WAYNE COUNTY DPS GENERAL NOTES

- 1. ALL WORK WITHIN THE WAYNE COUNTY ROAD RIGHT-OF-WAY (ROW) AND DRAIN EASEMENT SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND GENERAL SPECIFICATIONS, INCLUDING SOIL EROSION AND SEDIMENTATION CONTROL OF THE WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES, AND MDOT 2012 SPECIFICATIONS FOR CONSTRUCTION.
- THESE PLANS ARE NOT VALID WITHOUT ATTACHMENT OF THE WAYNE COUNTY PERMIT SPECIFICATIONS FOR CONSTRUCTION WITHIN THE ROAD ROW, PARKS, DRAIN EASEMENT OR SANITARY SEWER UNDER JURISDICTION OF THE WAYNE COUNTY (07/01/93) REVISED 12/15/2004.
- 3. A WAYNE COUNTY PERMIT ENGINEER MUST OBSERVE CONSTRUCTION / INSTALLATION OF THE PROPOSED SITE STORM WATER MANAGEMENT SYSTEM COMPONENTS (MANUFACTURED TREATMENT SYSTEM, UNDERGROUND DETENTION SYSTEM, AND OUTLET CONTROL STRUCTURE). CONTRACTOR SHALL NOTIFY THE WAYNE COUNTY PERMIT OFFICE AT (734) 595-6504 EXT. 2009 AT LEAST 72 HOURS PRIOR TO START OF CONSTRUCTION.

STATE OF MICHIGAN SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF MICHIGAN, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE CONSTRUCTION OF A NEW TACO BELL RESTAURANT LOCATED AT 37500 FORD ROAD, WESTLAND, MICHIGAN, 48185.

STATE OF MICHIGAN SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF MICHIGAN, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

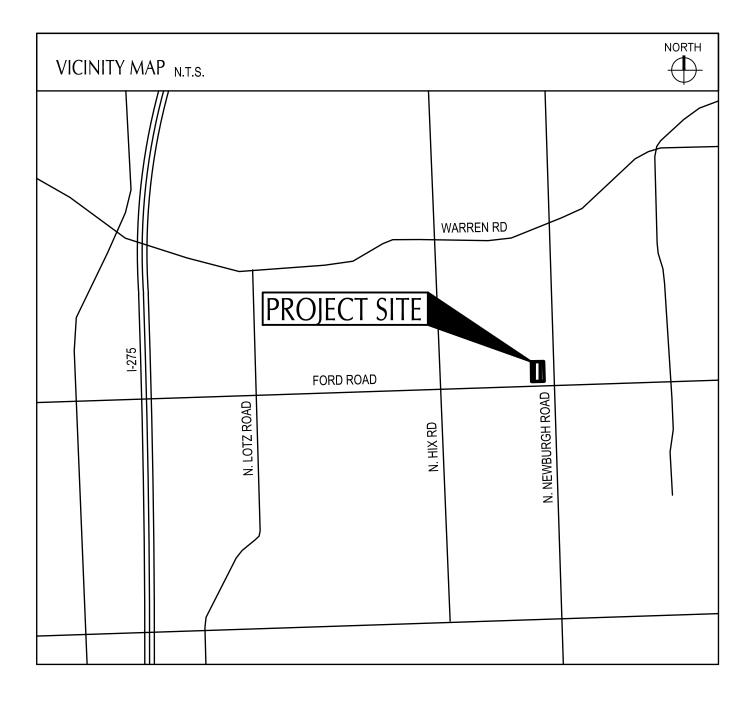
OWNER AND DEVELOPER

TACO BELL OF AMERICA, LLC 1900 COLONEL SANDERS LANE LOUISVILLE, KY 40213

LANDLORD MIKE KOZA 29200 NORTHWESTERN HIGHWAY, S 450 SOUTHFIELD, MI 48034

TACO FOR PLANS

37500 FORD ROAD WESTLAND, MI JULY 30, 2018



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APPROVALS

CITY ENGINEER

SANITARY ENGINEER

WATER DEPARTMENT

STORMWATER MANAGE

Μ	Ε	Ν	Т

DATE : _____

DATE :

DATE : _____

TACO

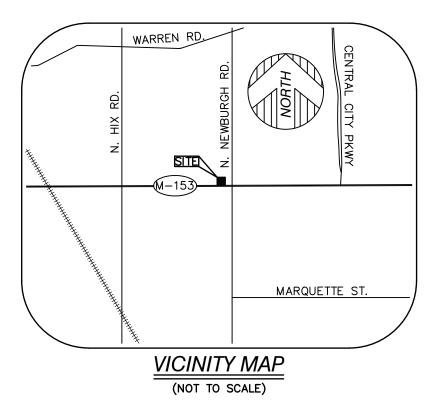
MODERN EXPLORER

T40 - OPEN KITCHEN

TITLE SHEET

TS-001





PARKING

NO PARKING MARKED ON SITE

PARCEL AREA

PARCEL 1 =	$15,000\pm$ SQUARE FEET = $0.344\pm$ ACRES
PARCEL 2 =	$9,440\pm$ SQUARE FEET = $0.217\pm$ ACRES
PARCEL $3 =$	$13,155\pm$ SQUARE FEET = $0.302\pm$ ACRES
TOTAL =	$37,595\pm$ SQUARE FEET = $0.863\pm$ ACRES

BASIS OF BEARING

NORTH 88'45'00" WEST, BEING THE SOUTH LINE OF THE SUBDIVISION AS PLATTED AND THE CENTER LINE OF FORD ROAD, AS DESCRIBED.

BENCHMARK

SITE BENCHMARK #1 ARROW ON HYDRANT, AT THE NORTHWEST CORNER OF FORD ROAD AND MORLEY ROAD. ELEVATION = 664.67' (NAVD88)

SITE BENCHMARK #2:

SET MAG NAIL ON EAST SIDE OF UTILITY POLE, ON WEST SIDE OF MORLEY, 200 FEET NORTH OF FORD ROAD. ELEVATION = 666.18' (NAVD88)

SITE BENCHMARK #3:

SET MAG NAIL ON NORTH SIDE OF GUY POLE, ON NORTH SIDE OF FORD ROAD, NEAR THE MIDDLE OF SITE. ELEVATION = 663.88' (NAVD88)

FLOOD NOTE

SUBJECT PARCEL LIES WITHIN: OTHER AREA (ZONE X): AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

AS SHOWN ON FLOOD INSURANCE RATE MAP: MAP NUMBER 26163C0208E, CITY OF WESTLAND - PANEL NUMBER 260739 0208 E, DATED FEBRUARY 2, 2012, PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

ZONING REGULATIONS

CB-1- LOW INTENSITY COMMERCIAL BUSINESS DISTRICT

- *MINIMUM LOT AREA 10,000 SQUARE FEET
- *MINIMUM LOT WIDTH 80 FEET
- *MINIMUM USABLE OPEN SPACE IN PERCENTAGE OF LOT AREA 40%
- *MINIMUM SETBACK REQUIREMENTS FOR PRINCIPAL AND ACCESSORY STRUCTURES
- FRONT 15 FEET
- SIDE 10 FEET REAR 20 FEET

BUILDINGS

*MAXIMUM BUILDING HEIGHT IN STORIES - 2 STORIES *MAXIMUM BUILDING HEIGHT IN FEET - 30 FEET

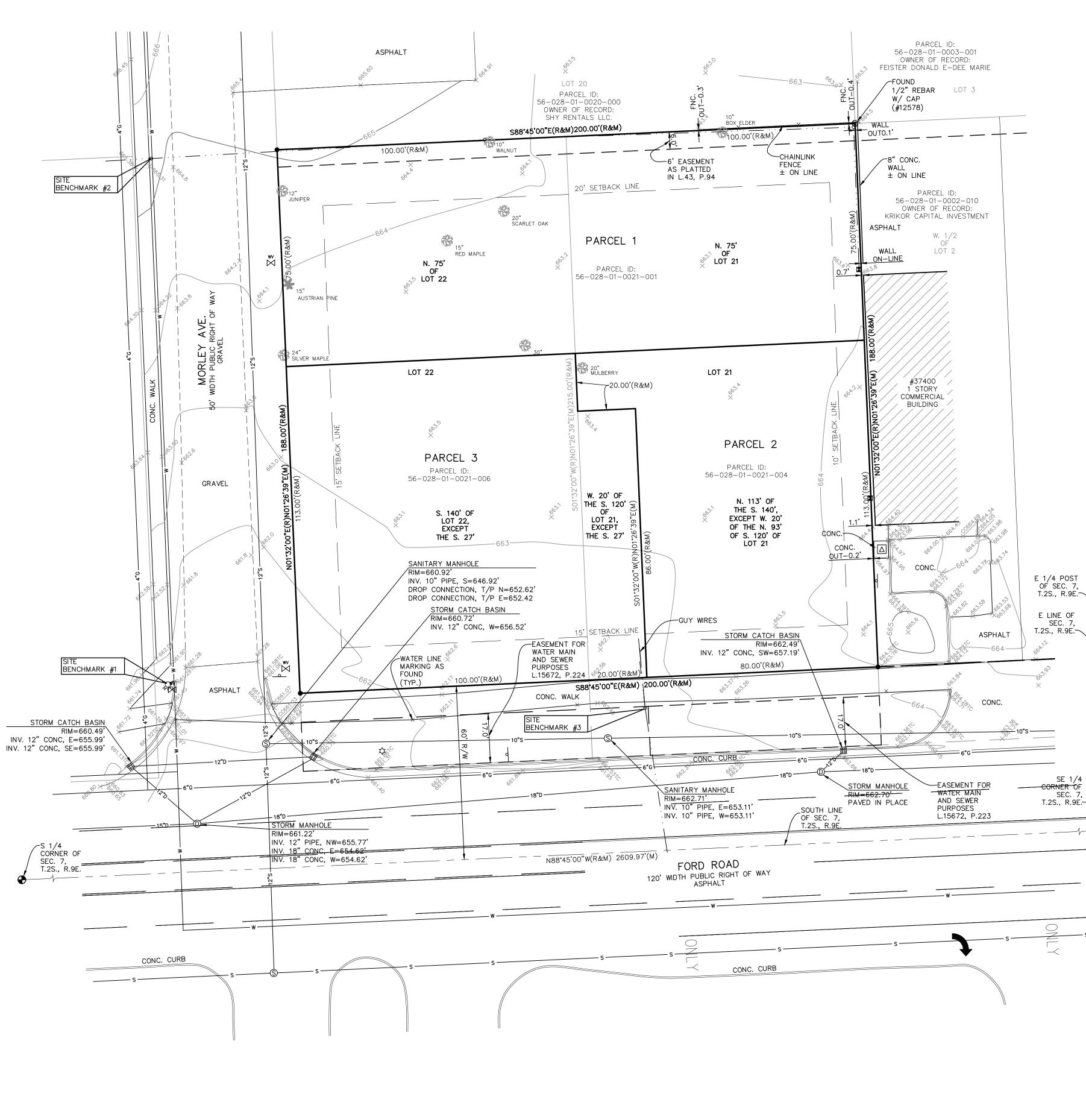
*MAXIMUM LOT COVERAGE - 40% FOR ALL PRINCIPAL AND ACCESSORY

NOTE: ALL ZONING INFORMATION IS TAKEN FROM THE CITY OF WESTLAND WEBSITE. ALL ZONING INFORMATION MUST BE VERIFIED FOR COMPLETENESS WITH CURRENT ZONING REGULATIONS.

LEGEND

EGEND	
•	SET 1/2" REBAR WITH CAP P.S. 32341
۲	FOUND MONUMENT (AS NOTED)
•	FOUND SECTION CORNER (AS NOTED)
(R&M)	RECORD AND MEASURED DIMENSION
(R)	RECORD DIMENSION
(M)	MEASURED DIMENSION
× ^{000.0}	GROUND POINT
	ELECTRIC RISER
	TRANSFORMER
0	UTILITY POLE
S	SANITARY MANHOLE
 	SQUARE CATCH BASIN
D	STORM DRAIN MANHOLE
	FIRE HYDRANT
	WATER VALVE
¢	LIGHTPOST/LAMP POST
- 	SINGLE POST SIGN
	DECIDUOUS TREE
	CONIFEROUS TREE
-10	PARCEL BOUNDARY LINE
	PLATTED LOT LINE
	SECTION LINE
	EASEMENT (AS NOTED)
	RIGHT-OF-WAY
	BUILDING
	BUILDING HATCH
	CONCRETE CURB
	EDGE OF CONCRETE (CONC.)
	EDGE OF ASPHALT (ASPH.)
	EDGE OF GRAVEL
×	
~	FENCE (AS NOTED)
<u> </u>	WALL (AS NOTED)
S	OVERHEAD UTILITY LINE
	SANITARY LINE
D	STORM LINE
w	WATER LINE
G	GAS LINE
	CONTOUR MAJOR
	CONTOUR MINOR

PAVEMENT MARKINGS



ALTA/NSPS LAND TITLE SURVEY



GRAPHIC SCALE

(IN FEET) 1 inch = 20 ft.

PROPERTY DESCRIPTION

LAND SITUATED IN THE STATE OF MICHIGAN, COUNTY OF WAYNE, CITY OF WESTLAND IS DESCRIBED AS FOLLOWS:

PARCEL 1: THE NORTH 75 FEET OF LOTS 21 AND 22, WARREN JUNCTION SUBDIVISION, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 43, PAGE 94 OF PLATS, WAYNE COUNTY RECORDS. TAX NUMBER: 56-028-01-0021-001

PARCEL 2: THE NORTH 113 FEET OF THE SOUTH 140 FEET OF LOT 21, EXCEPT THE WEST 20 FEET OF THE NORTH 93 FEET OF THE SOUTH 120 FEET THEREOF. WARREN JUNCTION SUBDIVISION, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 43, PAGE 94 OF PLATS, WAYNE COUNTY RECORDS.

TAX NUMBER: 56-028-01-0021-004

PARCEL 3: THE WEST 20 FEET OF THE SOUTH 120 FEET OF LOT 21, EXCEPT THE SOUTH 27 FEET THEREOF, ALSO THE SOUTH 140 FEET OF LOT 22, EXCEPT THE SOUTH 27 FEET THEREOF, WARREN JUNCTION SUBDIVISION, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 43, PAGE 94 OF PLATS, WAYNE COUNTY RECORDS.

TAX NUMBER: 56-028-01-0021-006

ALSO DESCRIBED AS: LOTS 21 AND 22, EXCEPT THE SOUTH 27 FEET THEREOF, WARREN JUNCTION SUBDIVISION, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 43, PAGE 94 OF PLATS, WAYNE COUNTY RECORDS.

TITLE REPORT NOTE

ONLY THOSE EXCEPTIONS CONTAINED WITHIN THE CHICAGO TITLE OF MICHIGAN, CHICAGO TITLE INSURANCE COMPANY COMMITMENT NO. 821038693NTS, DATED SEPTEMBER 5, 2017, AND RELISTED BELOW WERE CONSIDERED FOR THIS SURVEY. NO OTHER RECORDS RESEARCH WAS PERFORMED BY THE CERTIFYING SURVEYOR.

3. EASEMENT (FOR WATER AND SEWER MAIN PURPOSES) VESTED IN THE TOWNSHIP OF NANKIN RECORDED IN LIBER 15672, PAGE 223. (AS SHOWN)

4. EASEMENT (FOR WATER AND SEWER MAIN PURPOSES) VESTED IN THE TOWNSHIP OF NANKIN RECORDED IN LIBER 15672, PAGE 224. (AS SHOWN) 5. 6 FOOT EASEMENT OVER SUBJECT PROPERTY AS SHOWN ON THE RECORDED PLAT, AS RECORDED IN LIBER 43 OF PLATS, PAGE 94. (AS

SURVEYOR'S NOTES

SHOWN)

E 1/4 POST

OF SEC. 7,

T.2S., R.9E.~

E LINE OF

SEC.

T.2S., R.9E.~

SE 1/4

- CORNER OF

SEC

T.2S., R.9E.—

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

2. THERE ARE NO DELINEATED WETLANDS ON SITE AT TIME OF SURVEY.

SURVEYOR'S CERTIFICATION

TO TACO BELL OF AMERICA, LLC, A DELAWARE LIMITED LIABILITY COMPANY, CHICAGO TITLE OF MICHIGAN, INC., CHICAGO TITLE INSURANCE COMPANY AND GPD GROUP:

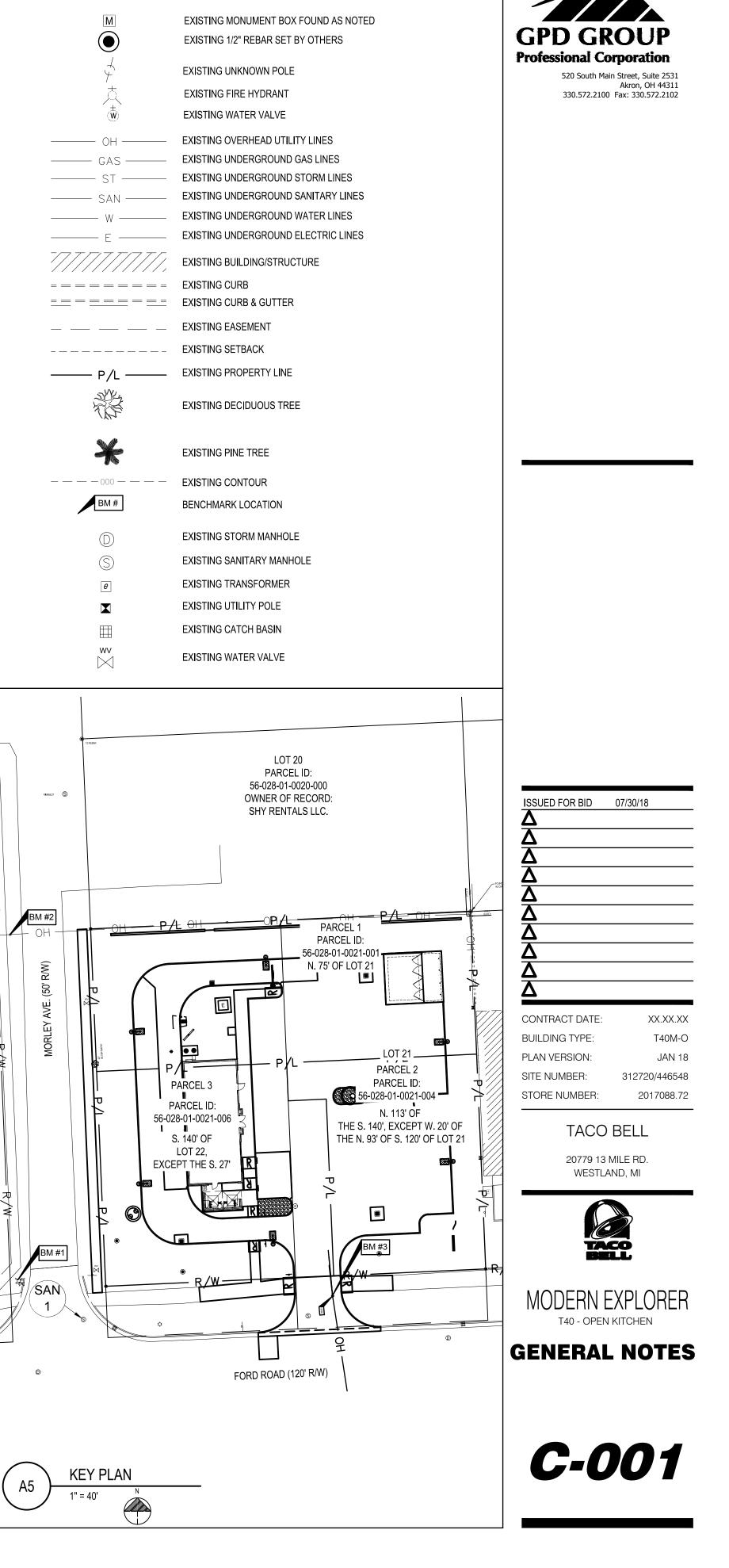
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDED ITEMS 1, 2 3, 4, 5, 6A, 6B, 7A, 7B1, 8, 9, 10A, 10B, 11, 13, 18, 19, AND 20 OF TABLE A, THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 1, 2017.

DATE OF PLAT OR MAP: (12/07/17)

	BELL					
PARC	EL ADDRESS: 37500 FORD	RD. WESTLAND, MI				
PARC	EL AREA: 37595± S.F.					
ENTIT	Y NUMBER: 446548					
SITE	NUMBER: 312720					
SCALE: 1"=20'	DRAWN BY: DB	SHEET: 1 OF 1				
	CHECKED BY: DD	GPD JOB NO.:				
DATE: 12/8/17						
DATE: 12/8/17						

DEMOLITION NOTES		GENERAL PLAN NOTES
 DEMOLITION INCLUDES THE FOLLOWING: 1.A. TRANSFER BENCHMARK CONTROL TO NEW LOCATIONS OUTSIDE THE DISTURBED AREA PRIOR TO COMMENCING DEMOLITION OPERATIONS (WHEN APPLICABLE). 1.B. DEMOLITION AND REMOVAL OF SITE IMPROVEMENTS. 1.C. DISCONNECTING, CAPPING OR SEALING, AND ABANDONING/REMOVING SITE UTILITIES IN DIAGE (MUNICULE) (CONDUCTION) 	1.	PRIOR TO STARTING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
 PLACE (WHICHEVER IS APPLICABLE). REMOVE AND LEGALLY DISPOSE OF ITEMS EXCEPT THOSE INDICATED TO BE REINSTALLED, SALVAGED, OR TO REMAIN. REMOVE, REINSTALL, AND RELOCATE: REMOVE ITEMS INDICATED; CLEAN, SERVICE, AND 	2.	ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AN THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY. THE SOILS REPORT (TO BE COMPLETED AT A LATER DATE AND TIME) AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR
 OTHERWISE PREPARE THEM FOR REUSE; STORE AND PROTECT AGAINST DAMAGE. REINSTALL ITEMS IN LOCATIONS INDICATED. 4. EXISTING TO REMAIN: PROTECT ITEMS INDICATED TO REMAIN AGAINST DAMAGE AND SOILING THROUGHOUT CONSTRUCTION. WHEN PERMITTED BY THE ENGINEER, ITEMS MAY BE REMOVED TO A SUITABLE, PROTECTED STORAGE LOCATION THROUGHOUT CONSTRUCTION 	3.	SHALL NOTIFY THE CONSTRUCTION/PROJECT MANAGER OF ANY DISCREPANCY BETWEEN SOILS REPORT (TO BE COMPLETED AT A LATER DATE AND TIME) AND PLANS, ETC. THE A.L.T.A. SURVEY BY KEM-TEC & ASSOC., DATED 12/8/2017 SHALL BE CONSIDERED A PART OF THESE PLANS. THE G.C. IS RESPONSIBLE FOR LOCATING IMPROVEMENTS PER THESE PLANS.
 AND THEN CLEANED AND REINSTALLED IN THEIR ORIGINAL LOCATIONS. 5. CONTRACTOR SHALL SCHEDULE DEMOLITION ACTIVITIES WITH THE CONSTRUCTION/PROJECT MANAGER INCLUDING THE FOLLOWING: 5.A. DETAILED SEQUENCE OF DEMOLITION AND REMOVAL WORK, WITH STARTING AND ENDING DATES FOR EACH ACTIVITY. 5.B. DATES FOR SHUTOFF, CAPPING, AND CONTINUATION OF UTILITY SERVICES. 5.C. IDENTIFY AND ACCURATELY LOCATE UTILITIES AND OTHER SUBSURFACE STRUCTURAL, ELECTRICAL, OR MECHANICAL CONDITIONS. 6. REGULATORY REQUIREMENTS: COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE STARTING DEMOLITION. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION. 7. STORAGE OR SALE OF REMOVED ITEMS OR MATERIALS ON-SITE WILL NOT BE PERMITTED. 	4.	THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THE PLAN ARE BASED ON FIELD SURVEYS AND CITY RECORDS. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR FACILITIES PRIOR TO STARTING CONSTRUCTION. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY HIS WORK FORCE ALL DIMENSIONS, GRADES, AND UTILITY LOCATIONS SHOWN ON THESE PLANS WERE BASED ON A.L.T.A SURVEY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIO TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY CONSTRUCTION/PROJECT MANAGER IF AN DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO INFORMATION SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
8. OBTAIN APPROVED BORROW SOIL MATERIALS OFF-SITE WHEN SUFFICIENT SATISFACTORY	6.	ALL WORK WITHIN THE RIGHTS OF WAY SHALL BE IN ACCORDANCE WITH THE GOVERNING JURISDICTION AND SPECIFICATIONS.
SOIL MATERIALS ARE NOT AVAILABLE ON-SITE.MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM	7.	CONTRACTOR SHALL COORDINATE ANY MAINTENANCE OF TRAFFIC WITH THE OWNER'S REPRESENTATIVE AND THE LOCAL JURISDICTION PRIOR TO CONSTRUCTION.
AGAINST DAMAGE THROUGHOUT CONSTRUCTION OPERATIONS. 9.A. DO NOT INTERRUPT EXISTING UTILITIES SERVING OCCUPIED OR OPERATING FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY ENGINEER AND AUTHORITIES HAVING JURISDICTION. PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXISTING UTILITIES, AS ACCEPTABLE TO OWNER AND TO GOVERNING AUTHORITIES.	8.	CONTRACTOR SHALL AT ALL TIMES ENSURE THAT SWPP MEASURES PROTECTING EXISTING DRAINAGE FACILITIES BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY PHASE OF THE SITE CONSTRUCTION OR LAND ALTERATION. (SEE SHEET C-131 TO C-134).
 DO NOT START DEMOLITION WORK UNTIL UTILITY DISCONNECTING AND SEALING HAVE BEEN COMPLETED AND VERIFIED IN WRITING. UTILITY REQUIREMENTS: LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF INDICATED UTILITY SERVICES SERVING THE SITE. ARRANGE TO SHUT OFF AND CAP UTILITIES WITH UTILITY COMPANIES AND FOLLOW THEIR RESPECTIVE UTILITY KILL AND CAP POLICIES. 	9.	UPON COMPLETION OF PROJECT, CONTRACTOR SHALL CLEAN THE PAVED AREAS PRIOR TO REMOVAL OF TEMPORARY SEDIMENT CONTROLS, AS DIRECTED BY THE CITY AND/OR CONSTRUCTION/PROJECT MANAGER. IF POWER WASHING IS USED, NO SEDIMENT LADEN WATER SHALL BE WASHED INTO THE STORM SYSTEM. ALL SEDIMENT LADEN MATERIAL ON PAVEMENT OR WITHIN THE STORM SYSTEM SHALL BE COLLECTED AND REMOVED FROM THE SITE AT CONTRACTOR'S EXPENSE. THE CONTRACTOR WILL, UPON BECOMING AWARE OF SUBSURFACE OR LATENT PHYSICAL
 CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN. ENSURE SAFE PASSAGE OF PEOPLE AROUND DEMOLITION AREA. 12.A. ERECT TEMPORARY PROTECTION, BARRICADES AS PER LOCAL GOVERNING AUTHORITIES. 12.B. PROTECT EXISTING SITE IMPROVEMENTS AND APPURTENANCES TO REMAIN. 		CONDITIONS DIFFERING FROM THOSE DISCLOSED BY THE ORIGINAL SOIL EXPLORATION WORK, PROMPTLY NOTIFY THE OWNER VERBALLY TO PERMIT VERIFICATION OF THE CONDITIONS AND IN WRITING, AS TO THE NATURE OF THE DIFFERING CONDITIONS. NO CLAIN BY THE CONTRACTOR FOR ANY CONDITIONS DIFFERING FROM THOSE ANTICIPATED IN THE PLAN AND SPECIFICATIONS AND DISCLOSED BY THE SOIL STUDIES WILL BE ALLOWED UNLES THE CONTRACTOR HAS SO NOTIFIED THE OWNER, VERBALLY AND IN WRITING AS REQUIRED ABOVE, OF SUCH DIFFERING CONDITIONS.
 EXPLOSIVES: USE OF EXPLOSIVES WILL NOT BE PERMITTED. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT 	11.	THESE PROJECT CONSTRUCTION DOCUMENTS SHALL NOT CONSTITUTE A CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR THE ENGINEER AND THE SUBCONTRACTOR.
 SURFACES AND AREAS. CLEAN ADJACENT BUILDINGS AND IMPROVEMENT OF DUST, DIRT, AND DEBRIS CAUSED BY DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE 	12.	THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION OR SAFETY MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES UTILIZED IN CONSTRUCTION BY THE
 START OF DEMOLITION. 16. DAMAGES: PROMPTLY REPAIR DAMAGES TO ADJACENT FACILITIES CAUSED BY DEMOLITION OPERATIONS AT THE CONTRACTORS COST. 17. GENERAL: PROMPTLY DISPOSE OF DEMOLISHED MATERIALS. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE. 	13.	CONTRACTOR OR SUBCONTRACTORS. THE CONTRACTOR SHALL RUN AN INDEPENDENT VERTICAL CONTROL TRAVERSE TO CHECK BENCHMARKS AND A HORIZONTAL CONTROL TRAVERSE THROUGH THE REFERENCED PROJECT CONTROL DATUM TO CONFIRM GEOMETRIC DATA. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
 BURNING: DO NOT BURN DEMOLISHED MATERIALS. FILLING BELOW-GRADE AREAS: COMPLETELY FILL BELOW-GRADE AREAS AND VOIDS RESULTING FROM DEMOLITION OF BUILDINGS AND PAVEMENTS WITH SOIL MATERIALS ACCORDING TO REQUIREMENTS PER SOILS REPORT (TO BE COMPLETED AT A LATER DATE AND TIME) (TO BE COMPLETED AT A LATER DATE AND TIME). CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO FILLING ANY AREAS. CONTRACTOR SHALL CONTACT ENGINEER TO OBSERVE FILL PROCEDURES. 	1.	SITE PLAN NOTES ALL DIMENSIONS AND RADII ARE GIVEN TO FACE OF CURB UNLESS OTHERWISE NOTED.
 CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED AND USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER ADJACENT OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM OWNER AND AUTHORITIES HAVING JURISDICTION. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS IF REQUIRED BY GOVERNING REGULATIONS. 	2.	ALL EXTERIOR SITE SPECIFIC PORTLAND CONCRETE CEMENT (I.E. SIDEWALK, PAVEMENT OR CURBING) SHALL MEET THE LATEST EDITION OF THE STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR MATERIALS USED, MIXING, TRANSPORTATION, PLACEMENT AND CURING. THE MINIMUM STRENGTH FOR PCC ALLOWED IS 4000 PSI AT 28 DAY STRENGTH. AIR ENTRAINMENT SHALL BE IN ACCORDANCE WITH DOT SPECIFICATIONS FOR EXTERIOR CONCRETE. (CONTRACTOR SHALL REFER TO DETAILS WITHIN THIS DRAWING SET FOR ANY VARIATIONS TO THIS SPECIFICATION)."
21. CONTRACTOR TO SAWCUT EXISTING PAVEMENT TO REMAIN PRIOR TO CURB, GUTTER, PAVEMENT, ETC REMOVAL.	3.	ALL EXTERIOR CURB SHALL HAVE EXPANSION JOINTS AT 100'-0" O.C, AND CONTROL JOINTS AT 10'-0" O.C. (UNLESS OTHERWISE SPECIFIED ON THE DETAIL SHEETS) ALL EXTERIOR WALK SHALL HAVE EXPANSION JOINTS AT 20'-0" O.C. AND CONTROL JOINTS @ 5'-0" MAX. O.C. (UNLESS OTHERWISE SPECIFIED ON THE DETAIL SHEETS).
	4.	ALL CONCRETE SHALL HAVE A MEDIUM TRANSVERSE FINISH. PLAN REPRODUCTION WARNING THE PLANS HAVE BEEN CREATED ON ANSI D (22"x34") SHEETS, REFER TO GRAPHIC SCALE.

		GRADING PLAN NOTES	UTILITY NOTES (CONTINUED)	
Ē	1.	BEFORE STARTING GRADING OPERATIONS, SEE SHEET C-131 THROUGH C-134, STORMWATER POLLUTION PREVENTION PLAN NOTES AND DETAILS (SWPP).	SANITARY SEWER NOTES	
ND	2.	BEFORE STARTING GRADING OPERATIONS, SEE LANDSCAPE PLAN L-101 AND SOILS REPORT (TO BE COMPLETED AT A LATER DATE AND TIME) FOR TREATMENT OF EXISTING GRADE.	 SANITARY SEWER LATERAL INVERT AT BUILDING SHALL BE A MINIMUM OF 5.00' BELOW FINISH FLOOR. CLEAN-OUTS TO BE INSTALLED AT ALL PIPE BENDS AND ANGLES, UNLESS A MANHOLE IS 	
AND S	3.	PRIOR TO SITE CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL INSTALL ALL SWPP MEASURES TO PROTECT EXISTING DRAINAGE FACILITIES. CONTRACTOR SHALL PREVENT	 CLEAN-OUTS TO BE INSTALLED AT ALL FIPE BENDS AND ANGLES, UNLESS A MAINHOLE IS INDICATED. THE CONTRACTOR SHALL HIRE A LOCAL PLUMBER LICENSED WITH THE LOCAL SANITARY 	
OR .RT	4.	SILTATION FROM LEAVING THE SITE AT ALL TIMES.	JURISDICTION TO MAKE ALL CONNECTIONS FROM THE BUILDING TO THE EXISTING 12" MAIN. CONTRACTOR SHALL SECURE A SANITARY SEWER CONNECTION PERMIT PRIOR TO ANY CONSTRUCTION. THE CONTRACTORS PRICE FOR SANITARY SEWER INSTALLATION SHALL INCLUDE ALL FEES AND APPURTENANCES REQUIRED BY THE LOCAL SANITARY JURISDICTION TO PROVIDE A COMPLETE WORKING SERVICE. COORDINATE ALL WORK WITH MIKE DITTMAR AT (734) 467-3210 AT THE CITY OF WESTLAND DEPARTMENT OF PUBLIC SERVICE WATER AND	
G I G I H H K OF	 5. 6. 7. 8. 9. 10. 	SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS GET FORTH IN THE SOLS REPORT COMPLETED BY INTERTEK-PSI, DATED JANUARY 26, 2018 AND REFERENCED IN THIS PLAN SET. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL SOT, YIELDING OR UNISUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS AS SPECIFIED IN THE SOLS REPORT (TO BE COMPLETED AT A LATER DATE AND TIME, UNLESS OTHERWISE SPECIFIED IN THE PLANS, SPECIFICATIONS, OR SOLS REPORT (TO BE COMPLETED AT A LATER DATE AND TIME) THE SITE GRADING, EXCAVATION, AND EMBANKMENT SHALL BE IN ACCORDANCE WITH THE STATE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.	 SEWER DIVISION. ALL SANITARY PIPE MATERIAL SHALL BE 6" PVC, SDR 35 CONFORMING TO ASTM D 3034, WITH JOINTS PER ASTM 3212. WATER NOTES WATER SERVICE MATERIALS SHALL BE COPPER TYPE "K" UNLESS OTHERWISE NOTED ON PLANS. DIAMETER SHALL BE AS NOTED ON THESE PLANS (SHEET C-141) AND SHALL BE INSTALL BE AS NOTED ON THESE PLANS (SHEET C-141) AND SHALL BE INSTALLED WITH A MINUM COVER OF 24" COR BELOW ROST UNE, WHICHEVER IS GREATER. CONSTRUCTION AND MATERIALS PROVIDED BY THE WATER COMPANY: TAP MAIN. FURNISH AND INSTALL CURB STOP & BOX AND WATER METER COOSTRUCTION AND MATERIALS PROVIDED BY THE WATER COMPANY: TAP MAIN. FURNISH AND INSTALL CURB STOP & BOX AND WATER METER COOSTRUCTION AND MATERIALS PROVIDED BY THE CONTRACTOR: 	
		UTILITY NOTES	3. CONTRACTOR SHALL COORDINATE THE NUMBER OF LINES REQUIRED WITH THE	
s s.C.	1. 2. 3.	VERAL UTILITY NOTES CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES IMMEDIATELY AFTER BID IS AWARDED AND ENSURE THE UTILITY COMPANIES HAVE THE ESSENTIALS REQUIRED FOR COMPLETE SERVICE INSTALLATION. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGER OF ANY TIME FRAMES ESTABLISHED BY UTILITY COMPANIES WHICH WILL NOT MEET OPENING DATE. CONTRACTOR SHALL VERIFY THE SIZE, LOCATION, INVERT ELEVATION, AND CONDITION OF EXISTING UTILITIES WHICH ARE INTENDED TO BE UTILIZED AS A CONNECTION POINT FOR ALL PROPOSED UTILITIES (SEE SHEET C-140 AND C-141), PRIOR TO ANY CONSTRUCTION. CONTRACTOR TO ENSURE EXISTING UTILITIES ARE IN GOOD CONDITION AND FREE FLOWING (IF APPLICABLE). IF ELEVATIONS, SIZE, OR LOCATION DIFFER FROM WHAT IS SHOWN ON SHEET C-140 AND C-141, CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGER IMMEDIATELY. WHERE PLANS PROVIDE FOR PROPOSED WORK TO BE CONNECTED TO, OR CROSS OVER AN EXISTING SEWER OR UNDERGROUND UTILITY. THE CONTRACTOR SHALL LOCATE THE PROPOSED WORK, IF II S DETEMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE RESULTS IN A CHANGE IN THE PLAN, THE CONSTRUCTION MANAGER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED WORK WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY. PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT ITEM. WRE SEWER NOTES ALL STORM SEWER PIPE 12" OR GREATER IN DIAMETER SHALL BE C76 CLASS IV REINFORCED CONCRETE PIPE (UNLESS OTHERWISE NOTED). STORM SEWER LESS THAN 12" IN DIAMETER SHALL BE PVC, SDR 35, PER ASTM D 3034 AND JOINTS PER ASTM D 3212 (OR APPROVED EQUAL). THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRENCHING, BACKFILLING AND PIPE INSTALLATION, PIPE MATERIAL AND TAP CONNECTION. COORDINATE ALL WORK WITH WAYNE	 CONSTRUCTION/ PROJECT MANAGER. NATURAL GAS NOTES CONSTRUCTION AND MATERIALS PROVIDED BY THE GAS COMPANY: TAP MAIN. FURNISH AND INSTALL SERVICE FROM TAP TO BUILDING. ALL TRENCHING AND BACKFILLING. FURNISH AND INSTALL METER. COORDINATE ALL WORK WITH DTE ENERGY @ (800) 338-0178. CONSTRUCTION AND MATERIALS PROVIDED BY THE CONTRACTOR: FURNISH AND INSTALL SERVICE FROM METER TO BUILDING AND THROUGHOUT THE BUILDING. FURNISH AND INSTALL SERVICE FROM METER TO BUILDING AND THROUGHOUT THE BUILDING. CONTRACTOR SHALL INCLUDE ALL FEES REQUIRED BY THE GAS COMPANY TO PROVIDE A COMPLETE WORKING SERVICE. CABLE NOTES INSTALL 4" CABLE TVSS CONDUIT PER CITY/VILLAGE, STATE OR NEC CODE, WHICHEVER IS MORE STRINGENT (FOR FUTURE USE). SEE ELECTRICAL SHEETS FOR DETAILS. TERMINATE CABLE CONDULT AT RIGHT-OF-WAY. PROVIDE END CAP AND NOTE LOCATION ON AS-BUILT DRAWINGS. 	R/W
	3. 4.	COUNTY DEPARTMENT OF PUBLIC SERVICE, ENGINEERING DIVISION - PERMIT OFFICE, ALI ALJAWAD @ 734-595-6504 x 2079. ALL DRAINAGE STRUCTURES AT PAVEMENT SUMPS SHALL HAVE FINGER DRAINS PER SHEET C-503. ALL DRAINAGE STRUCTURES WITHIN PROPOSED PAVEMENTS SHALL HAVE CONCRETE COLLAR, SEE SHEET C-503.		



<u>EXISTING</u>

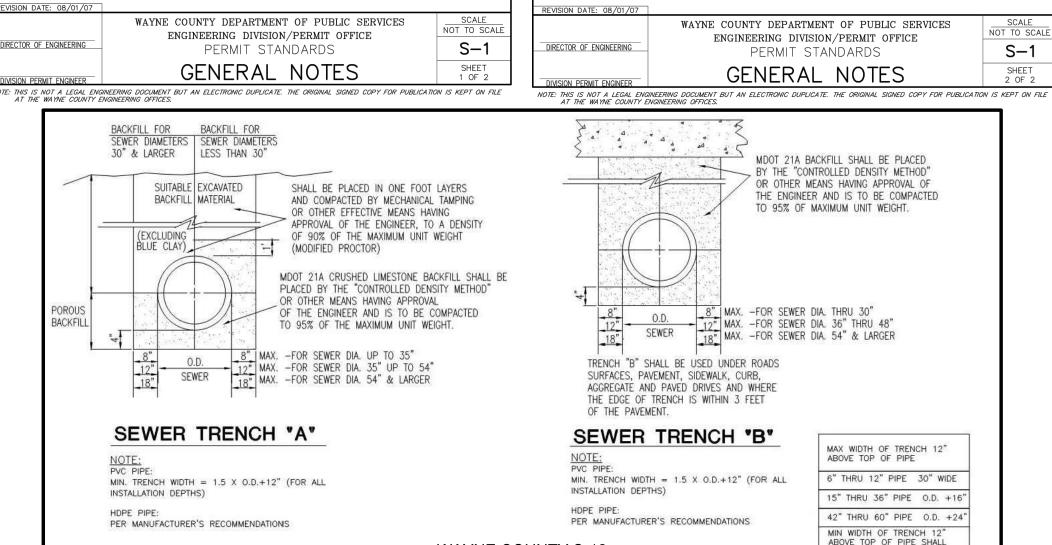
-

	WAYNE COUNTY GENERAL NOTES	
	ALL WORK WITHIN WAYNE COUNT ROAD RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND GENERAL SPECIFICATIONS, INCLUDING SOIL EROSION AND SEDIMENTATION CONTROL OF WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES, AND MDOT 2012 SPECIFICATIONS FOR CONSTRUCTION.	1. All materials and w Specifications which of Transportation (modified by Wayne
	THESE PLANS ARE NOT VALID WITHOUT ATTACHMENT OF THE WAYNE COUNTY PERMIT SPECIFICATIONS FOR CONSTRUCTION WITHIN ROAD RIGHT-OF-WAY, PARKS, DRAIN EASEMENTS OR SANITARY SEWER EASEMENTS UNDER THE JURISDICTION OF WAYNE COUNTY (07/01/93) REVISED 12/15/2004.	 Paving Standard Pl Use of reinforcement A Transverse End there is an interrup
	RESTORE ALL DISTURBED AREAS WITHIN THE COUNTY ROAD RIGHT-OF-WAY WITH EITHER SEED MIX THM AND MULCH OVER 3" TOPSOIL OR SOD OVER 2" TOPSOIL.	Transverse End of accordance with cu Concrete Pavement
	TRAFFIC SHALL BE MAINTAINED IN BOTH DIRECTIONS AT ALL TIMES, SIGNING, BARRICADES, ETC. SHALL BE IN CONFORMANCE WITH MICHIGAN'S MANUAL OF UNIFORM TRAFFIC CONTROL	This note applies t 4. When it is anticipa endings will be pro
	DEVICES. CONTRACTOR SHALL NOTIFY WAYNE COUNTY THREE (3) BUSINESS DAYS (MINIMUM) PRIOR TO START OF CONSTRUCTION. CONTACT WAYNE COUNTY PERMIT OFFICE AT (734) 595-6504 EXTENSION 2009.	shown on RS-4. 5. The Expansion Join Polyurethane foam sealant. Density o
	CONTRACTOR SHALL CONTACT <u>MISS DIG AT 811</u> TO IDENTIFY AND FLAG / MARK THE LOCATIONS OF ALL UNDERGROUND UTILITIES AT THE PROPOSED CONSTRUCTION AREAS PRIOR TO START OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND ELEVATIONS OF ALL UNDERGROUND UTILITIES, AND RESOLVE ANY CONFLICT BETWEEN THE PROPOSED WORK AND THE EXISTING UNDERGROUND OR ABOVE GROUND UTILITIES.	 6. Wire Fabric Reinfor area. The use of reinforcement. 7. Where the lane wia standards, special or standard sheets may be added to laps shall not be of
	ALL SURVEY MONUMENTS / CORNERS AND BENCH MARKS LOCATED WITHIN THE CONSTRUCTION AREA MUST BE PRESERVED IN ACCORDANCE WITH PUBLIC ACT 74 AS MENDED (INCLUDING ACT 34, P.A. 2000) AND AS PER WAYNE COUNTY PERMIT RULE 1.5. THE PERMIT HOLDER AND CONTRACTOR SHALL COORDINATE THE WORK WITH A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF MICHIGAN DURING CONSTRUCTION ACTIVITIES FOR THE PURPOSE OF WITNESSING, PRESERVING OR REPLACING SURVEY MONUMENTS AND MONUMENT BOXES.	 8. The ends of the W. at least two place displacement. 9. When Concrete Pav Plane of Weakness transverse joints, w minimum spacings.
	BACKFILL THE TRENCH PER SEWER TRENCH "A" OR "B" IN THE WAYNE COUNTY DETAIL S-12 OR AS DIRECTED BY THE COUNTY ENGINEER.	10. Existing concrete cutting for remova concrete pavement or shoulder, which
	ALL ROADS, TREES, AND DRIVEWAYS TO BE BORED PER WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICE REQUIREMENTS.	REVISION DATE: 08/01/07
	TUNNELING, BORING, AND JACKING OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE WAYNE COUNTY SPECIFICATIONS/ATTACHMENT AND/OR AS DIRECTED BY THE COUNTY ENGINEER.	DIVISION PERMIT ENGINEER NOTE: THIS IS NOT A LEGAL ENGINEERING AT THE WAYNE COUNTY ENGINEERING
	PLACE BORE PITS AT LEAST 10-FEET FROM THE EDGE OF PAVEMENT PER WAYNE COUNTY SPECIFICATIONS.	
	CONSTRUCTION SHALL BE DONE BETWEEN 9:00A.M. AND 3:00P.M. IF YOU PLAN TO OBSTRUCT OR CLOSE ANY LANE ON A MAIN THROUGHFARE.	1. All materials and County Specificat ment of Transpor as modified by W
-	RESTORE RIGHT-OF-WAY AS DIRECTED BY THE WAYNE COUNTY ENGINEER.	2. The Contractor m detailed, with pre
•	RESTORE/RECONSTRUCT THE DITCH PER WAYNE COUNTY DETAIL P-4 OR AS DIRECTED BY THE WAYNE COUNTY ENGINEER.	conditions are sa
•	THE MINIMUM 36-INCH HORIZONTAL, AND MINIMUM 18-INCH VERTICAL CLEARANCE ARE REQUIRED BETWEEN THE PROPOSED AND EXISTING UTILITIES AS PER THE WAYNE COUNTY STANDARDS. MUST BE MAINTAINED MINIMUM 6-FEET UNDER THE COUNTY DRAINS.	a. All pre ASTM (1) 7 (2) 7
	THE DEPTH OF THE INSTALLATION SHALL BE A MINIMUM OF FOUR (4) FEET BELOW THE GROUND (FROM THE LOWEST ELEVATION ALONG THE CENTERLINE OF THE PROPOSED UTILITY) AND A MINIMUM OF SEVEN (7) FEET UNDER THE PAVEMENT MEASURED FROM THE LOWEST GUTTER LINE OR EDGE OF PAVEMENT ELEVATION PER THE COUNTY SPECIFICATIONS, ATTACHMENT, AND/OR AS DIRECTED BY THE COUNTY ENGINEER.	(Z) b. The m shall b maxim
-	CONTRACTOR SHALL BE RESPONSIBLE FOR AVOIDING ANY CONFLICT BETWEEN THE PROPOSED UTILITIES AND THE EXISTING UTILITIES AND TO KEEP THE SUFFICIENT CLEARANCE BETWEEN THE UTILITIES AS REQUIRED BY THE SPECIFICATIONS/ORDINANCE/REGULATIONS AND THE LAWS. REVISED 7/1/2006.	c. No ope less th or wou any ho manho may b or by
	REPLACE SIDEWALK AS DIRECTED BY THE WAYNE COUNTY ENGINEERING AND/OR SPECIFICATIONS AND AS DIRECTED BY THE COUNTY ENGINEER. REPLACE ADA RAMPS PER MDOT STANDARDS R-28-I REQUIREMENT AND AS DIRECTED BY THE WAYNE COUNTY ENGINEER.	d. Opening meter The op using
	ALL ABANDONED MAINS AND VAULTS WILL BE REMOVED. REPAIR DAMAGED UNDERDRAIN PER WAYNE COUNTY DETAIL S-14 AND AS DIRECTED BY THE COUNTY ENGINEER.	e. Structu meetin or brid with p. precas
•	IF CONCRETE CURB IS DISTURBED THE SAW-CUT FULL DEPTH TO REMOVE EXISTING CONCRETE CURB, AND ROAD PAVEMENT TO LIMITS AS DIRECTED BY THE COUNTY ENGINEER.	precas
	ROADWAY PAVEMENT RECONSTRUCTION SHALL BE 1-1/2 INCH MINIMUM WAYNE COUNTY HMA TOP (F) OVER 10-INCH MINIMUM NON-REINFORCED CONCRETE PAVEMENT ON 9-INCH MINIMUM OF 21AA AGGREGATE BASE COMPACTED IN PLACE TO A MINIMUM OF 95% OF MAXIMUM UNIT WEIGHT AS DIRECTED BY THE COUNTY ENGINEER.	REVISION DATE: 08/01/07
<i>'</i> .	TIE NEW PAVEMENT TO EXISTING PAVEMENT WITH 18-LONG NO. 5 EPOXY COATED REBAR AT 18-INCH O.C. AS DIRECTED BY THE COUNTY ENGINEER.	DIVISION PERMIT ENGINEER NOTE: THIS IS NOT A LEGAL ENGINEERING D AT THE WA INE COUNTY ENGINEERING
	ALL UTILITIES, INCLUDING DRAINAGE FACILITIES, SHALL BE LOCATED PRIOR TO EXCAVATION IN THE COUNTY ROAD RIGHT-OF-WAY. SOME FACILITIES ARE NOT LOCATED THROUGH THE MISS DIG SYSTEM.	BACKFI SEWER 30" &
	NO PARKING, STORAGE OF MATERIALS OR EQUIPMENT WILL BE ALLOWED WITHIN THE WAYNE COUNTY RIGHT-OF-WAY.	
	A SAFE AND ADEQUATE TRAVEL ROUTE FOR PEDESTRIANS SHALL BE MAINTAINED AT ALL TIMES. PEDESTRIANS SHALL NOT BE DETOURED IN THE EXISTING ROADWAY.	(
۹.	THE CONTRACTOR SHALL NOTIFY THE WAYNE COUNTY TRAFFIC SIGNAL SHOP AT (734) 955-3277 THREE (3) WORKING DAYS PRIOR TO STARTING ANY WORK (SIGNAL WORK, CONDUIT WORK, OR ANY EXCAVATION) WITHIN THE VICINITY OF ANY TRAFFIC SIGNAL FACILITIES.	POROUS BACKFILL
	PLAN REPRODUCTION WARNING THE PLANS HAVE BEEN CREATED ON ANSI D (22"x34") SHEETS, REFER TO GRAPHIC SCALE.	SE NOTE: PVC PI MIN. TF INSTALL HDPE F PER M

- 1. All materials and workmanship shall be in accordance with Wayne County Specifications which are defined as the current Michigan Department of Transportation (MDOT) Standard Specifications for Construction as modified by Wayne County Special Provisions.
- Paving Standard Plan Details may be shown with wire fabric reinforcement. Use of reinforcement shall be required as called for on the plans.
- 3. A Transverse End of Pour Joint, Symbol (H), shall be constructed when there is an interruption in concrete paving for more than ½ hour. Transverse End of Pour Joint, Symbol (H), shall be constructed in accordance with current MDOT Standard Plan, R–39 series (Reinforced Concrete Pavement) and R–39P series (Plain Concrete Pavement). This note applies to both concrete base and finished concrete pavement.
- 4. When it is anticipated that construction traffic will be using the pavement, endings will be protected by means of a temporary concrete header as shown on RS-4.
- 5. The Expansion Joint Foam Rod shall be a solid round heat resistant Polyurethane foam capable of withstanding the temperature of the sealant. Density of the foam shall be 2–4 Lb/Cft.
- Wire Fabric Reinforcement shall lay flat when delivered to the work area. The use of spreader bars will be required for lifting bundles of reinforcement.
- 7. Where the lane width of the pavement differs from wire fabric reinforcement standards, special sheets of the required width may be used or standard sheets may be cut to the required size or split sheets may be added to standard sheets to obtain the required size. Side laps shall not be less than the spacing of the longitudinal wires.
- 8. The ends of the Wire Fabric Reinforcement sheets shall be fastened in at least two places at each lap to prevent horizontal and vertical displacement
- 9. When Concrete Pavement Repairs are longer than 20 feet, Transverse Plane of Weakness Joints (WT) shall be placed in—line with existing transverse joints, working cracks, or at 15 feet maximum and 6 feet minimum spacings.
- 10. Existing concrete pavements with HMA surface requiring saw– cutting for removal shall have the saw cuts extend completely thru the concrete pavement. Sawed over–cuts occurring in adjacent slab, gutter or shoulder, which will remain in place, shall be sealed.

	which will remain in place, shall be sealed.				
	WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES ENGINEERING DIVISION/PERMIT OFFICE	SCALE NOT TO SCALE	REVISION DATE:	1	SCALE
DIRECTOR OF ENGINEERING	PERMIT STANDARDS	RS-1		WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES	NOT TO SCALE
DIVISION PERMIT ENGINEER	GENERAL NOTES	SHEET 1 OF 1	DIRECTOR OF ENGINEERING	ENGINEERING DIVISION/PERMIT OFFICE PERMIT STANDARDS	PR-5
NOTE: THIS IS NOT A LEGAL ENGIN AT THE WAYNE COUNTY EN	NEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL SIGNED COPY FOR PUBLIC VOINEERING OFFICES.	ATION IS KEPT ON FILE	DIVISION PERMIT ENGINEER	PAVEMENT REMOVAL AND REPAIR (PATCHING)	SHEET 1 OF 1
NOTE: THIS IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL SIGNED COPY FOR PUBLICATION IS KEPT ON FILE AT THE WAYNE COUNTY ENGINEERING OFFICES.					ON IS KEPT ON FILE

- 1. All materials and workmanship shall be in accordance with the Wayne County Specifications which are defined as the 2003 Michigan Depart– ment of Transportation (MDOT) Standard Specifications for Construction as modified by Wayne County Special Provisions.
- 2. The Contractor may construct manholes, catch basins and inlets, as detailed, with precast reinforced concrete units provided the following conditions are satisfied:
 - . All precast sections shall be made in accordance with ASTM C-478 except that:
 - (1) The minimum wall thickness shall be 5 inches.
 - (2) The thickness of base and top slabs shall be as detailed on the Standard Plans.
 - b. The maximum diameter of sewer outlet in any precast unit shall be 18 inches, except for Inlets which shall have a maximum outlet diameter of 12 inches.
 - c. No openings shall be made in precast units which would leave less than 24 inches of total undisturbed precast manhole wall or would remove more than 30% of the circumference along any horizontal plane. A minimum of 6 inches of undisturbed manhole is required between any two openings. Openings may be constructed by casting, removal of green concrete, or by drilling the openings in cured concrete.
 - d. Openings for sewer pipe shall be cut or precast with a diameter 3 inches larger than the outside diameter of the pipe. The opening around the outside of the pipe shall be closed using brick masonry.
 - e. Structures for sewers larger than 18 inches or those not meeting the opening requirements shall be built of block or brick to a minimum of 8 inches above the top of sewer, with precast units being used above this point. Where the precast units rest on the block or brick, the groove in the precast unit will be filled with mortar.



HMA PAVEMENT REPAIR

The minimum HMA Base Course repair patch size shall be 6' x 6' with no less than 6' remain to any other joints, crack, or edge of pavement. Saw cuts must extend completely through the pavement section. Any over-cuts

except for at the outside corners of patch will be required to be removed. (this will increase the size of the patch).

All over-cuts located at the outside corners of the patch shall be cleaned and sealed.

Unless otherwise approved, all full depth HMA repairs will be replaced with non-reinforced concrete base course with 1 $\frac{1}{2}$ " HMA Top (F).

The required thickness of the non-reinforced concrete base course shall be $1 \frac{1}{2}$ " less than the existing pavement section with minimum thickness of 8".

Example 1: Existing pavement is 6" HMA. the repair will be 1 $\frac{1}{2}$ " HMA Top (F) on 8" non-reinforced concrete.

Example 2: Existing pavement is 10 $\frac{1}{2}$ " HMA. The repair will be 1 $\frac{1}{2}$ " HMA Top (F) on 9" non-reinforced concrete.

Non-reinforced concrete base course repairs shall have transverse plane of weakness joints (WT) installed at 15' maximum or 6' minimum spacing.

The minimum HMA surface course repair on pavement under 10 years old shall be one lane wide and the length shall match the base repair limits. On pavement over 10 years old, the size will match the base repair.

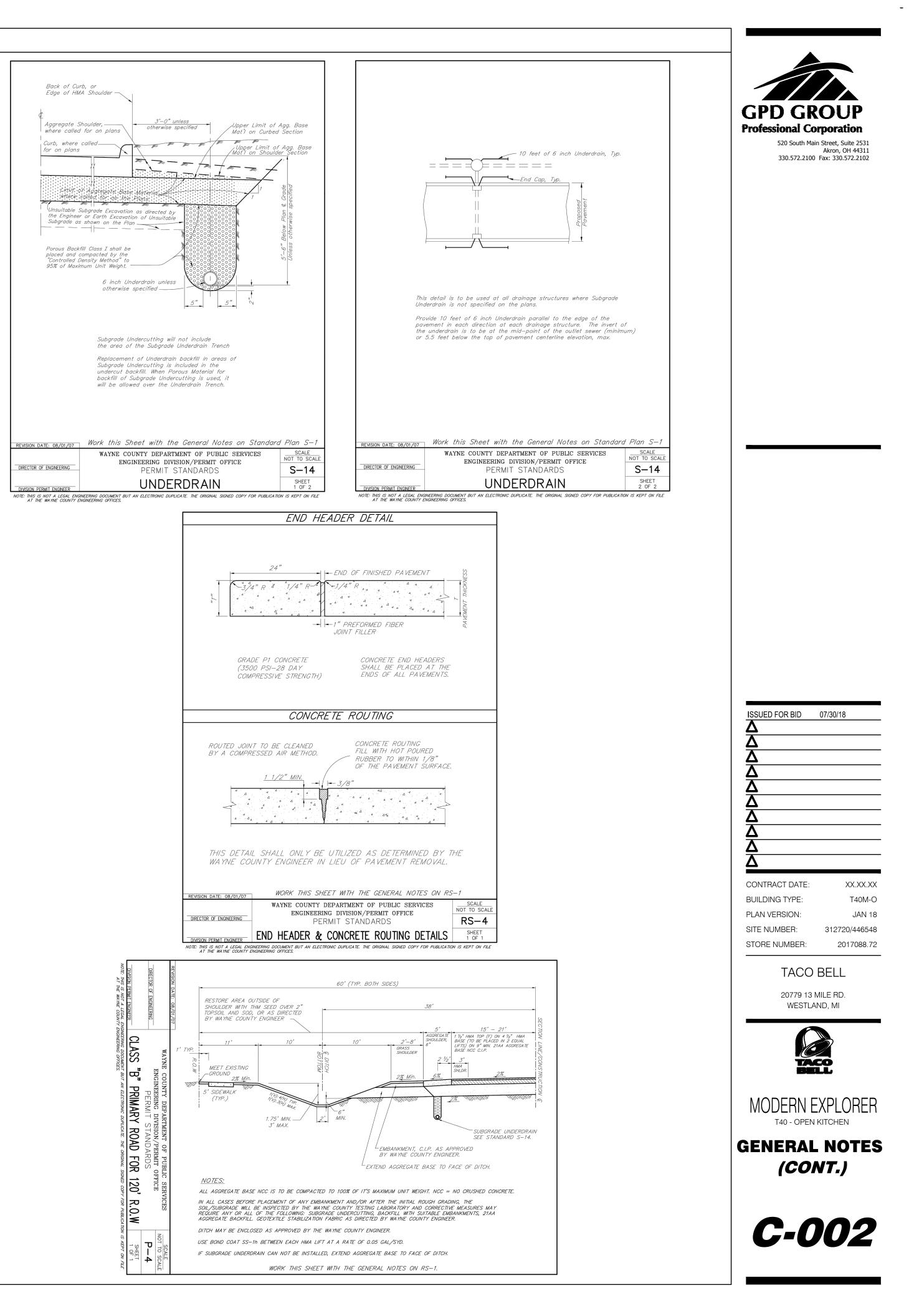
When additional HMA surface course is to be removed , it shall be done using the cold milling method.

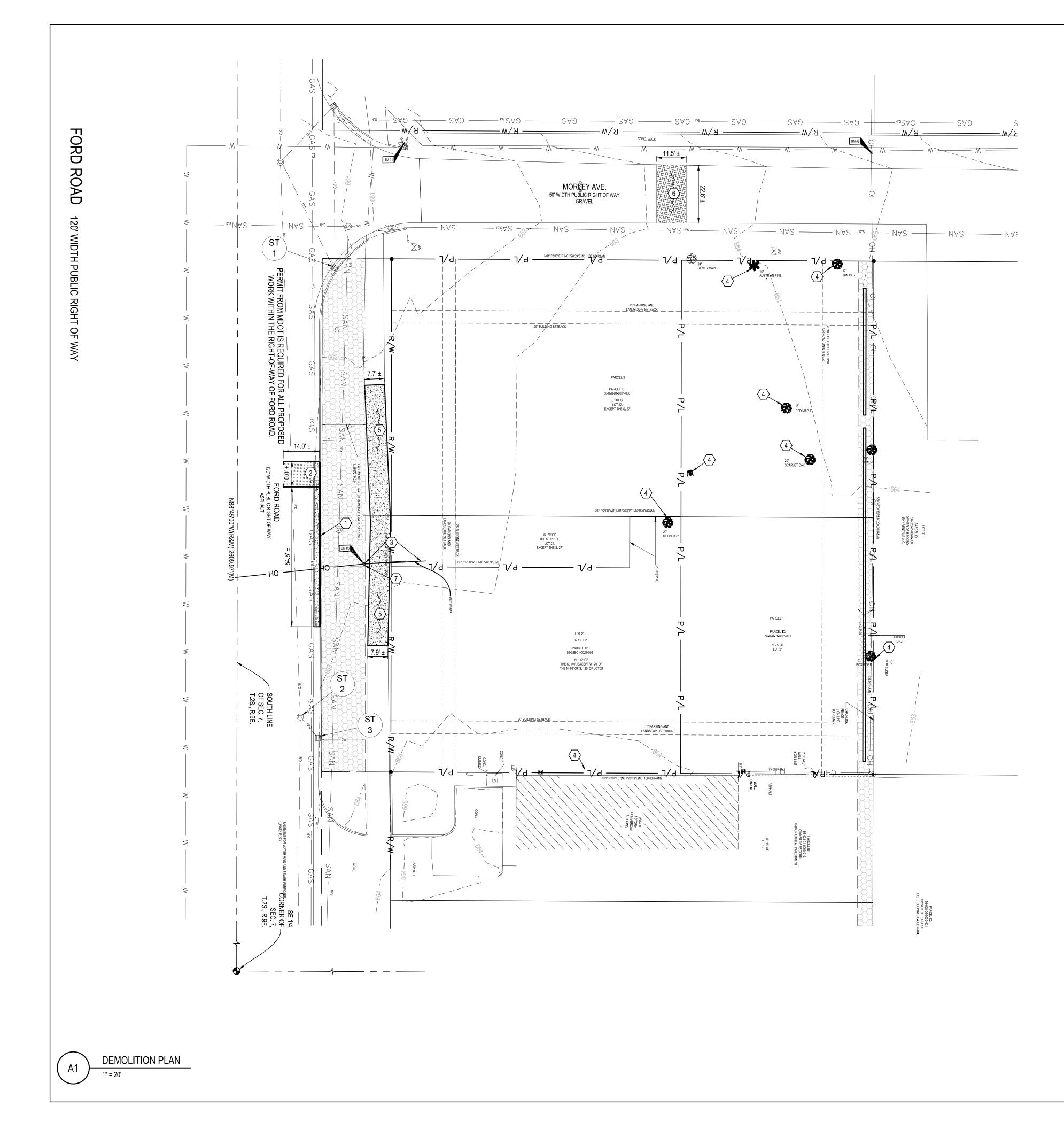
When replacing HMA pavement cores, slightly undermine existing HMA base along the outside diameter of the cores and fill the undermined area and core hole with H.E. concrete.

> f. Circumstances encountered during construction may preclude the use of precast unit structures, as determined by the Engineer. If the contractor elects to use precast unit structures and field changes prohibit their use, no compensation will be made to the contractor for having these units manufactured, supplied, to the project, and not utilized.

- g. Special precast units for use on large diameter sewers must have the approval of the Engineer.
- 3. All vertical holes in concrete block structure wall shall be completely filled with mortar. All vertical wall joints shall be buttered.
- 4. The first pipe length entering or leaving any structure shall be temporarily supported by suitable means until the structure is completed and backfilled.
- 5. A poured Grade S1 concrete base without steel reinforcement, may be substituted for a precast base as approved by the Engineer. A porous backfill cushion will not be required under the poured base, unless the Contractor has excavated below the required elevation, at which time the Engineer will decide as to the merits of increasing the thickness of the concrete base or the use of a porous backfill cushion.
- 6. The conical section of brick or block manholes, catch basins or inlets, shall be shrouded with a geotextile blanket from the top down to 1 foot below the conical section. Precast structures shall be shrouded with the geotextile blanket to a point 1 foot below the stack. Enough geotextile material will be left on the top to roll over the brick stack and under the casting. Also, wrap inlet and outlet pipes at connection to the structures with a geotextile blanket, minimum 1 foot each direction. The geotextile blanket shall meet the requirements of Subsection 910.03.A in the 2003 MDOT Standard Specifications for Construction.
- 7. A 10 feet length of 6 inch Underdrain in Sewer Trench will be required at proposed drainage structure that do not have longer lengths of underdrain connected to them (see Standard Plan S-14). The cost of these 10 feet lengths of underdrain with end caps shall be included in the cost of the drainage structure.
- 8. Steps are required for all structures over 10 feet in depth. Steps shall be of an approved design, made of cast iron, aluminum, or plastic coated steel. Rungs shall be a minimum of 10 inches clear length and designed to prevent the foot from slipping off the end. The minimum horizontal load shall be 405 lbf. The minimum vertical load shall be 810 lbf.

BE 6" ON EACH SIDE OF





GENERAL SHEET NOTES

- 1. SEE INDEX MAP, SHEET C-001 FOR LOCATION OF EXISTING BENCHMARKS.
- 2. CONTRACTOR TO RE-ESTABLISH BENCHMARK #3 UPON RELOCATION OF EXISTING GUY POLE.
- 3. ALL UTILITY PROVIDERS/CONTRACTORS (I.E. GAS, ELECTRIC, TELECOMMUNICATION) MUST OBTAIN SEPARATE PERMITS FROM
- MDOT FOR THE WORK INDICATED WITHIN THIS PLAN SET AND LOCATED IN MDOT RIGHT-OF-WAY. 4. PAVEMENT REPAIRS INDICATED ON M-153 (FORD RD) FOR UTILITY WORK SHALL BE ONE FULL LANE WIDTH.
- 1"=20' Horizontal Scale in Feet



PLAN KEYNOTES 🕢

1. EXISTING CURB / CURB AND GUTTER TO BE REMOVED.

- 2. EXISTING PAVEMENT TO BE REMOVED. 3. EXISTING GUY POLE AND WIRE(S) TO BE REMOVED/RELOCATED, CONTRACTOR TO COORDINATE WITH ELECTRIC COMPANY.
- 4. EXISTING LANDSCAPING (INCLUDING BUSHES, TREES, ETC.) TO BE REMOVED.
- 5. EXISTING WALK TO BE REMOVED.
- 6. EXISTING GRAVEL ROAD TO BE TRENCHED OPEN FOR UTILITY WORK. CONTRACTOR TO REPLACE PER CITY STANDARDS.
- 7. CONTRACTOR SHALL HAVE PROFESSIONAL SURVEYOR RELOCATE BENCHMARK PRIOR TO SITE DISTURBANCE.

DEMOLITION NOTES:

1. ALL EXISTING SITE AND SURROUNDING FEATURES SUCH AS UTILITIES, PAVEMENT, CURB, LANDSCAPING, ETC. SHALL REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION UNLESS NOTED OTHERWISE, OR ARE REQUIRED TO BE MODIFIED OR REMOVED FOR THE INSTALLATION OF PROPOSED IMPROVEMENTS. ALL DISTURBED FEATURES SHALL BE RESTORED OR RELOCATED AS REQUIRED TO THE SATISFACTION OF THE OWNER. CONTRACTOR SHALL REPAIR/REPLACE ANY SURROUNDING FEATURES DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE OWNER.

2. SEE SHEET L-101 FOR TREE REMOVAL AND REPLACEMENT CHART.

LEGEND (SEE SHEET C-001 FOR GENERAL LEGEND)

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AND SEWER PURPOSES L.15672, P.223 EXISTING GRAVEL ROAD TO BE TRENCHED FOR UTILITY WORK

EXISTING ASPHALT TO BE REMOVED

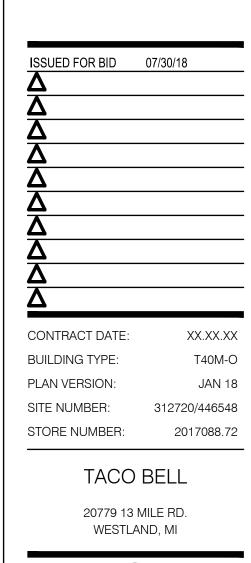
EXISTING CONCRETE TO BE REMOVED

EXISTING EASEMENT FOR WATER MAIN

- DENOTES LIMITS OF SAWCUT
- DEMOLITION KEYNOTE

EXISTING STRUCTURES					
STRCT. ID STRUCTURE DETAILS					
ST 1	EXISTING STORM CATCH BASIN RIM=660.72' INV. 12" CONC (W)=656.52'				
ST 2	EXISTING STORM MANHOLE RIM=662.70' PAVED IN PLACE				
ST 3	EXISTING STORM CATCH BASIN RIM=662.49' INV. 12" CONC. (SW)=657.19'				
SAN 1	EXISTING SANITARY MANHOLE RIM=662.71' INV. 8" (E&W)=653.11'				







MODERN EXPLORER T40 - OPEN KITCHEN





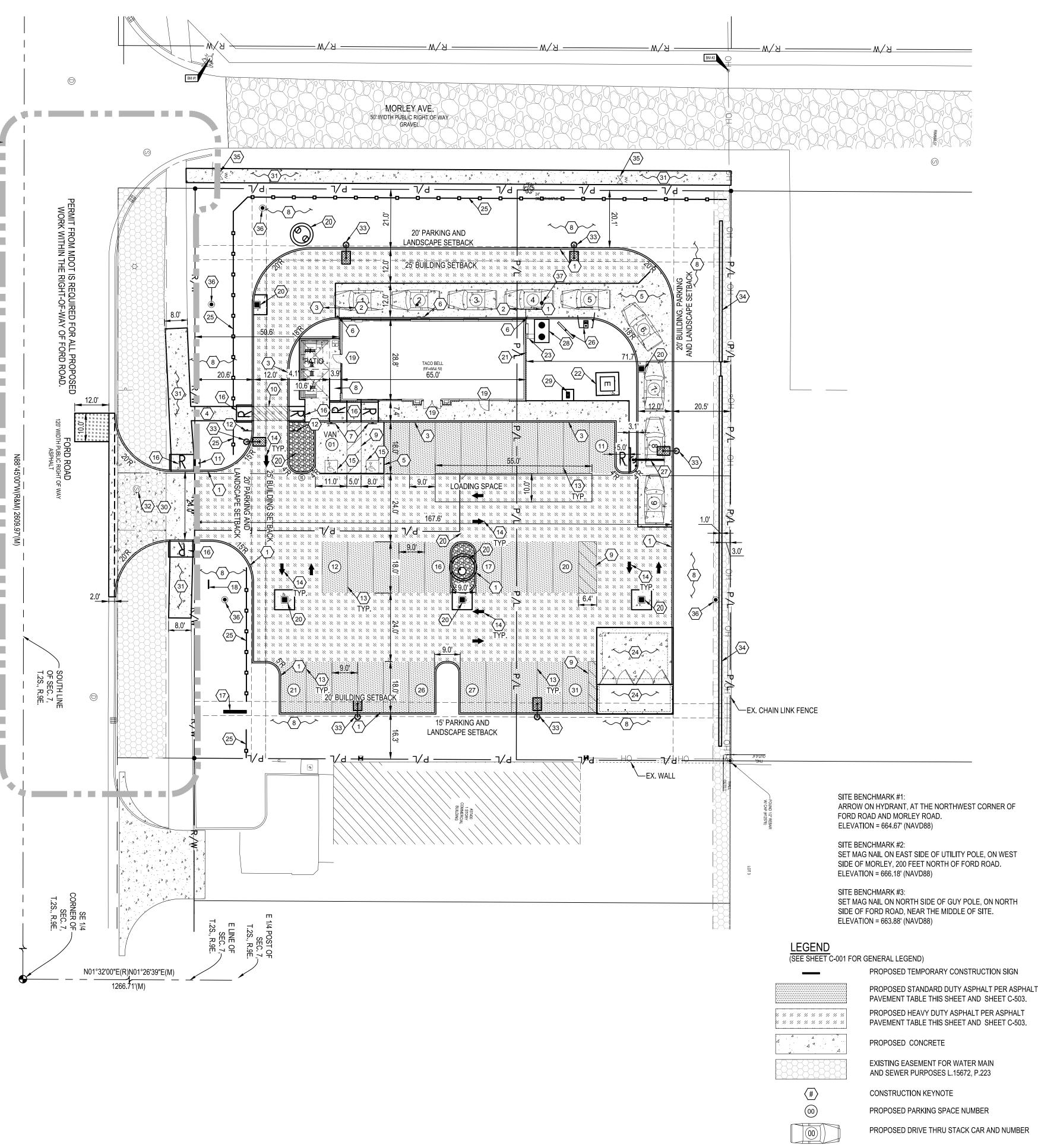
SITE BENCHMARK #3: SET MAG NAIL ON NORTH SIDE OF GUY POLE, ON NORTH SIDE OF FORD ROAD, NEAR THE MIDDLE OF SITE. ELEVATION = 663.88' (NAVD88)

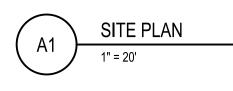
NOTE:

SIDEWALK AND LANE CLOSURE TO BE STRICTLY COORDINATED BETWEEN CONTRACTORS FOR ONGOING MDOT PROJECT ALONG M-153 (FORD RD) AND TACO BELL DEVELOPMENT.

A SINGLE LANE CLOSURE ALONG WB M-153 (FORD RD) WILL BE PERMITTED MONDAY - FRIDAY 8:00 PM TO 5:00 AM AND SATURDAY - SUNDAY 8:00 PM TO 6:00 PM, DOUBLE LANE CLOSURE IS NOT PERMITTED, PER MDOT REVIEW.

THE ONGOING MDOT PROJECT WILL REQUIRE A CURB CUT (BY MDOT) AT THE CORNER OF M-153 (FORD RD) AND MORLEY AVENUE FOR PLACEMENT OF AN ADA RAMP. ANY DISTURBANCE TO THE NEWLY PLACED ADA RAMP CAUSED BY THE PRIVATE DEVELOPMENT WILL REQUIRE FULL RESTORATION TO MDOT STANDARDS TO MATCH ONGOING PROJECT.





<u>GE</u>	NERAL SHEET NOTES			
1.	SEE INDEX MAP, SHEET C-001 FOR LOCATION OF			
2.	EXISTING BENCHMARKS.			
	RELOCATE BENCHMARK #3 PRIOR TO SITE DISTURBANCE.	20		
3.	ALL UTILITY PROVIDERS/CONTRACTORS (I.E. GAS, ELECTRIC, TELECOMMUNICATION) MUST OBTAIN	10 40		
	SEPARATE PERMITS FROM MOOT FOR THE WORK	1"=20'	GPD GR	
	INDICATED WITHIN THIS PLAN SET AND LOCATED IN	lorizontal Scale in Feet	Professional Co	-
4			520 South Ma	n Street, Suite 2531 Akron, OH 44311
4.	PAVEMENT REPAIRS INDICATED ON M-153 (FORD RD) FOR UTILITY WORK SHALL BE ONE FULL LANE WIDTH.		330.572.2100	Fax: 330.572.2102
PL	AN KEYNOTES $\langle \# \rangle$			
<u>. </u>	PROPOSED P.C.C. CURB, SEE SHEET C-501.			
2.	PROPOSED CURB AT DRIVE THRU, SEE SHEET C-501.			
3.	PROPOSED P.C.C. CURBED WALK, SEE SHEET C-501.			
4. 5.	PROPOSED P.C.C. WALK, SEE SHEET C-501. PROPOSED 6" P.C.C. PAVEMENT W/ W.W.F. 6" x 6"-W2.9 x W2.9 (CONTROL			
5.	CRUSHED AGGREGATE OR GRAVEL BASE. APPLY LIQUID ASPHALT AT AL	,		
	CONCRETE AND ASPHALT.			
6. 7	PROPOSED BOLLARD IN CURB, SEE SHEET C-501. PROPOSED ADA PARKING SIGN, SEE SHEET C-501.			
7. 8.	PROPOSED ADA PARKING SIGN, SEE SHEET C-301. PROPOSED LANDSCAPING AREA. SOD ALL DISTURBED AREAS EXCEPT W	HERE PLANTING BEDS ARE		
	INDICATED. SEE SHEET L-101.			
9. 10	PROPOSED PAINTED TRANSVERSE STRIPING, SEE SHEET C-501.			
10. 11.	PROPOSED PAINTED CROSSWALK STRIPING, SEE SHEET C-501. PROPOSED 'STOP' SIGN PER MDOT STANDARDS, SEE SHEET C-502.			
12.	PROPOSED 'DO NOT ENTER' SIGN PER MDOT STANDARDS, SEE SHEET C	-502.		
13.	PROPOSED PAINTED 4" WIDE SOLID STRIPE - WHITE ON ASPHALT, YELLO			
14.	PROPOSED DIRECTIONAL PAVEMENT MARKINGS - WHITE ON ASPHALT, Y SEE SHEET C-501.	ELLOW ON CONCRETE -		
15.	PROPOSED PAINTED INTERNATIONAL ADA SYMBOL PER ADA SPECIFICA	TONS AND SHEET C-501.		
	PROPOSED ADA ACCESSIBLE RAMP PER ADA SPECIFICATIONS AND SHE			
17.	PROPOSED MONUMENT SIGN PER SIGN SUPPLIER SPECIFICATIONS. CO COORDINATE WITH OWNER FOR INSTALLATION.	NTRACTOR TO		
18.	PROPOSED TEMPORARY CONSTRUCTION SIGN TO BE CONSTRUCTED AN	ID INSTALLED BY SIGN		
	COMPANY. GC SHALL COORDINATE EXACT LOCATION WITH CONSTRUCT	ION/PROJECT MANAGER.		
	PROPOSED FROST SLAB AT DOOR. SEE SHEET STRUCTURAL PLANS. PROPOSED STORM STRUCTURE, SEE SHEET C-141 FOR DESIGN INFORM			
	PROPOSED GAS METER PER GAS COMPANY SPECIFICATIONS. SEE ARC			
	FOR EXACT LOCATION.			
22.	PROPOSED ELECTRICAL TRANSFORMER PER ELECTRICAL COMPANY SP VERIFY EXACT LOCATION AND SIZE WITH UTILITY ENGINEER.	ECIFICATIONS. G.C. TO		
23.	PROPOSED ELECTRIC METER PER ELECTRIC COMPANY SPECIFICATIONS	S. SEE ARCHITECTURAL		
	DRAWINGS FOR EXACT LOCATION.			
	PROPOSED DUMPSTER ENCLOSURE AND PAD, SEE SHEET G2.0. PROPOSED DECORATIVE PERIMETER FENCE PER CITY OF WESTLAND S			
25.	SPECIFICATIONS.			
26.	PROPOSED MENU BOARD AND ORDER CONFIRMATION BOARD PER SIGN			
	SPECIFICATIONS AND SHEET C-502. SIGN SUPPLIER TO PROVIDE A TEMI COORDINATE A MEETING WITH THE CONSTRUCTION/PROJECT MANAGEF			
	VERIFY LOCATION AND PLACEMENT OF MENU BOARD AND ORDER CONF			
	TO ANY CONSTRUCTION. SIGN SUPPLIER SHALL PROVIDE G.C. WITH FO	JNDATION DETAILS. G.C.		
27	RESPONSIBLE FOR SIGN FOUNDATIONS/ELECTRICAL. PROPOSED EVOLUTION PORTAL CLEARANCE BAR, SEE SHEET C-502.			
	PROPOSED 1,000 GALLON EXTERIOR GREASE INTERCEPTOR, SEE SHEE	C-141 FOR UTILITY		
	INFORMATION.			
	PROPOSED BIKE RACK, SEE SHEET C-501. PROPOSED COMMERCIAL DRIVE APRON PER MDOT STANDARDS AND SP	ECIEICATIONS SEE SHEET	_	
50.	C-112.		ISSUED FOR BID	07/30/18
31.	PROPOSED WALK PER WAYNE COUNTY STANDARDS AND SPECIFICATION		Δ	
	FOR WORK ALONG FORD ROAD AND WAYNE COUNTY STANDARDS FOR V AVE). SEE SHEET C-112.	VORK ALONG MORLEY	Δ	
32.	EXISTING SANITARY MANHOLE TO BE ADJUSTED TO PROPOSED GRADES	PER WAYNE COUNTY	Δ	
	STANDARDS AND SPECIFICATIONS. SEE SHEET C-503.		$\overline{\Delta}$	
33. 24	PROPOSED LIGHT POLE BASE, SEE SHEET C-502. PROPOSED 6' TALL MASONRY SCREENING WALL. REFERENCE STRUCTURE		$\overline{\Delta}$	
34.	COORDINATE WITH OWNER OF EASTERN PROPERTY FOR CONNECTION		$\overline{\Delta}$	
	FEASIBLE).	, , , , , , , , , , , , , , , , , , ,	$\overline{\Delta}$	
35. 36	ADJUST VALVES TO FINISHED SIDEWALK GRADE. PROPOSED YARD DRAIN, SEE SHEET C-503.		$\overline{\Delta}$	
	PROPOSED YARD DRAIN, SEE SHEET C-503. PROPOSED SANITARY MANHOLE.		$\overline{\Delta}$	
-			$\overline{\Delta}$	
			CONTRACT DATE:	XX.XX.XX
			BUILDING TYPE:	T40M-O
			PLAN VERSION:	JAN 18
			SITE NUMBER:	312720/446548

ASPHALT PAVEMENT

MATERIAL	DEPTH (HVY. DUTY)	DEPTH (STD. DUTY)	MDOT SPECIFICATIONS ITEM
A.C. SURFACE COURSE	2"	1-1/2"	5E03
A.C. INTERMEDIATE COURSE	3"	2"	4E03
AGG. BASE COURSE	8"	8"	21AA
SUBGRADE COMPACTION	12"	12"	PER SOILS REPORT

SOILS REPORT GOVERNS IF ANY DISCREPANCIES OCCUR.

SEE TYPICAL SECTION SHEET C-501.

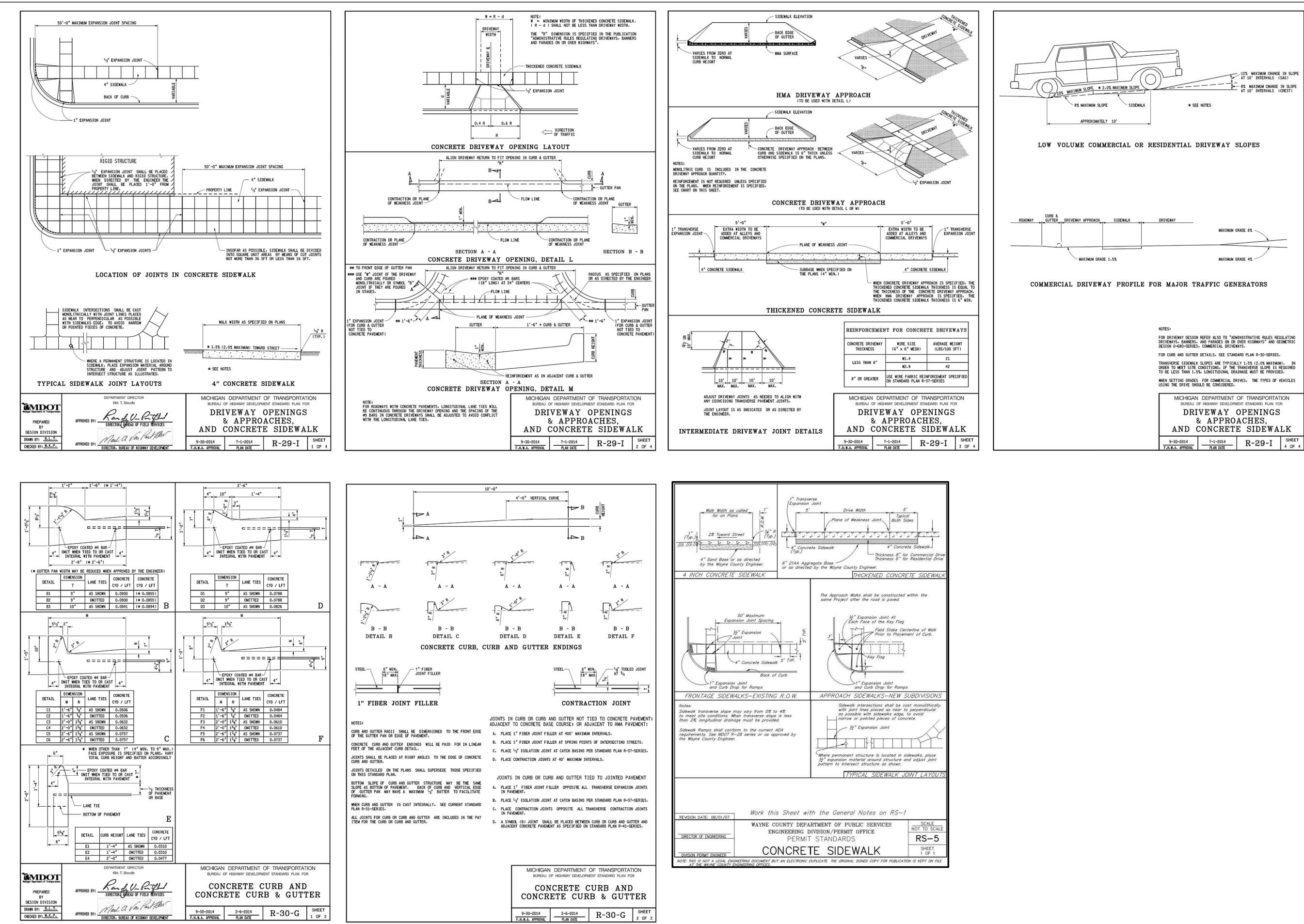
BUILDING SET	BACKS		PARKING SPACES		
	REQUIRED	PROVIDED		REQUIRED	PROVIDED
FRONT: SOUTH REAR: NORTH SIDE: WEST SIDE: EAST	25.0' 20.0' 25.0' 20.0'	50.6' 71.9' 45.0' 125.8'	NUMBER OF SPACES PARKING REQUIREMENTS 1 PARKING SPACE FOR 50 EATING AREA, PLUS EITH	SQUARE F	
PARKING SETE	BACKS		PER 100 SQUARE FEET O OR ONE PARKING SPACE	F NON-EAT	NG AREA
	REQUIRED	PROVIDED	THE LARGEST SHIFT, WH		
FRONT: SOUTH REAR: NORTH SIDE: WEST SIDE: EAST	20.0' 20.0' 20.0' 15.0'	20.1' 20.0' 20.1' 15.8'	THEREFORE: (1000 / 50 + REQUIRED.	860 / 100) =	
LANDSCAPE S	FTBACK	S	LAND USE DATA		
	REQUIRED	PROVIDED		% OF SITE AREA	AREA PROV I DED
FRONT: SOUTH REAR: NORTH SIDE: WEST SIDE: EAST	20.0' 20.0' 20.0' 15.0'	20.1' 20.0' 20.1' 15.8'	BUILDING PAVEMENT/IMPERVIOUS LANDSCAPING	5.0% 58.7% 36.3%	0.043 AC. 0.507 AC. 0.313 AC.
	13.0	13.0	TOTAL CURRENT ZONING: CB-1 PROPOSED ZONING: CB-3	100%	0.863 AC.

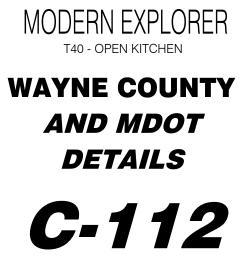








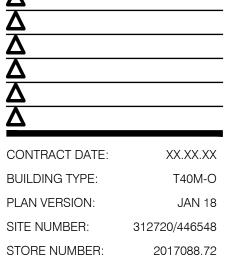




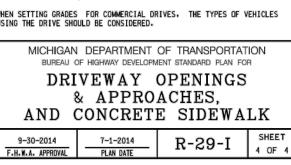


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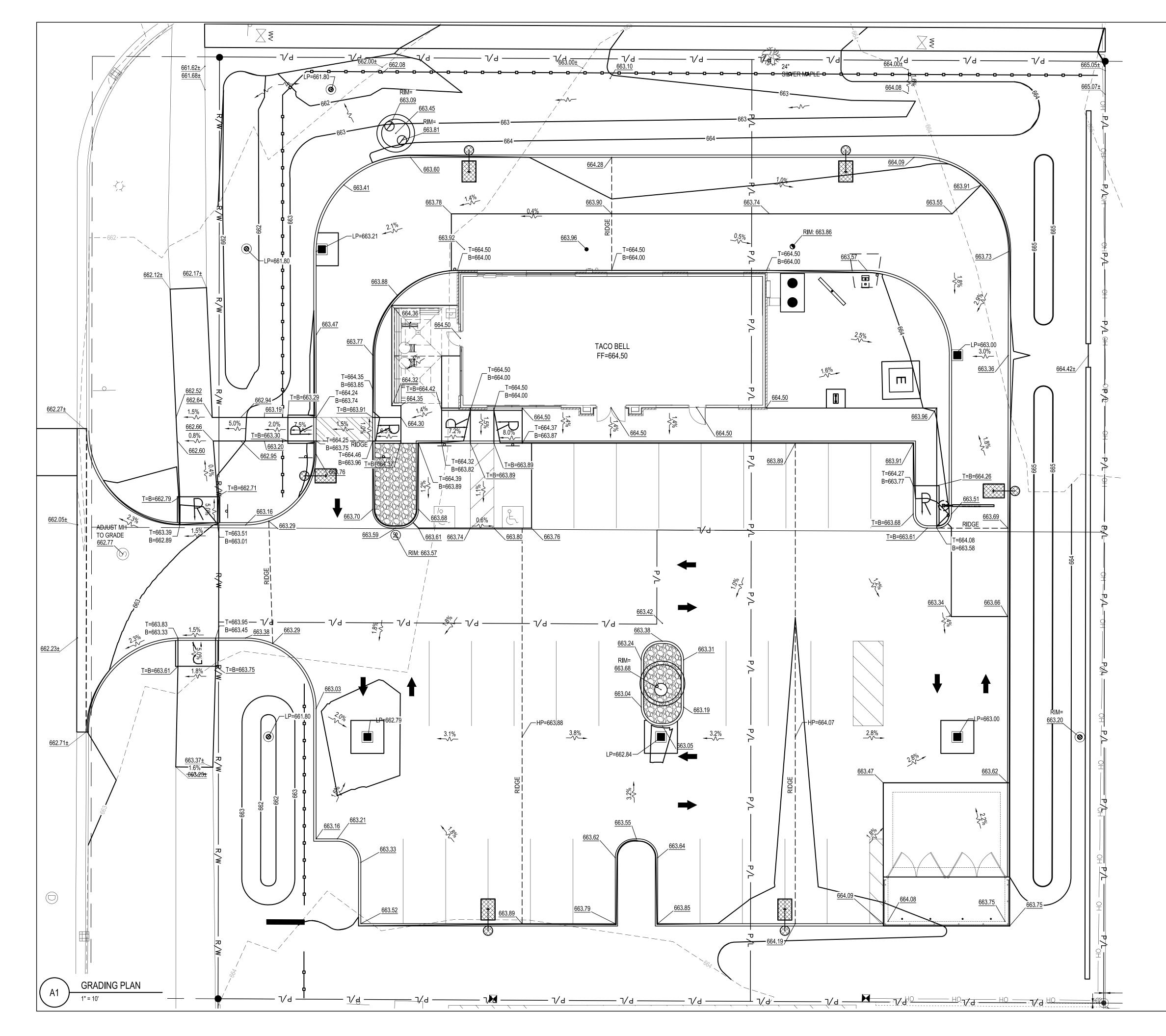
TACO BELL



ISSUED FOR BID 07/30/18

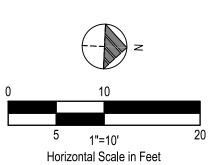






GENERAL SHEET NOTES

1. GRADES SHOWN ON PLAN AT CURB LINES REFER TO BOTTOM OF CURB ELEVATIONS. 2. CONTRACTOR TO RE-ESTABLISH BENCHMARK #3 PRIOR TO RELOCATION / REMOVAL OF EXISTING GUY POLE.



LEGEND (SEE SHEET C-001 FOR GENERAL LEGEND)

000	PROPOSED CONTOUR
RIDGE	PROPOSED RIDGE
<u>000.00±</u>	EXISTING SPOT ELEVATION
000.00	PROPOSED ELEVATION @ FINISHED PAVEMENT ELEVATION
<u>T=000.00</u>	TOP OF CURB ELEVATION
B=000.00	BOTTOM OF CURB/FINISHED PAVEMENT ELEVATION
<u>000.0±</u>	MATCH EXISTING ELEVATION
<u>LP=000.00</u>	LOW POINT
0.0%	PROPOSED DRAINAGE SLOPE & DIRECTION

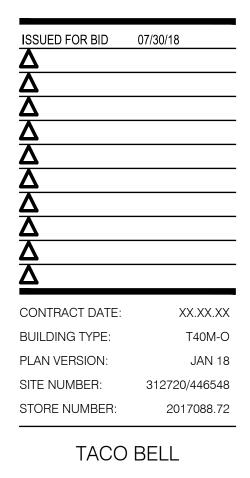
NOTE: EMERGENCY OVERLAND OVERFLOW FROM UNDERGROUND DETENTION SYSTEM FLOWS TO APRONS AND OUT TO PUBLIC ROADS.

SITE BENCHMARK #1: ARROW ON HYDRANT, AT THE NORTHWEST CORNER OF FORD ROAD AND MORLEY ROAD. ELEVATION = 664.67' (NAVD88)

SITE BENCHMARK #2: SET MAG NAIL ON EAST SIDE OF UTILITY POLE, ON WEST SIDE OF MORLEY, 200 FEET NORTH OF FORD ROAD. ELEVATION = 666.18' (NAVD88)

SITE BENCHMARK #3: SET MAG NAIL ON NORTH SIDE OF GUY POLE, ON NORTH SIDE OF FORD ROAD, NEAR THE MIDDLE OF SITE. ELEVATION = 663.88' (NAVD88)





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	ORM WATER POLLUTION PREVENTION NOTES ALL WORK SPECIFIED AS AN DEPARTMENT OF TRANSPORTATION ITEM SHALL BE GOVERNED BY THE CURRENT STATE OF DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL	<u>AD</u> [1.	DITIONAL CONSTRUCTION SITE POLLUTION CONTROLS CONSTRUCTION PERSONNEL, INCLUDING SUBCONTRACTORS WHO MAY USE OR HANDLE
	SPECIFICATIONS AS WELL AS THE CURRENT EDITION OF THE LOCAL JURISDICTION STORM WATER MANAGEMENT MANUAL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO POSSESS AND TO BE FAMILIAR WITH APPLICABLE SECTIONS.		HAZARDOUS OR TOXIC MATERIALS, SHALL BE MADE AWARE OF THE FOLLOWING GENERAL GUIDELINES REGARDING DISPOSAL AND HANDLING OF HAZARDOUS AND CONSTRUCTION WASTES:
2.	THESE CONTRACT DRAWING SHALL BE MADE AVAILABLE ON SITE AT ALL TIMES AND PRESENTED UPON REQUEST. IF UNFORESEEN STORM WATER POLLUTION IS ENCOUNTERED, ADDITIONAL STORM WATER POLLUTION PREVENTION (SWPP) MEASURES SHALL BE IMPLEMENTED TO MANAGE THE CURRENT SITE CONDITIONS WHICH MAY BE REQUESTED BY THE OWNER, COUNTY ENGINEER, PROJECT ENGINEER OR SOIL AND WATER CONSERVATION SERVICE REPRESENTATIVE AT ANYTIME. SUCH REQUESTS AND CHANGE IN SITE CONDITIONS SHALL BE IMPLEMENTED IMMEDIATELY AT CONTRACTOR'S EXPENSE.)	 a) PREVENT SPILLS b) USE PRODUCTS UP c) FOLLOW LABEL DIRECTIONS FOR DISPOSAL d) REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH e) RECYCLE WASTES WHENEVER POSSIBLE f) DON'T POUR INTO WATERWAYS, STORM DRAINS OR ONTO THE GROUND g) DON'T POUR DOWN THE SINK, DOOR DRAIN OR SEPTIC TANKS h) DON'T BURY CHEMICALS OR CONTAINERS
3.	ALL STORM WATER POLLUTION PREVENTION PRACTICES WILL BE INSTALLED BEFORE ANY OTHER EARTH MOVING OCCURS.		 i) DON'T BURN CHEMICALS OR CONTAINERS j) DON'T MIX CHEMICALS TOGETHER
4.	ALL STORM WATER POLLUTION PREVENTION ITEMS SHALL BE INSTALLED AS SHOWN OR NOTED IN THESE PLANS.	3.	CONTAINERS SHALL BE PROVIDED FOR THE PROPER COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS USED ON-SITE. CONTAINERS SHALL BE COVERED AND NOT LEAKING. ALL
5.	PLANT TEMPORARY SEEDING AND MULCHING IN ALL AREAS THAT SHALL BE INACTIVE FOR 14 DAYS OR MORE. ALL DISTURBED AND ERODED EARTH SHALL BE REGRADED AND SEEDED WITHIN 7 DAYS WITH SEEDING, AS DEFINED ON THE TEMPORARY SEEDING TABLE WITHIN THESE PLANS, TO ESTABLISH STABILITY AND PROVIDE SEDIMENT CONTROL. WHERE POSSIBLE, TEMPORARY SEEDING GROWTH SHALL NOT BE MOWED UNTIL IT HAS GONE TO SEED FOR 1	4.	WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL. CONSTRUCTION DEMOLITION AND DEBRIS (CD&D) WASTE MUST BE DISPOSED OF AT THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY APPROVED CD&D LAND FILL. NO CONSTRUCTION RELATED WASTE MATERIALS ARE TO BE BURIED ON-SITE. BY EXCEPTION, CLEAN FILL (BRICKS, HARDENED CONCRETE, SOIL) MAY BE UTILIZED IN A WAY
6.	YEAR. PERMANENT VEGETATION SHALL BE INSTALLED WITHIN 7 DAYS AT THE COMPLETION OF ANY		WHICH DOES NOT ENCROACH UPON NATURAL WETLANDS, STREAMS OR PLAINS OR RESULT IN THE CONTAMINATION OF WATERS OF THE STATE.
7.	GRADED AREAS, WEATHER PERMITTING. PRIOR TO THE TIME THAT DRAINAGE DIVERTS TO INLETS, INLET SEDIMENT FILTERS SHALL BE	5.	HANDLING CONSTRUCTION CHEMICALS : MIXING, PUMPING, TRANSFERRING OR OTHER HANDLING OF CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS
8	INSTALLED AT ALL INLET STRUCTURES TO KEEP PIPING SYSTEMS FREE OF SILTATION. SILT BARRIERS SHALL BE INSTALLED AROUND ALL EXISTING AND NEW STORM INLETS, CATCH		SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.
0.	BASINS, YARD DRAINS. INSTALL ROCK CHECK DAMS FOR HEADWALL INLETS FOR STORM WATER POLLUTION PREVENTION. STORM WATER POLLUTION PREVENTION MEASURES SHALL BE INSTALLED AROUND ALL DIRT OR		EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED AWAY FROM WATERCOURSES, DITCHES OR STORM DRAINS, IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS. SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL FUEL OIL
10	TOPSOIL STOCKPILES AND OTHER TEMPORARILY DISTURBED AREAS AS SHOWN ON THESE PLANS AND AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL INSPECT ALL SWPP MEASURES DAILY AND LOGGED BY THE CONTRACTOR		STORAGE TANKS. THESE AREAS MUST BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HRS. OF A 0.5 INCH OR GREATER RAIN EVENT TO ENSURE THERE ARE NO EXPOSED MATERIALS WHICH WOULD CONTAMINATE STORM WATER. SITE OPERATORS MUST BE AWARE THAT SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC)
10.	FOR INSPECTION, LOGGING SHALL BE WEEKLY AND AFTER EVERY ½" RAINFALL EVENT. REPAIR AS NECESSARY TO PREVENT EROSION. SILTATION SHALL BE REMOVED FROM AREAS WHERE FAILURES HAVE OCCURRED AND CORRECTIVE ACTION TAKEN WITHIN 24 HOURS TO MAINTAIN ALL SWPP.		REQUIREMENTS MAY APPLY. AN SPCC PLAN IS REQUIRED FOR SITES WITH ONE SINGLÉ ABOVE GROUND TANK OF 660 GALLONS OR MORE, ACCUMULATIVE ABOVE GROUND STORAGE OF 1330 GALLONS OR MORE, OR 42,000 GALLONS OF UNDERGROUND STORAGE. CONTAMINATED SOILS MUST BE DISPOSED OF IN ACCORDANCE WITH ITEM 8.
11.	SILT BARRIERS, CONSTRUCTION ENTRANCES, AND SILT PERIMETER CONTROLS SHALL REMAIN IN PLACE UNTIL A GOOD STAND OF GRASS HAS BEEN OBTAINED AND/OR PAVING OPERATIONS ARE COMPLETE. CONTRACTOR SHALL KEEP SILT FROM ENTERING ANY STORM DRAINAGE SYSTEM. ONCE SITE HAS BEEN COMPLETELY STABILIZED, ANY SILT IN PIPES AND DRAINAGE SWALES SHALL BE REMOVED WITHIN 10 DAYS.	7.	CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER. FIELD TILE OR OTHER SUBSURFACE DRAINAGE STRUCTURES WITHIN 10 FT. OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED AWAY FROM ANY WATER CONVEYANCES.
12.	TEMPORARY SEDIMENTATION AND STORM WATER POLLUTION PREVENTION MEASURES MUST BE INSPECTED AND AFTER $\frac{1}{2}$ " RAIN EVENTS.	8.	SPILL REPORTING REQUIREMENTS : SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST OR KITTY LITTER AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY
13.	UTILITY COMPANIES MUST COMPLY WITH ALL STORM WATER POLLUTION PREVENTION MEASURES AS DEFINED ON THE STORM WATER POLLUTION PREVENTION PLANS, DETAILS AND NOTES.		LAND FILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. SPILLS SHALL BE REPORTED TO THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY. SPILLS OF 25 GALLONS OR MORE OF PETROLEUM PRODUCTS SHALL BE
14.	ALL EXISTING WATER COURSES WITHIN THE PROJECT LIMITS SHALL BE TEMPORARILY PROTECTED DURING LAND CLEARING AND GRADING OPERATIONS. SOILS WITHIN 50 FEET OF SAID WATER COURSES SHALL BE STABILIZED WITHIN 2 DAYS OF THE INITIAL CLEARING / GRADING OPERATION AS SHOWN ON PLANS.		REPORTED TO THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE DISCOVERY OF THE RELEASE. ALL SPILLS WHICH CONTACT WATERS OF THE STATE MUST BE REPORTED TO THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY.
15.	IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL SEDIMENTATION AND STORM WATER POLLUTION PREVENTION ITEMS AT ALL TIMES.	9.	CONTAMINATED SOILS : IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT LICENSED SANITARY LAND FILL OR OTHER APPROVED
16.	DUST CONTROL SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. IF POSSIBLE GRADING SHALL BE DONE BY PHASING. IF PHASING IS NOT AN OPTION, DUST SHALL BE CONTROLLED WITH WATER DURING EARTHWORK. AFTER EARTHWORK OPERATIONS, THE EXPOSED SOILS SHALL BE COVERED WITH STRAW OR MULCH UNTIL SEEDED. SEE DETAIL WITHIN THESE PLANS. OIL IS NOT TO BE USED AS A DUST SUPPRESSANT.		PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY (NOT A CONSTRUCTION/DEMOLITION DEBRIS LAND FILL). NOTE THOSE STORM WATER RUNOFFS ASSOCIATED WITH CONTAMINATED SOILS ARE NOT BE AUTHORIZED UNDER THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY GENERAL STORM WATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
17.	ANY DISCHARGE OF PETROLEUM OR PETROLEUM PRODUCTS OF LESS THAN 25 GALLONS ONTO A PERVIOUS SURFACE SHALL BE LEGALLY REMOVED AND PROPERLY TREATED OR PROPERLY DISCOURS OF OR OTHERWISE REMERIATED TO THAT NO CONTAMINATION FROM THE	10. 11.	OPEN BURNING : NO OPEN BURNING. DUST CONTROL OR DUST SUPPRESSANTS SHALL BE USED TO PREVENT NUISANCE
18.	DISPOSED OF, OR OTHERWISE REMEDIATED, SO THAT NO CONTAMINATION FROM THE DISCHARGE REMAINS ON-SITE. IN THE EVENT OF A LARGE PETROLEUM SPILL (25 OR MORE GALLONS) CONTRACTOR MUST		CONDITIONS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND IN A MANNER, WHICH PREVENT A DISCHARGE TO WATERS OF THE STATE. SUFFICIENT DISTANCE MUST BE PROVIDED BETWEEN APPLICATIONS AND NEARBY BRIDGES, CATCH BASINS, AND OTHER WATERWAYS. APPLICATION (EXCLUDING WATER) MAY NOT OCCUR
	CONTACT THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY. THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE (LEPC) WITHIN 30 MINUTES OF A SPILL OF 25 OR MORE GALLONS.		WHEN RAIN IS IMMINENT AS NOTED IN THE SHORT TERM FORECAST. USED OIL MAY NOT BE APPLIED FOR DUST CONTROL.
	CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT FACILITY SHALL BE UTILIZED, IF CONDITIONS ARE SUCH THAT MUD IS COLLECTING ON VEHICLE TIRES, THE TIRES MUST BE CLEANED BEFORE THE VEHICLES ENTER THE PUBLIC ROADWAY. THE SITE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING OR FLOW OF MUD ONTO THE PUBLIC RIGHT-OF-WAY. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO THE ROADWAY MUST BE REMOVED PROMPTLY.	12.	OTHER AIR PERMITTING REQUIREMENTS : CERTAIN ACTIVITIES ASSOCIATED WITH CONSTRUCTION WILL REQUIRE AIR PERMITS INCLUDING BUT NOT LIMITED TO: MOBILE CONCRETE BATCH PLANTS, MOBILE ASPHALT PLANTS, CONCRETE CRUSHERS, LARGE GENERATORS, ETC. THESE ACTIVITIES WILL REQUIRE SPECIFIC THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY AIR PERMITS FOR INSTALLATION AND OPERATION. OPERATORS MUST SEEK AUTHORIZATION FROM THE CORRESPONDING DISTRICT OF THE EPA. FOR DEMOLITION OF ALL COMMERCIAL SITES, A NOTIFICATION FOR
20.	IF NECESSARY, THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING	13.	RESTORATION AND DEMOLITION MUST BE SUBMITTED TO THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY TO DETERMINE IF ASBESTOS CORRECTIVE ACTIONS ARE REQUIRED. PROCESS WASTE WATER/LEACHATE MANAGEMENT : EPA'S CONSTRUCTION GENERAL
21.	ALL FEES AND CHARGES. IF NECESSARY, ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN ANY ROAD RIGHT OF WAY DURING CONSTRUCTION.		PERMIT ONLY ALLOWS THE DISCHARGE OF STORM WATER AND DOES NOT INCLUDE OTHER WASTE STREAMS/DISCHARGES SUCH AS VEHICLE AND/OR EQUIPMENT WASHING, ON-SITE SEPTIC LEACHATE CONCRETE WASH OUTS, WHICH ARE CONSIDERED PROCESS WASTEWATERS. ALL PROCESS WASTEWATERS MUST BE COLLECTED AND PROPERLY DISPOSED AT AN APPROVED DISPOSAL FACILITY. IN THE EVENT, LEACHATE OR SEPTAGE IS DISCHARGED; IT MUST BE ISOLATED FOR COLLECTION AND PROPER DISPOSAL AND CORRECTIVE ACTIONS TAKEN TO ELIMINATE THE SOURCE OF WASTE WATER.
22.	CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING CONSTRUCTION FENCE, SIGNS, ETC. TO WARN AND KEEP PEOPLE OFF SITE FOR THE DURATION OF THE PROJECT.	14.	A PERMIT TO INSTALL (PTI) IS REQUIRED PRIOR TO THE CONSTRUCTION OF ALL CENTRALIZED SANITARY SYSTEMS, INCLUDING SEWER EXTENSIONS, AND SEWERAGE SYSTEMS (EXCEPT THOSE SERVING ONE, TWO, AND THREE FAMILY DWELLINGS) AND POTABLE WATER LINES. PLANS MUST BE SUBMITTED AND APPROVED BY THE MICHIGAN
23.	IF ENCOUNTERED DURING SITE REDEVELOPMENT, ANY OIL/GAS WELLS OR MINE SHAFTS MUST BE PROPERLY ABANDONED, VAULTED AND VENTED IN ACCORDANCE WITH CURRENT REGULATIONS AND SPECIFICATIONS OF ALL GOVERNING AUTHORITIES		DEPARTMENT OF ENVIRONMENTAL QUALITY. ISSUANCE OF THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY CONSTRUCTION GENERAL STORM WATER PERMIT DOES NOT AUTHORIZE THE INSTALLATION OF ANY SEWERAGE SYSTEM WHERE THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY HAS NOT APPROVED A PTI.
24.	PERIOD, AND THAT ALL BARE SOILS ARE SEEDED AND MULCHED WITH TEMPORARY SEED	15.	DEPARTMENT OF ENVIRONMENTAL QUALITY HAS NOT APPROVED A PTI. PLEASE REFER TO THE LOCAL JURISDICTION STORM WATER MANAGEMENT MANUAL, CURRENT EDITION, FOR ADDITIONAL INFORMATION.
25.	MIXTURE. THE FOLLOWING STORM WATER POLLUTION PREVENTION AND SEDIMENT CONTROL MEASURES WHICH WILL BE USED ON THIS SITE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING : a. SILT FENCE b. SILT BARRIERS	16.	WASTES GENERATED BY CONSTRUCTION ACTIVITIES (I.E. CONSTRUCTION MATERIALS SUCH AS PAINTS, SOLVENTS, FUELS, CONCRETE, WOOD, ETC) MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS. HAZARDOUS AND TOXIC SUBSTANCES ARE USED ON VIRTUALLY ALL CONSTRUCTION SITES. GOOD MANAGEMENT OF THESE SUBSTANCES IS ALWAYS NEEDED.

b. SILT BARRIERS

c. CONSTRUCTION ENTRANCE d. CONCRETE WASHOUT FACILITY

CONSTRUCTION SEQUENCE

- DURING PRECONSTRUCTION MEETING ALL EROSION & SEDIMENT CONTROL FACILITIES & PROCEDURES SHALL BE DISCUSSED.
- 1. INSTALL CONSTRUCTION ENTRANCE AS DETAILED ON PLANS. TEMPORARY CONSTRUCTION FENCING SHALL BE INSTALLED AROUND PERIMETER OF CONSTRUCTION SITE. WHERE THERE IS EXISTING FENCE ALONG THE PERIMETER OF THE SITE, IT CAN BE UTILIZED. FENCING SHALL BE USED TO RESTRICT OUTSIDE TRAFFIC TO SITE.
- 2. DELIVER CONSTRUCTION TRAILER TO SITE AND INSTALL TEMPORARY POWER AND TELEPHONE, IF REQUIRED. TEMPORARY UTILITY SERVICES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 3. STAKE AND/OR FLAG LIMITS OF CLEARING.
- 4. CLEARING & GRUBBING, AS NECESSARY, FOR INSTALLATION OF PERIMETER CONTROLS. INSTALL SILT PERIMETER CONTROLS AS SHOWN ON PLANS. SILT PERIMETER CONTROLS SHALL BE INSTALLED LEVEL, ALONG THE CONTOURS, WITH ENDS TURNED UPSLOPE TO PREVENT CONCENTRATED FLOW AT THE SILT PERIMETER CONTROLS.
- 5. INSTALL TEMPORARY SILT INLET PROTECTION ON ALL EXISTING CATCH BASINS AND INLETS, AS DESIGNATED IN THE PLANS. REMOVAL OF SILT INLET PROTECTION FROM DESIGNATED INLETS CAN ONLY OCCUR WHEN A STRUCTURE IS REMOVED, AND AS REQUIRED BY THE PROGRESSION OF THE DEMOLITION AND CONSTRUCTION.
- 6. CLEARING & GRUBBING THE SITE AS NECESSARY. TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR REUSE, OR REMOVED TO AN APPROVED OFFSITE SPOIL AREA.
- 7. BEGIN FILLING & GRADING AS REQUIRED TO REACH SUBGRADE.
- 8. UTILIZE DUST CONTROL MEASURES AS REQUIRED TO MINIMIZE AIR-BORNE POLLUTION BY METHODS APPROVED BY THE AUTHORIZING EPA OFFICE.
- 9. ONCE PAVEMENT GRADES HAVE BEEN ESTABLISHED, AS DESIGNATED ON THE PLANS, THE CONTRACTOR SHALL UTILIZE THESE AREAS FOR STRUCTURE CONSTRUCTION.
- 10. IN PROPOSED GRASS AREAS, REPLACE TOPSOIL, FINE GRADE AND SEED, AS REQUIRED. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEED AND MULCHING OR TEMPORARY SEEDING IMMEDIATELY UPON REACHING FINAL GRADE.
- 11. CONSTRUCT UNDERGROUND UTILITY WORK INCLUDING STORM DRAINAGE FACILITIES. UPON INSTALLATION OF STORM DRAINAGE CATCH BASINS, YARD DRAINS AND INLETS, INSTALL REQUIRED INLET PROTECTION.
- 12. DO NOT REPLACE ANY TOPSOIL, SEED OR INSTALL FINAL PAVEMENT PRIOR TO COMPLETION OF BUILDING SHELL. SHOULD SITEWORK BE COMPLETED PRIOR TO THIS DATE, MULCH DISTURBED AREAS TO BE PLANTED AND INSTALL STONE SUBBASE IN DISTURBED AREAS TO BE PAVED.
- 13. FOLLOWING COMPLETION OF BUILDING SHELL AND PAVEMENT INSTALLATION. BEGIN LANDSCAPE INSTALLATION.
- 14. COMPLETE SITEWORK, PAVEMENT MARKINGS AND FINAL CLEAN-UP. RESEED ANY AREAS THAT MAY REQUIRE ATTENTION IMMEDIATELY. NOTE THAT LAWN AREAS WILL NOT BE DEEMED STABLE UNTIL A MINIMUM 80% VEGETATIVE DENSITY HAS BEEN ACHIEVED.
- 15. MAINTAIN EROSION & SEDIMENTATION CONTROL MEASURES UNTIL THE SITE HAS BEEN COMPLETELY STABILIZED. ALL AREAS OF VEGETATIVE SURFACE, WHETHER PERMANENT OR TEMPORARY, SHALL BE CONSIDERED TO BE IN PLACE AND FUNCTIONAL WHEN THE REQUIRED UNIFORM RATE OF COVERAGE (80%) IS OBTAINED.
- 16. REMOVE SEDIMENT CONTROLS.

NECESSARY.

- 17. THE FOLLOWING ITEMS MUST BE COMPLETED IN ORDER BY THE CONTRACTOR, ONCE THE SITE HAS BEEN DEEMED STABLE:
 - a) REMOVE CONSTRUCTION ENTRANCE PRIOR TO COMPLETION OF PAVING
 - b) SITE CLEAN UP RESEED ANY AREAS THAT REQUIRE ADDITIONAL SEED
 - SILT FENCE SHOULD BE CLEANED, REMOVED, BACKFILLED AND SEEDED WITH
 - PERMANENT SEEDING. VERIFY POSITIVE DRAINAGE FLOW IN ALL DRAINAGE STRUCTURES, REPAIR AS

** YEARLY INSPECTIONS, COMPLETED BY MAY 31ST OF EACH YEAR, MUST BE DOCUMENTED. COPIES SHOULD BE SENT TO THE LOCAL CITY AS WELL AS THE THE LOCAL COUNTY SOIL AND WATER CONSERVATION DISTRICT.

> ONLY APPROVED SIGNED PLANS BY THE LOCAL SWCD ARE TO BE USED FOR CONSTRUCTION.

CONTRACTORS INSPECTOR SHALL BE A QUALIFIED INDIVIDUAL. SITE INSPECTIONS SHALL BE DONE WEEKLY AND WITHIN 24 HRS AFTER EVERY RAINFALL EVENT EXCEEDING 1/2" OF RAINFALL. ALL NECESSARY REPAIRS SHOULD BE IMPLEMENTED IMMEDIATELY AFTER SUCH INSPECTIONS.

CONTRACTOR'S INSPECTOR SHALL BE RESPONSIBLE FOR PREPARING AND SIGNING WEEKLY AND ALL INTERMEDIATE EROSION CONTROL INSPECTION REPORTS AFTER EVERY INSPECTION. SUCH REPORTS SHALL BE MADE AVAILABLE TO OWNER, ENGINEER AND CITY / STATE OFFICIALS UPON THEIR REQUEST.

REPORTS SHALL BE KEPT FOR 3 YEARS AFTER TERMINATION OF THE CONSTRUCTION ACTIVITIES.

CONTRACTOR MAY SUBMIT A WAIVER REQUEST TO THE STATE EPA FOR A REDUCTION TO MONTHLY INSPECTIONS IF THE SITE WILL BE STABILIZED DORMANT SITE FOR A LONG PERIOD.

ONLY A QUALIFIED INSPECTION PERSONNEL IS TO PERFORM THE INSPECTIONS.

FOR BMPS THAT REQUIRE REPAIR OR MAINTENANCE - NON SEDIMENT POND BMPS ARE TO BE REPAIRED WITHIN 3 DAYS OF INSPECTION AND SEDIMENT PONDS ARE TO BE REPAIRED OR CLEANED OUT WITHIN 10 DAYS OF INSPECTION.

FOR BMPS THAT DO NOT MEET THE INTENDED FUNCTION, A NEW BMP SHALL BE INSTALLED WITHIN 10 DAYS OF THE INSPECTION.

FOR MISSING BMPS REQUIRED, THE MISSING BMPS SHALL BE INSTALLED WITHIN 10 DAYS OF THE INSPECTION.

PROJECT DESCRIPTION

PROJECT LOCATION:

LATITUDE LONGITUDE 42.324366° -83.409982°

EXISTING SITE SOIL TYPES:

TESTING.

TONQUISH CREEK.

IN ORDER TO MEET THE STORMWATER RUNOFF REQUIREMENTS SET FOR BY WAYNE COUNTY, A SINGLE UNDERGROUND DETENTION SYSTEM CONSISTING OF 55 STORMTECH CHAMBERS (SC-740) WILL BE INSTALLED UNDER THE PROPOSED PARKING LOT. THE STORMWATER RUNOFF WILL COLLECT INTO A SERIES OF CATCH BASINS AND ROUTE TO A PRECAST PRETREATMENT STRUCTURE AND ULTIMATELY ROUTED TO THE DETENTION BASIN.

LESSEE CONTACT:

TACO BELL OF AMERICA, LLC 1900 COLONEL SANDERS LANE LOUISVILLE, KY 40213 502.874.8300

ANTICIPATED TIMING:

CONSTRUCTION COMPLETE: AUGUST, 2018

CONTRACTOR: T.B.D. CONTACT: PHONE NUMBER:

CONTRACTOR SHALL MAINTAIN A CONSTRUCTION LOG DOCUMENTING ALL GRADING AND STABILIZATION ACTIVITIES.

APRIL, 2018

STORM WATER POLLUTION PREVENTION PLAN NARRATIVE

THIS PROJECT INVOLVES THE CONSTRUCTION OF A NEW TACO BELL RESTAURANT. THE CURRENT SITE IS VACANT AND GRASS COVERED WITH A MILD SLOPE FROM NORTH TO SOUTH. STORM WATER QUALITY AND QUANTITY WILL BE MANAGED VIA MANUFACTURED PRETREATMENT AND UNDERGROUND DETENTION, RESPECTIVELY.

PROJECT COMPLETION STATISTICS

PARCEL SIZE (AFTER LOT SPLIT): TOTAL DISTURBED AREA:	0.86 ACRES APPROX. 0.91	ACRES
EXISTING LAND USE FOR THE SITE IS VACANT.		
ESTIMATED PRE-CONSTRUCTION IMPERVIOUS AREA: ESTIMATED PRE-CONSTRUCTION IMPERVIOUS PERCENT: PRE-CONSTRUCTION RUN-OFF COEFFICIENT:		0.00 ACRES 0% 0.15
PROPOSED LAND USE WILL BE APARTMENT BUILDING WITH PARKING LO IMPROVEMENTS	OT AND AMENI	ГҮ
ESTIMATED POST-CONSTRUCTION IMPERVIOUS AREA: ESTIMATED POST-CONSTRUCTION IMPERVIOUS PERCENT: POST-CONSTRUCTION RUN-OFF COEFFICIENT:		0.55 ACRES 64% 0.66
PROJECT LOCATION:		

OaB: OAKVILLE FINE SAND, 0 TO 6 PERCENT SLOPES. TeA: TEDROW LOAMY FINE SAND, 0 TO 2 PERCENT SLOPES.

REFERENCE: USDA NATIONAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY.

THE INFILTRATION RATE FOR THIS SITE HAS NOT BEEN DETERMINED VIA SOILS REPORT OR

WETLAND INFORMATION:

THERE ARE NO WETLANDS ON THIS SITE.

FIRST AND SUBSEQUENT RECEIVING STREAM:

INITIAL RECEIVING WATER IS WILLOW CREEK AND THE SUBSEQUENT RECEIVING WATER IS

CONTROL RATIONAL AND DESCRIPTION

CONSTRUCTION BEGIN:



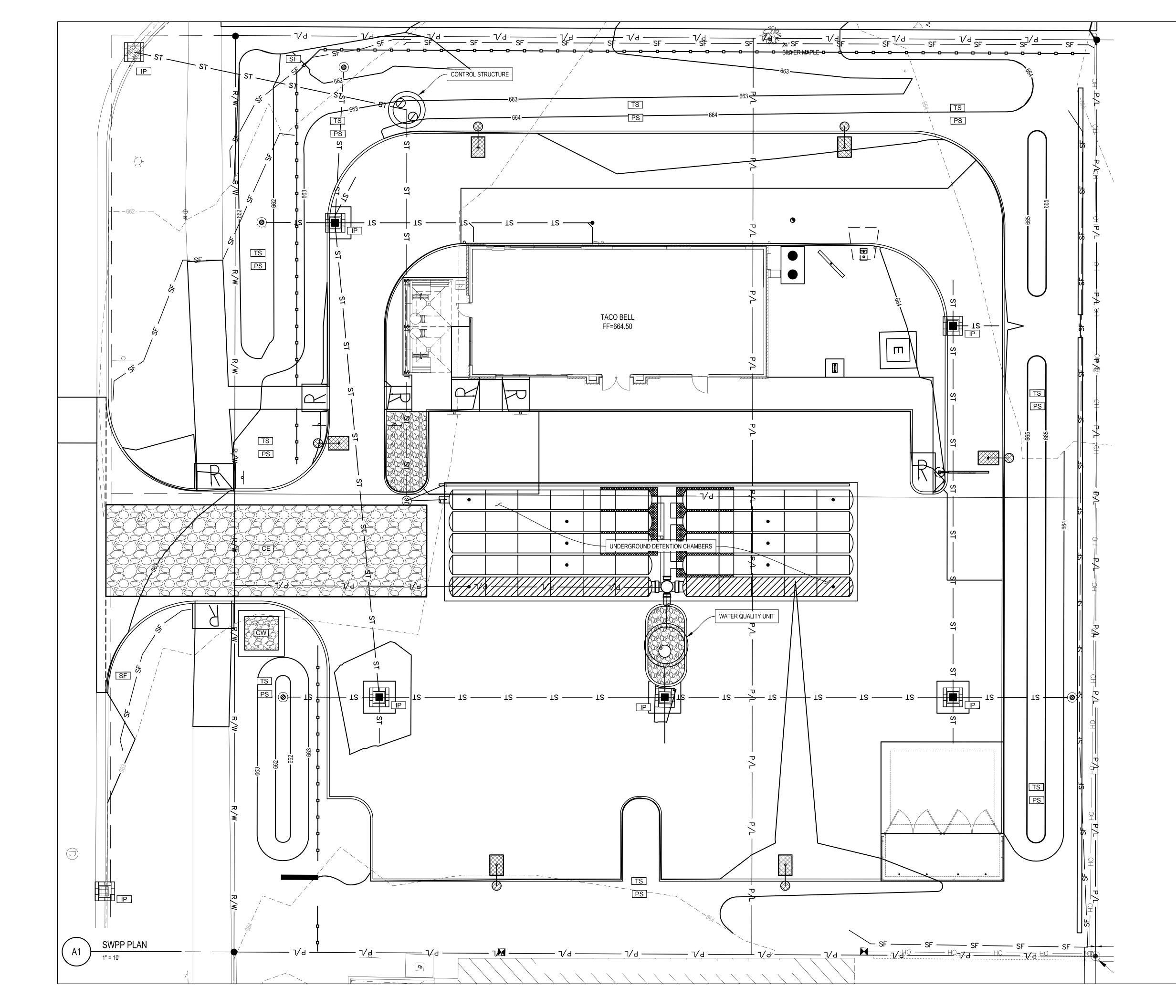
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CONTRACT DATE:	XX.XX.XX
BUILDING TYPE:	T40M-O
PLAN VERSION:	JAN 18
SITE NUMBER:	312720/446548
STORE NUMBER:	2017088.72
	BELL

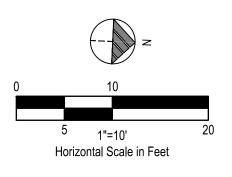
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SWPP KEYNOTES

TS TEMPORARY SEEDING

- PS PERMANENT SEEDING
- CW CONCRETE WASHOUT AREA
- SF SILT FENCE
- CE CONSTRUCTION ENTRANCE
- IP INLET PROTECTION

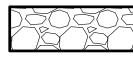
LEGEND

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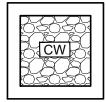
(SEE SHEET C-001 FOR GENERAL LEGEND) PROPOSED SILT BARRIER REFER TO SWPP DETAILS

PROPOSED SILT FENCE ------ SF ------ REFER TO SWPP DETAILS

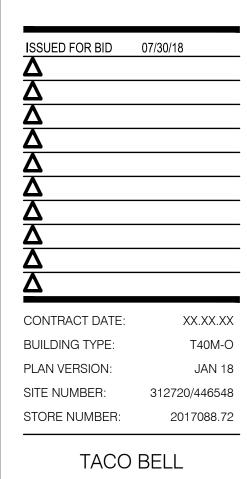
REFER TO SWPP DETAILS



PROPOSED CONSTRUCTION ENTRANCE



PROPOSED CONCRETE WASHOUT FACILITY REFER TO SWPP DETAILS



20779 13 MILE RD.

WESTLAND, MI



MODERN EXPLORER T40 - OPEN KITCHEN



C-132

SITE BENCHMARK #1: ARROW ON HYDRANT, AT THE NORTHWEST CORNER OF FORD ROAD AND MORLEY ROAD. ELEVATION = 664.67' (NAVD88)

SITE BENCHMARK #2: SET MAG NAIL ON EAST SIDE OF UTILITY POLE, ON WEST SIDE OF MORLEY, 200 FEET NORTH OF FORD ROAD. ELEVATION = 666.18' (NAVD88)

SITE BENCHMARK #3: SET MAG NAIL ON NORTH SIDE OF GUY POLE, ON NORTH SIDE OF FORD ROAD, NEAR THE MIDDLE OF SITE. ELEVATION = 663.88' (NAVD88)

MULCHING

1) MULCH AND OTHER APPROPRIATE VEGETATIVE PRACTICES SHALL BE APPLIED TO DISTURBED AREAS WITHIN 7 DAYS OF GRADING IF THE AREA IS TO REMAIN DORMANT (UNDISTURBED) FOR MORE THAN 21 DAYS OR ON AREAS AND PORTIONS OF THE SITE WHICH CAN BE BROUGHT TO FINAL GRADE.

2) MULCH SHALL CONSIST OF ONE OF THE FOLLOWING:

-STRAW SHALL BE UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/AC. OR 90 LB./1,000 SQ. FT. (TWO TO THREE BALES) THE STRAW MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQ. FT. SECTIONS AND PLACE TWO REPEAT AS NEEDED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING 45-LB BALES OF STRAW IN EACH SECTION.

-WOOD CELLULOSE FIBER SHOULD BE USED AT 2,000 LB.AC, OR 46 LB/1,000 SQ. FT.

-ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS AND ROLLED EROSION CONTROL PRODUCTS STONE OR COARSE GRAVEL AS SOON AS PRACTICABLE AFTER REACHING AN INTERIM OR FINAL AT 10-20 TONS/AC

3) MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR RUNOFF. THE FOLLOWING ARE ACCEPTABLE METHODS FOR ANCHORING MULCH.

-USE A DISK, CRIMPER, OR SIMILAR TYPE TOOL SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH SOIL. MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT BE LEFT GENERALLY LONGER THAN 6 INCHES.

-USE MULCH NETTINGS ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, FOLLOWING POLLUTION OR PLANT DAMAGE. APPLICATION RATES SHOULD BE STRICTLY IN ACCORDANCE WITH ALL PLACEMENT AND ANCHORING REQUIREMENTS. USE IN AREAS OF WATER CONCENTRATION AND SUPPLIERS' SPECIFIED RATES. STEEP SLOPES TO HOLD MULCH IN PLACE.

-FOR STRAW MULCH, SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, BE APPLIED AS NEED TO ACCOMPLISH CONTROL. TERRA TACK OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER. ALL APPLICATIONS OF SYNTHETIC BINDERS MUST BE CONDUCTED IN SUCH A MANNER WHERE THERE IS 7) PAVED AREAS THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE NO CONTACT WITH WATERS OF THE STATE.

-WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LB/AC. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB/100 GAL. OF WOOD CELLULOSE FIBER.

TEMPORARY SEEDING						
SEEDING DATES	SPECIES	SEEDIN	IG RATE			
		LB./1,000 SQ FT	LB./AC.			
MARCH 1 TO AUGUST 15	OATS	3	128 (4 BUSHEL)			
	TALL FESCUE	1	40			
	ANNUAL RYEGRASS	1	40			
	PERENNIAL RYEGRASS	1	40			
	TALL FESCUE	1	40			
	ANNUAL RYEGRASS	1	40			
	ANNUAL RYEGRASS	1.25	55			
	PERENNIAL RYEGRASS	3.25	142			
	CREEPING RED FESCUE	0.4	17			
	KENTUCKY BLUEGRASS	0.4	17			
	OATS	3	128 (3 BUSHEL)			
	TALL FESCUE	1	40			
	ANNUAL RYEGRASS	1	40			
AUGUST 16 TO OCTOBER 31	RYE	3	112 (2 BUSHEL)			
	TALL FESCUE	1	40			
	ANNUAL RYEGRASS	1	40			
	WHEAT	3	120 (2 BUSHEL)			
	TALL FESCUE	1	40			
	ANNUAL RYEGRASS	1	40			
	PERENNIAL RYEGRASS	1	40			
	TALL FESCUE	1	40			
	ANNUAL RYEGRASS	1	40			
	ANNUAL RYEGRASS	1.25	40			
	PERENNIAL RYEGRASS	3.25	40			
	CREEPING RED FESCUE	0.4	40			
	KENTUCKY BLUEGRASS	0.4				
NOVEMBER 1 TO FEBRUARY 29 USE MULCH ONLY OR DORMANT SEEDING						
NOTE: OTHER APPROVED SEED S	SPECIES MAY BE SUBSTITUTED					

DUST CONTROL NOTES

CONSTRUCTION SEQUENCING AND DISTURBING ONLY SMALL AREAS AT A TIME CAN GREATLY REDUCE PROBLEMATIC DUST FROM THE SITE. IF LAND MUST BE DISTURBED, ADDITIONAL

AND ALLOW MAXIMUM INFILTRATION. (MAXIMUM INFILTRATION WILL HELP CONTROL BOTH RUNOFF RATE AND WATER QUALITY.) SUBSOILING SHOULD BE DONE WHEN THE SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING SHALL NOT BE DONE ON APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED TO WHAT IS NECESSARY FOR 2) THE SITE SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT 4) AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACID SOIL AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 POUNDS PER 1,000 SQ. FT. OR 2 TONS PER ACRE. FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN PLACE OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF 25 POUNDS PER 1,000 SQ. FT. OR 1,000 POUNDS PER SPRING-TOOTH HARROW, OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF 3 INCHES. ON SLOPING LAND, THE SOIL SHALL BE WORKED ON THE CONTOUR.

1)

TEMPORARY STABILIZATION MEASURES SHOULD BE CONSIDERED PRIOR TO DISTURBANCES. FOR OVER 14 DAYS, SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUSE SOIL AND AIR ESTABLISHING VEGETATION. MOVEMENT ACROSS DISTURBED AREAS. 2) SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND FOR SEEDBED PREPARATION AND SEEDING. SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING 3) TOPSOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION. AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS INSTRUCTIONS. 3) GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABALIZED USING CRUSHED APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD MULCH/CHIPS APPLIED GRADE. CRUSHED STONE OR COARSE GRAVEL CAN BE USED AS A PERMANENT COVER TO PROVIDE CONTROL OF SOIL EMISSIONS. 4) EXISTING WINDBREAK VEGETATION SHALL BE MARKED AND PRESERVED. SNOW FENCING OR ACRE OF A 10-10-10 OR 12-12-12 ANALYSES. OTHER SUITABLE BARRIER MAY BE PLACED PERPENDICULAR TO PREVAILING AIR CURRENTS AT INTERVALS OF ABOUT 15 TIMES THE BARRIER HEIGHTS TO CONTROL AIR CURRENTS AND BLOWING 6) THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW,

> 5) CALCIUM CHLORIDE MAY BE APPLIED BY MECHANICAL SPREADER AS LOOSE, DRY GRANULES OR FLAKES AT A RATE THAT KEEPS THE SURFACE MOIST BUT NOT SO HIGH AS TO CAUSE WATER

CLEANED DAILY, OR AS NEEDED, UTILIZING A STREET SWEEPER OR BUCKET-TYPE ENDLOADER OR SCRAPER.

TEMPORARY SEEDING

STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.

2) TEMPORARY SEEDING / STABILIZATION SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 14 DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDED WITHIN 7 DAYS AFTER GRADING.

3) THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHOULD NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.

4) TEMPORARY VEGETATION SEEDING RATES SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.

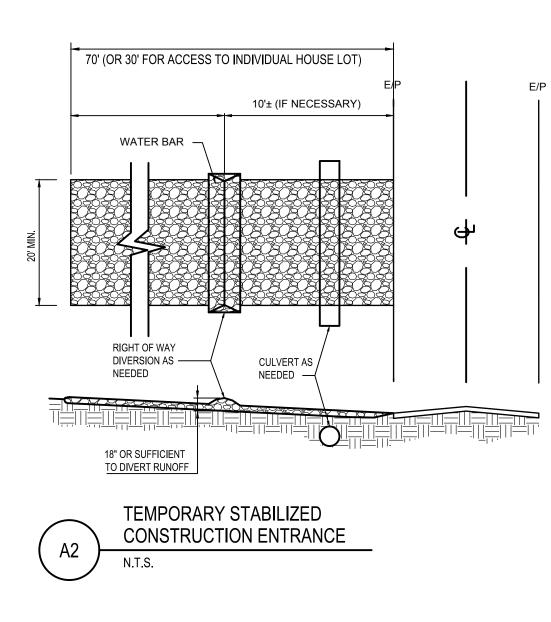
5) SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER, SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH, WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES ON FAVORABLE, VERY FLAT SOIL CONDITIONS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION. IF MULCH SHALL BE USED, FOLLOW THE REQUIREMENTS AND INSTRUCTIONS IN THE MULCH APPLICATION.

ANY DISTURBED AREAS THAT ARE NOT GOING TO BE WORKED FOR 14 DAYS DURING WINTER MUST BE SEEDED AND MULCHED BY NOVEMBER 1.

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREA WITHIN 50 FEET OF A WATERCOURSE AND NOT AT FINAL GRADE	WITHIN 2 DAYS OF THE MOST RECENT DISTURBANCE, IF THAT AREA WILL REMAIN IDLE FOR MORE THAN 21 DAYS
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREA, INCLUDING SOIL STOCKPILES, THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A WATERCOURSE	WITHIN 7 DAYS IF THE MOST RECENT DISTURBANCE WITHIN THE AREA
DISTURBED AREAS THAT WILL BE IDLE OVER THE WINTER	PRIOR TO NOVEMBER 1.
	ANY DISTURBED AREA WITHIN 50 FEET OF A WATERCOURSE AND NOT AT FINAL GRADE FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREA, INCLUDING SOIL STOCKPILES, THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A WATERCOURSE DISTURBED AREAS THAT WILL BE IDLE OVER

	PERMANENT SEEDING					
	SE	EDING RATE	NOTEO			
SEED MIX	LB./AC.	LB./1,000 SQ FT	NOTES:			
GENERAL USE						
CREEPING RED FESCUE	20-40	1/2 - 1				
DOMESTIC RYEGRASS	10-20	1/4 - 1/2	FOR CLOSE MOWING & FOR WATERWAY WITH < 2.0 FT/SEC VELOCITY			
KENTUCKY BLUEGRASS	10-20	1/2-1				
TALL FESCUE	40-50	1-1 1/4				
DWARF FESCUE	90	2 1/4				
	STEE	P BANKS OR CUT	SLOPES			
TALL FESCUE	40-50	1 1/4				
CROWN VETCH	10-20	1/4-1/2				
TALL FESCUE	20-30	1/2-3/4	DO NOT SEED LATER THAN AUGUST			
FLAT PEA	20-25	1/2-3/4				
TALL FESCUE	20-30	1/2-3/4	DO NOT SEED LATER THAN AUGUST			
	ROA	D DITCHES AND	SWALES			
TALL FESCUE	40-50	1-1 1/4				
DWARF FESCUE	90	2 1/4				
KENTUCKY BLUEGRASS	5	0.1				
		LAWNS				
KENTUCKY BLUEGRASS	100-120	2				
PERENNIAL RYEGRASS		2				
KENTUCKY BLUEGRASS	100-120	2	FOR SHADED AREAS			
CREEPING RED FESCUE		1-1/2				
NOTE: OTHER APPROVED	SEED SPI	ECIES MAY BE SU	JBSTITUTED			



PERMANENT SEEDING NOTES:

SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUGUST 1 TO SEPTEMBER 30. IF SEEDING 7) OCCURS OUTSIDE OF THE ABOVE-SPECIFIED DATES, ADDITIONAL MULCH AND IRRIGATION MAY BE REQUIRED TO ENSURE A MINIMUM OF 80% GERMINATION. TILLAGE FOR SEEDBED PREPARATION SHOULD BE DONE WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN 6) WHEN TEMPORARY DUST CONTROL MEASURES ARE USED; REPETITIVE TREATMENT SHOULD COMPRESSED BY HAND. FOR WINTER SEEDING, SEE THE FOLLOWING SECTION ON DORMANT SEEDING.

SUBSOILER, PLOW, OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION

8) SEEDING SHOULD NOT BE MADE FROM OCTOBER 1 THROUGH NOVEMBER 20. DURING THIS PERIOD, THE SEEDS ARE LIKELY TO GERMINATE BUT PROBABLY WILL NOT BE ABLE TO SURVIVE THE WINTER.

9) THE FOLLOWING METHODS MAY BE USED FOR "DORMANT SEEDING":

- -- FROM OCTOBER 1 THROUGH NOVEMBER 20, PREPARE THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME AND FERTILIZER, THEN MULCH AND ANCHOR. AFTER NOVEMBER 20. AND BEFORE MARCH 15, BROADCAST THE SELECTED SEED MIXTURE. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
- -- FROM NOVEMBER 20 THROUGH MARCH 15, WHEN SOIL CONDITIONS PERMIT, PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED SEED MIXTURE, MULCH AND ANCHOR. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
- -- APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDRO-SEEDER (SLURRY MAY INCLUDE SEED AND FERTILIZER) ON A FIRM, MOIST SEEDBED.
- -- WHERE FEASIBLE, EXCEPT WHEN A CULTIPACKER TYPE SEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A CULTIPACKER. ROLLER, OR LIGHT DRAG. ON SLOPING LAND, SEEDING OPERATIONS SHOULD BE ON THE CONTOUR WHERE FEASIBLE.

10) PERMANENT SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY WEATHER OR ON ADVERSE SITE CONDITIONS, WHICH REQUIRE ADEQUATE MOISTURE FOR SEED GERMINATION AND PLANT GROWTH. IRRIGATION SHALL BE MONITORED TO PREVENT EROSION AND DAMAGE TO SEEDED AREAS FROM EXCESSIVE RUNOFF.

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREA THAT WILL LIE DORMANT FOR ONE YEAR OR MORE.	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE.
ANY AREA WITHIN 50 FEET OF A WATERCOURSE AND AT FINAL GRADE.	WITHIN 2 DAYS OF REACHING FINAL GRADE.
ANY AREA AT FINAL GRADE.	WITHIN 7 DAYS OF REACHING FINAL GRADE WITHIN THAT AREA.

<u>NOTES</u>

- 1. STONE SIZE NO. 2 STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
- 2. THE CONSTRUCTION ENTRANCE SHALL COINCIDE WITH THE PROPOSED DRIVE AS SHOWN ON THE PLAN.
- 3. PAVEMENT THICKNESS STONE LAYER SHALL BE 6" THICK FOR STANDARD DUTY ACTIVITY AND 10" THICK FOR HEAVY DUTY ACTIVITY.
- 4. DRIVEWAY WIDTH THE ENTRANCE SHALL BE AT LEAST 20' WIDE. CONTRACTOR SHALL ENSURE ALL VEHICLES UTILIZE THE CONSTRUCTION ENTRANCE UNTIL PAVEMENT IS IN PLACE.
- BEDDING-A GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE SPECIFICATIONS SHOWN BELOW.
- 6. CULVERT-A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
- WATER BAR A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
- MAINTENANCE TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
- 9. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION SHALL BE RESTRICTED FROM MUDDY AREAS.
- 10. THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

SITE INSPECTIONS SHALL BE DONE WEEKLY AND AFTER EVERY RAINFALL EVENT EXCEEDING 1/2" OF RAINFALL. ALL NECESSARY REPAIRS SHOULD BE IMPLEMENTED IMMEDIATELY AFTER SUCH INSPECTIONS.

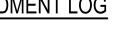
CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING WEEKLY EROSION CONTROL INSPECTION REPORTS. SUCH REPORTS SHALL BE MADE AVAILABLE TO OWNER, ENGINEER AND CITY / STATE OFFICIALS UPON THEIR REQUEST.

SWPPP AMENDMENT LOG

SWPPP CONTACT:

PROJECT NAME

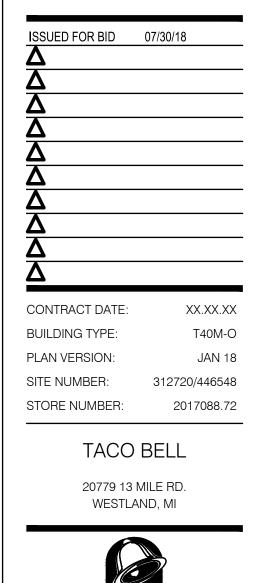
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DESCRIPTION OF THE AMENDMENT

BILIZATION LOG

E NG TY ED	DATE OF STABILIZATION MEASURES INITIATED	DESCRIPTION OF THE STABILIZATION MEASURE AND LOCATION



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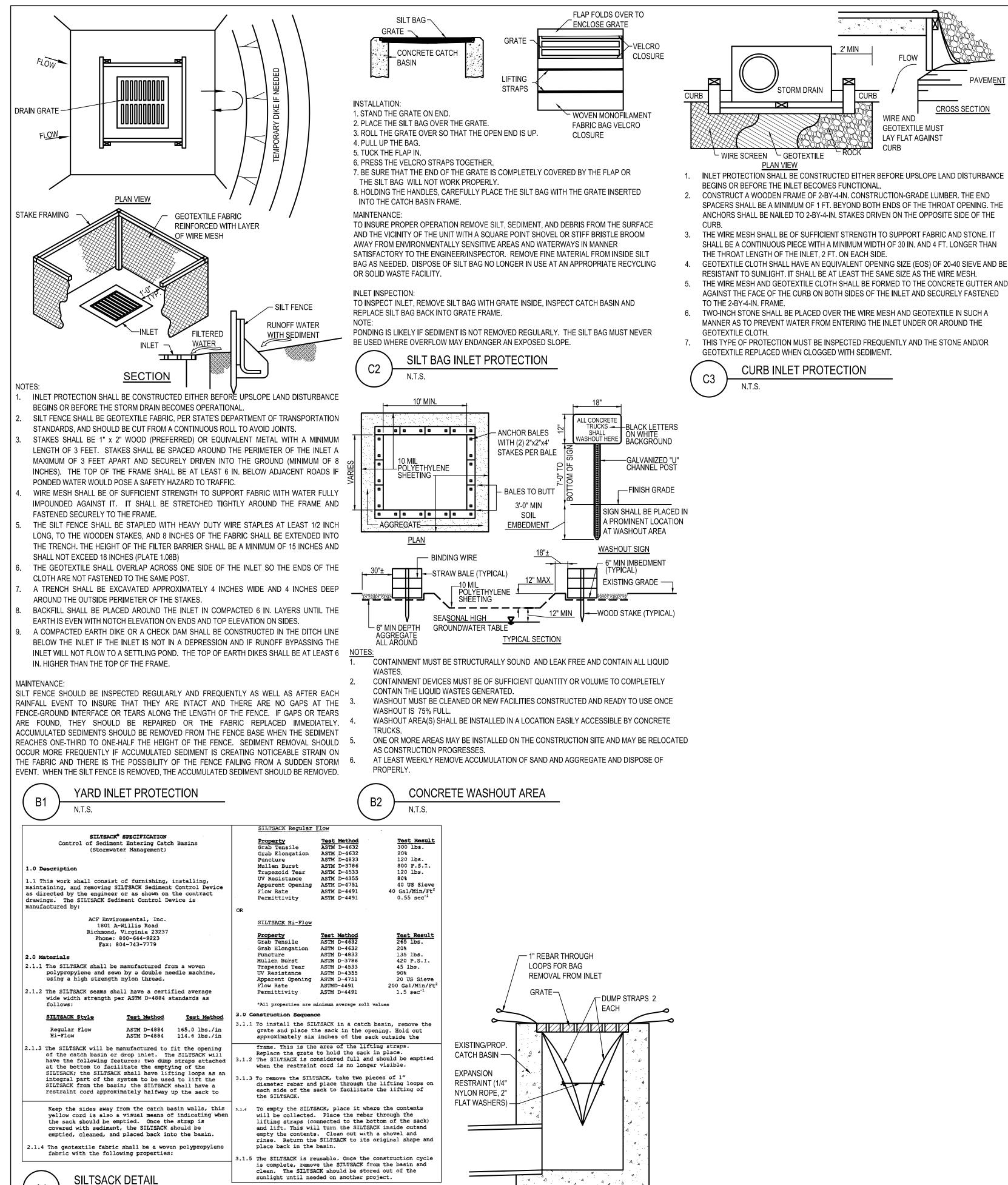
T40 - OPEN KITCHEN

SWPP NOTES

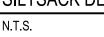
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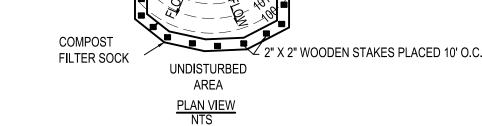


- GEOTEXTILE CLOTH SHALL HAVE AN EQUIVALENT OPENING SIZE (EOS) OF 20-40 SIEVE AND BE

COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS HEAVY DUTY MULTI-FILAMENT MULTI-FILAMENT 5 mil HDPE POLYPROPYLENE POLYPROPYLENE 3 mil HDPE 5 mil HDPE MATERIAL TYPE (MFPP) (MFPP) PHOTO-PHOTO-PHOTO-PHOTO-BIO-MATERIAL DEGRADABLE DEGRADABLE CHARACTERISTICS EGRADABLE DEGRADABLE FGRADAB SOCK 12 18" 18' DIAMETERS 24" 18" 24" 24" 24" MESH OPENING 3/8" 202 PSI TENSILE STRENGTH 44 PSI 26 PSI | 26 PSI | ULTRAVIOLET STABILITY % % AT 1000 23% AT 100% AT 100% AT ORIGINAL STRENGTH HR. 1000 HR. 1000 HR. 1000 HR. (ASTM G-155) MINIMUM FUNCTIONAL MONTHS MONTHS MONTHS YEAR YEARS LONGEVITY TWO-PLY SYSTEM HDPE BIAXIAL NET CONTINUOUSLY WOUND INNER CONTAINMENT FUSION-WELDED JUNCTURES NETTING 3/4" X 3/4" MAX. APERTURE SIZE COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER & NON-WOVEN FLEECE MECHANICALLY OUTER FILTRATION FUSED VIA NEEDLE PUNCH) MESH 3/16" MAX. APERTURE SIZE

SOCK FABRICS COMPOSED OF BURLAP MAY BE U	JSED ON PROJECTS LASTING 6 MONTHS OR LESS
COMPOST SHALL MEET THE FOLLOWING STANDARDS	S:
ORGANIC MATTER CONTENT	80% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
рН	5.5 - 8.0
MOISTURE CONTENT	35% - 55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS MAXIMUM

BLOWN - 2" X 2" WOODEN STAKES PLACED 10' O.C. PLACED COMPOST FILTER SOCK DISTURBED AREA UNDISTURBED AREA 12" MIN. 🕴 SECTION VIEW NTS EXISTING CONTOURS DISTURBED ARFA



ADAPTED FROM FILTREXX

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES ½ THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH ½ INCH STORM RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK

N.T.S

NOTES

3) TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.

5) WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FT. (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED. IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.

SURFACE.

7) THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP, AND SECURELY SFALED.

8) POSTS SHALL BE A MINIMUM OF 5 FEET LONG, 2 INCHES IN DIAMETER AND SPACED A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND. WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET.

9) THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICE WHICH WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.

10) THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8 IN. OF CLOTH ARE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6 IN. DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED.

11) WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS.

12) THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.

14) SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: A) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, B) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR C) OTHER PRACTICES SHALL BE INSTALLED.

SILT FENCE SHOULD BE INSPECTED REGULARLY AND FREQUENTLY AS WELL AS AFTER EACH RAINFALL EVENT TO INSURE THAT THEY ARE INTACT AND THERE ARE NO GAPS AT THE FENCE-GROUND INTERFACE OR TEARS ALONG THE LENGTH OF THE FENCE. IF GAPS OR TEARS ARE FOUND, THEY SHOULD BE REPAIRED OR THE FABRIC REPLACED IMMEDIATELY. ACCUMULATED SEDIMENTS SHOULD BE REMOVED FROM THE FENCE BASE WHEN THE SEDIMENT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE FENCE. SEDIMENT REMOVAL SHOULD OCCUR MORE FREQUENTLY IF ACCUMULATED SEDIMENT IS CREATING NOTICEABLE STRAIN ON THE FABRIC AND THERE IS THE POSSIBILITY OF THE FENCE FAILING FROM A SUDDEN STORM EVENT. WHEN THE SILT FENCE IS REMOVED, THE ACCUMULATED SEDIMENT SHOULD BE REMOVED.

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1) SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.

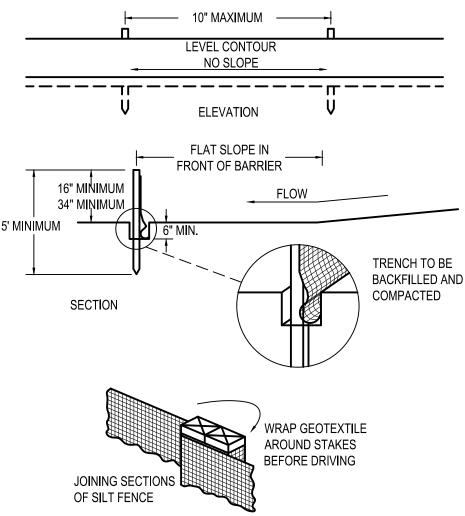
2) ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.

4) WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.

6) THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 IN. ABOVE THE ORIGINAL GROUND

3) SEAMS BETWEEN SECTION OF SILT FENCE SHALL BE OVERLAPPED WITH THE END STAKES OF EACH SECTION WRAPPED TOGETHER BEFORE DRIVING INTO THE GROUND.

AINTENANCE:



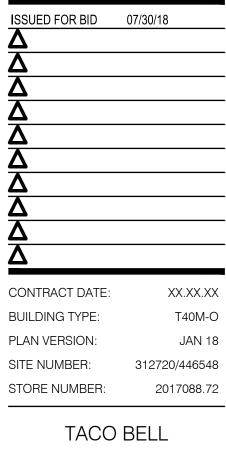
CRITERIA FOR GEOTEXTILE FABRIC SILT FENCE, PER CURRENT STATE'S DOT SPECIFICATIONS.

FABRIC PROPERTIES	VALUES	TEST METHOD
IIMUM TENSILE STRENGTH	120 LB. MINIMUM	ASTM D 4632
IIMUM BURST STRENGTH	200 PSI MINIMUM	
IIMUM PERMITTNITY	1x10-2sec-1	ASTM D 4491
PARENT OPENING SIZE	AOS <u><</u> 0.84 mm	ASTM D 4751
EXPOSURE STRENGTH RETENTIOL	70%	ASTM G 4335
XIMUM ELONGATION AT 60 LBS.	50%	ASTM D 4632
IIMUM PUNCTURE STRENGTH	50 LBS (220N)	ASTM D 4833
IIMUM TEAR STRENGTH	40 LBS (180N)	ASTM D 4533

SILT FENCE

NTS



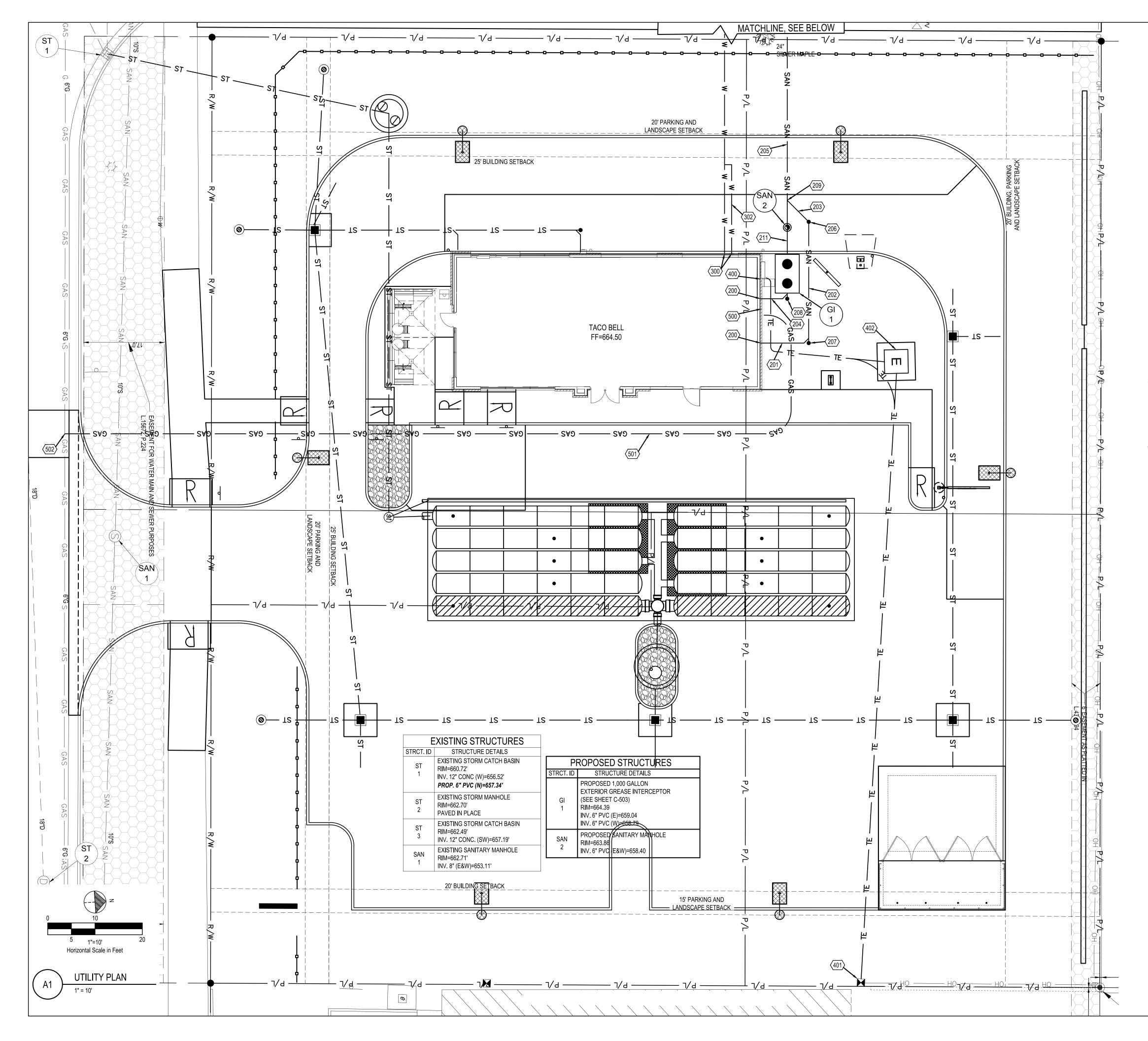


20779 13 MILE RD. WESTLAND, MI









GENERAL SHEET NOTES

- 1. SEE SHEET C-001 FOR ADDITIONAL UTILITY NOTES.
- 2. UTILITY PLAN CONTINUED ON SHEET C-141 SPECIFIC TO STORM SYSTEM.
- CONTRACTOR TO RE-ESTABLISH BENCHMARK #3 PRIOR TO DEMOLITION OF EXISTING GUY POLE.
 SEE KEY PLAN, SHEET C-001 FOR LOCATION OF STRUCTURES INDICATED BUT NOT SHOWN ON SHEET C-140.
- 5. CONTRACTOR SHALL FIELD VERIFY THE INVERTS AND SLOPE OF THE EXISTING 12" SANITARY SEWER TO BE TAPPED.

SANITARY

- 200. PROPOSED SANITARY CONNECTION. INV.=659.50.
- 201. PROPOSED 10 L.F. OF 6" (PVC) SANITARY SEWER @ 3.60%.
- 202. PROPOSED 26 L.F. OF 6" (PVC) SANITARY SEWER @ 3.46%.
- 203. PROPOSED 6 L.F. OF 6" (PVC) SANITARY SEWER @ 3.83%.
- 204. PROPOSED 7 L.F. OF 6" (PVC) SANITARY SEWER @ 6.57%. 205. PROPOSED 51 L.F. OF 6" (PVC) SANITARY SEWER @ 6.79%.
- 206. PROPOSED SANITARY CLEANOUT SEE SHEET C-503 AND WYE CONNECTION SHEET C-503. INV.=658.24.
- 207. PROPOSED SANITARY CLEANOUT SEE SHEET C-503 AND WYE CONNECTION SHEET C-503. INV.=659.14. 208. PROPOSED SANITARY CLEANOUT SEE SHEET C-503 AND WYE CONNECTION SHEET C-503. INV.=659.04.
- 209. PROPOSED SANITARY WYE CONNECTION, SEE SHEET C-503. INV.=658.01.
- 210. PROPOSED SANITARY SEWER SERVICE CONNECTION. CONTRACTOR SHALL PROVIDE CONNECTION PER CITY OF WESTLAND DEPARTMENT OF PUBLIC WORKS WATER AND SEWER DIVISION STANDARDS. PROPOSED 6" INV.=654.92±; EXISTING 12" INV.=654.42±, SEE SHEET C-503.
- 211. PROPOSED 6 L.F. OF 6" (PVC) SANITARY SEWER @ 6.79%.

WATER

- 300. PROPOSED WATER CONNECTION. COORDINATE WITH PLUMBING PLANS.
- 301. PROPOSED 89 L.F. OF 2" (COPPER TYPE "K") WATER SERVICE LINE.
- 302. PROPOSED 89 L.F. OF 1-1/2" (COPPER TYPE "K") WATER SERVICE LINE. 303. PROPOSED WATER SERVICE TAP AND WATER VALVE PER CITY OF WESTLAND DEPARTMENT OF
- PUBLIC WORKS DIVISION OF WATER AND SEWER STANDARDS AND SPECIFICATIONS, SEE SHEET C-503.

ELECTRIC AND COMMUNICATIONS

- 400. PROPOSED ELECTRIC METER PER ELECTRIC COMPANY SPECIFICATIONS. SEE BUILDING DRAWINGS FOR EXACT LOCATION. ELECTRIC SERVICE LINE TO BE COORDINATED WITH THE ELECTRIC COMPANY.
- 401. PROPOSED ELECTRIC AND TELECOMMUNICATIONS SERVICE CONNECTION TO BE COORDINATED WITH THE UTILITY COMPANIES.
- 402. PROPOSED ELECTRICAL TRANSFORMER PER ELECTRICAL COMPANY SPECIFICATIONS. G.C. TO VERIFY EXACT LOCATION AND SIZE WITH UTILITY ENGINEER.

GAS

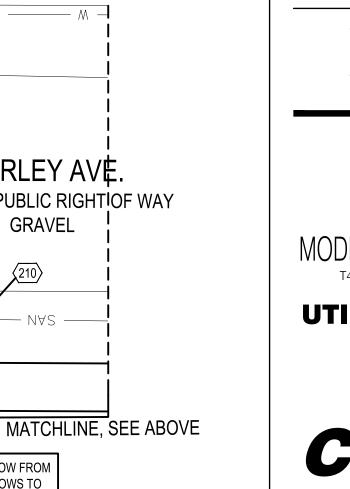
- 500. PROPOSED GAS METER PER GAS COMPANY SPECIFICATIONS. SEE BUILDING DRAWINGS FOR EXACT LOCATION. GAS SERVICE LINE TO BE COORDINATED WITH THE GAS COMPANY.
 501. PROPOSED 190 L.F. GAS SERVICE CONNECTION TO BE COORDINATED WITH THE GAS
- COMPANY.
 502. PROPOSED CONNECTION TO EXISTING UTILITY. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR METHOD OF CONNECTION.

UTILITY CROSSINGS

GENERAL CROSSING NOTES: CONTRACTOR SHALL COORDINATE ALL CROSSINGS WITH THE UTILITY COMPANY. PRESSURIZED AND SECONDARY UTILITIES SHALL DEFLECT TO MAINTAIN 18" CLEAR AT SANITARY OR STORM SEWER CROSSINGS.

600. PROPOSED UTILITY CROSSING: 12" SANITARY INV.=654.25±; 2" WATER INV.=659.25±.

(SEE SHEET C-001 FO			
ST		STORM SEWER	
SAN		FINGER DRAIN SANITARY SEWER	
W		WATER SERVICE	
GAS		GAS SERVICE	
		JNDERGROUND	
T&E	TELEPHONE ELECTRIC SE	,CABLE, AND	
D.S. 🔳	PROPOSED I	DOWNSPOUT	
A #	APPURTENA	NCES	
(#)	UTILITY CON	STRUCTION KEYNOTE	
	EXISTING EA	SEMENT	
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GPD GROUP Professional Corporation 520 South Main Street, Suite 2531 Akron, OH 44311 330.572.2100 Fax: 330.572.2102

SANITARY

ISSUED FOR BID 07/30/18

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MODERN EXPLORER T40 - OPEN KITCHEN





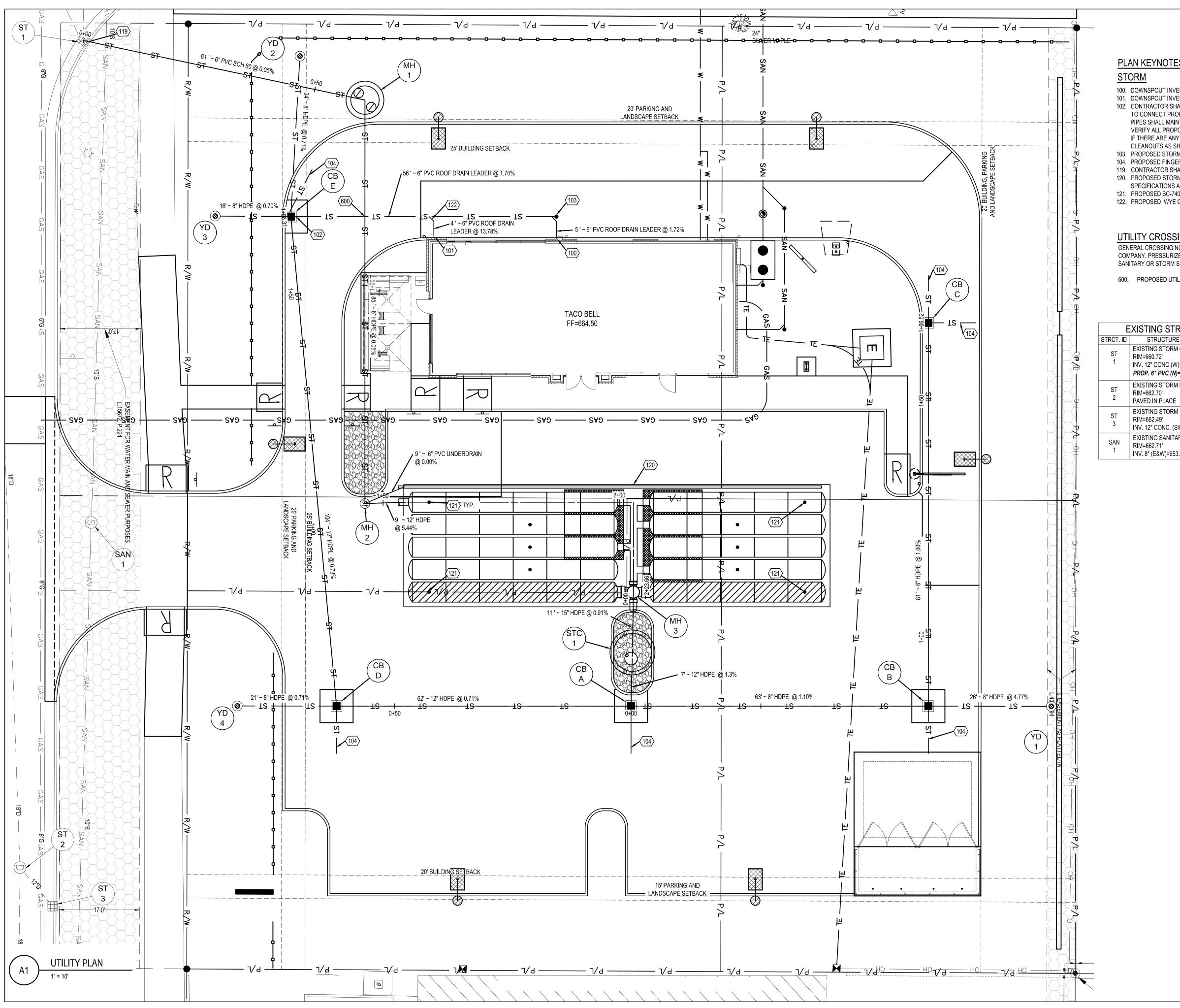
NOTE: EMERGENCY OVERLAND OVERFLOW FROM UNDERGROUND DETENTION SYSTEM FLOWS TO APRONS AND OUT TO PUBLIC ROADS.

- **12"S** S

600

- NYS

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PLAN KEYNOTES

STORM

- 100. DOWNSPOUT INVERT AT BUILDING = 661.15.
- 101. DOWNSPOUT INVERT AT BUILDING = 661.20. 102. CONTRACTOR SHALL INSTALL 6" SDR 35 PVC STORM PIPE AND SUPPLY FITTINGS AS REQUIRED TO CONNECT PROPOSED DOWNSPOUT CONNECTIONS TO PROPOSED CATCH BASIN CB E. ALL PIPES SHALL MAINTAIN A MINIMUM COVER OF TWO FEET. THE CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED PIPE LOCATIONS AND NOTIFY CONSTRUCTION MANAGER IMMEDIATELY IF THERE ARE ANY ISSUES MAINTAINING POSITIVE DRAINAGE. CONTRACTOR SHALL INSTALL CLEANOUTS AS SHOWN ON PLAN, FLUSH WITH FINISHED PAVEMENT GRADE, SEE SHEET C-503. 103. PROPOSED STORM CLEANOUT AND WYE CONNECTION, SEE SHEET C-503. INV.=661.06.
- 104. PROPOSED FINGER DRAIN, SEE SHEET C-503.
- 119. CONTRACTOR SHALL CONNECT INTO EXISTING STRUCTURE WITH A WATERTIGHT SEAL. 120. PROPOSED STORMTECH UNDERGROUND DETENTION SYSTEM, SEE SHEETS C-146 & C-147 FOR SPECIFICATIONS AND DETAIL INFORMATION.
- 121. PROPOSED SC-740 INSPECTION PORT, SEE SHEET C-147.
- 122. PROPOSED WYE CONNECTION, SEE SHEET C-503. INV.=660.62.

UTILITY CROSSINGS

GENERAL CROSSING NOTES: CONTRACTOR SHALL COORDINATE ALL CROSSINGS WITH THE UTILITY COMPANY. PRESSURIZED AND SECONDARY UTILITIES SHALL DEFLECT TO MAINTAIN 18" CLEAR AT SANITARY OR STORM SEWER CROSSINGS.

600. PROPOSED UTILITY CROSSING: 12" STORM INV.=657.38; 6" STORM INV.=660.39.

E	XISTING STRUCTURES		PI	ROPOSED STRUCTURES
T. I D	STRUCTURE DETAILS] (STROT. 10	Y STRUCTURE DETAILS Y Y Y Y
r	EXISTING STORM CATCH BASIN RIM=660.72' INV. 12" CONC (W)=656.52' <i>PROP. 6" PVC (N)=657.34'</i>		CB A	4' DIA. CATCH BASIN, MDOT R-1-G RIM = 662.84 *4" PVC UNDERDRAIN (E) 8" HDPE PIPE INV (N)=658.50 12" HDPE PIPE INV (S)=658.27
r	EXISTING STORM MANHOLE RIM=662.70' PAVED IN PLACE			12" HDPE PIPE INV (W)=658.17 4' DIA. CATCH BASIN, MDOT R-1-G
Г N	EXISTING STORM CATCH BASIN RIM=662.49' INV. 12" CONC. (SW)=657.19' EXISTING SANITARY MANHOLE		CB B	RIM = 663.00 *4" PVC UNDERDRAIN (N&E) 6" HDPE PIPE INV (W)=659.36 8" HDPE PIPE INV (S)=659.19 8" HDPE PIPE INV (N)=659.29
	RIM=662.71' INV. 8" (E&W)=653.11'		CB C	4' DIA. CATCH BASIN, MDOT R-1-G *4" PVC UNDERDRAIN (N&W) RIM = 663.00 6" HDPE PIPE INV (E)=660.17
			CB D	4' DIA. CATCH BASIN, MDOT R-1-G RIM = 662.79 *4" PVC UNDERDRAIN (E&S) 12" HDPE PIPE INV (W)=658.81 12" HDPE PIPE INV (N)=658.71 8" HDPE PIPE INV (S)=659.04
			CB E	4' DIA. CATCH BASIN, MDOT R-1-G RIM = 663.21 *4" PVC UNDERDRAIN (NW) 6" HDPE PIPE INV (N)=660.12 12" HDPE PIPE INV (E)=659.62 8" HDPE PIPE INV (S)=659.62 8" HDPE PIPE INV (W)=659.62
		(MH 3	PROPOSED 4' DIA. STANDARD DIVERSION MANHOLE W/ 2' SUMP RIM = 663.42 15" HDPE PIPE INV (E)=657.90 12" HDPE PIPE INV (N&S)=657.74 12" HDPE PIPE INV (W)=658.65
			MH 2	4' DIA. MANHOLE, MDOT R-1-G RIM = 663.57 12" HDPE PIPE INV (N)=657.41 6" PVC SCH 80 INV (W)=657.41 6" PVC INV (NW)=657.23
		C	MH 1	PROPOSED FLOW RESTRICTOR STRUCTURE, FR-1, SEE SHEET C-145 RIM = 663.81 6" HDPE PIPE INV (S)=657.37 6" HDPE PIPE INV (E)=657.37
			STC 1	STORMCEPTOR - STC 2400 RIM = 663.68 12" HDPE PIPE INV (E)=658.08 15" HDPE PIPE INV (W)=658.00
			YD 1	YARD DRAIN, SEE SHEET C-502 RIM = 663.20 8" HDPE PIPE INV (S)=660.53
			YD 2	YARD DRAIN, SEE SHEET C-502 RIM = 661.80 8" HDPE PIPE INV (E)=659.86
			YD 3	YARD DRAIN, SEE SHEET C-502 RIM = 661.80 8" HDPE PIPE INV (N)=659 73

*INVERT(S) TO BE SET BASED ON PAVEMENT SECTION DESIGNED IN SOILS REPORT WHEN COMPLETED.

RIM = 661.80

YD

8" HDPE PIPE INV (N)=659.73

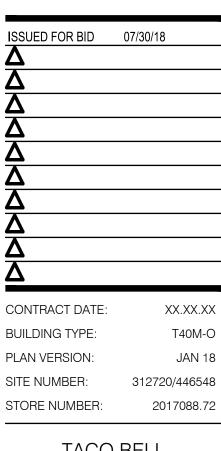
8" HDPE PIPE INV (N)=659.19

YARD DRAIN, SEE SHEET C-502



⁵ 1"=10'

Horizontal Scale in Feet



TACO BELL

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WESTLAND, MI

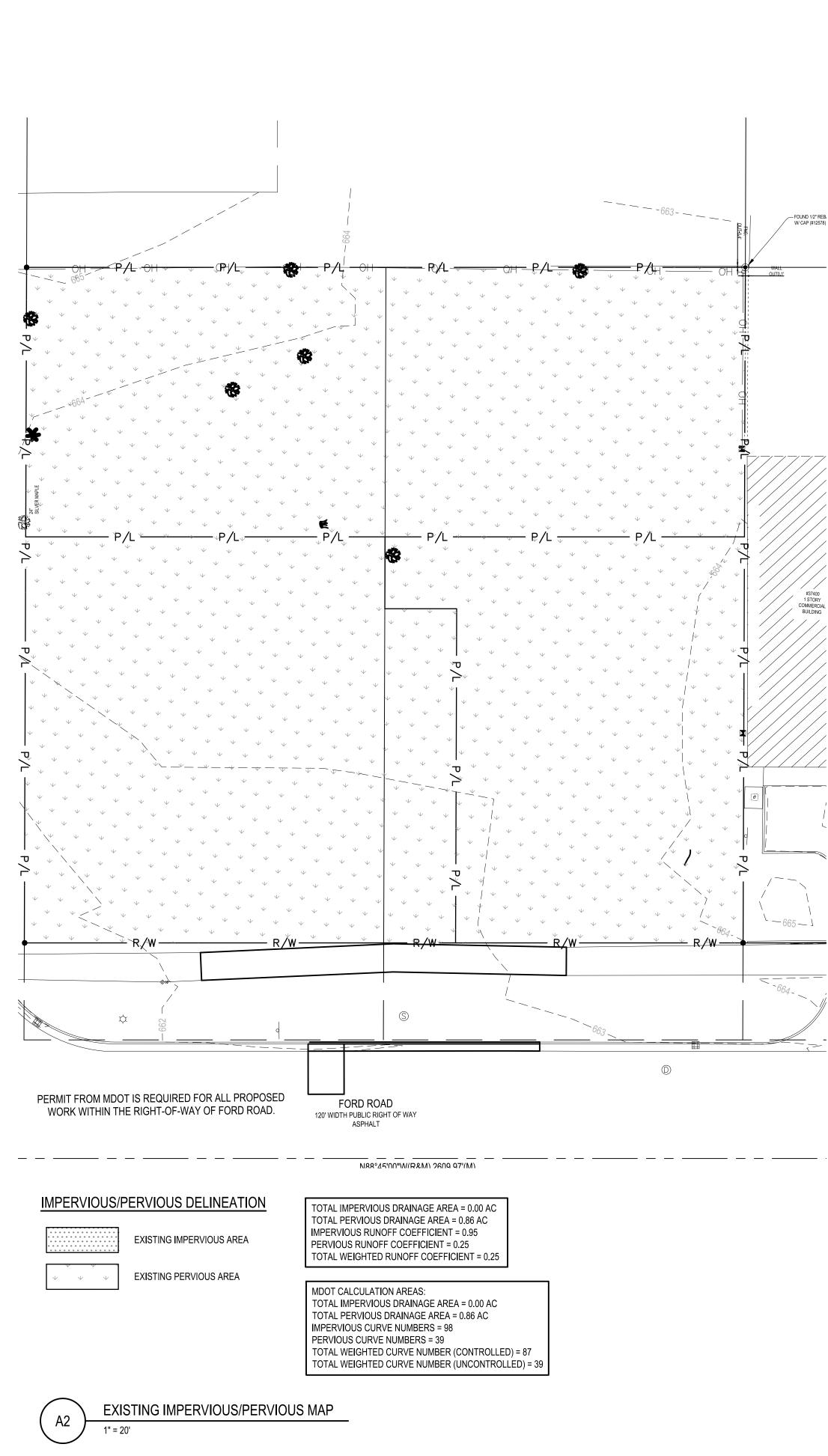


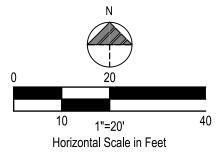


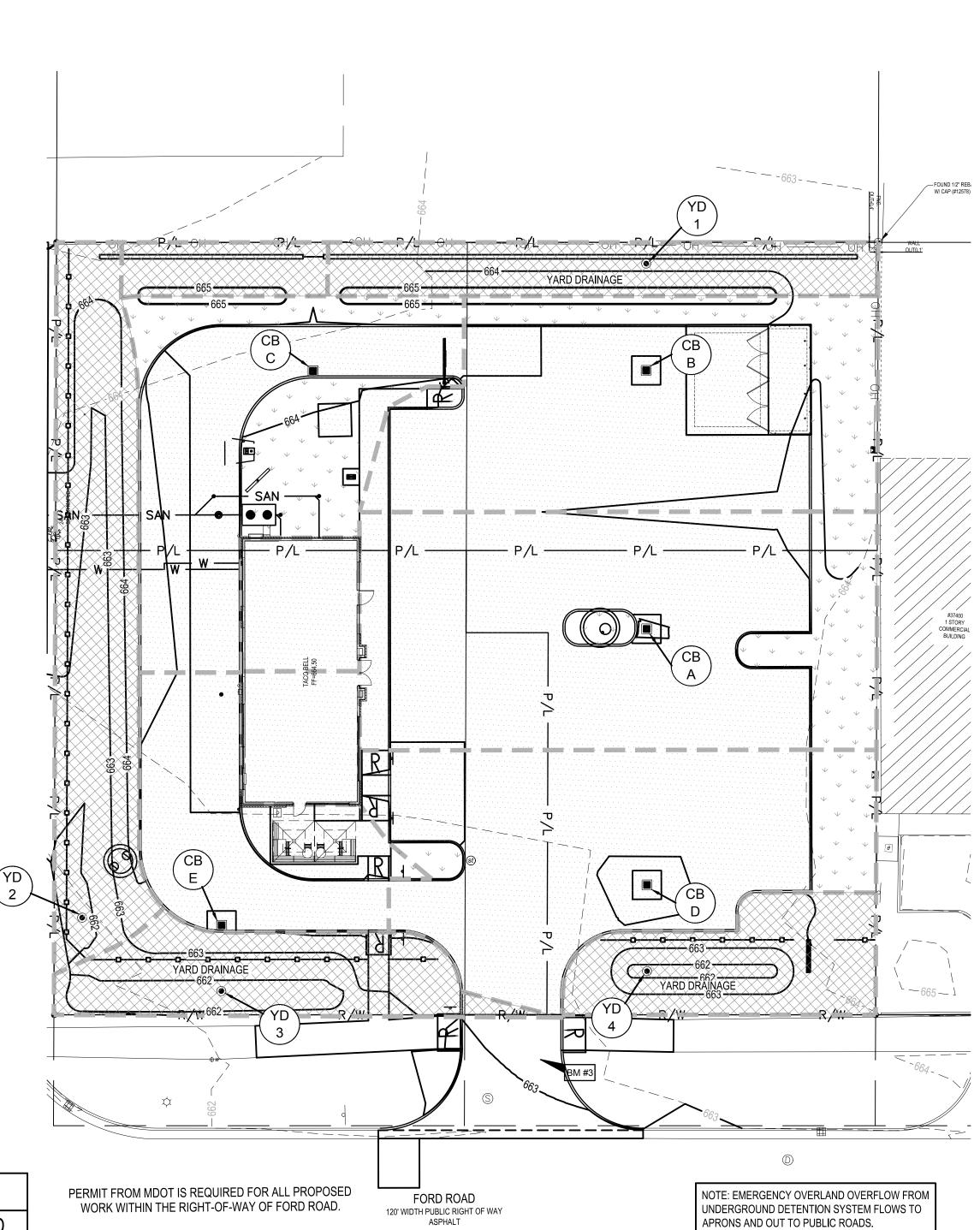












	EXISTING	PROPOSED
	Q (CFS)	Q(CFS)
1-YR	0.000	0.020
2-YR	0.000	0.023
5-YR	0.000	0.028
10-YR	0.001	0.033
25-YR	0.004	0.062
50-YR	0.011	0.098
100-YR	0.047	0.173

MDOT PRE-POST TABLE

NOTE: PRE TO POST COMPARISON VALUES WERE DETERMINED USING SCS SYNTHETIC HYDROGRAPH HYDRAULIC MODELING. THE FLOWS TO THE MDOT SYSTEM INCREASED FRACTIONALLY THROUGHOUT THE VARIOUS STORMS HOWEVER INCREASING STORAGE WOULD AFFECT STORAGE AND DISCHARGE ELEVATIONS REQUIRED BY WAYNE COUNTY. THE RESULTS IN THE TABLE ABOVE SHOULD BE REVIEWED BY MDOT TO DETERMINE IF THE MINIMAL INCREASE ARE ACCEPTABLE.

PROPOSED IMPERVIOUS AREA

A1

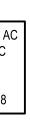
- PROPOSED PERVIOUS AREA
- YARD DRAINAGE (PERVIOUS)

TOTAL IMPERVIOUS DRAINAGE AREA = 0.53 AC TOTAL PERVIOUS DRAINAGE AREA = 0.33 AC IMPERVIOUS RUNOFF COEFFICIENT = 0.95 PERVIOUS RUNOFF COEFFICIENT = 0.25 TOTAL WEIGHT RUNOFF COEFFICIENT = 0.68

NI&&°45'00"\N/(R&M) 2609 97'(M)

MDOT CALCULATION AREAS: TOTAL IMPERVIOUS DRAINAGE AREA = 0.53 AC TOTAL PERVIOUS DRAINAGE AREA = 0.33 AC IMPERVIOUS CURVE NUMBERS = 98 PERVIOUS CURVE NUMBERS = 39 TOTAL WEIGHTED CURVE NUMBER (CONTROLLED) = 75

PROPOSED IMPERVIOUS/PERVIOUS MAP 1" = 20'



SITE BENCHMARK #1:

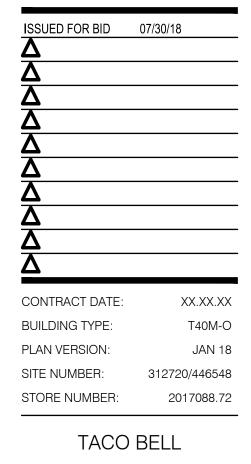
ARROW ON HYDRANT, AT THE NORTHWEST CORNER OF FORD ROAD AND MORLEY ROAD. ELEVATION = 664.67' (NAVD88)

SITE BENCHMARK #2:

SET MAG NAIL ON EAST SIDE OF UTILITY POLE, ON WEST SIDE OF MORLEY, 200 FEET NORTH OF FORD ROAD. ELEVATION = 666.18' (NAVD88)

SITE BENCHMARK #3: SET MAG NAIL ON NORTH SIDE OF GUY POLE, ON NORTH SIDE OF FORD ROAD, NEAR THE MIDDLE OF SITE. ELEVATION = 663.88' (NAVD88)



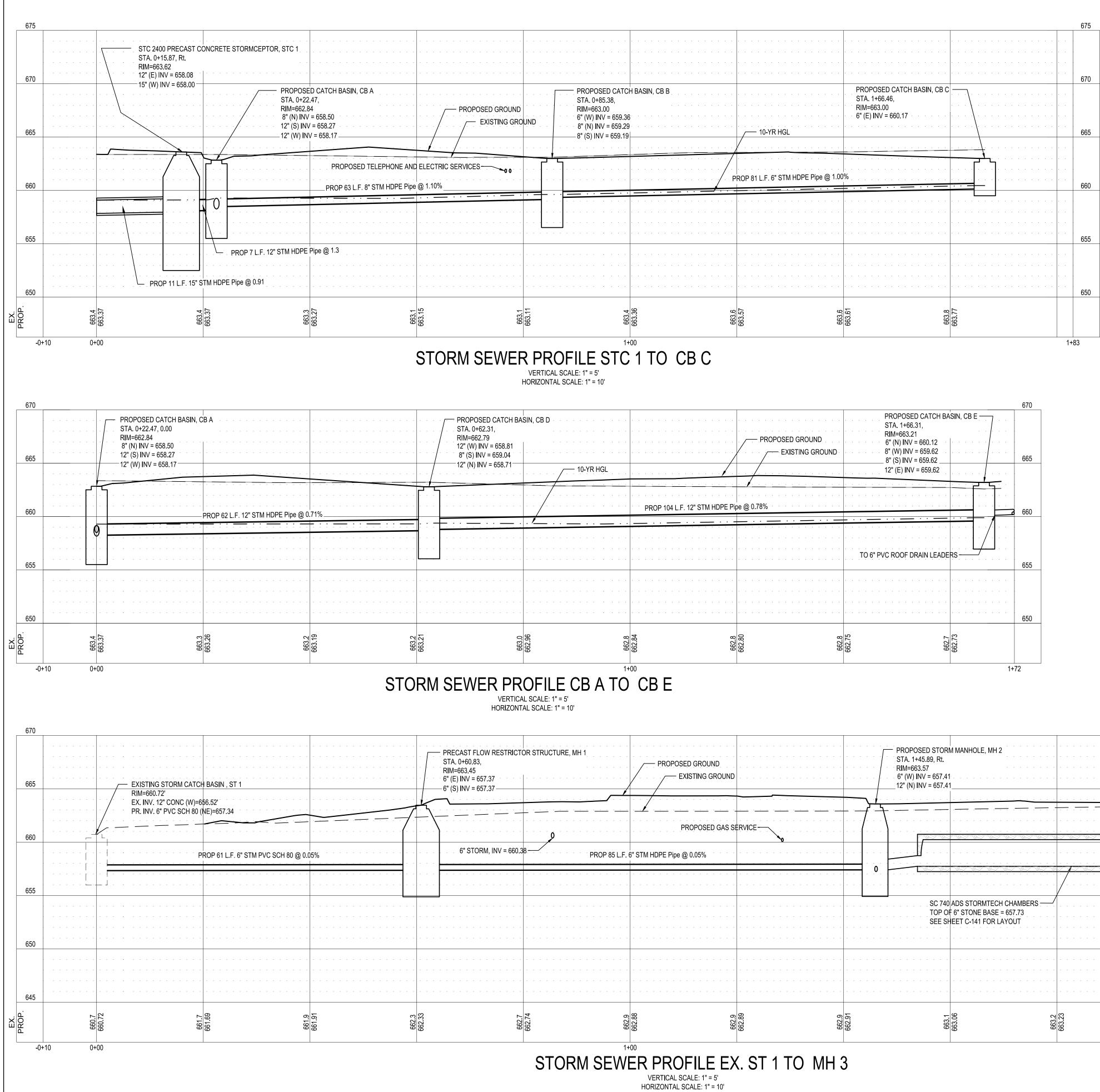


20779 13 MILE RD. WESTLAND, MI





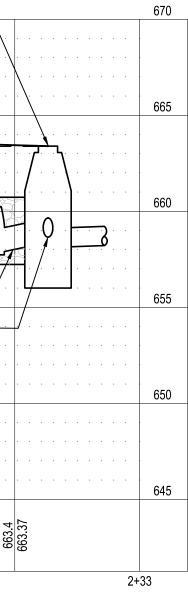




VERTICAL SCALE: 1" = 5'	
	~

PROPOSED GROUN			PROPOSED STORM I STA. 1+45.89, Rt. RIM=663.57 6" (W) INV = 657.41 12" (N) INV = 657.41	/ANHOLE, MH 2	· · · · · · · · · · ·	PROPOSED 4' DIA. STANDARD DIVERS MANHOLE W/ 2' SUMP, MH 3 STA. 2+21.50 RIM = 663.42 12" HDPE PIPE INV (N&S)=657.74 _ 12" HDPE PIPE INV (W)=658.65 15" HDPE PIPE INV (E)=657.90	ION
PROPOSED) GAS SERVICE				· · · · · · · · · · · · · · · · · · ·		
PROP 85 L.F. 6" STM HDPE Pipe @ 0.05%				· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
		· · · · · · · · · · · · · · · · · · ·		<u>50505050505050</u> 5055		15" MANIFOLD I ISOLATOR ROV	
		· · · · · · · · · · · · · · · · · · ·	TOP OF 6	DS STORMTECH CHAMBERS	· · · · · · · · · · ·	12"X12"X15" ELEVATED TO OTHER CHAMBERS	
· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			
			· · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	
						· · · · · · · · · · · · · · · · · · ·	
662.9 662.88	662.9 662.89	662.9 662.91	663.1 663.06	663.2	663.23	663.4 663.39	663.4
1+00	I					2+00	





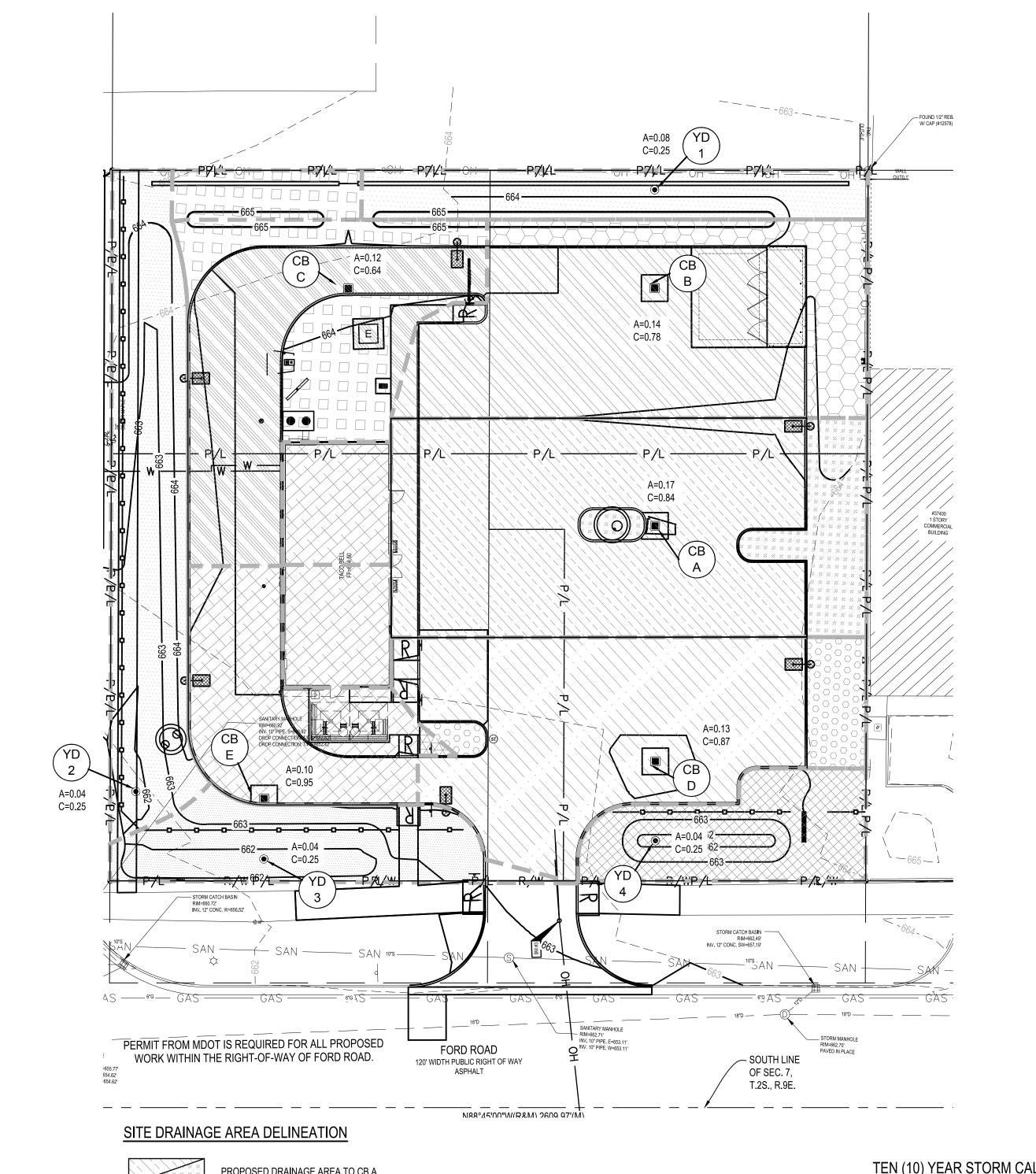


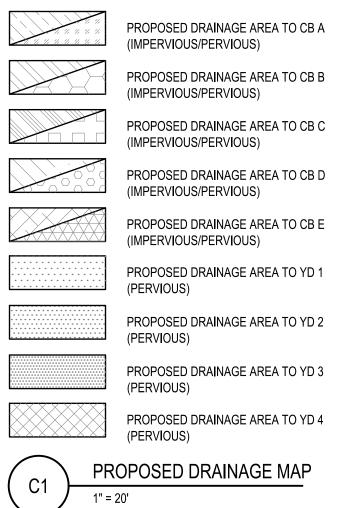
ISSUED FOR BID 07/30/18











Line	Line Length	Incr. Area	Total Area	Runoff Coeff.	Incr. C X A	Total C X A	Inlet Time	Time Conc	Rainfall Intensity		Total Flow	Full	Velocity Full	Pipe Size	Pipe Slope	Inv Elev Dn	Inv Elev Up	HGL Dn	HGL Up	Grnd/Rim Dn	Grnd/Rim Up	Rim-HGL	A ₁₀ Q ₁
	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(cfs)	(cfs)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
CB C TO CB B	81	0.12	0.12	0.64	0.08	0.08	15	15	4.35	0.33	0.33	0.61	3.09	6	1.00	659.36	660.17	659.68	660.51	663	663	2.49	•
CB B TO CB A	63	0.14	0.34	0.78	0.11	0.21	15	15.44	4.30	0.47	0.90	1.39	3.94	8	1.10	658.50	659.19	659.35	659.68	662.84	663	3.32	Qτ
CB A TO STC 1	7	0.17	0.86	0.84	0.14	0.59	15	15.70	4.26	0.61	2.55	4.4	6.3	12	1.30	658.08	658.17	659.16	659.18	663.68	662.84	3.66	0.
STC 1 TO SYSTEM	11	0	0.86	0	0.00	0.59	15	15.72	4.26	0.00	2.55	6.67	5.44	15	0.91	657.90	658.00	659.15	659.16	663.42	663.68	4.52	Οι
CB E TO CB D	104	0.1	0.18	0.95	0.10	0.12	15	15	4.35	0.41	0.50	3.41	4.34	12	0.78	658.81	659.62	659.44	659.95	662.79	663.21	3.26	-
CB D TO CB A	62	0.13	0.35	0.87	0.11	0.22	15	15.40	4.30	0.49	0.95	3.25	4.14	12	0.71	658.27	658.71	659.35	659.37	662.84	662.79	3.42	QA
YD 1 TO CB B	26	0.08	0.08	0.25	0.02	0.02	15	15	4.35	0.09	0.09	2.90	8.21	8	4.77	659.29	660.53	659.68	660.71	663.00	663.20	2.49	(Se
YD 2 TO CB E	34	0.04	0.04	0.25	0.01	0.01	15	15	4.35	0.04	0.04	1.12	3.17	8	0.71	659.62	659.86	659.95	660	663.20	661.60	1.6	
YD 3 TO CB E	16	0.04	0.04	0.25	0.01	0.01	15	15	4.35	0.04	0.04	1.11	3.15	8	0.70	659.62	659.73	659.95	659.87	663.20	661.60	1.73	Pij
YD 4 TO CB D	21	0.04	0.04	0.25	0.01	0.01	15	15	4.35	0.04	0.04	1.12	3.17	8	0.71	659.04	659.19	659.44	659.33	662.79	661.80	2.47	Are

Project:	Taco B	Bell - Westland	d, MI	_			
				•	Charge		
Chambe	er Model -		SC-740	1	Storr	niecn [®]	
Units -			Imperial	Click Here for Metric		etention • Retention • Water Quality	
				<u>.</u>	A divi	ision of EULICE DS .	
Number	of chambers -		55]			
	the stone (porosity)) -	25	%			
	STONE Elevation -		657.23	ft 🗔 Tr	Iclude Perimeter Sto	ne in Calculations	
	of Stone Above Cha		6	in 🖻			
	of Stone Below Cha	mbers -	6	in			
Area of	system -		2332	sf Min. Area -	1859 sf min. ar	ea	
StormT	ech SC-740 (Cumulative	Storage V	/olumes			
Height of	Incremental Single	Incremental	Incremental	Incremental	Cumulative		
System	Chamber	Total Chamber	Stone	Ch & St	Chamber	Elevation	
(inches)	(cubic feet)	(cubic feet)	(cubic feet)	(cubic feet)	(cubic feet)	(feet)	Z10=660.73
42	0.00	0.00	48.58	48.58	3935.97	660.73	-210-000.73
41	0.00	0.00	48.58	48.58	3887.39	660.65	
40	0.00	0.00	48.58	48.58	3838.81	660.56	
39	0.00	0.00	48.58	48.58	3790.22	660.48	
38	0.00	0.00	48.58	48.58	3741.64	660.40	
37	0.00	0.00	48.58	48.58	3693.06	660.31	
36	0.05	3.02	47.83	50.85	3644.47	660.23	
35	0.16	8.96	46.34	55.30	3593.62	660.15	
34	0.28	15.51	44.71	60.21	3538.32	660.06	
33	0.60	33.22	40.28	73.50	3478.10	659.98	
32	0.80	44.09	37.56	81.65	3404.61	659.90	
31	0.95	52.29	35.51	87.80	3322.95	659.81	

TEN (10) YEAR STORM CALCULATIONS FOR CLOSED CONDUIT SIZING

1.07

1.18

1.27

1.36

1.45

1.52

1.58

1.64

1.70

1.75

1.80

1.85

1.89

1.93

1.97

2.01

2.04

2.07

2.10

2.13

2.15

2.18

2.20

2.21

0.00

0.00

0.00

0.00

0.00

0.00

30

29

28

27

26

25

24

23

22

21

20

19

18

17

16

15

14

13

12

11

10

59.10

64.93

69.61

74.53

79.98

83.86

87.03

90.33

93.47

96.41

99.15

102.02

104.12

106.37

108.62

110.55

112.47

114.12

115.77

117.25

118.46

119.74

120.91

121.40

0.00

0.00

0.00

0.00

0.00

0.00

33.81

32.35

31.18

29.95

28.59

27.62

26.83

26.00

25.22

24.48

23.79

23.08

22.55

21.99

21.43

20.95

20.46

20.05

19.64

19.27

18.97

18.65

18.36

18.23

48.58

48.58

48.58

48.58

48.58

48.58

92.91

97.28

100.79

104.48

108.56

111.48

113.85

116.33

118.69

120.89

122.95

125.10

126.67

128.36

130.05

131.49

132.94

134.18

135.41

136.52

137.43

138.39

139.27

139.64

48.58

48.58

48.58

48.58

48.58

48.58

3235.15

3142.25

3044.97

2944.18

2839.70

2731.13

2619.66

2505.80

2389.47

2270.79

2149.89

2026.94

1901.84

1775.17

1646.81

1516.76

1385.26

1252.32

1118.15

982.74

846.22

708.79

570.40

431.14

291.50

242.92

194.33

145.75

97.17

48.58

659.73

659.65

659.56

659.48

659.40

659.31

659.23

659.15

659.06

658.98

658.90

658.81

658.73

658.65

658.56

658.48

658.40

658.31

658.23

658.15

658.06

657.98

657.90

657.81

657.73

657.65

657.56

657.48

657.40

657.31

STORM CALCULATION FORMULAS: Q=C*I*A I=151.8/(t+19.9) n=0.012 Q_{man}=(1.486*A*(R^{^2}₃)*(S^{^1}₂))/n

Date: 1/3/2018

A = 0.86 acres C= 0.68

 $V_{\rm Tbf} = 5,10$ Storage Volume Calcuations

Size

Z₀ = -ZBF=659.53 **z**оот=

Bank Ful $h_{bf} = Z_{10}$ $Q_{\rm bf} = 0.62$

Additiona

 $Q_{ADJ} = C$ $h_{MAX} = Z$ $A_{ADJ} = Q$ **Hole Siz Hole Siz** Number

Number 10ACTUAL

10ACTUA

TOTAL =

utlet Pi

lA= See clos

ipe Siz rea = n = R = V= Q_{PEAK10}/A

TACO BELL - WAYNE COUNTY, MI **Underground Detention Storm System Calculations**

Performed by: MPM Revise: 6/18/2018 **10-year Storm Calculations**

Area (Ac.) С AxC Impervious 0.53 0.95 0.50 Pervious 0.33 0.25 0.08 Total 0.86 0.59 C_{AVG} 0.68

Q_A (allowable)=0.15*A

<u>0.129</u> cfs

Q₀ = Q _A /(A*C) T10 = -19.9+(4530/Q0)^0.5	<u>0.22</u> cfs/acre impervious <u>124</u> min
V _{S10} = ((9108*T ₁₀)/(T ₁₀ + 19.9))-40*Q ₀ *T ₁₀	6,757 cf/acre impervious
$V_{T10} = V_{S10}^* A^* C$	3,959 cf
V _{Tbf} = 5,160*A*C	3,024 cf

Using StormTech Chamber

Using Ston	meen cha	niber		
Size	cft/ft	lft provided	# Chambers	Volume (cf)
SC-740	10.06	391.38	55	3,936
Z ₀		•	at Detention at Outlet Cor	Pipes htrol Structure

First Flush Elevation Z _{ff} = First Flush Storage Elevation = <u>658.19</u>	
Bank Full Elevation Z _{bf} = Bank Full Storage Elevation = <u>659.53</u>	
Flood Control Storage Elevation Z ₁₀ = V _{T10} Elevation = <u>660.73</u>	
Control Outlet Structure Design Sizing for First Flush Discharge to be released within a 24-hour timeframe	
$Q_{avgff} = V_{Tff} / (86400) = \underbrace{0.012 \text{ cfs}}_{h_{avg}} = 0.5^{*} (Z_{ff} - Z_{0}) + (Z_{0} - Z_{OUT}) = \underbrace{0.405 \text{ ft}}_{0.0039} \text{ ft}$ $A_{0} = Q_{avgff} / (0.62^{*} (32.2^{*}2^{*}h_{avg})^{*} 0.5) = \underbrace{0.0039}_{0.0039} \text{ sf}$	
Using one 1" hole @ elev. 657.37 $A_{ACTUAL} =$ $Q_{avg ACTUAL} =$ $T_{ACTUAL} =$ 29.51 hours	5
Outlet Sizing for 10-Year Storm $Q_{MAX} = Q_A =$ 0.129 cfsBank Full Orifice Contribution	

ull Orifice Contribution	
₀-Z _{out} =	<u>3.36</u> ft
62*A _{ACTUAL} *(32.2*2*h _{bf})^0.5 =	<u>0.050</u> cfs
nal holes required to release remainder of $\mathbf{Q}_{\mathbf{A}}$	
Q _{MAX} -Q _{bf} =	<u>0.079</u> cfs
$Z_{10}-Z_{bf} =$	<u>1.20</u> ft
Q _{ADJ} /(0.62*(32.2*2*h _{MAX})^0.5 =	<u>0.0145</u> sf
ize (diameter) =	<u>1.50</u> in
ize (area)=	<u>0.0123</u> sf
r of Holes =	<u>1.18</u>
r of holes used =	1.00
Use one 1.5" hole at Elev. 659.53	
_{AL} =	<u>0.0123</u> sf
_{IAL} = 0.62*A _{10ACTUAL} *(32.2*2*h _{MAX})^0.5 =	<u>0.067</u> cfs
= Q _{bf} + Q _{10ACTUAL} =	<u>0.117</u> cfs < 0.129 d
Pipe Design for 10-Year Event	
	<u>0.129</u> cfs
osed conduit sizing for 10-year storm)	
ze =	<u>6.0</u> in
	<u>0.1963</u> sf
	0.012

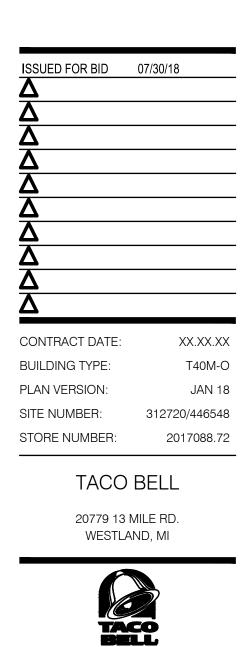
Slope = [(Q_{PEAK}*n)/1.486*A_{OUT}*R^0.67]^2

cfs

<u>0.012</u> <u>0.125</u> ft <u>0.0457</u> % <u>0.66</u> ft/s

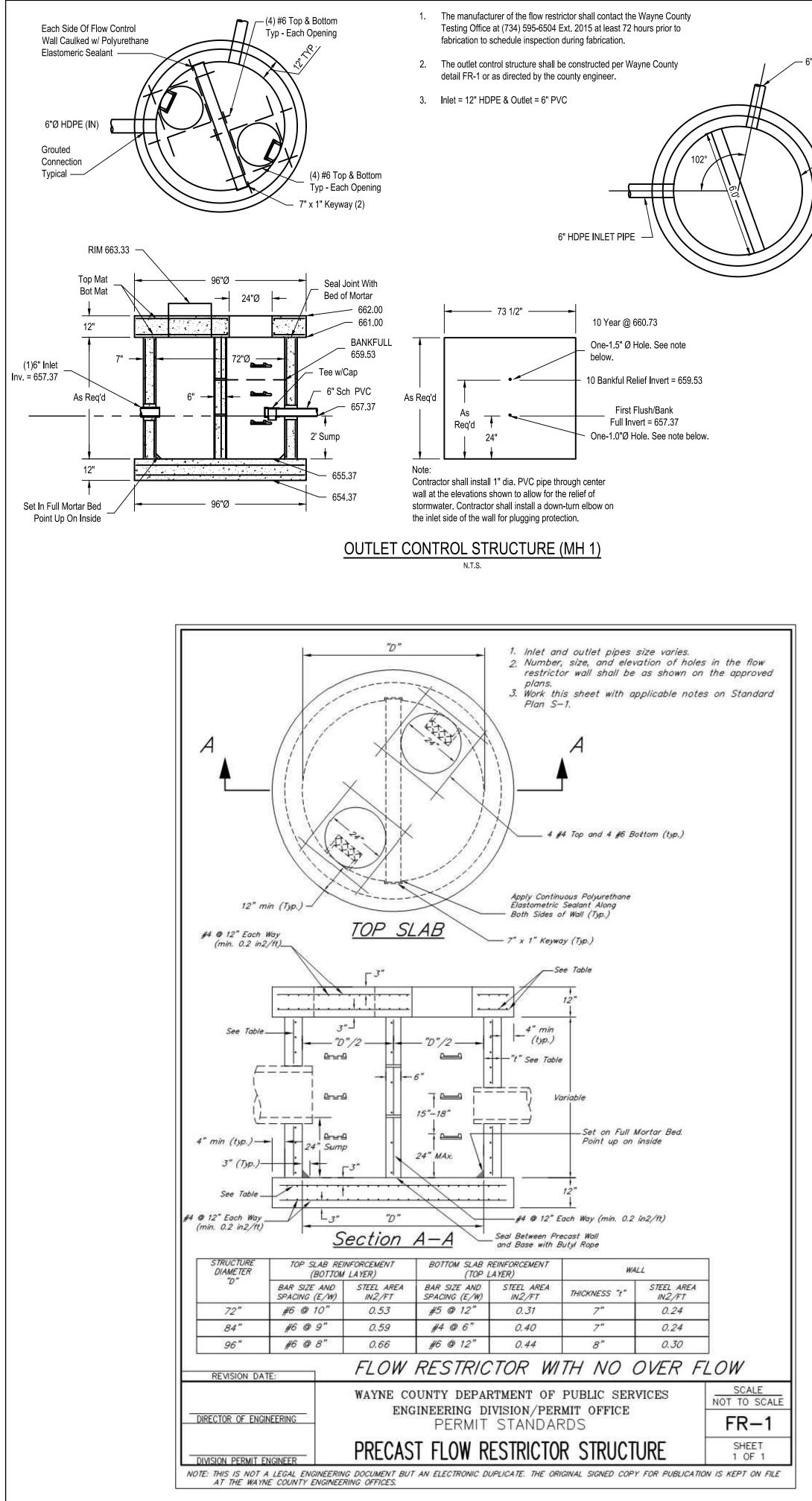
<u>using 0.05%</u>





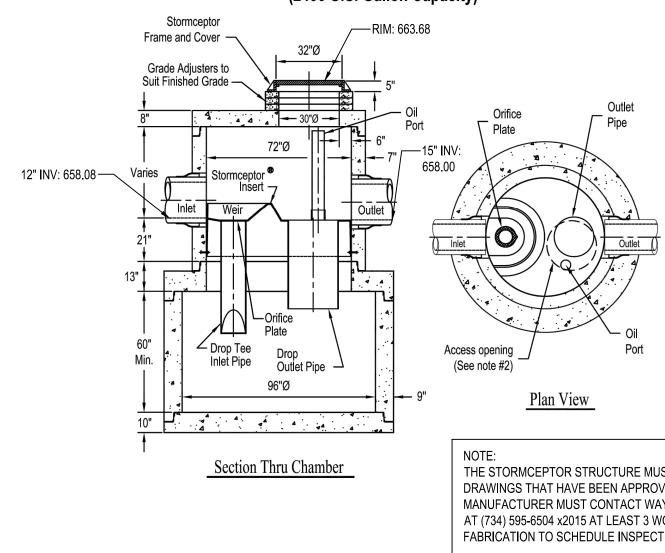






- 6" PVC OUTLET PIPE

TOP/BASE DIAMETER - INSIDE DIAMETER - OUTSIDE DIAMETER



- 1. The Use Of Flexible Connection is Recommended at The Inlet and Outlet Where Applicable.
- 2. The Cover Should be Positioned Over The Outlet Drop Pipe and The Oil Port.
- 3. The Stormceptor System is protected by one or more of the following U.S. Patents:
- #5753115, #5849181, #6068765, #6371690, #7582216, #7666303,
- 4. Contact a Concrete Pipe Division representative for further details not listed on this drawing.

10. Installation

The installation of the concrete Stormceptor should conform in general to state highway, or local specifications for the installation of manholes. Selected sections of a general specification that are applicable are summarized in the following sections.

10.1. Excavation

Excavation for the installation of the Stormceptor should conform to state highway, or local specifications. Topsoil removed during the excavation for the Stormceptor should be stockpiled in designated areas and should not be mixed with subsoil or other materials. Topsoil stockpiles and the general site preparation for the installation of the Stormceptor should conform to state highway or local specifications.

The Stormceptor should not be installed on frozen ground. Excavation should extend a minimum of 12 inches (300 mm) from the precast concrete surfaces plus an allowance for shoring and bracing where required. If the bottom of the excavation provides an unsuitable foundation additional excavation may be required.

In areas with a high water table, continuous dewatering may be required to ensure that the excavation is stable and free of water.

10.2. Backfilling

Backfill material should conform to state highway or local specifications. Backfill material should be placed in uniform layers not exceeding 12 inches (300mm) in depth and compacted to state highway or local specifications.

11. Stormceptor Construction Sequence

- The concrete Stormceptor is installed in sections in the following sequence:
 - Aggregate base 2. Base slab
 - 3. Lower chamber sections
 - 4. Upper chamber section with fiberglass insert
 - Connect in et and outlet pipes
 - 6. Assembly of fiberglass insert components (drop tee, riser pipe, oil cleanout port
 - and orifice plate
 - Remainder of upper chamber
 - 8. Frame and access cover

The precast base should be placed level at the specified grade. The entire base should be in contact with the underlying compacted granular material. Subsequent sections, complete with joint seals, should be installed in accordance with the precast concrete manufacturer's recommendations.

Adjustment of the Stormceptor can be performed by lifting the upper sections free of the excavated area, re-leveling the base and re-installing the sections. Damaged sections and gaskets should be repaired or replaced as necessary. Once the Stormceptor has been constructed, any lift holes must be plugged with mortar.

12. Maintenance

12.1 Health and Safety

The Stormceptor System has been designed considering safety first. It is recommended that confined space entry protocols be followed if entry to the unit is required. In addition, the fiberglass insert has the following health and safety features:

- Designed to withstand the weight of personnel
- A safety grate is located over the 24 inch (600 mm) riser pipe opening
- Ladder rungs can be provided for entry into the unit, if required

12.2. Maintenance Procedures

Maintenance of the Stormceptor system is performed using vacuum trucks. No entry into the unit is required for maintenance (in most cases). The vacuum service industry is a wellestablished sector of the service industry that cleans underground tanks, sewers and catch basins. Costs to clean a Stormceptor will vary based on the size of unit and transportation distances.

The need for maintenance can be determined easily by inspecting the unit from the surface. The depth of oil in the unit can be determined by inserting a dipstick in the oil inspection/cleanout port.

Similarly, the depth of sediment can be measured from the surface without entry into the Stormceptor via a dipstick tube equipped with a ball valve. This tube would be inserted through the riser pipe. Maintenance should be performed once the sediment depth exceeds the guideline values provided in the Table 4.

Although annual servicing is recommended, the frequency of maintenance may need to be increased or reduced based on local conditions (i.e. if the unit is filling up with sediment more quickly than projected, maintenance may be required semi-annually; conversely once the site has stabilized maintenance may only be required every two or three years).

4 5.

12.3. Submerged Stormceptor Careful attention should be paid to maintenance of the Submerged Stormceptor System. In cases where the storm drain system is submerged, there is a requirement to plug both the inlet and outlet pipes to economically clean out the unit.

12.4. Hydrocarbon Spills waste hauler.

12.5 Disposal Requirements for the disposal of material from the Stormceptor System are similar to that of any other stormwater Best Management Practice (BMP) where permitted. Disposal options for the sediment may range from disposal in a sanitary trunk sewer upstream of a sewage treatment plant, to disposal in a sanitary landfill site. Petroleum waste products collected in the Stormceptor (free oil/chemical/fuel spills) should be removed by a licensed waste management company.

12.6. Oil Sheens With a steady influx of water with high concentrations of oil, a sheen may be noticeable at the Stormceptor outlet. This may occur because a rainbow or sheen can be seen at very small oil concentrations (<10 mg/L). Stormceptor will remove over 98% of all free oil spills from storm sewer systems for dry weather or frequently occurring runoff events.

The appearance of a sheen at the outlet with high influent oil concentrations does not mean the unit is not working to this level of removal. In addition, if the influent oil is emulsified the Stormceptor will not be able to remove it. The Stormceptor is designed for free oil removal and not emulsified conditions.

THE STORMCEPTOR STRUCTURE MUST BE FABRICATED AS PER SHOP DRAWINGS THAT HAVE BEEN APPROVED BY WAYNE COUNTY. THE MANUFACTURER MUST CONTACT WAYNE COUNTY TESTING OFFICE AT (734) 595-6504 x2015 AT LEAST 3 WORKING DAYS PRIOR TO FABRICATION TO SCHEDULE INSPECTION DURING FABRICATION.

Rinker 031

Table 4. Sediment Depths indicating required servicing.

Mode	Sediment Depth inches (mm)
450i	8 (200)
900	8 (200)
1200	10 (250)
1800	15 (381)
2400	12 (300)
3600	17 (430)
4800	15 (380)
6000	18 (460)
7200	15 (381)
11000	17 (380)
13000	20 (500)
16000	17 (380)

Oil is removed through the oil inspection/cleanout port and sediment is removed through the riser pipe. Alternatively oil could be removed from the 24 inches (600 mm) opening if water is removed from the lower chamber to lower the oil level below the drop pipes.

The following procedures should be taken when cleaning out Stormceptor:

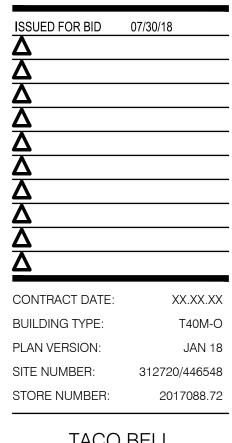
Check for oil through the oil cleanout port

Remove any oil separately using a small portable pump Decant the water from the unit to the sanitary sewer, if permitted by the local regulating authority, or into a separate containment tank Remove the sludge from the bottom of the unit using the vacuum truck

Re-fill Stormceptor with water where required by the local jurisdiction

The Stormceptor is often installed in areas where the potential for spills is great. The Stormceptor System should be cleaned immediately after a spill occurs by a licensed liquid





TACO BELL

20779 13 MILE RD. WESTLAND, MI



MODERN EXPLORER T40 - OPEN KITCHEN



C-145

PROJECT INFORMATION				
engineered Product Manager:	CHRIS OWEN 248-431-1361 CHRIS.OWEN@ADS-PIPE.COM			
ADS SALES REP:	RANDY NOSEK 810-348-8914 RANDY.NOSEK@ADS-PIPE.COM			
PROJECT NO:	S085845			



TACO BELL WESTLAND, MI

STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740 OR SC-310.

13 ADS, IN

- 2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS.
- 3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- 5. CHAMBERS SHALL MEET ASTM F2922 (POLYETHYLENE) OR ASTM F2418-16 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
- a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
- b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 OR ASTM F2922 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
- c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
- 8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITYAND THEY SHALL BE TESTED AT A RATE OF ONE (1) TEST PER SHIFT, BUT NOT TO EXCEED 260 PIECES OF CHAMBER (7' LONG EACH PIECE) OR END CAPS BY WAYNE COUNTY OR AN INDEPENDENT THIRD PARTY.
- 9. A WAYNE COUNTY OR AN INDPENDENT THIRD PARTY CERTIFICATION SHALL BE PROVIDED WITH EACH TESTED SHIPMENT. A WAYNE COUNTY PERMIT ENGINEER/INSPECTOR MUST OBSERVE INSTALLATION OF THE UNDERGROUND DETENTION SYSTEM. CONTACT
- WAYNE COUNT PERMIT OFFICE AT (734) 595-6504 X 2009.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310/SC-740 SYSTEM

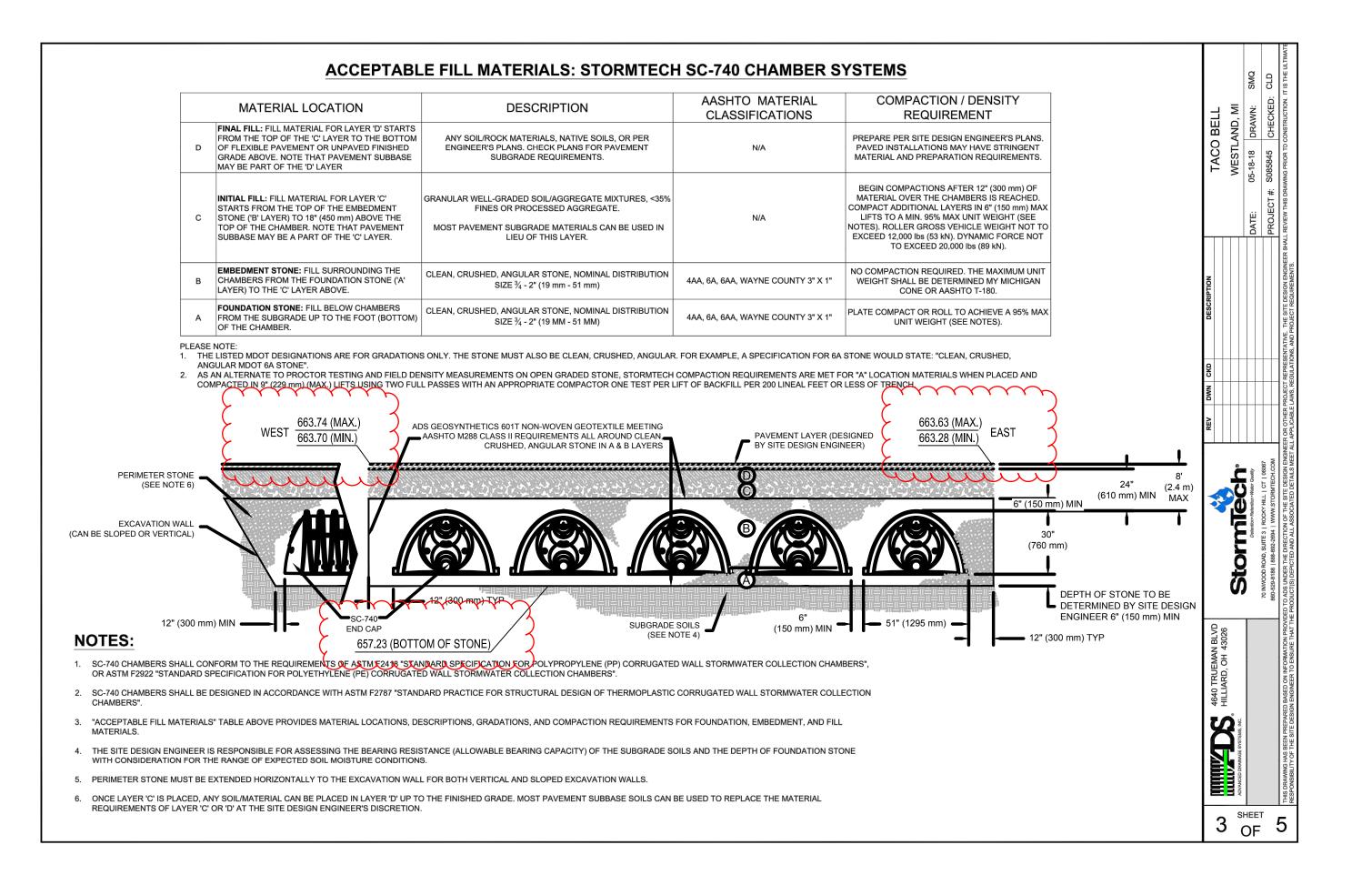
- 1. STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- GUIDE' 3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.
- STORMTECH RECOMMENDS 3 BACKFILL METHODS: • STONESHOOTER LOCATED OFF THE CHAMBER BED. BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE. BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- 4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- 5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- 6. MAINTAIN MINIMUM 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- 7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
- ENGINEER
- 9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

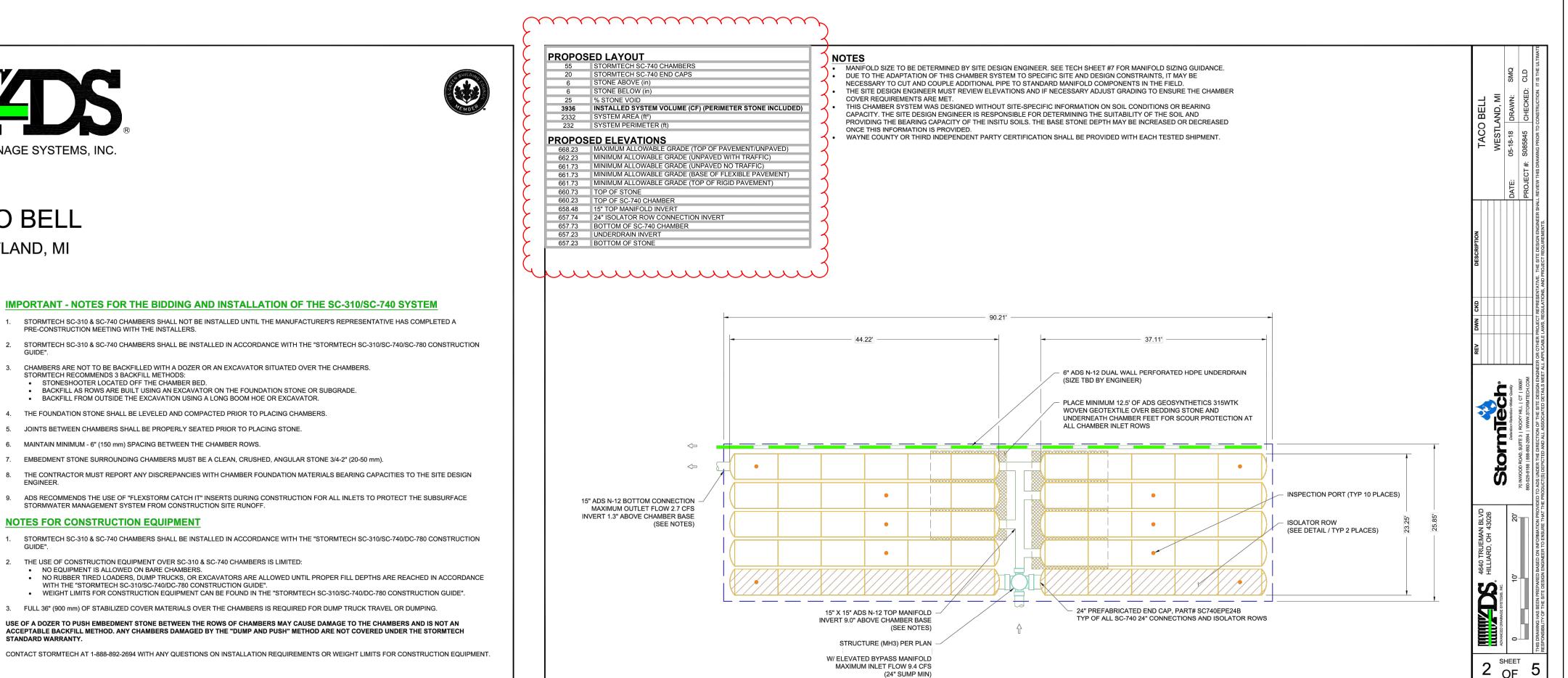
NOTES FOR CONSTRUCTION EQUIPMENT

- 1. STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- 2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED: NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS
- WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE" • WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- 3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING

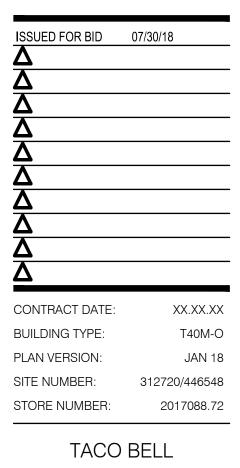
USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANT

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.









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WESTLAND, MI

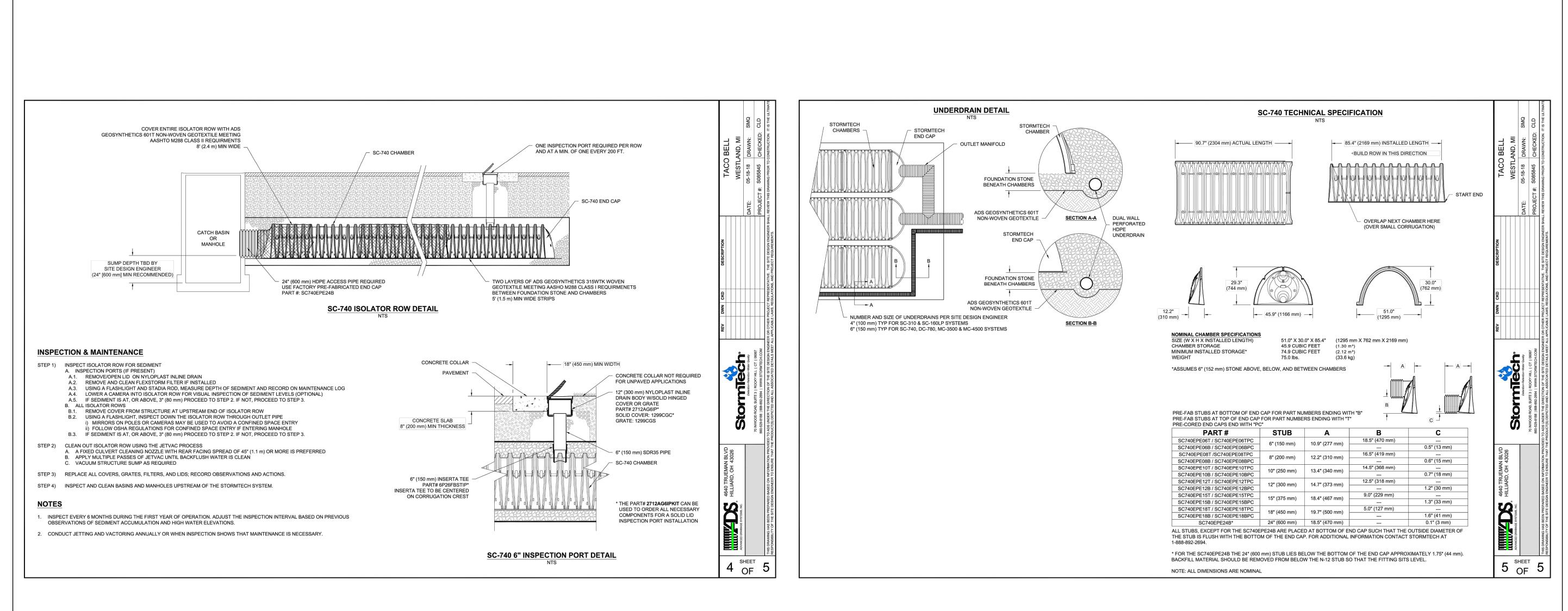
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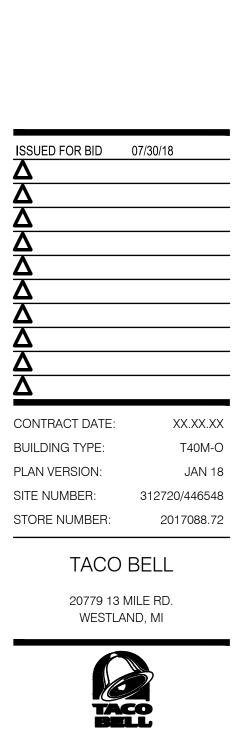
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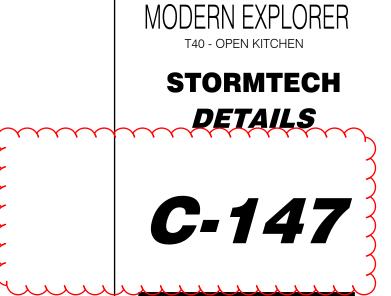
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DETAILS

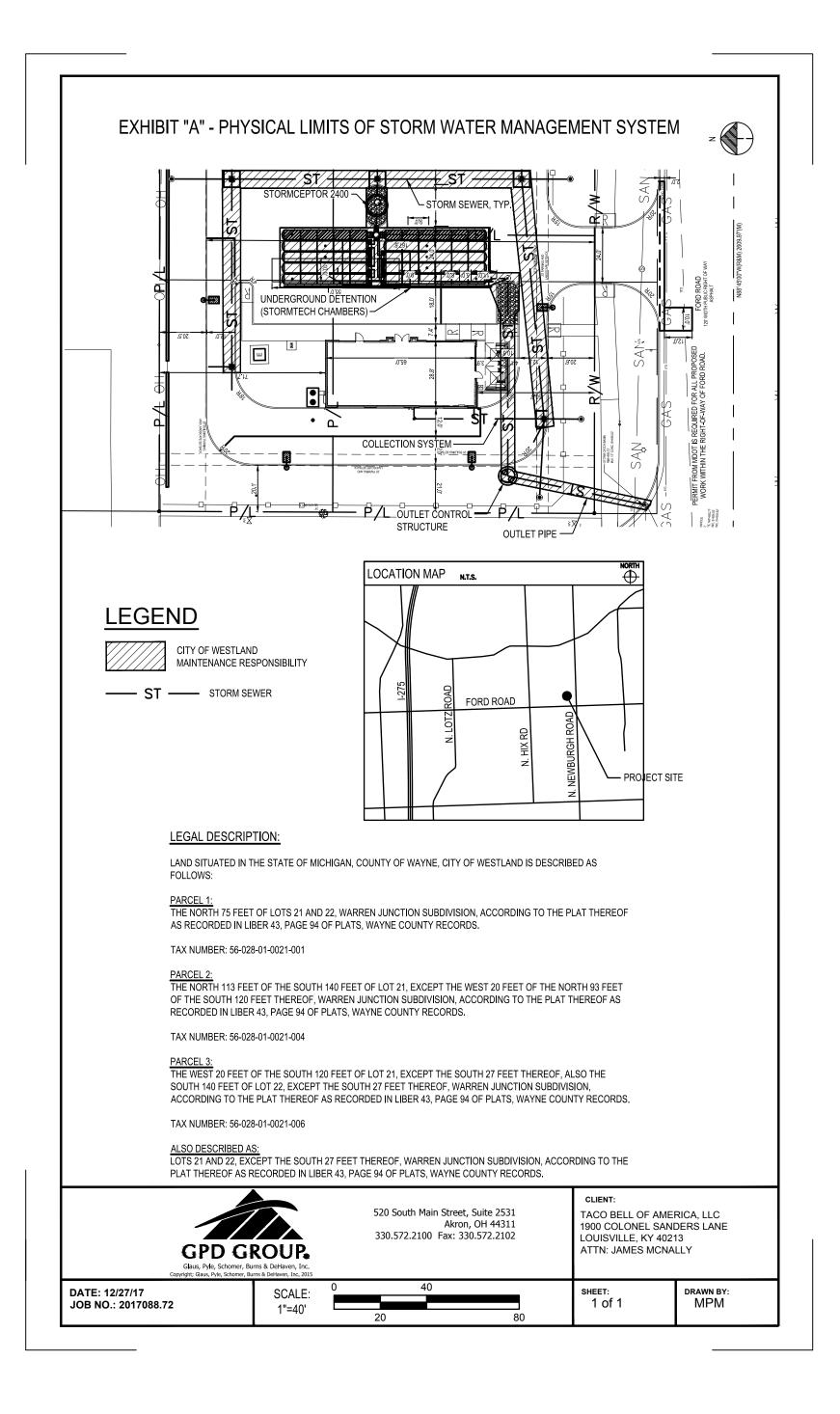
C-146







GPD GROUP Professional Corporation 520 South Main Street, Suite 2531 Akron, OH 44311 330.572.2100 Fax: 330.572.2102





Wayne County DPS Plan review No.: R18-061

A. Physical Limits of the Storm Water Management System

The storm water management system (SWMS) subject to this long-term maintenance plan (Plan) is depicted on Exhibit A to the permit and includes without limitation the storm sewers, swales, catch basins, manholes, inlets, manufactured treatment system, underground detention system, flow restrictor structure and outlet pipe that conveys flow from the underground detention system to an existing storm system within the public highway of Ford Road that outlets to a County Drain. For the purposes of this plan, this SWMS and all of its components as shown in Exhibit A is referred to as "Taco Bell's SWMS".

B. Time Frame for Long-Term Maintenance Responsibility

Taco Bell of America, LLC is responsible for maintaining the Taco Bell's SWMS including complying with applicable requirements of the local or Wayne County soil erosion and sedimentation control program until Wayne County releases the construction permit. Long-term maintenance responsibility for Taco Bell's SWMS commences when defined by the maintenance permit issued by the County. Long-term maintenance continues in perpetuity.

C. Manner of Insuring Maintenance Responsibility

The City of Westland has assumed responsibility for long-term maintenance of Taco Bell's SWMS. The resolution by which The City of Westland has assumed maintenance responsibility is attached to the permit as Exhibit C. Taco Bell of America, LLC., through a maintenance agreement with the City of Westland, has agreed to perform the maintenance activities required by this plan. The City of Westland retains the right to enter the property and perform the necessary maintenance of the Taco Bell's SWMS if Taco Bell of America, LLC. fails to perform the required maintenance activities.

To ensure that the Taco Bell's SWMS is maintained in perpetuity, the map of the physical limits of the storm water management system (Exhibit A), this plan (Exhibit B), the resolution attached as Exhibit C, and the maintenance agreement between the City of Westland and the property owner will be recorded with the Wayne County Register of Deeds. Upon recording, a copy of the recorded documents will be provided to the County.

D. Long-Term Maintenance Plan and Schedule

Table 1 identifies the maintenance activities to be performed, organized by category (monitoring/inspections, preventative maintenance and remedial actions). Table 1 also identifies site-specific work needed to ensure that the storm water management system functions properly as designed.

			Т	ABLI	E 1				
STO	RM WATER MANAGE	MEN	NT SYST	EM L	ONG-	TERM	MAIN	TENANCE SCHED)UL
MAINTENANCE ACTIVIT	IES	SYSTEM COMPONENTS	Storm Collection System (Sewers, Swales, Catch Basins, Manholes)	Manufactured Treatment System	Underground Detention System	Flow Restrictor Structure & Outlet Pipe	Pavement Areas	FREQUENC	Y
Monitoring/Inspection			T		,	· ·			
Inspect for Sediment Accumulatio			X	<u>X</u>	X	<u> </u>	X	Annually	
Inspect For Floatables, Dead Ve			X	X	X	<u> </u>	X	Annually & After	
Inspect For Erosion And Integrity of System		Х				Х	Annually & After	r Ma	
Inspect All Components During Wet weather & Compare to As-		Х	X	X	X	X	Annually		
Built Plans Ensure Maintenance Access Remain Open/Clear		V					Annually		
			X	X	X	X	X	Annualiy	
Preventative Maintenance Remove Accumulated sediments				X	X	X	X	As Needed (Se	
Remove Floatables, Dead Vege			X X				X	As Needed	
Sweeping of Paved Surfaces							X	As Needed	
Remedial Actions								7.6 1000000	
Repair/Stabilize Areas of Erosion	1		Х				X	As Needed	
Replace Dead Plantings & Reser								As needed	
Structural Repairs		X	X	X	X	X	As Needed		
Make Adjustments/Repairs to Ensure Proper Functioning			X	X	X		X	As Needed	
NOTE: Manufactured treatmer		deten							
whenever sediments accumulate			-				-		
PROJECT:	· · · · ·	LESSEE (RESPONSIBLE PART				ENGI			
Taco Bell	•	Taco Bell of America, Ll				GPD C			F
37500 Ford Road	1900 Colonel Sanc	lers L	.ane			520 S	outh M	ain St, Suite 2531	┝
Westland, MI, 48185	Louisville, KY 4021	3				Akron	, OH 44	1311	
	Attn: TBD Phone: (502) 874-8	300				Phone	e: (330)	572-2100	S

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GPD GROUP Professional Corporation 520 South Main Street, Suite 2531 Akron, OH 44311 330.572.2100 Fax: 330.572.2102

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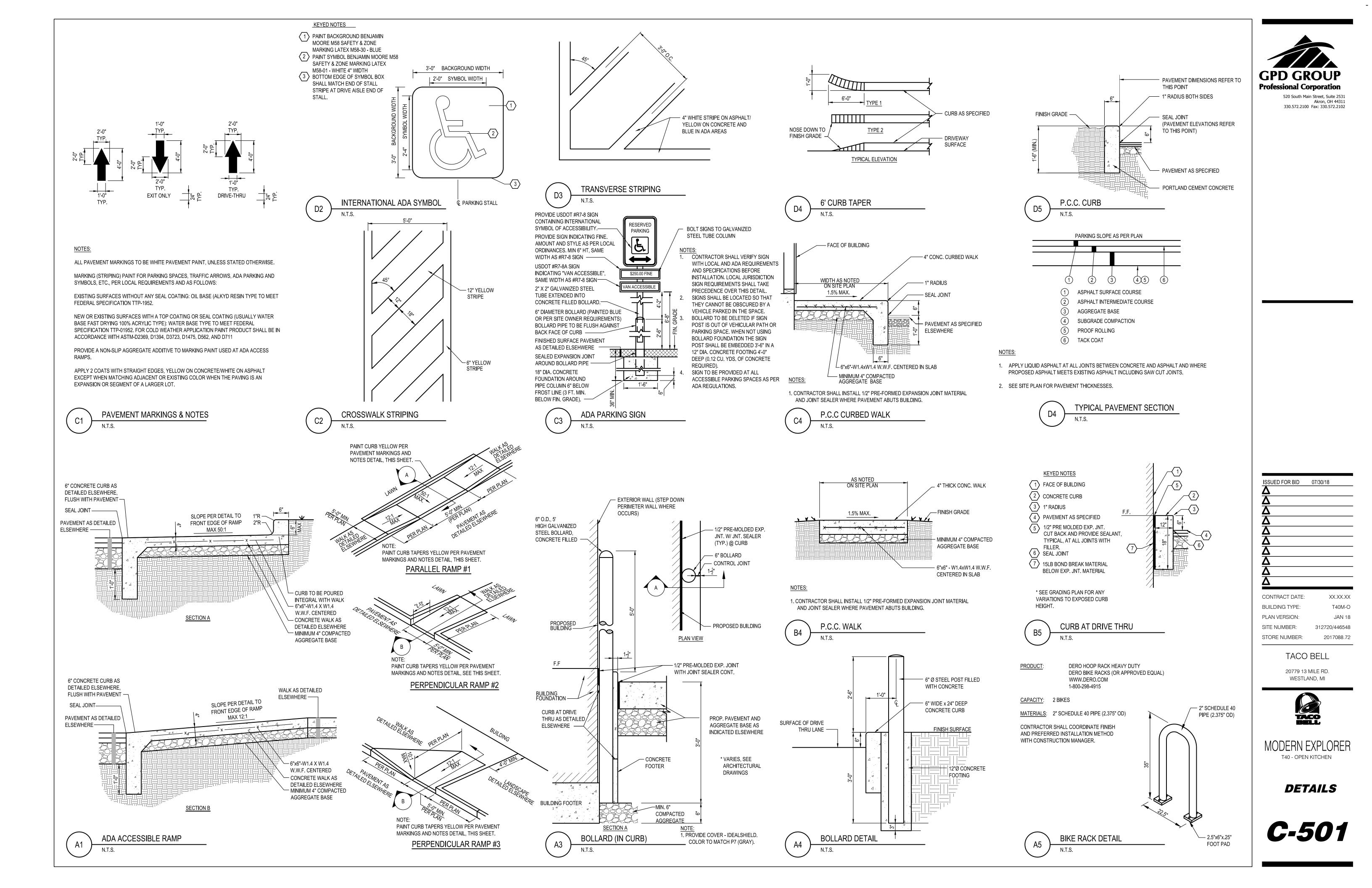
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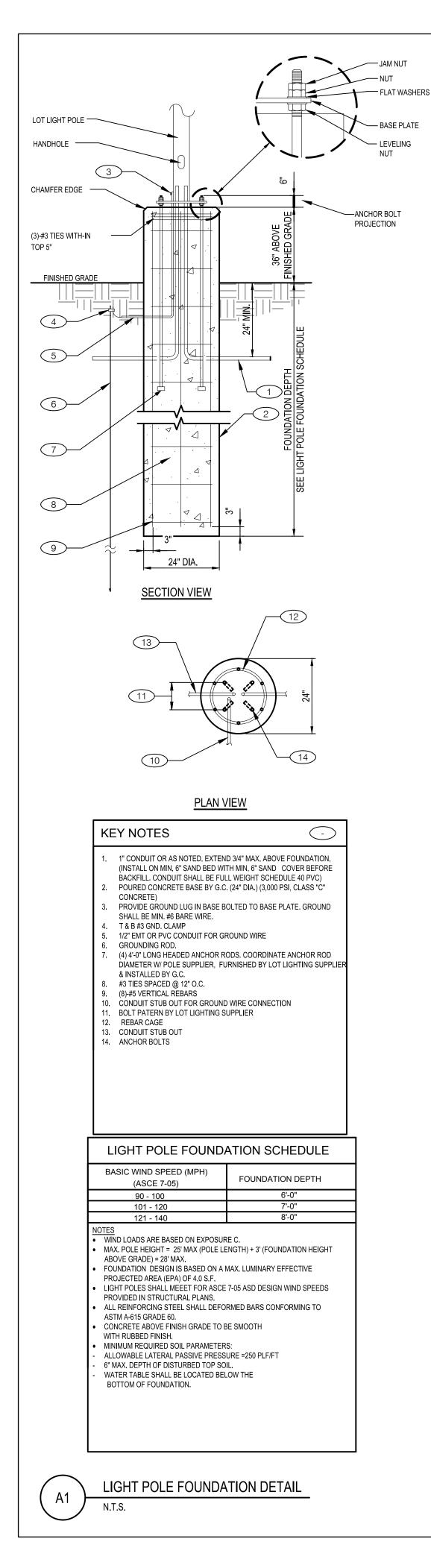
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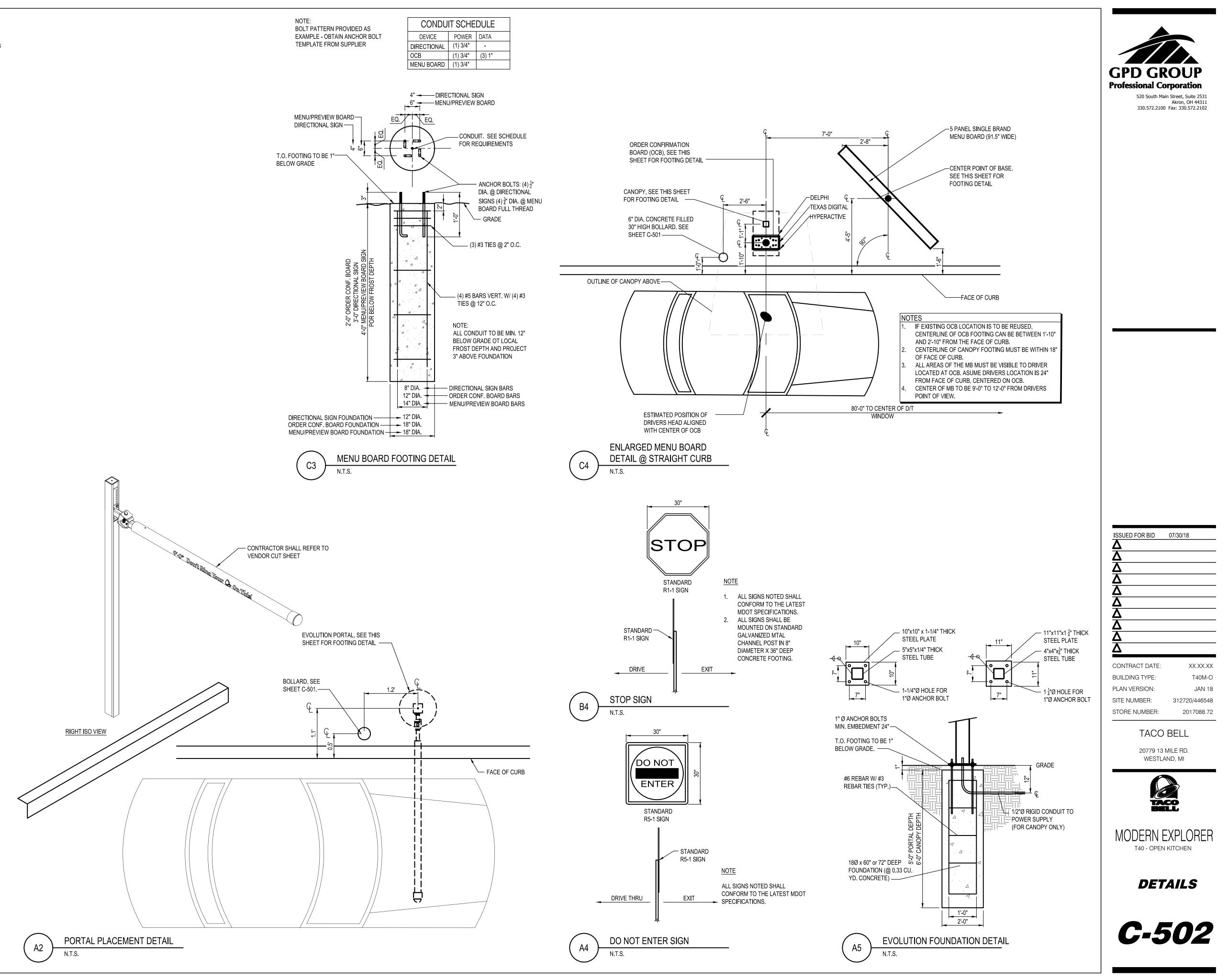
STORMWATER

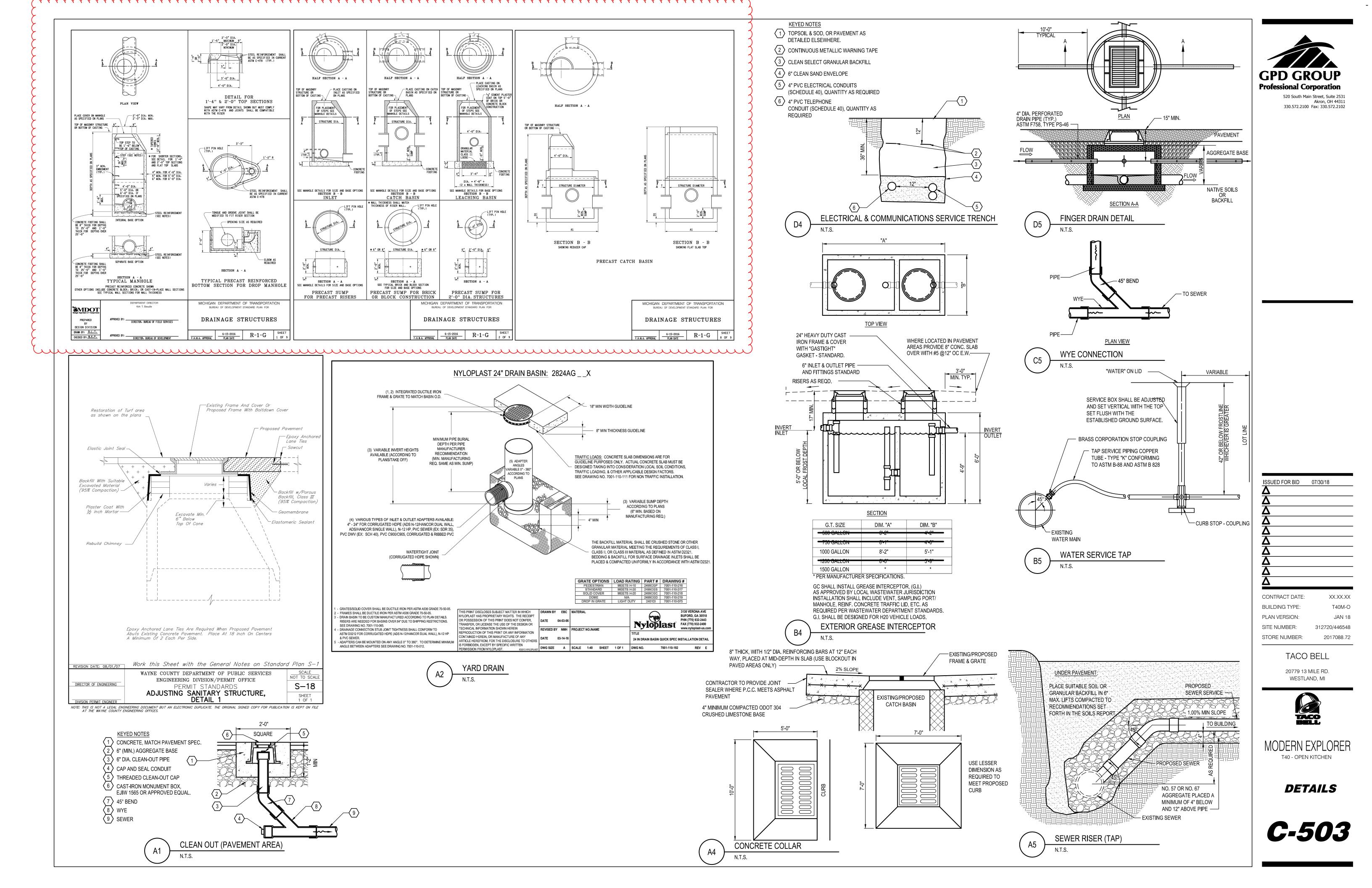
EXHIBITS

C-148









LANDSCAPE NOTES & PLANTING SPECIFICATIONS

SCOPE OF WORK

- THIS WORK SHALL CONSIST OF PERFORMING CLEARING AND GRUBBING, SOIL PREPARATION, FINISH GRADING, PLANTING AND DRAINAGE, INCLUDING ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT.
- QUANTITY TAKEOFF IS SUPPLIED FOR CONTRACTOR'S ASSISTANCE ONLY. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ALL PLANT MATERIALS AS PER PLAN.
- NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND
- REPAIR WITHIN EASEMENT OR RIGHT-OF-WAY LIMITS. PRESERVATION/PROTECTION (IF APPLICABLE)
- CONTRACTOR SHALL MAINTAIN AND PRESERVE TREES AND SHRUBS NOT BEING REMOVED, INCLUDING THEIR ROOTS. TREE PROTECTION FENCING SHALL BE USED AT THE DRIP LINE OF 3. ALL TREES AND SHRUBS WITHIN 50 FEET OF CONSTRUCTION EXCEPT AS SHOWN ON PLAN. FENCING SHALL REMAIN IN PLACE UNTIL FINAL PLANT INSPECTION FOLLOWING CONSTRUCTION. MATERIALS SHALL NOT BE STOCKPILED WITHIN THIS DEFINED AREA AND VEHICLES AND OTHER EQUIPMENT SHALL BE OPERATED TO AVOID SOIL COMPACTION.
- FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA EQUAL TO TWICE THE TREE CIRCUMFERENCE (MEASURED 6" ABOVE THE GROUND LINE IN INCHES) EXPRESSED IN FEET. (EXAMPLE: A CIRCUMFERENCE OF 10" WOULD HAVE A 'NO CUT' ZONE OF 20 FEET IN ALL DIRECTIONS FROM THE TREE). THIS SHOULD APPLY TO UTILITY SERVICES, IF FEASIBLE. THE ONLY EXCEPTION TO 2. THIS REQUIREMENT WILL BE THOSE SPECIFICALLY ALLOWED BY THE LANDSCAPE ARCHITECT, SPECIFICATIONS OR AS INDICATION ON THE PLANS.
- TREE TRUNKS AND EXPOSED ROOTS DAMAGED DURING EQUIPMENT OPERATIONS SHALL BE TREATED IN ACCORDANCE WITH THE ARBOR CULTURAL STANDARDS OF THE CITY.

PLANT MATERIALS

- GENERAL ALL MATERIALS SHALL BE OF ITS KIND AVAILABLE AND SHALL HAVE BEEN GROWN IN A CLIMATE SIMILAR TO THAT ON SITE.
- PLANTS ALL PLANTS SHALL BE HEALTHY, OF NORMAL GROWTH, WELL ROOTED, FREE FROM DISEASE AND INSECTS. QUALITY AND SIZE OF PLANT MATERIAL SHALL CONFORM TO ANSI Z60.1 "AMERICAN STANDARDS FOR NURSERY STOCK".
- VARIETIES AND SIZES OF PLANTS SHALL BE AS SHOWN ON DRAWINGS.
- PLANTS SHALL BE IN A HEALTHY, VIGOROUS CONDITION, FREE OF DEAD OR BROKEN BRANCHES, SCARS THAT ARE NOT COMPLETELY HEALED, FROST CRACKS, DISFIGURING KNOTS, BROKEN OR ABRADED BARK, REDUNDANT LEADERS OR BRANCHES, OR ABERRATIONS OF ANY KIND. PLANTS SHALL NOT HAVE MULTIPLE LEADERS, UNLESS THIS IS THE NATURAL FORM.
- BALLED AND BURLAPPED (B&B) PLANTS SHALL BE DUG WITH A FIRM ROOT BALL OF NATURAL EARTH, OF A SIZE IN PROPORTION TO THE PLANT'S SIZE, AS MEASURED BY CALIPER, HEIGHT, OR SPREAD. BALLED AND BURLAPPED PLANTS SHALL BE HANDLED ONLY BY THE ROOT BALL, NOT BY THE TRUNK OR BRANCHES, AS THIS MAY BREAK OR LOOSEN THE ROOT BALL AND DAMAGE THE ROOT SYSTEM. CONTAINER PLANTS SHALL HAVE BEEN ESTABLISHED FOR A MINIMUM OF ONE FULL GROWING SEASON IN THEIR CONTAINERS BEFORE INSTALLATION. CONTAINER PLANTS SHALL BE HANDLED ONLY BY THE CONTAINER, NOT BY THE STEMS OR BRANCHES, AS THIS MAY PULL THE PLANT OUT OF THE CONTAINER AND BREAK OR LOOSEN THE ROOT BALL AND DAMAGE THE ROOT SYSTEM.
- PLANTS SHALL BE PROTECTED FROM DRYING OUT DURING SHIPPING WITH TARPAULINS OR OTHER COVERINGS. PLANTS SHALL BE PROTECTED FROM DRYING OUT AFTER DELIVERY BY PLANTING IMMEDIATELY: IF THIS IS NOT POSSIBLE, THE ROOT BALL SHALL BE COVERED WITH PEAT MOSS OR EARTH. AND WATERED FREQUENTLY TO KEEP IT MOIST UNTIL PLANTING.
- DO NOT HANDLE, MOVE, BIND, TIE OR OTHERWISE TREAT PLANTS SO AS TO DAMAGE THE ROOT BALL, ROOTS, TRUNK, OR BRANCHES IN ANY WAY.

TOPSOIL

- TOPSOIL HAS BEEN (OR WILL BE) STOCKPILED FOR REUSE IN LANDSCAPE WORK. IF QUANTITY OF STOCKPILED TOPSOIL IS INSUFFICIENT, PROVIDE ADDITIONAL TOPSOIL AS REQUIRED TO COMPLETE LANDSCAPE WORK. IMPORTED TOPSOIL SHALL CONSIST OF LOOSE, FRIABLE, LOAMY TOPSOIL WITHOUT ADMIXTURE OF SUBSOIL OR REFUSE. ACCEPTABLE TOPSOIL SHALL CONTAIN NOT LESS THAN 3 PERCENT NOR MORE THAN 20 PERCENT ORGANIC MATTER.
- PLANTING BACKFILL FOR PARKING LOT ISLANDS SHALL CONSIST OF A HOMOGENEOUS MIXTURE OF 3 PARTS TOPSOIL TO ONE PART SPHAGNUM PEAT INSTALLED OVER A 6" THICKNESS OF NO. 57 AGGREGATE.

SOIL CONDITIONING

- OBTAIN LABORATORY ANALYSIS OF STOCKPILED AND IMPORTED TOPSOIL COMPLETE WITH RECOMMENDATIONS FOR SOIL AMENDMENT.
- BEFORE MIXING, CLEAN TOPSOIL OF ROOTS, PLANTS, SOD, STONES, CLAY LUMPS, AND OTHER EXTRANEOUS MATERIALS HARMFUL OR TOXIC TO PLANT GROWTH.
- MIX SPECIFIED SOIL AMENDMENTS AND FERTILIZERS WITH TOPSOIL AT RATES SPECIFIED BY THE LAB REPORT. DELAY MIXING OF FERTILIZER IF PLANTING WILL NOT FOLLOW PLACING OF 1. SPACING AND VARIETY OF GROUND COVER SHALL BE AS SHOWN ON DRAWINGS. PLANTING SOIL WITHIN A FEW DAYS.
- FOR PLANTING BEDS AND LAWNS, MIX PLANTING SOIL EITHER PRIOR TO PLANTING OR APPLY ON SURFACE OF TOPSOIL AND MIX THOROUGHLY BEFORE PLANTING. MIX LIME WITH 3. DRY SOIL PRIOR TO MIXING OF FERTILIZER.
- PREVENT LIME FROM CONTACTING ROOTS OF ACID-LOVING PLANTS.
- APPLY PHOSPHORIC ACID FERTILIZER (OTHER THAN THAT CONSTITUTING A PORTION OF COMPLETE FERTILIZERS) DIRECTLY TO SUBGRADE BEFORE APPLYING PLANTING SOIL AND TILLING.

PLANTING SOIL

PLANTING SOIL MIX SHALL BE CLEAR OF ALL STONES AND DEBRIS 1" OR LARGER, AND CONSIST OF THE FOLLOWING: 25% ORGANIC COMPOST, 75% ACCEPTABLE TOPSOIL.

BED EDGING - EDGING SHALL BE 4" STEEL EDGING WITH THREE (3) METAL ANCHOR STAKES PER 20 FOOT SECTION. ALL MASS PLANTING BEDS SHALL HAVE EDGING PLACED BETWEEN MULCH AREA AND ANY ADJACENT TURF AREA.

2. MULCH:

OTHER MATERIALS

A. RIVER ROCK MULCH AREA: MEXICAN BEACH AGGREGRATE MULCH, 3" IN SIZE, GRAY IN COLOR, WASHED AND ROUNDED, SHALL BE INSTALLED WITHIN THE RIVER ROCK MULCH AREA PER PLAN. RIVER ROCK SHALL BE INSTALLED AT 6" DEPTH.

B. NON-DRYED, DOUBLE SHREDDED HARDWOOD MULCH SHALL BE INSTALLED IN ALL OTHER LANDSCAPE BEDS OUTSIDE OF THE RIVER ROCK MULCH AREA, AT A 3" DEPTH.

WEED BARRIER - POLYETHYLENE FILTER FABRIC DESIGNED TO PERMIT WATER INFILTRATION WHILE PREVENTING WEED GROWTH-TO BE INSTALLED IN ALL PLANTING BEDS. GENERAL WORK PROCEDURES

LANDSCAPE WORK SHALL BE ACCORDING TO THE WORKMANLIKE STANDARDS ESTABLISHED FOR LANDSCAPE CONSTRUCTION AND PLANTING IN THE MICHIGAN STANDARDIZED LANDSCAPE SPECIFICATIONS (ASLA) AND ANY LOCAL LANDSCAPE ORDINANCES.

- CONTRACTOR SHALL OBTAIN A COPY OF LOCAL ORDINANCES REGARDING ACCEPTABLE PLANT AND PLANTING DETAILS AND ABIDE BY THOSE ORDINANCES AND DETAILS.
- 3. ENGINEER RESERVES THE RIGHT TO REJECT ALL PLANT MATERIAL DEEMED NOT ACCEPTABLE.
- ANY PROPOSED PLANT SUBSTITUTIONS SHALL BE EQUIVALENT IN FORM, HABIT, STRUCTURE, BRANCHING AND LEAF TYPE AND MUST BE ISSUED TO THE LANDSCAPE ARCHITECT FOR APPROVAL, IN WRITING, PRIOR TO INSTALLATION.

WEEDING

1. BEFORE AND DURING PRELIMINARY GRADING AND FINISH GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

PLANTING

- POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE OWNER BEFORE EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.
- PLANTING PITS SHALL BE AS PER DETAILS.
- PREPARED SOIL SHALL BE TAMPED FIRMLY AT BOTTOM OF PIT. FILL WITH PLANTING SOIL AROUND BALL OF PLANT. COMPLETE BACKFILLING AND WATER THOROUGHLY.
- 4. EACH TREE AND SHRUB SHALL RECEIVE THE LANDSCAPER'S BIONUTRITION (3-0-3) GRANULAR WITH MYCORRHIZAL TECHNOLOGY FERTILIZER OR APPROVED OTHER. APPLY FERTILIZER PER MANUFACTURER'S SPECIFICATIONS.
- WATER IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED.
- 6. INSTALL BED EDGING AND MULCH PER MATERIALS SPECIFICATION AND DETAILS.
- REMOVE ALL SALES TAGS, STRINGS, STRAPS, WIRE, ROPE OR OTHER MATERIALS THAT MAY INHIBIT PLANT GROWTH BOTH ABOVE AND BELOW THE SURFACE OF THE SOIL.
- 8. REMOVE ANY BROKEN, SUCKERING, DISEASED, CRISSCROSSED OR AESTHETICALLY DISPLEASING BRANCHES BACK TO LIVE LEADER OR SIDE LATERAL WITH A FLUSH CUT.

FINISH GRADING

- 1. ALL AREAS WILL BE GRADED BY THE CONTRACTOR TO SUBSTANTIALLY PLUS/MINUS 0.1 FOOT OF FINISH GRADE.
- 2. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN, UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE, SOIL AREAS ADJACENT TO THE BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS.
- 3. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER.
- 4. PARKING LOT ISLAND SHALL BE BACKFILLED AS PART OF THIS CONTRACT.

GROUND COVER

- 2. MULCH GROUND COVER WITH 2" THICKNESS OF SPHAGNUM PEAT.
- IMMEDIATELY AFTER PLANTING GROUND COVER, CONTRACTOR SHALL THOROUGHLY WATER GROUND COVER.
- 4. ALL GROUND COVER AREAS SHALL BE TREATED WITH A PRE-EMERGENT BEFORE FINAL LANDSCAPE INSPECTION. GROUND COVER AREAS SHALL BE WEEDED PRIOR TO APPLYING PRE-EMERGENT. PRE-EMERGENT TO BE APPLIED AS PER MANUFACTURER'S RECOMMENDATION.

GUARANTEE

1. CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF PROJECT ACCEPTANCE BY THE OWNER.

CLEANUP

1. UPON THE COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM HIS WORK. AN 'ACCEPTABLE CONDITION' SHALL BE AS DEFINED AND APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.

MAINTENANCE

(MAINTENANCE PERIOD TO COMMENCE AFTER FINAL INSPECTION.)

- 1. MAINTENANCE PERIOD FOR THIS CONTRACT SHALL BE 90 CALENDAR DAYS COMMENCING AFTER FINAL INSPECTION OF CONSTRUCTION.
- 2. MAINTAIN TREES, SHRUBS AND OTHER PLANTS BY PRUNING, CULTIVATING AND WEEDING AS REQUIRED FOR HEALTHY GROWTH, RESTORE PLANTING SAUCERS, RESET TREES AND SHRUBS TO PROPER GRADES OR VERTICAL POSITION AS REQUIRED.
- 3. MAINTAIN LAWNS BY WATERING, MOWING, TRIMMING, AND OTHER OPERATIONS SUCH AS ROLLING, REGRADING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.
- 4. MAINTAIN THE LANDSCAPING BY KEEPING ALL PLANTS DISEASE-FREE AND PLANTING BEDS GROOMED, EXCEPT IN NATURALLY OCCURRING VEGETATION AREAS.
- 5. REPLACE ANY REQUIRED PLANTING(S), WHICH SEVERELY DECLINE OR DIE AFTER THE DATE OF PLANTING. SUCH REPLACEMENT SHALL OCCUR DURING THE NEXT APPROPRIATE PLANTING SEASON.

SODDING

SOD SHALL BE FIRST GRADE CERTIFIED BLENDS OF THE FOLLOWING SPECIES PER HARDINESS ZONE CONTAINING NOT MORE THAN 30 PERCENT OF OTHER GRASSES AND CLOVERS, AND FREE FROM ALL NOXIOUS WEEDS.

> ZONES 3, 4 & 5: APPROVED BLUE GRASS BLEND ZONE 6: APPROVED FESCUE BLEND ZONES 7 & 8: APPROVED BERMUDA BLEND ZONES 9 & 10: APPROVED ST AUGUSTINE FLORATAM BLEND

- 2. SOD SHALL BE RECENTLY MOWED TO A HEIGHT OF NOT LESS THAN 3 INCHES. IT SHALL BE CUT INTO STRIPS OF NOT LESS THAN 3 FEET AND NOT OVER 6 FT. WITH A UNIFORM WIDTH OF NOT OVER 24 INCHES.
- 3. SOD SHALL BE CUT TO A DEPTH EQUAL TO THE GROWTH OF THE FIBROUS ROOTS BUT IN NO CASE LESS THAN 1 INCH.
- 4. SOD SHALL BE DELIVERED TO THE JOB WITHIN 24 HOURS AFTER BEING CUT AND SHALL BE INSTALLED WITHIN 48 HOURS AFTER BEING CUT.
- BEFORE SOD IS PLACED, THE SOD BED WILL HAVE BEEN EXCAVATED TO SUCH A DEPTH THAT WHEN THE SOD IS IN PLACE THE TOP OF THE SOD WILL BE FLUSH WITH THE SURROUNDING GRADE.
- NO SOD SHALL BE PLACED WHEN THE TEMPERATURE IS BELOW 32 DEGREES F. NO FROZEN SOD SHALL BE PLACED NOR SHALL ANY SOD BE PLACED ON FROZEN SOIL. WHEN SOD IS PLACED BETWEEN THE DATES OF JUNE 1ST AND OCTOBER 15TH, IT SHALL BE COVERED IMMEDIATELY WITH A STRAW MULCH 1 INCH THICK (LOOSE MEASUREMENT).
- 7. AFTER LAYING, THE SOD SHALL BE WATERED THOROUGHLY AND TAMPED WITH APPROVED SOD TAMPERS SUFFICIENTLY TO BRING THE SOD INTO CLOSE CONTACT WITH THE SOD BED AND INSURE TIGHT JOINTS BETWEEN THE SECTIONS OR STRIPS.
- THE CONTRACTOR SHALL KEEP ALL SODDED AREAS INCLUDING SUBGRADE, THOROUGHLY MOIST FOR 30 DAYS AFTER SODDING.
- 9. THE CONTRACTOR SHALL REPAIR ANY AREAS DAMAGED FOLLOWING INSTALLATION AS DIRECTED BY THE ENGINEER. SOD SHALL BE IN PLACE AT LEAST 30 DAYS BEFORE FINAL ACCEPTANCE.

SEEDING

- GRASS SEED SHALL BE FRESH, CLEAN, DRY, NEW-CROP SEED COMPLYING WITH THE ASSOCIATION OF OFFICIAL SEED ANALYSTS' "RULES FOR TESTING SEEDS" FOR PURITY AND GERMINATION TOLERANCES.
- ALL AREAS TO BE SEEDED SHALL RECEIVE NO LESS THAN FIVE POUNDS OF SEED PER ONE THOUSAND SQUARE FEET. APPLY SEED AND PROTECT WITH STRAW MULCH AS REQUIRED FOR NEW LAWNS. GRASS SEED MIX SHALL CONSIST OF THE FOLLOWING:

PROPORTION	NAME		MIN.% PURE SEED	MAX.% WEED SEED	
30%	KENTUCKY BLUEGRASS (POA PRATENSIS)	80	85	0.50	
30%	CREEPING RED FESCUE (FESTUCA RUBRA)	85	98	0.50	
20%	PERENNIAL RYE GRASS (LOLIUM PERENNE)	90	98	0.50	
20%	ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	85	92	1.00	

PLANTING SCHEDULE

ALL PLANTING IS RECOMMENDED TO BE DONE WITHIN THE FOLLOWING DATES. WHEN PLANTING OUTSIDE THESE DATES, WRITTEN DOCUMENTATION SHALL BE PROVIDED THAT SURVIVAL OR REPLACEMENT WILL BE ENSURED. NO PLANTING SHALL BE DONE IN FROZEN SOIL.

NORMAL PLANTING SEASONS	SPRING	FALL
ALL TREES AND SHRUBS	MARCH 15-MAY 15	OCTOBER 1-DECEMBER 1
EVERGREENS	APRIL 1-MAY 15	OCTOBER 1-NOVEMBER 15
GROUNDCOVERS	APRIL 1-JUNE1	WHEN SOD IS WORKABLE
SEED AND MULCH	APRIL 1-MAY 15	OCTOBER 1-NOVEMBER 15

GENERAL NOTE

ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE WITHIN THE RIGHT-OF-WAY SHALL BE FINE GRADED TO MAINTAIN POSITIVE DRAINAGE, HAVE A 4" LAYER OF TOPSOIL APPLIED AND BE SEEDED ACCORDING TO SPECIFICATIONS ON THIS SHEET.

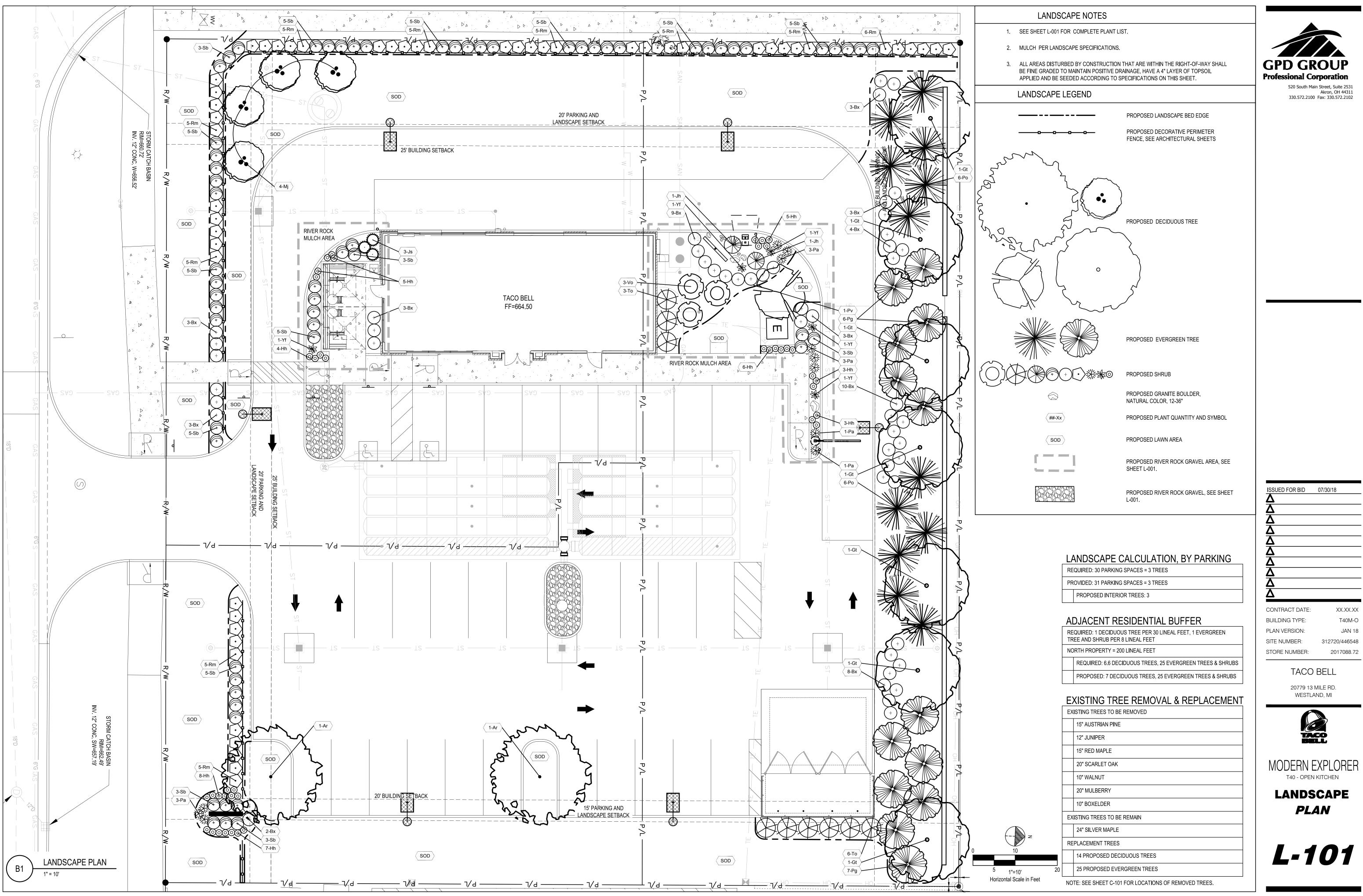
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Symbol	Botanical Name	Common Name	Qty.	Min. Size	Condition	Remarks
Ar	Acer rubrum 'Northwood'	Northwood Red Maple	2	2.5" Cal.	B&B	Matching
Bx	Buxus x 'Green Gem'	Green Gem Boxwood	45	18" H, No. 3	Cont.	3' o/c
Gt	Gleditsia triacanthos f. inermis 'Skycole'	Skyline Honeylocust	7	2.5" Cal.	B&B	Specimen
Hh	Hemerocallis 'Happy Returns'	Happy Returns Daylily	41	No. 1	Cont.	1.5' o/c
Jh	Juniperus horizontalis 'Wiltoni'	Blue Rug Juniper	2	No. 3	Cont.	Per Plan
Js	Juniperus scopulorum 'Sky Rocket'	Sky Rocket Juniper	3	5' H	B&B	Matching
Mj	Malus 'Jewelcole'	Red Jewel Crabapple	4	10-12' H	B&B	Multi-stem, matchin
Ра	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	11	No. 2	Cont.	Per Plan
Pg	Picea glauca	White Spruce	13	8' H	B&B	Specimen
Po	Picea omorika	Serbian Spruce	12	8' H	B&B	Specimen
Pv	Prunus virginiana 'Canada Red'	Canada Red Chokecherry	1	2" Cal.	B&B	Matching
Rm	Rosa 'Meicoublan'	White Meidiland Rose	51	24" H, No. 3	Cont.	3' o/c
Sb	Spireae x bumalda 'Anthony Waterer'	Anthony Waterer Spirea	65	24" H, No. 3	Cont.	3' o/c
То	Thuja occidentalis 'Emerald'	Emerald Arborvitae	9	5' H	B&B	4' o/c
Vo	Viburnum opulus 'Compactum'	Compact Cranberry Bush Viburnum	3	36" H, No. 5	Cont.	Per Plan
Yf	Yucca flaccida	Adam's Needle	5	No. 3	Cont.	Per Plan

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ΕX	ISTING TREES TO BE REMOVED
	15" AUSTRIAN PINE
	12" JUNIPER
	15" RED MAPLE
	20" SCARLET OAK
	10" WALNUT
	20" MULBERRY
	10" BOXELDER
ΕX	ISTING TREES TO BE REMAIN
	24" SILVER MAPLE
RE	PLACEMENT TREES
	14 PROPOSED DECIDUOUS TREES
	25 PROPOSED EVERGREEN TREES
NO	TE: SEE SHEET C-101 FOR LOCATIONS OF REMOVED TREES.

