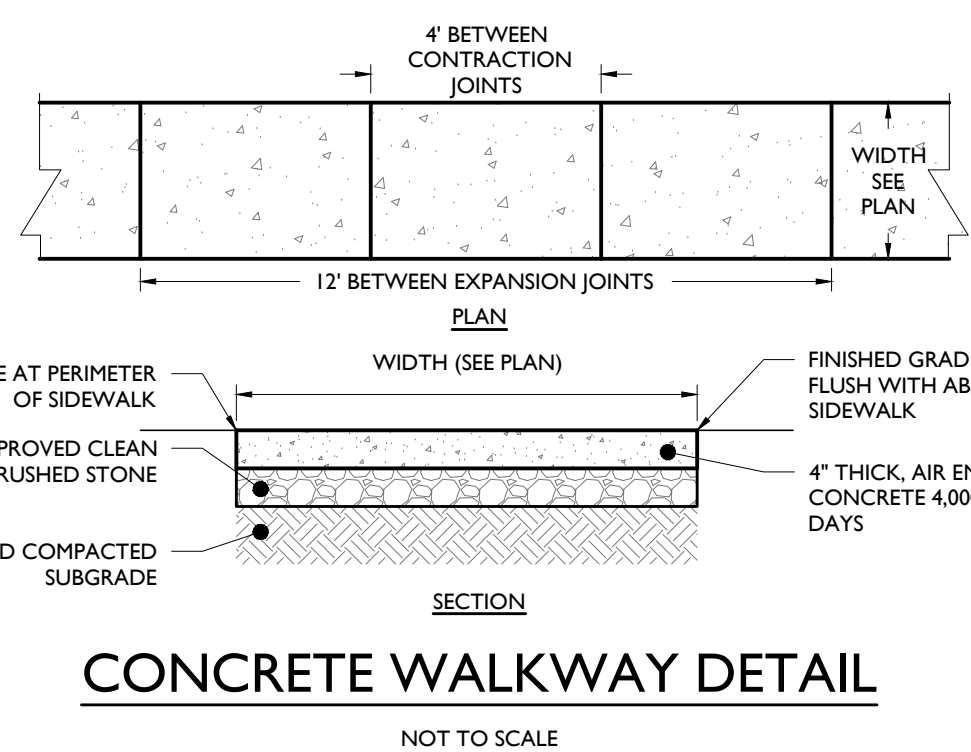


BOLLARD DETAIL
NOT TO SCALE



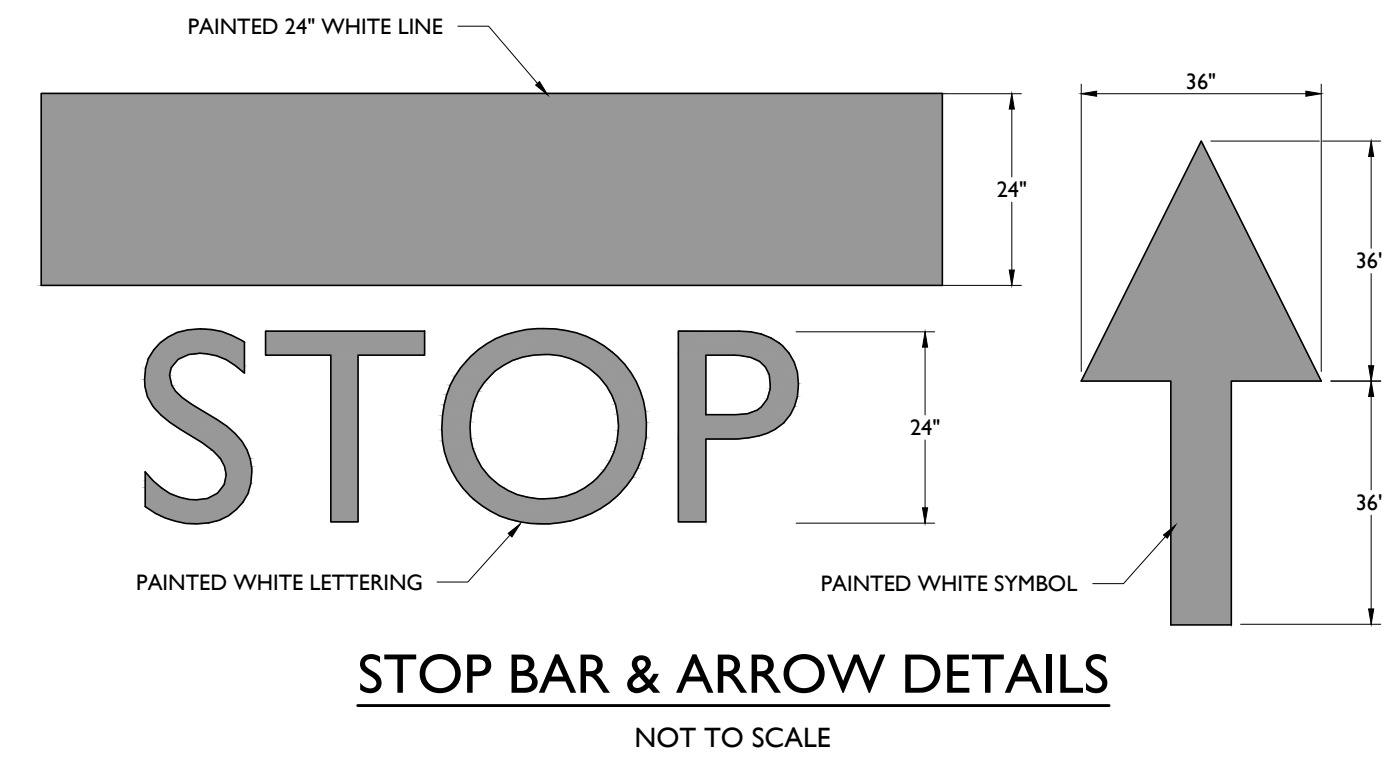
- NOTE:
BLOCK COLOR TO MATCH BUILDING OR AS SPECIFIED BY OWNER

TRASH / RECYCLE ENCLOSURE DETAIL
NOT TO SCALE



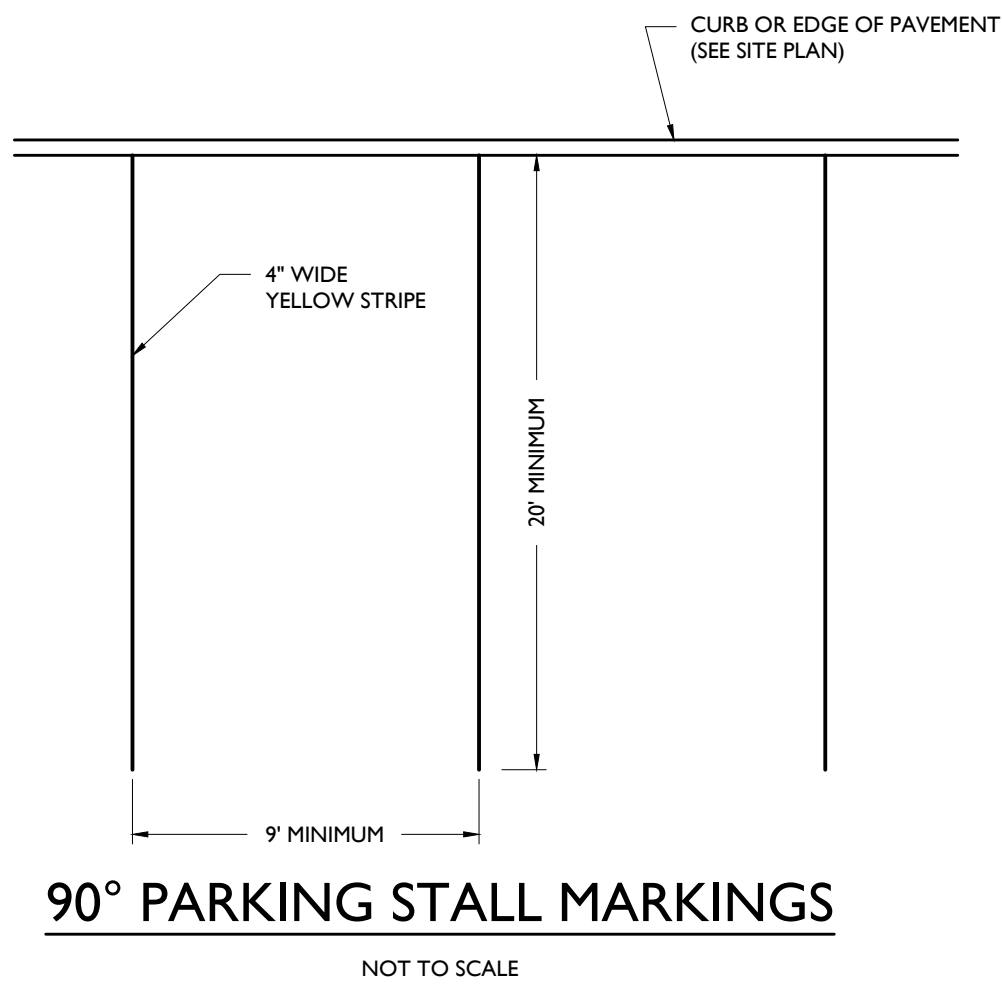
CONCRETE WALKWAY DETAIL
NOT TO SCALE

- 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.

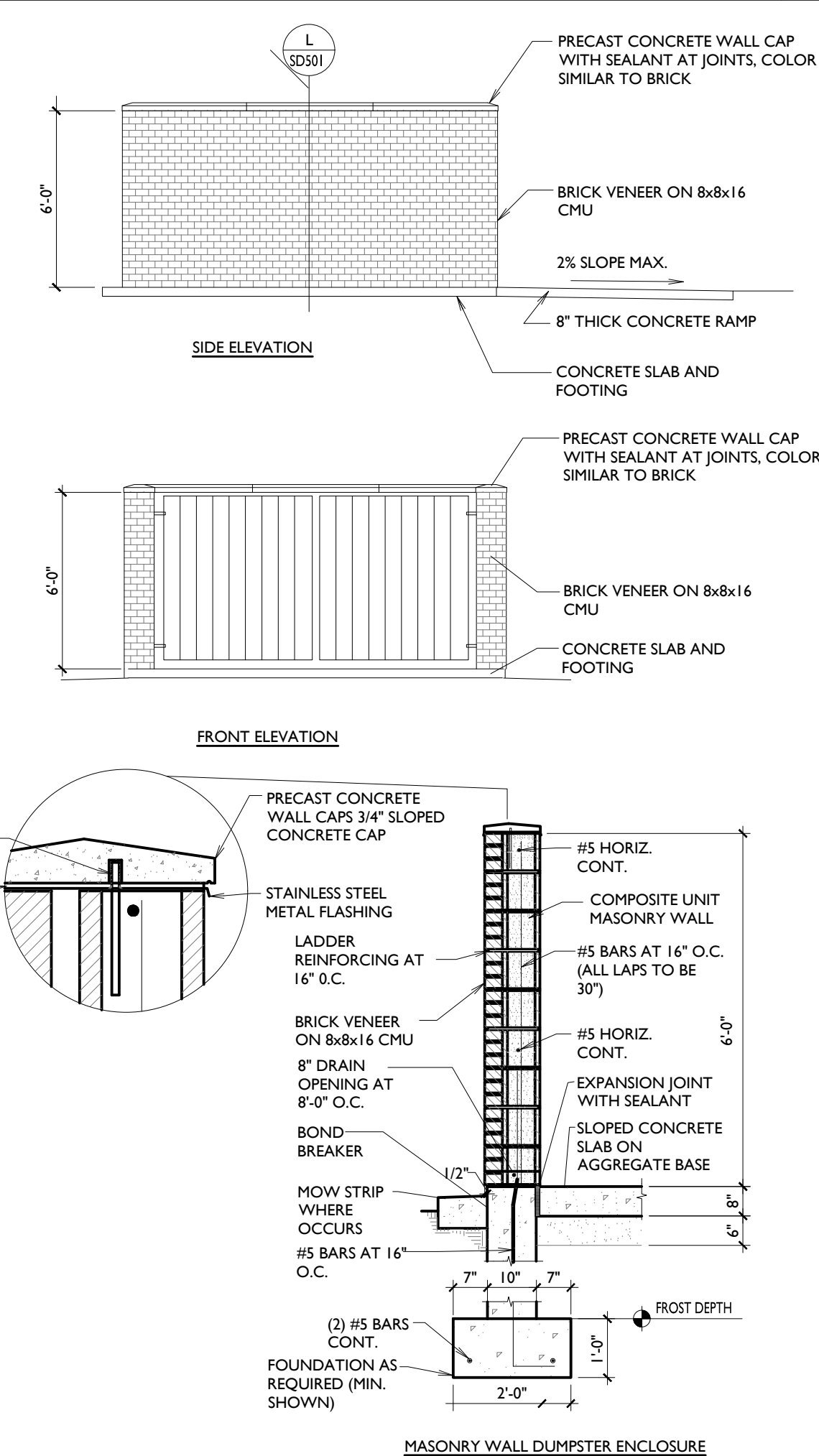


STOP BAR & ARROW DETAILS
NOT TO SCALE

- PAVEMENT STRIPING & MARKINGS NOTES:**
- ALL SIGNING AND STRIPING IN EXISTING CONDITION IN CONFLICT WITH THE PROPOSED DESIGN PLAN SHALL BE REMOVED.
 - ALL PROPOSED SIGNING AND STRIPING SHALL CONFORM TO THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
 - PAVEMENT STRIPING AND MARKINGS SHALL BE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE LOCAL, COUNTY AND STATE REQUIREMENTS.
 - UNLESS OTHERWISE SPECIFIED, ALL STRIPING AND MARKINGS IN THE PUBLIC RIGHT-OF-WAY SHALL BE OF THERMOPLASTIC PAINT OR PREFORMED THERMOPLASTIC MARKINGS.
 - UNLESS OTHERWISE SPECIFIED, ON SITE PARKING STALL STRIPING, FIRE LANE STRIPING AND DIRECTIONAL ARROWS SHALL BE EPOXY PAINT. ON SITE STOP BARS, "DO NOT ENTER" BARS, AND ASSOCIATED LETTERING SHALL BE THERMOPLASTIC PAINT OR PREFORMED THERMOPLASTIC MARKINGS.



90° PARKING STALL MARKINGS
NOT TO SCALE



MASONRY WALL DUMPSTER ENCLOSURE
NOT TO SCALE

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WHITEWATER EXPRESS CAR WASH

PROPOSED CAR WASH

PARCEL ID: 4715-22-400-024
VACANT E-M36
HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

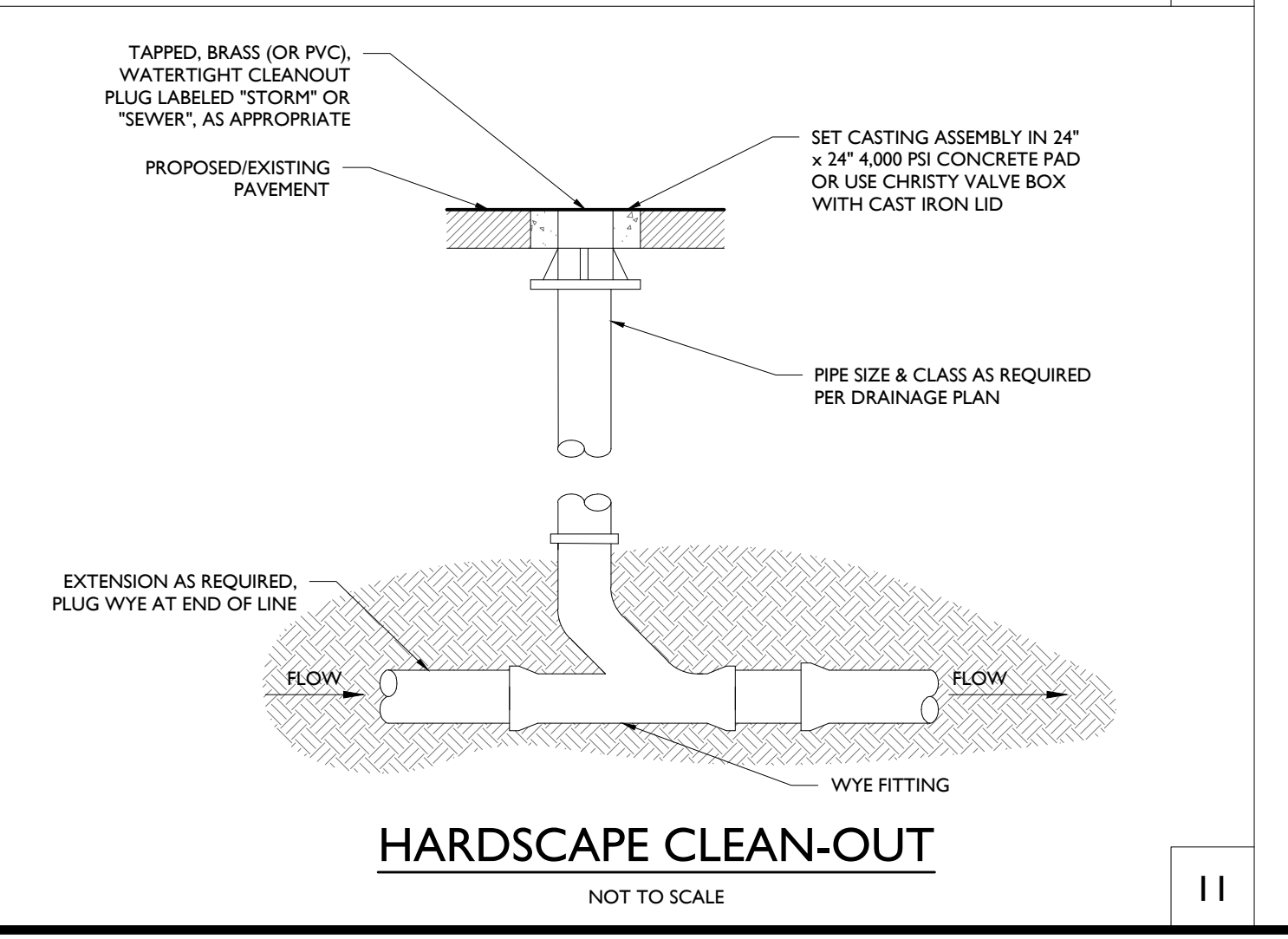
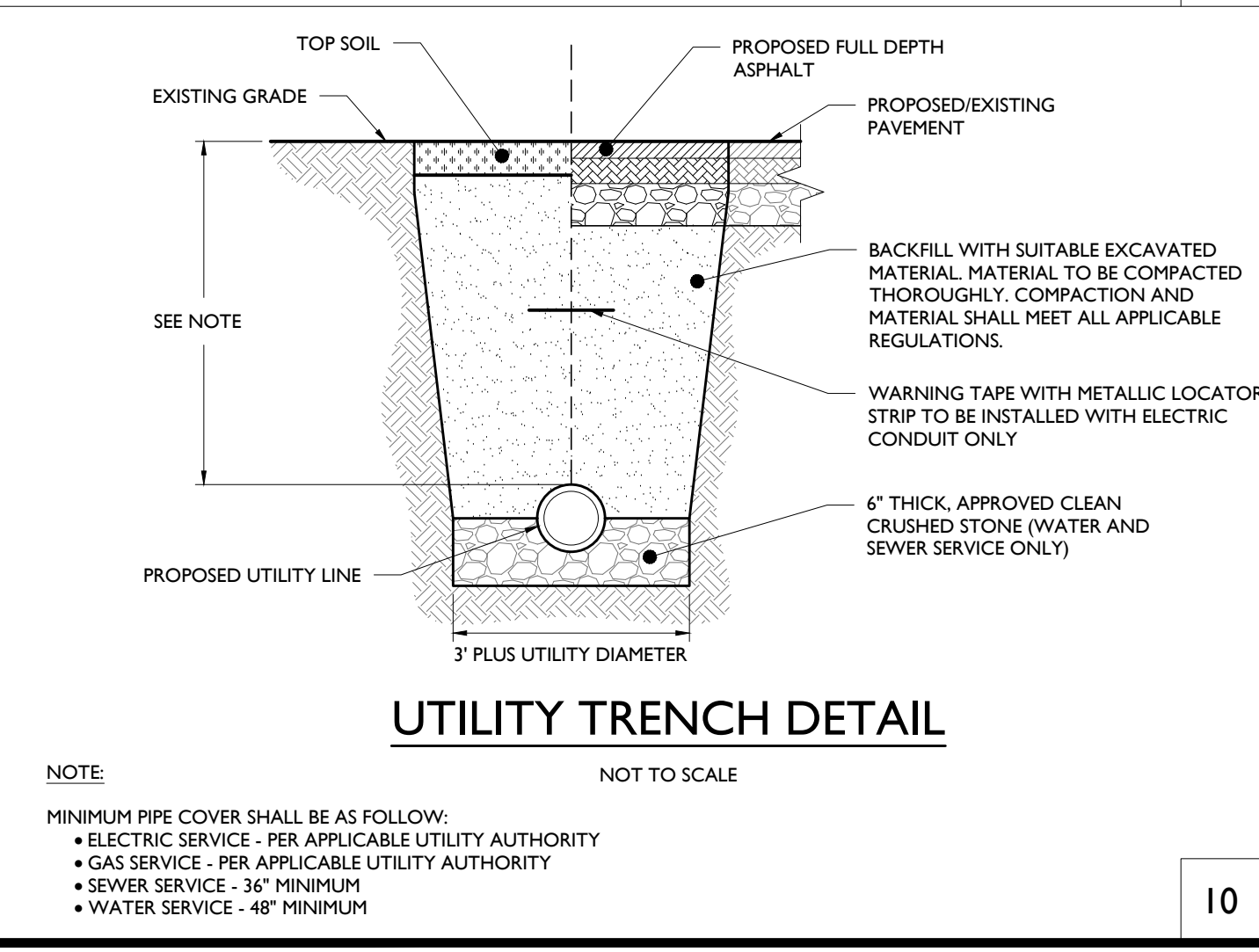
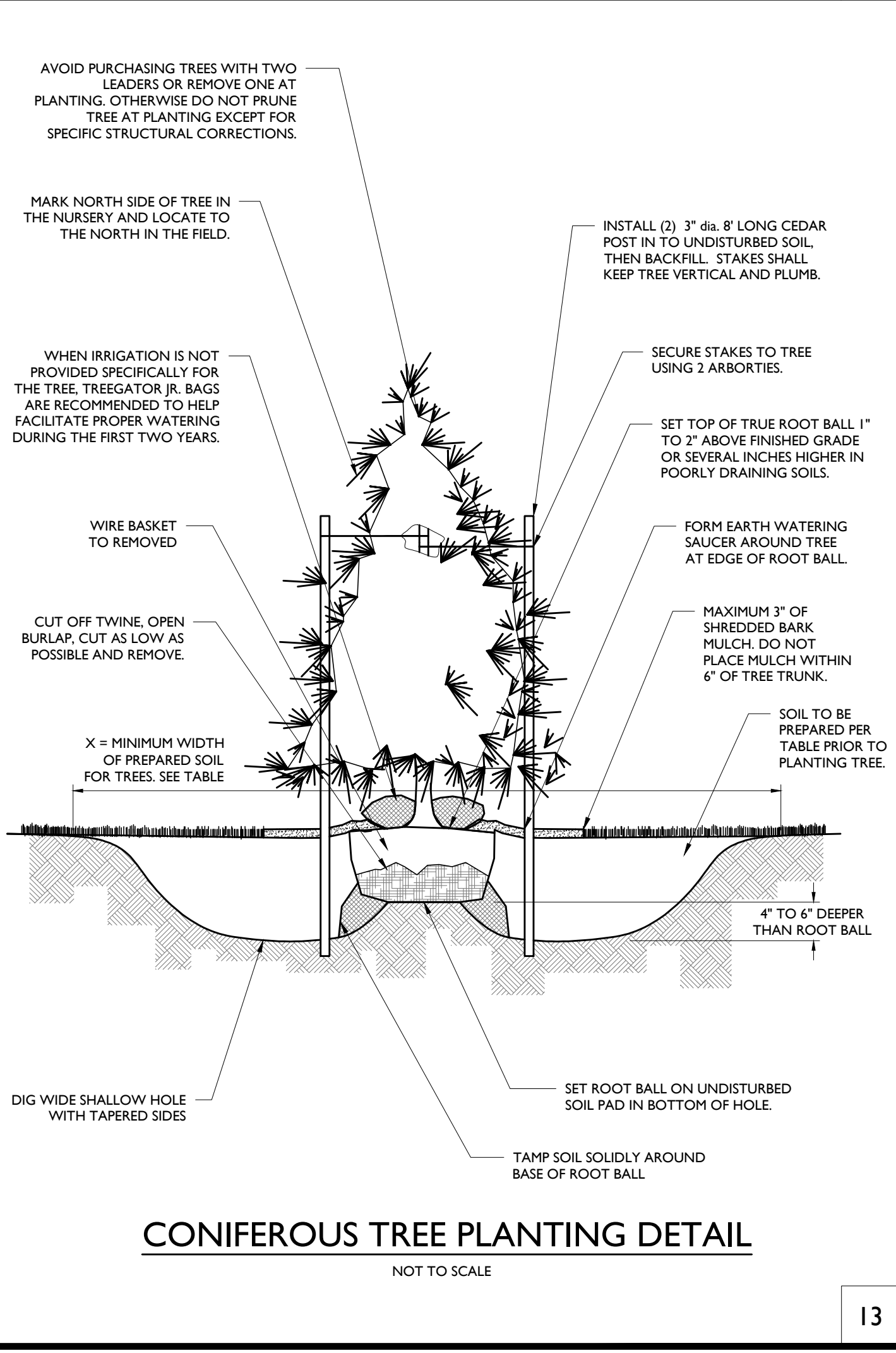
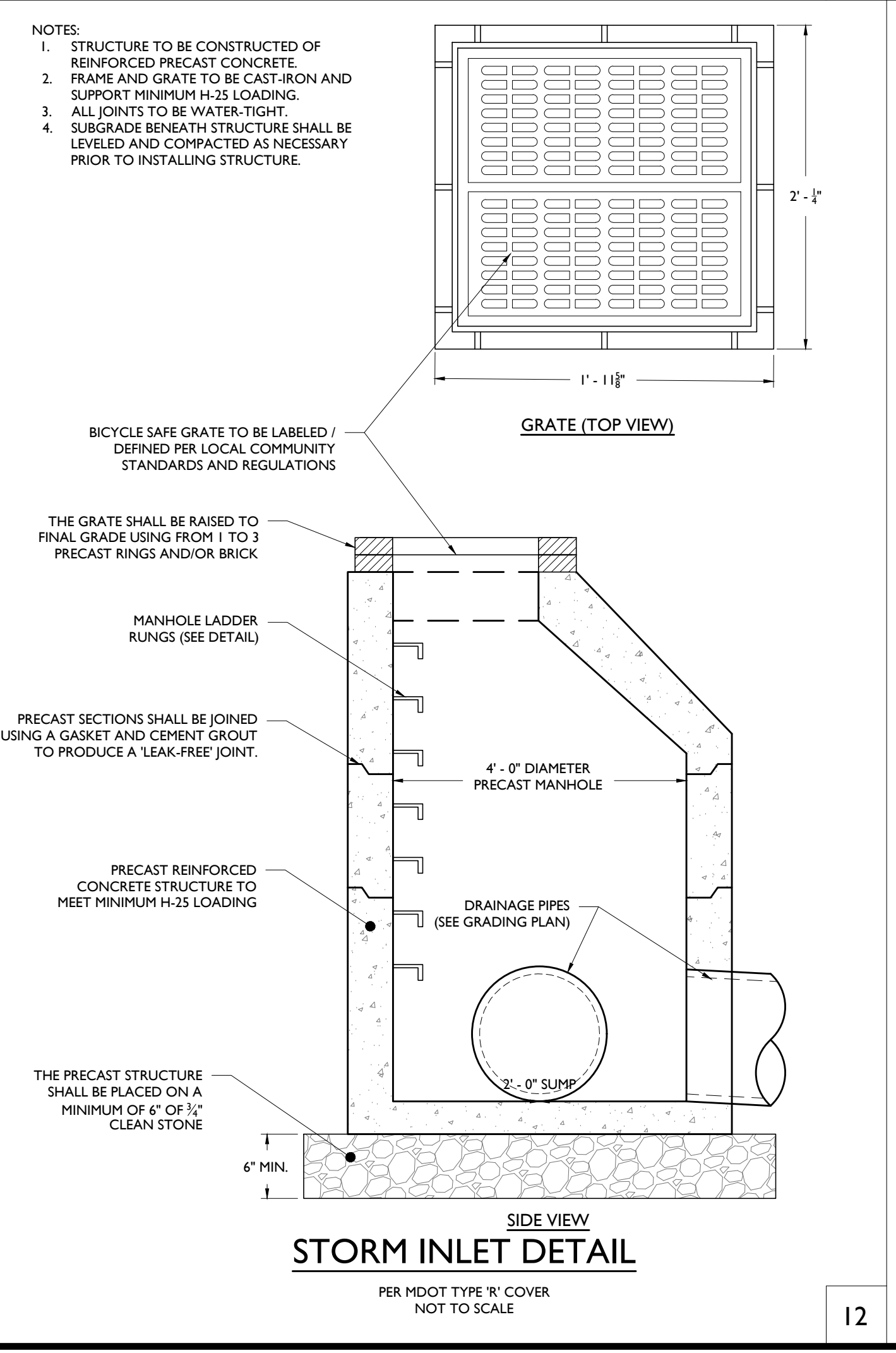
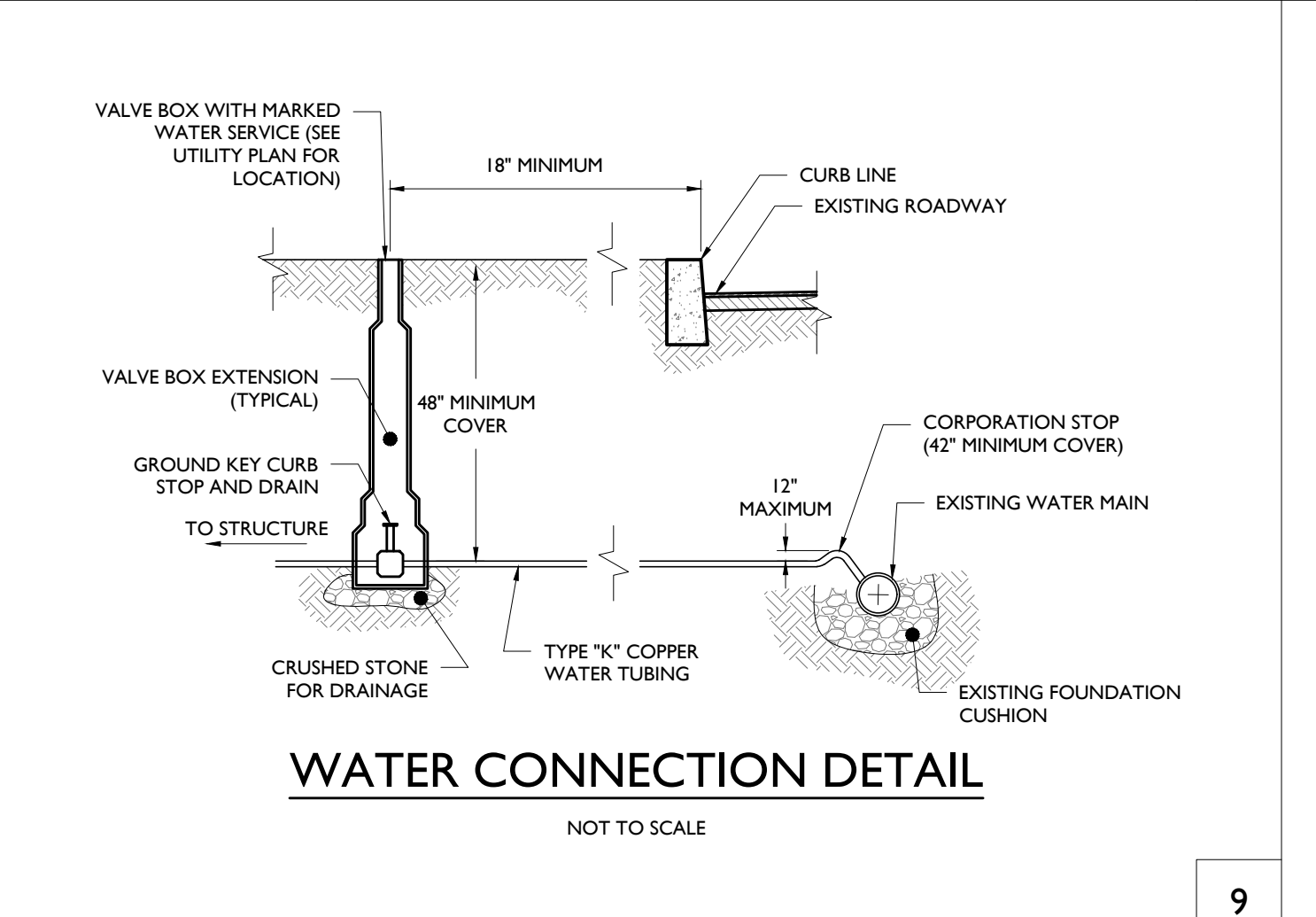
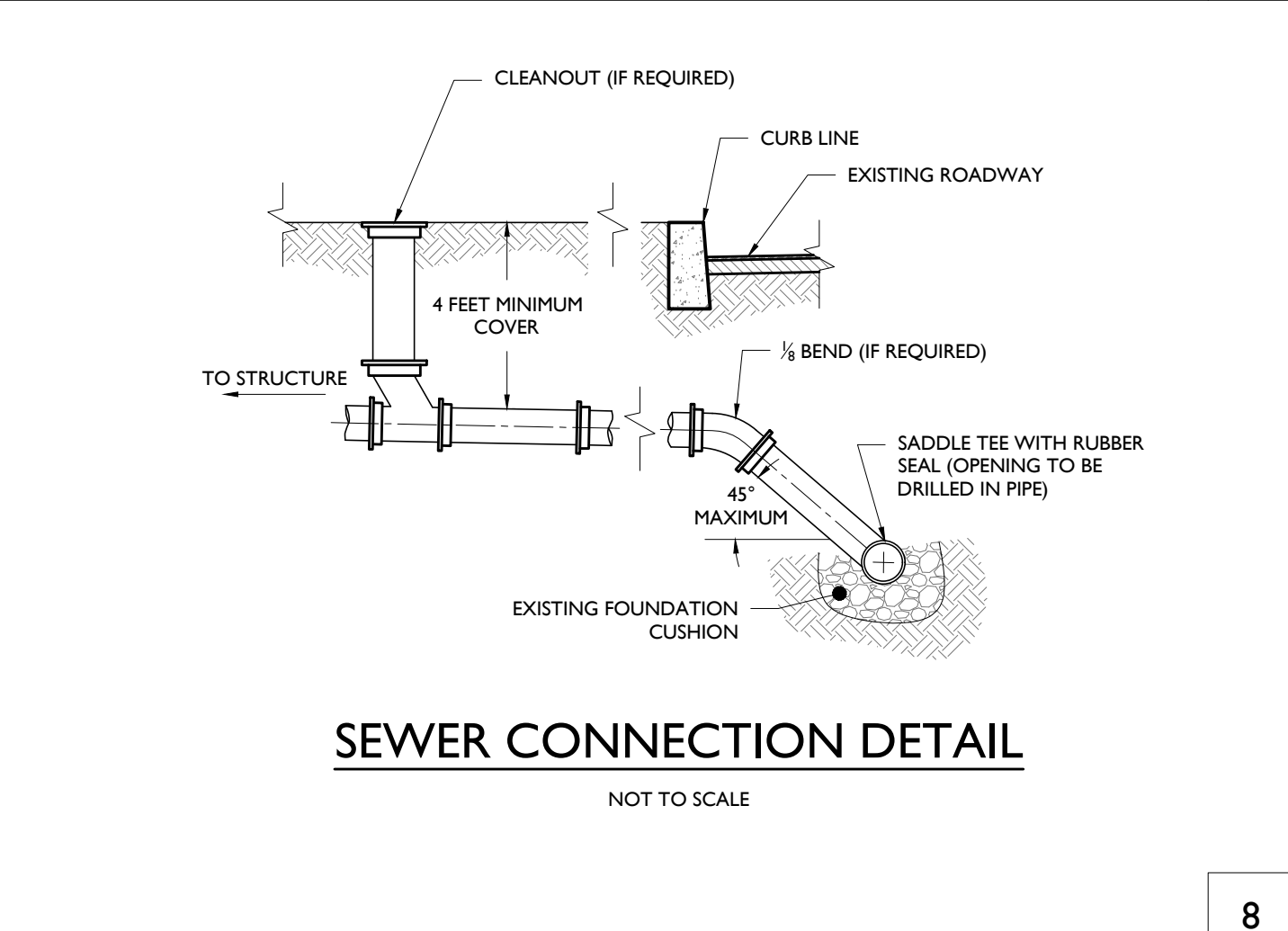
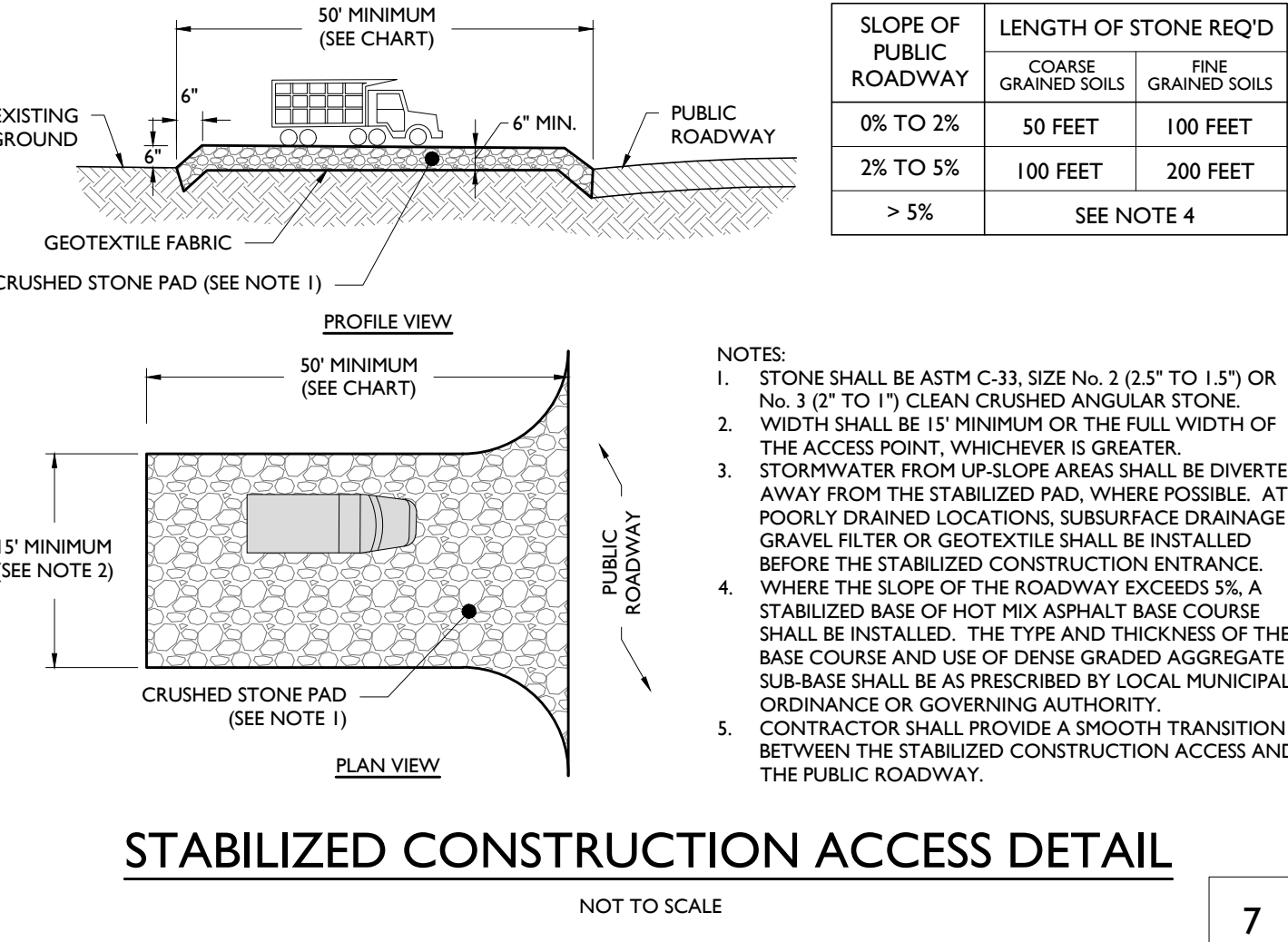
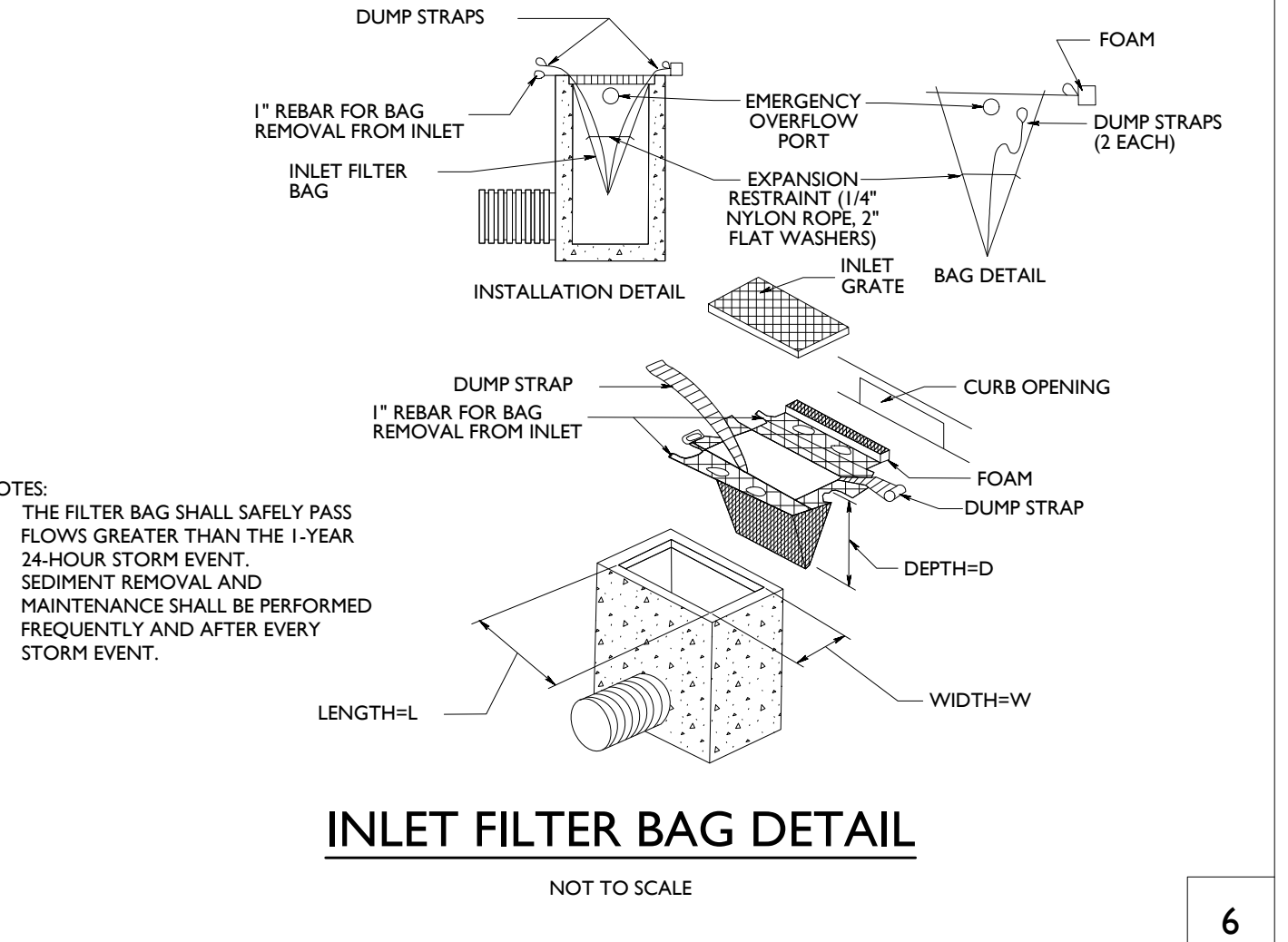
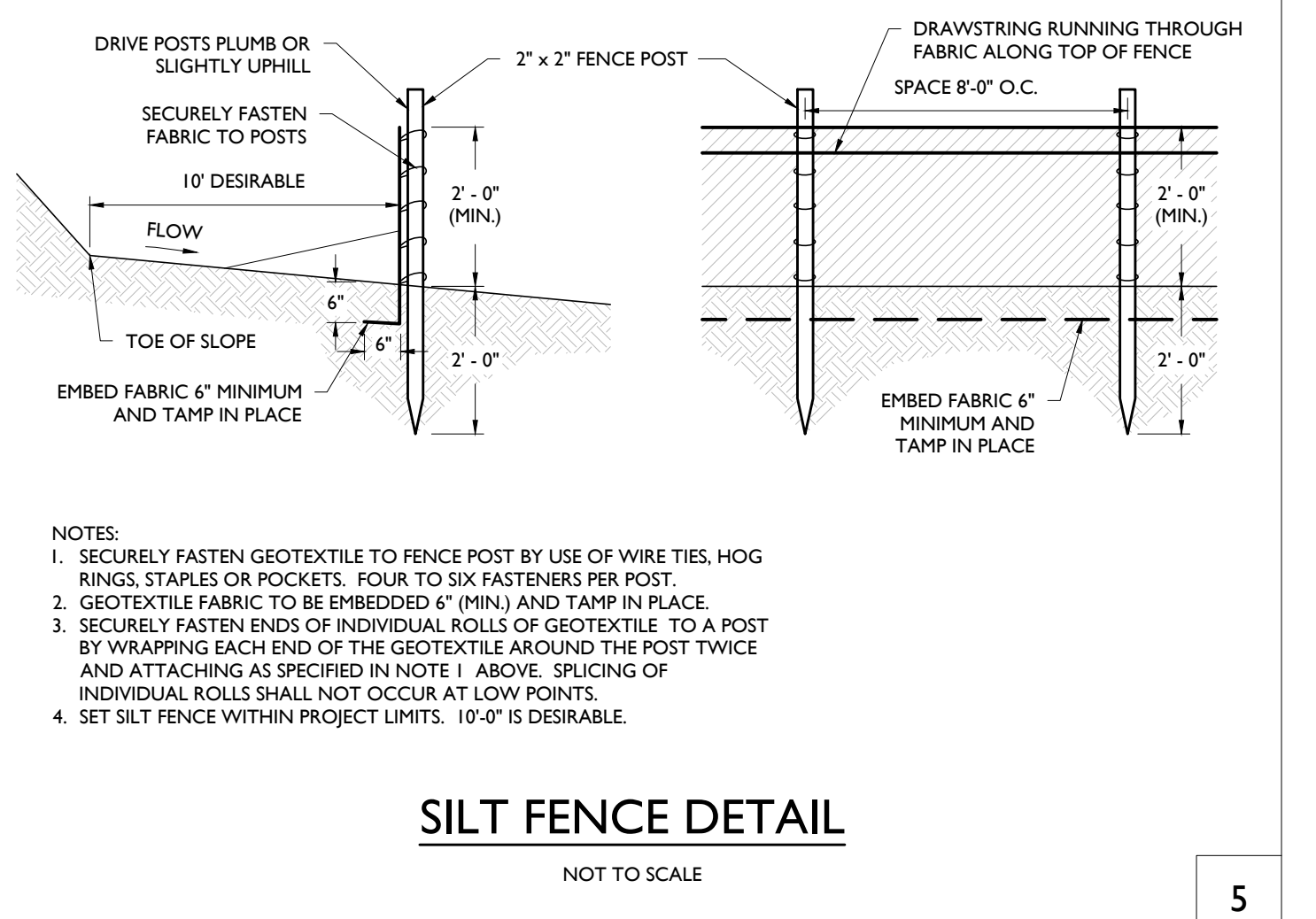
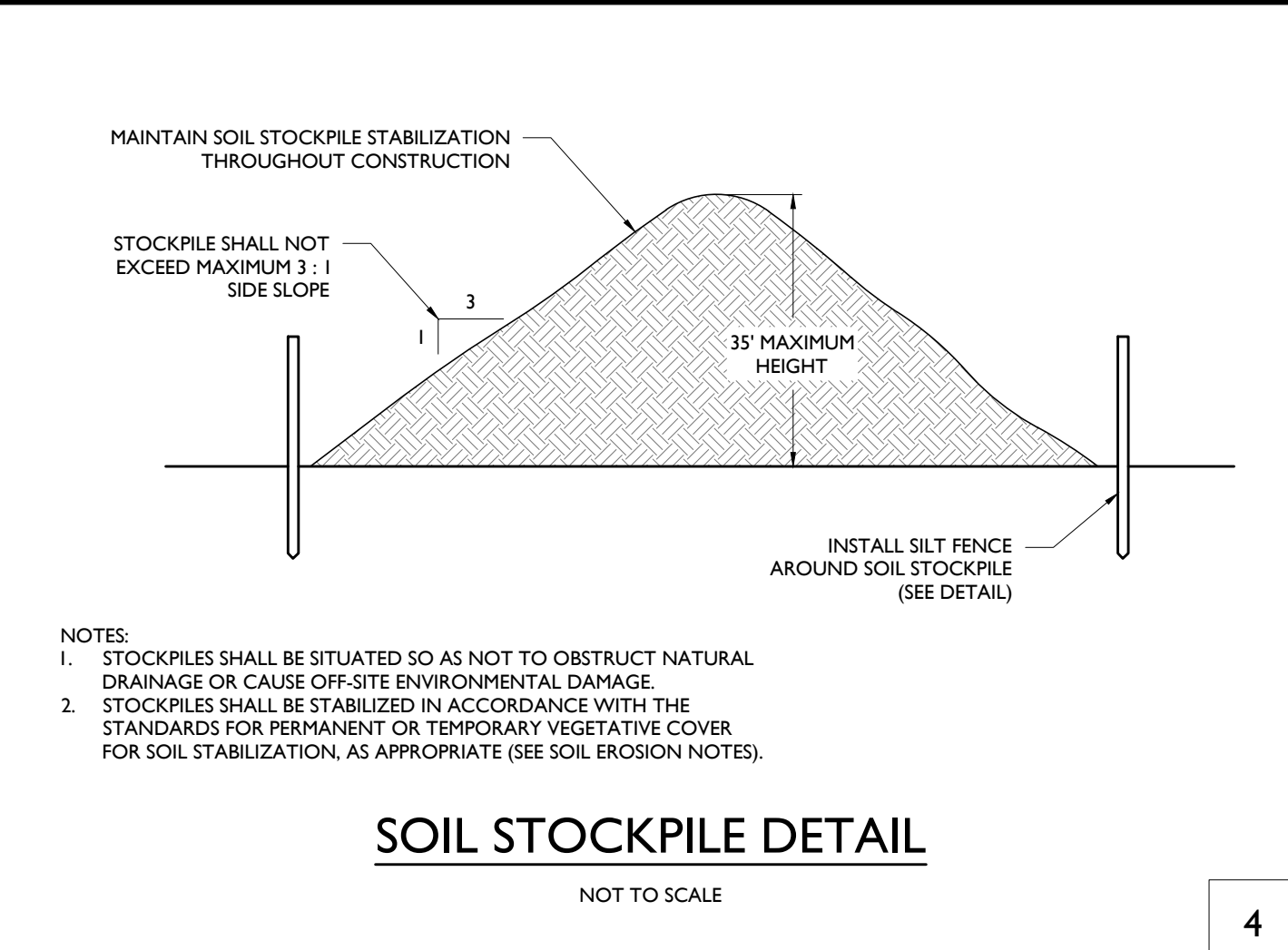
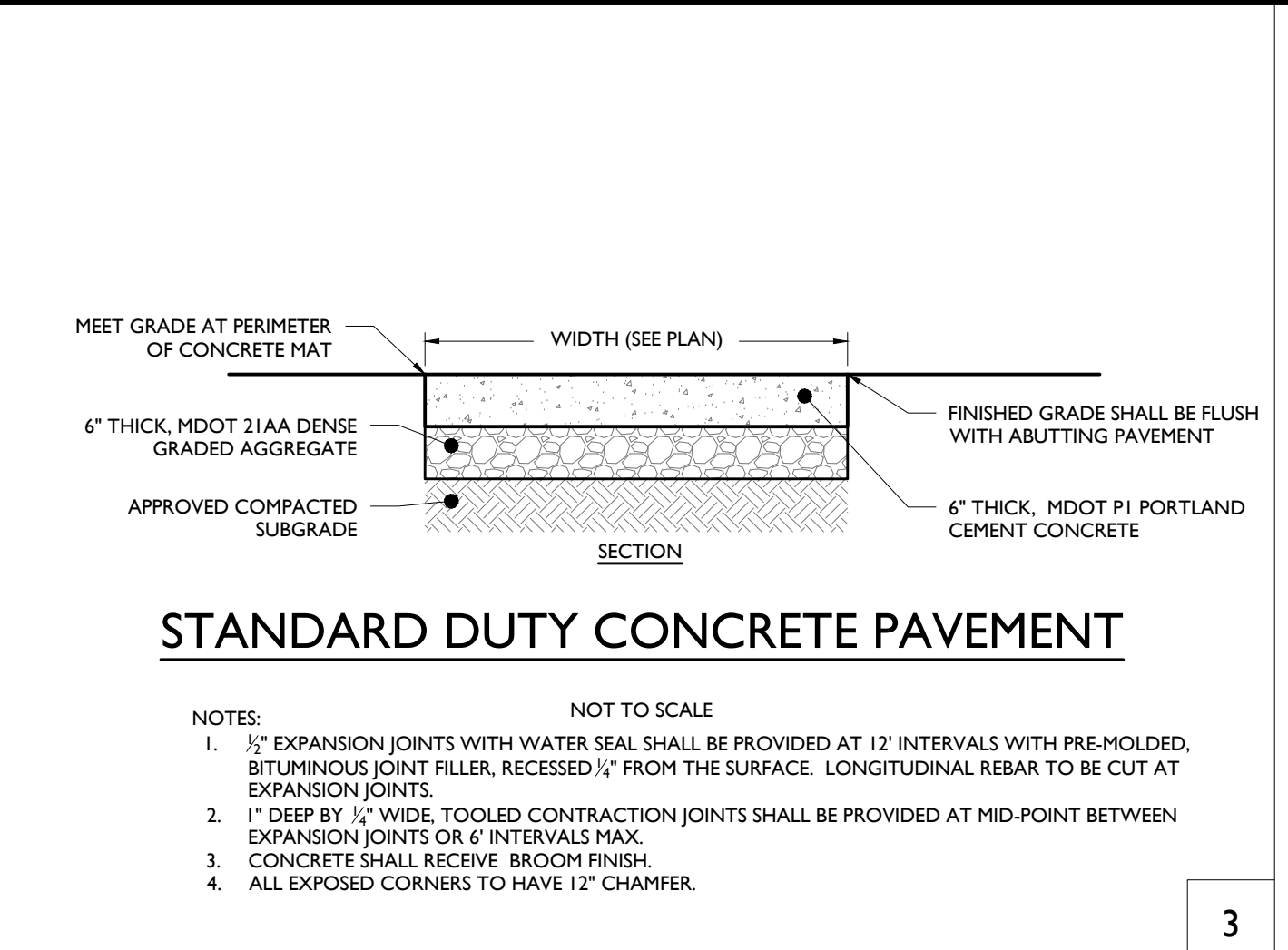
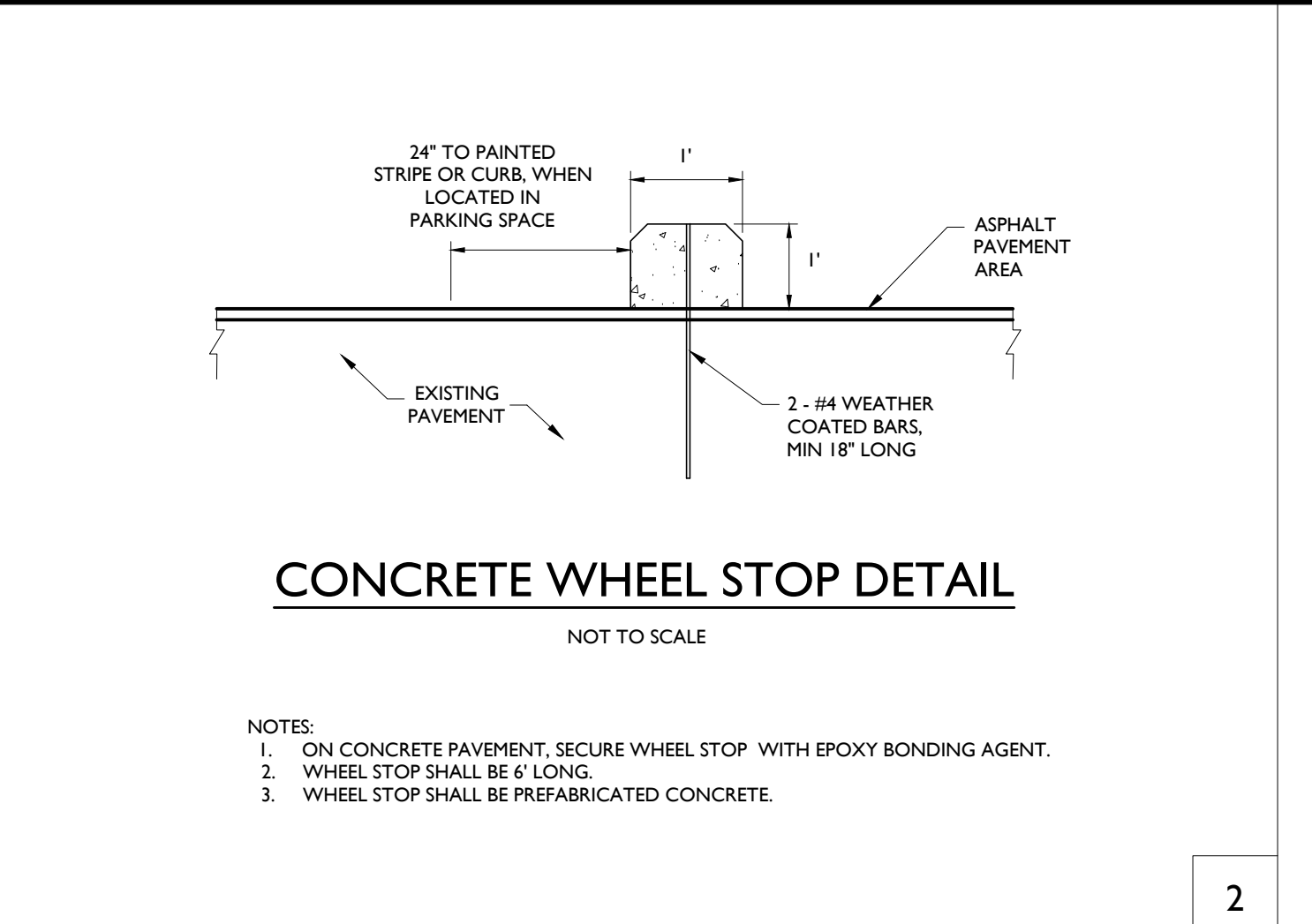
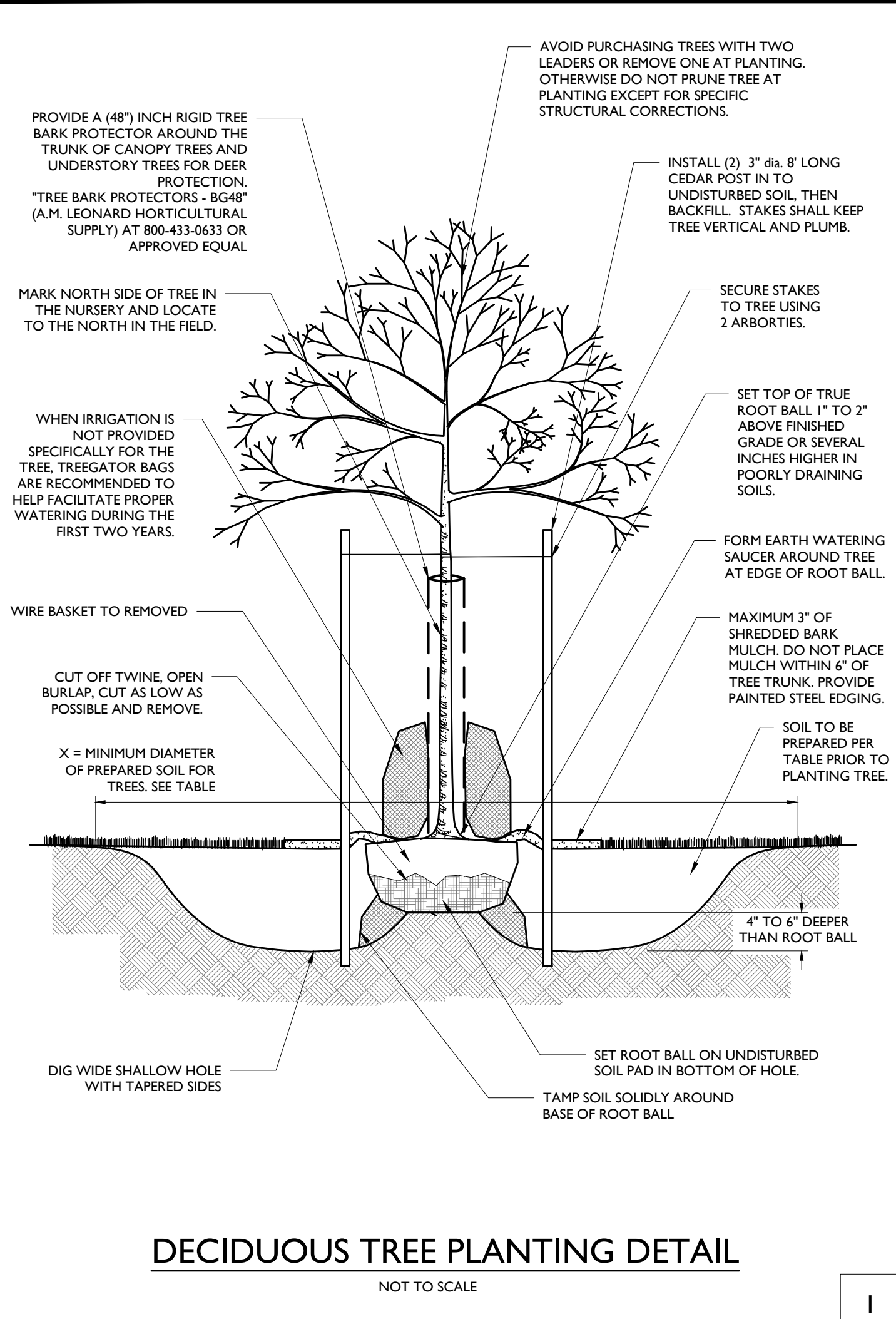
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MICHIGAN LICENSE No. 6201069428
LICENSED PROFESSIONAL ENGINEER

SCALE: AS SHOWN PROJECT ID: DET-220416

TITLE: CONSTRUCTION DETAILS

DRAWING: C-9



NO.	DATE	ISSUE	BY	DESCRIPTION
2	07/05/2023	JCIEM		FOR PRE-APPLICATION CONFERENCE
1	05/09/2023	JPIEM		FOR CLIENT REVIEW

NOT APPROVED FOR CONSTRUCTION

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WHITEWATER EXPRESS
CARWASH

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PARCEL ID: 4715-22-400-024
VACANT E-M36
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MICHIGAN LICENSE No. 6201069428
LICENSED PROFESSIONAL ENGINEER

SCALE: AS SHOWN PROJECT ID: DET-220416

TITLE:
CONSTRUCTION DETAILS

DRAWING:
C-11

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