WHATABURGER

NWQ HIGHWAY 150 AND HOLLYWOOD STREET
LEE'S SUMMIT, MO 64802
JACKSON COUNTY
PROTOTYPE 20-M

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		CONSTRUCTION LIMITS
P/L		PROPERTY LINE
ESMT		EASEMENT
X		FENCE
		LIGHT POLE
UE	UE	UNDERGROUND ELECTRIC LINE
		ELECTRICAL STRUCTURE
UT	UT	UNDERGROUND TELECOMMUNICATION LINE
G		GAS LINE
		GAS METER
W	W	WATER LINE
		WATER STRUCTURE
		FIRE HYDRANT
SAN	SAN	SANITARY LINE
		SANITARY STRUCTURE
		SANITARY GREASE TRAP
ST	ST	STORM LINE
		STORM STRUCTURE
	RD	ROOFDRAIN / UNDERDRAIN
950	950	CONTOUR
950.00 EX. 949.50 EX.	950.00 949.50	TOP OF CURB TOP OF PAVEMENT
950.00 EX.	950.00	FINISHED GRADE SPOT ELEVATION
	1.00%	GRADE SLOPE
		MAJOR FLOOD ROUTING
	HP HP	HIGH POINT
		SEEDING/LANDSCAPE AREA
		CONCRETE
		STRUCTURAL CONCRETE
		CONCRETE PAVEMENT
		ROCK AREA
		HEAVY DUTY ASPHALT PAVEMENT

VICINITY MAP
N.T.S.

SHEET INDEX

OWNER
WHATABURGER
300 CONCORD PLAZA DR.
SAN ANTONIO, TX 78216
PHONE: (210) 476-6842
CONTACT: ALYSSIA LESTER
EMAIL: alester@wbhq.com

ENGINEER
ms consultants, inc.
2221 SCHROCK ROAD
COLUMBUS, OHIO 43229
PHONE: (614) 898-7100
CONTACT: IAN AULTMAN
EMAIL: iaultman@msconsultants.com

BENCHMARK
TBM 1:
1/2 IRON
NORTHING: 2822704.4825
EASTING: 978325.3390
ELEVATION = 1022.68

TBM 2:
1/2 IRON
NORTHING: 2822484.7625
EASTING: 978055.2866
ELEVATION = 1019.71

BASIS OF BEARINGS:
MO (C) STATE PLANE COORDINATE SYSTEM SPC (2402 MO C)

SURVEYOR
YOUNG - HOBBS AND ASSOCIATES
1202 CROSSLAND AVE.
CLARKSVILLE, TN 37040
PHONE: (931) 645-2524
CONTACT: DAVE R. HOBBS

GEOTECHNICAL ENGINEER
TERRACON CONSULTANTS, INC.
4765 WEST JUNCTION STREET
SPRINGFIELD, MISSOURI 65802
PHONE: (417) 864-5100
CONTACT: TY G. ALEXANDER, P.E.

FLOOD INFORMATION
THIS PROPERTY IS LOCATED WITHIN AN AREA HAVING ZONE DESIGNATIONS OF "X" BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, ON FLOOD INSURANCE RATE MAP NO. 29095C0532G, WITH A MAP EFFECTIVE DATE OF JANUARY 1ST, 2017, IN JACKSON COUNTY, STATE OF MISSOURI, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PROPERTY IS SITUATED.

Know what's below. Call before you dig.

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 &
HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

SHEET TITLE

COVER SHEET

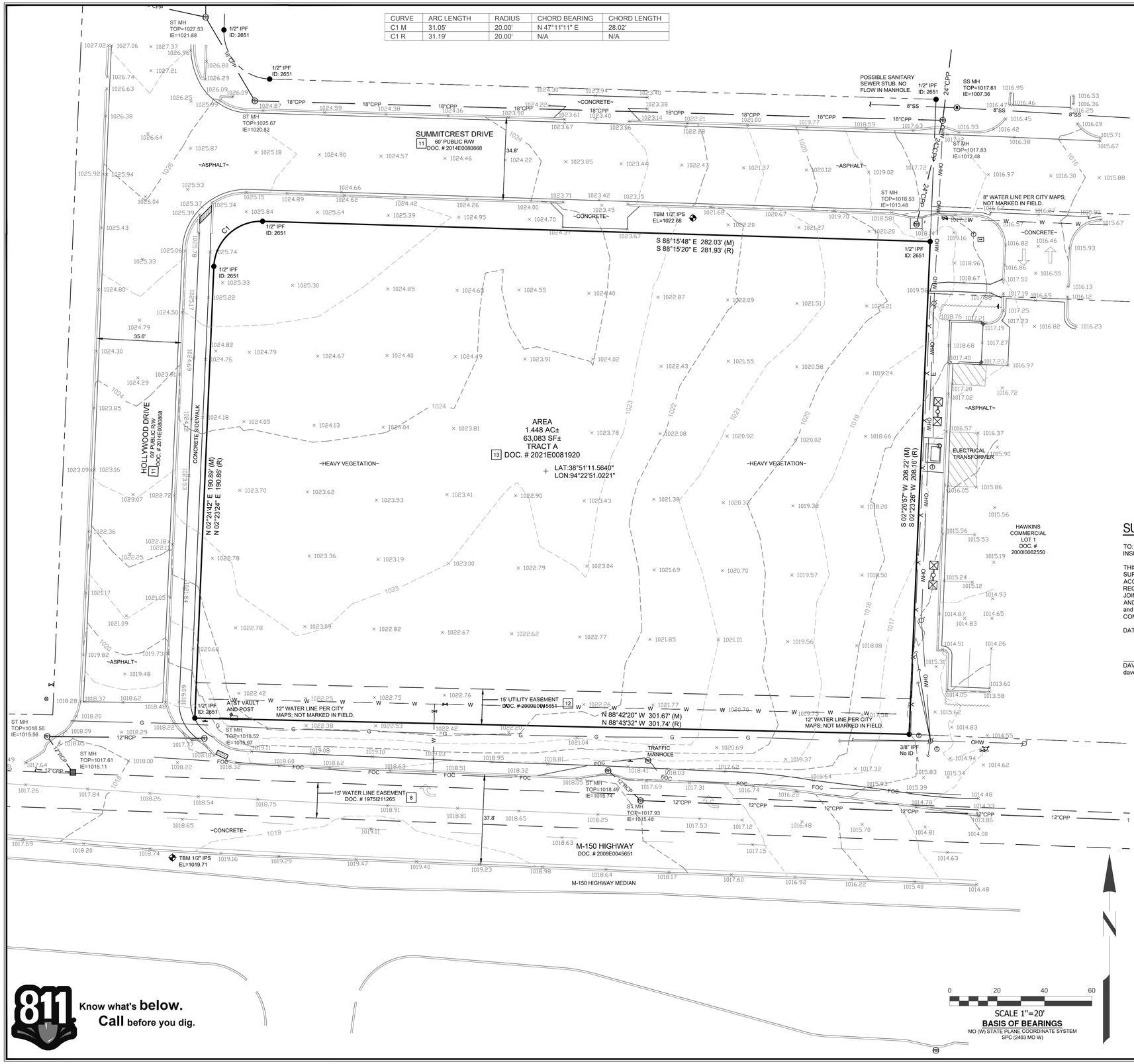
DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

C-1.0

N:\03\62\40497\21-Lee's Summit, MO Market\Docs\CAD\CIVIL\SHEETS\C-1.0 Cover Sheet.dwg, 2/24/2022 2:50 PM, chiusano, joseph

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1 M	31.05'	20.00'	N 47°11'11" E	28.02'
C1 R	31.19'	20.00'	N/A	N/A



SITE ADDRESS:

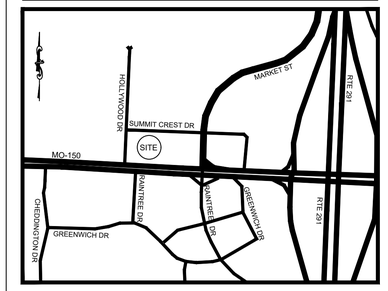
204 SW MISSOURI 150 HIGHWAY,
LEES SUMMIT, MO 64081

PARKING:

REGULAR: 0
HANDICAPPED: 0

TOTAL: 0

SITE MAP



NOTES CORRESPONDING TO SCHEDULE B-II:

CHICAGO TITLE INSURANCE COMPANY
EFFECTIVE DATE: NOVEMBER 17, 2021 AT 8:00 A.M.
FILE NO.: KCC213072

ITEMS 1-7 AND 14-15, ARE STANDARD EXCEPTIONS AND/OR NOT SURVEYING RELATED AND ARE SUBJECT TO THESE EXCEPTIONS.

8. Water Line Easement by the instrument recorded as Document No. 1975I211265 in Book I596 at Page 173. DOES NOT AFFECT.

9. Sewer Line Easement by the instrument recorded as Document No. 1988I875029 in Book I1850 at Page 1774. AFFECTS, NOT POTTABLE.

10. Temporary Easement for Highway Purposes by the instrument recorded as Document No. 1988I015602 in Book I3155 at Page 270. DOES NOT AFFECT.

11. Right of way granted to the City of Lee's Summit by the instrument recorded as Document No. 2014E0080868. DOES NOT AFFECT.

12. Easements set forth in Warranty Deed recorded as Document No. 2009E0045651. AFFECTS, AS SHOWN HEREON.

13. Matters shown and set forth on Certificate of Survey recorded July 27, 2021 as Document No. 2021E0081920. AFFECTS, NO EASEMENT SHOWN.

TABLE A NOTES:

ITEM 2: ADDRESS SHOWN IS PER TITLE COMMITMENT NO. KCC213072.

ITEM 3: THIS PROPERTY IS LOCATED WITHIN AN AREA HAVING ZONE DESIGNATIONS OF "X" BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, ON FLOOD INSURANCE RATE MAP NO.29095C0532G, WITH A MAP REVISED DATE OF JANUARY 20, 2017, IN JACKSON COUNTY, STATE OF MISSOURI, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PROPERTY IS SITUATED."

ITEM 5: CONTOURS WERE DERIVED FROM RANDOM SHOTS AND CROSS SECTIONS AND ARE SHOWN AT ONE FOOT INTERVALS. ELEVATIONS SHOWN HEREON ARE BASED ON GPS OBSERVATIONS TOGETHER WITH AN OPUS SOLUTION, DATED 11/22/2021 (NAVD88,GEOID18).

ITEM 6A: NO ZONING REPORT PROVIDED TO THIS SURVEYOR.

ITEM 16: THERE WAS NO EVIDENCE OF RECENT EARTH MOVING, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.

ITEM 17: THERE WAS NO EVIDENCE OF RECENT CHANGES IN STREET RIGHT OF WAY LINES. THERE WAS NO EVIDENCE OF RECENT OR STREET SIDEWALK CONSTRUCTION OR REPAIRS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.

SURVEYOR'S CERTIFICATION:

TO: WHATABURGER RESTAURANTS LLC AND CHICAGO TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6(a), 6(b), 7(a-c), 8, 9, 13, 16, and 17 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON NOVEMBER 22, 2021.

DATE OF PLAT OR MAP: DECEMBER 16, 2021.

DAVE R. HOBBS, PLS 2014020711
dave@younghobbs.com

DATE

LAND DESCRIPTION: AS SURVEYED

PART OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 47 NORTH, RANGE 31 WEST, OF THE FIFTH PRINCIPAL MERIDIAN, LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, DESCRIBED AS FOLLOWS:

BEING ALL OF TRACT "A", ON THE CERTIFICATE OF SURVEY, RECORDED JULY 27, 2021 AS DOCUMENT NO. 2021E0081920 IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, ALSO DESCRIBED AS FOLLOWS:

BEGINNING AT A 1/2" IRON PIN FOUND (ID: 2651) AT THE RIGHT OF WAY LINE INTERSECTION OF 150 HIGHWAY AND HOLLYWOOD DRIVE; THENCE WITH THE EAST RIGHT OF WAY LINE OF SAID HOLLYWOOD DRIVE N 02°24'42" E A DISTANCE OF 190.89 FEET TO A 1/2" IRON PIN FOUND (ID: 2651); THENCE WITH THE RIGHT OF WAY LINE INTERSECTION OF SAID HOLLYWOOD DRIVE AND SUMMITCREST DRIVE WITH A CURVE TURNING TO THE RIGHT WITH AN ARC LENGTH OF 31.05 FEET WITH A RADIUS OF 20.00 FEET WITH A CHORD BEARING OF N 47°11'11" E, WITH A CHORD LENGTH OF 28.02 FEET TO A 1/2" IRON PIN FOUND (ID: 2651); THENCE WITH THE SOUTH RIGHT OF WAY LINE OF SAID SUMMITCREST DRIVE S 88°15'48" E A DISTANCE OF 282.03 FEET TO A 1/2" IRON PIN FOUND (ID: 2651); THENCE LEAVING SAID RIGHT OF WAY LINE WITH THE WEST LINE OF HAWKINS COMMERCIAL LOT 1, RECORDED IN DOCUMENT NO. 2000I0062550 S 02°26'57" W A DISTANCE OF 208.22 FEET TO A 3/8" IRON PIN FOUND IN THE NORTH RIGHT OF WAY LINE OF SAID 150 HIGHWAY, THENCE WITH SAID NORTH RIGHT OF WAY LINE N 88°42'20" W A DISTANCE OF 301.67 FEET TO THE POINT OF BEGINNING, HAVING AN AREA OF 63,083 SQUARE FEET, 1.448 ACRES, MORE OR LESS.

SURVEY NOTES:

INFORMATION REGARDING THE PRESENCE, SIZE AND LOCATION OF UNDERGROUND UTILITIES IS SHOWN HEREON. THIS INFORMATION HAS BEEN SHOWN BASED ON THE LOCATION ABOVE GROUND APPURTENANCES, AVAILABLE DESIGN PLANS, AND FLAGS AND PAINT PLACED BY THE UNDERGROUND PROTECTION SERVICE. NO CERTIFICATION IS MADE AS TO THE ACCURACY OF THOROUGHNESS OF THE INFORMATION CONCERNING UNDERGROUND UTILITIES AND STRUCTURES SHOWN HEREON. (MISSOURI ONE CALL 1-800-DIG-RITE). THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A PRIVATE UTILITY LOCATE.

CONTACT PROPER AUTHORITIES BEFORE BUILDING NEAR UTILITY LINES, FOR EASEMENT WIDTH AND RESTRICTIONS. UTILITIES ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY CONSTRUCTION.

UNLESS STATED OTHERWISE, ANY MONUMENT REFERRED TO HEREIN AS AN "IRON PIN SET" IS A SET 5/8" DIAMETER REBAR, WITH AN YELLOW PLASTIC CAP STAMPED "YOUNG-HOBBS"

THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF THE PERSON OR ENTITIES NAMED HERON. NO EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE INFORMATION SHOWN HEREON IS TO BE EXTENDED TO ANY PERSONS OR ENTITIES OTHER THAN THOSE SHOWN HEREON.

THERE WERE NO BUILDINGS ON THE SUBJECT PROPERTY AT THE TIME OF THE SURVEY.

LIST OF ENCROACHMENTS: NONE, THE OWNERSHIP OF CURB, UTILITIES, FENCES, AND/OR PERIMETER WALLS SHOWN HEREON ARE NOT KNOWN AND THUS ARE NOT LISTED AS ENCROACHMENTS. CURB, UTILITIES, FENCES, AND/OR PERIMETER WALLS ARE SHOWN IN THEIR RELATIVE POSITION TO THE BOUNDARY.

I DO HEREBY STATE THAT THIS IS A TRUE, COMPLETE AND CORRECT SURVEY OF THE DESCRIBED REAL PROPERTY SITUATED IN THE COUNTY OF GREENE, MISSOURI AND THAT THIS SURVEY WAS EXECUTED IN ACCORDANCE WITH THE CURRENT MISSOURI MINIMUM STANDARDS FOR PROPERTY SURVEYS (URBAN SURVEY 1:20,000)

LEGEND

- IRON PIN FOUND, AS NOTED
- BENCHMARK, AS NOTED
- SIGN, AS NOTED
- SEWER MANHOLE
- FIRE HYDRANT
- WATER VALVE
- UTILITY POLE
- GUY WIRE
- ELECTRIC METER
- GAS VALVE
- FOC PULL BOX
- TELEPHONE BOX
- GRATE INLET
- STORM MANHOLE
- GATE POST
- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINES
- OHW — OVERHEAD WIRE
- UGE — UNDERGROUND ELECTRIC
- X — FENCE LINE
- G — GAS LINE, AS NOTED
- SS — SANITARY SEWER, AS NOTED
- FOC — UNDERGROUND FIBER OPTIC
- ST — STORM SEWER PIPE, AS NOTED
- W — WATER LINE
- LIGHT POLE(2-WAY)

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

YOUNG - HOBBS AND ASSOCIATES
1202 CROSSLAND AVE.
CLARKSVILLE, TN 37040
PHONE 931-645-2524
FAX 931-645-2768

PRELIMINARY - NOT FOR RECORDING OR LAND TRANSFER

DAVE R. HOBBS, PLS 2014020711

No.	Date	Revision
1		

CLIENT

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

ALTA/NSPS LAND TITLE SURVEY

OWNER INFORMATION

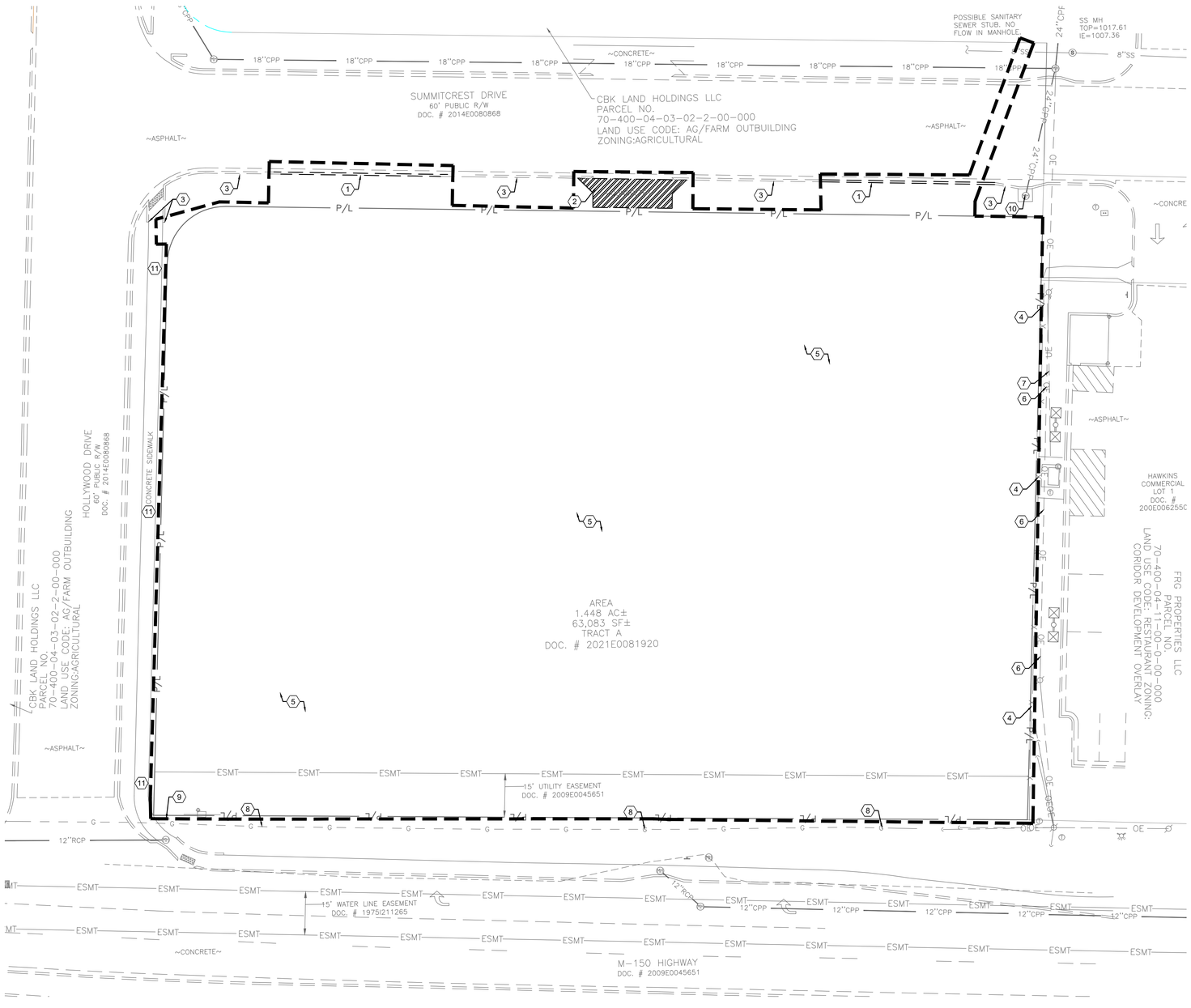
SHUN PING YEH
TAX ID:
70-400-04-03-02-3-00-000
DOC. # 2021E0043600
DOC. # 2021E0043599

ALSO BEING TRACT "A"
DOC. # 2021E0081920

CITY OF LEES SUMMIT
COUNTY OF JACKSON
STATE OF MISSOURI

DRAWN BY:	CLH,KAB
APPROVED BY:	DRH
DATE: (FIELD)	11/22/2021
DATE: (OFFICE)	12/16/2021
YHA PRO. #	242-21

SHEET 1 OF 1



GENERAL NOTES:

A. ALL EXISTING CONDITIONS, TOPOGRAPHY, UTILITIES AND PROPERTY INFORMATION ARE TAKEN FROM A SURVEY OF LAND SITUATED IN THE CITY OF LEE'S SUMMIT, COUNTY OF JACKSON AND STATE OF MISSOURI, BY SURVEYOR: YOUNG-HOBBS AND ASSOCIATES, 1202 CROSSLAND AVENUE CLARKSVILLE, TN 37040.

B. AT START OF PROJECT AND PRIOR TO DEMOLITION OF EXISTING CONDITIONS, CONTRACTOR SHALL BE IN CONTACT WITH ADJACENT PROPERTY OWNERS, CITY REPRESENTATIVE, UTILITY REPRESENTATIVES AND OWNER REPRESENTATIVE TO COORDINATE DEMOLITION TIMING.

C. CONTRACTOR TO REMOVE AND DISPOSE OF ALL DEBRIS AND OTHER MATERIALS RESULTING FROM DEMOLITION AND CONSTRUCTION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

D. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGE TO ADJACENT PROPERTIES DURING CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR DAMAGE TO NEIGHBORING PROPERTIES OCCURRING AS A RESULT OF CONSTRUCTION ACTIVITIES.

E. ALL EXISTING UTILITIES ARE SHOWN HEREIN AS REFERENCE ONLY AND ARE BASED ON RECORD OF THE VARIOUS UTILITY COMPANIES, A FIELD SURVEY AND EXISTING PLANS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS OF ALL UTILITIES PRIOR TO DEMOLITION ACTIVITIES. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES DURING CONSTRUCTION.

F. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES 48 HOURS BEFORE CONSTRUCTION IS TO START, TO VERIFY IF ANY UTILITIES ARE PRESENT ON SITE. ALL VERIFICATIONS (LOCATION, SIZE AND DEPTH) SHALL BE MADE BY THE APPROPRIATE UTILITY COMPANIES. WHEN EXCAVATION IS AROUND OR OVER EXISTING UTILITIES, THE CONTRACTOR MUST NOTIFY THE UTILITY SO A REPRESENTATIVE OF THAT UTILITY COMPANY CAN BE PRESENT TO INSTRUCT AND OBSERVE DURING CONSTRUCTION.

G. CONTRACTOR SHALL CONFINE ALL STOCKPILING OF DEMOLITION MATERIALS TO WITHIN THE LIMITS OF THE SUBJECT PROPERTY.

H. CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES PRIOR TO DEMOLITION. SEE SHEETS C-10.0 AND C-10.1 FOR NOTES AND DETAILS.

KEYED NOTES:

1. EXISTING CURB TO BE REMOVED AND DISPOSED OF.
2. EXISTING CONCRETE TO BE REMOVED AND DISPOSED OF.
3. EXISTING CURB TO REMAIN.
4. EXISTING WOODEN FENCE TO REMAIN.
5. EXISTING VEGETATION TO BE REMOVED AND DISPOSED OF.
6. EXISTING OVERHEAD ELECTRIC LINE TO REMAIN DURING CONSTRUCTION.
7. EXISTING UNDERGROUND ELECTRIC LINE TO REMAIN DURING CONSTRUCTION.
8. PROTECT EXISTING GAS LINE TO REMAIN DURING CONSTRUCTION.
9. EXISTING SIGN TO REMAIN.
10. EXISTING STORM MANHOLE TO REMAIN.
11. EXISTING CONCRETE SIDEWALK TO REMAIN.

LEGEND

EXISTING	DESCRIPTION
UE	UNDERGROUND ELECTRIC LINE
	UNDERGROUND TELECOMMUNICATION LINE
G	GAS LINE
SAN	SANITARY SEWER
ST	STORM SEWER
	WATER MAIN
P/L	PROPERTY LINE
	CONSTRUCTION LIMITS
ESMT	EASEMENT
	CONCRETE REMOVAL
MH	STORM STRUCTURE
	WATER STRUCTURE
	FIRE HYDRANT
	LIGHT POLE
	TRAFFIC POLE
MH	TRAFFIC MANHOLE

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

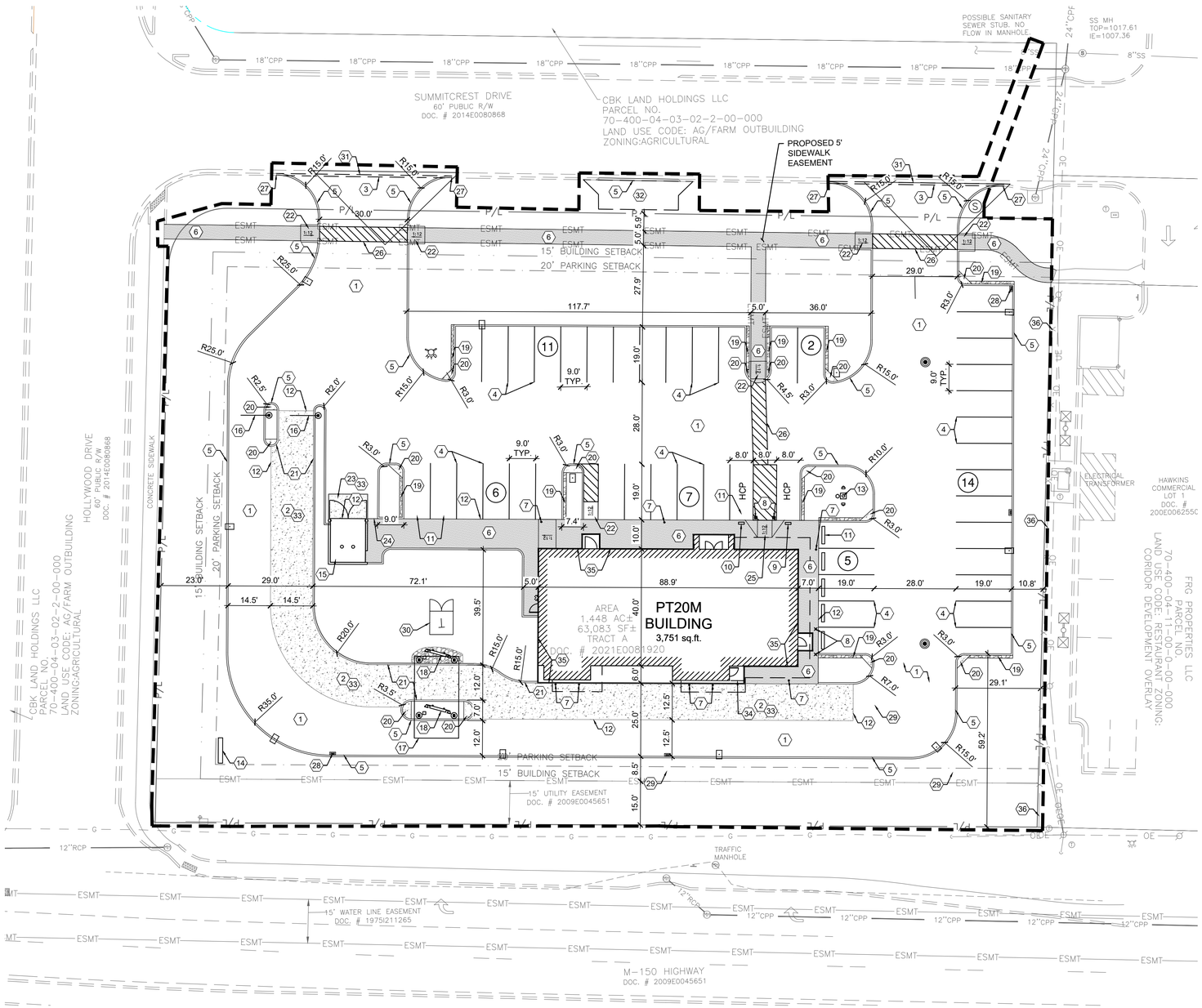
SHEET TITLE

SITE DEMOLITION PLAN

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

C-2.0



LAND DESCRIPTION:
AS SURVEYED

PART OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 47 NORTH, RANGE 31 WEST, OF THE FIFTH PRINCIPAL MERIDIAN, LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, DESCRIBED AS FOLLOWS:

BEING ALL OF TRACT "A", AS SHOWN ON THE CERTIFICATE OF SURVEY, RECORDED JULY 27, 2021 AS DOCUMENT NO. 2021E0081920 IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, ALSO DESCRIBED AS FOLLOWS:

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SITE DATA

	SQ. FT.	ACRES	PERCENT
TOTAL SITE AREA	63083	1.45	100.0
LIMITS OF DISTURBANCE	66640	1.53	105.5
EXISTING PERVIOUS	62787	1.44	99.5
EXISTING IMPERVIOUS	296	0.01	0.5
TOTAL PROPOSED PERVIOUS	24129	0.55	38.2
TOTAL PROPOSED IMPERVIOUS	38954	0.89	61.8
EXISTING ZONING IS AG-AGRICULTURAL			
PROPOSED ZONING IS CP-2 PLANNED COMMUNITY COMMERCIAL			
FLOOR AREA RATION = 0.059 SF			

PHASING PLAN

PROJECT PHASE	BP DESCRIPTION	DATE
A-PRE-CONSTRUCTION	PREPARTE SITE FOR CONSTRUCTION INCLUDING ESTABLISHING E&S PERIMETER CONTROLS	SEPTEMBER-22
B-PHASE I CONSTRUCTION	TOP SOIL STOCK PILE PROTECTION, SITE CLEARING, TEMPORARY SEEDING, GENERAL SITE PREP	SEPTEMBER-22 DECEMBER-22
C-PHASE II CONSTRUCTION	CONSTRUCT BUILDING ASPHALT PAVING, STORM STRUCTURE INSTALLATIONS	DECEMBER-22 JANUARY-23
D-FINAL STABILIZATION	PERMANENT SEEDING	JUNE-23

0 10 20 30 40
SCALE: 1"=20'

GENERAL NOTES:

A. ALL EXISTING CONDITIONS, TOPOGRAPHY, UTILITIES AND PROPERTY INFORMATION ARE TAKEN FROM A SURVEY OF LAND SITUATED IN THE CITY OF LEE'S SUMMIT, COUNTY OF JACKSON AND STATE OF MISSOURI, BY SURVEYOR: YOUNG-HOBBS AND ASSOCIATES, 1202 CROSSLAND AVENUE CLARKSVILLE, TN 37040.

B. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION, AND IS RESPONSIBLE FOR ANY DAMAGE TO THEM DURING CONSTRUCTION.

C. PROVIDE SMOOTH TRANSITION FROM NEWLY PAVED AREAS TO EXISTING PAVED AREAS AS NECESSARY. THE EXISTING EDGE OF PAVEMENT SHALL BE FREE OF ALL LOOSE DEBRIS AT ALL AREAS WHERE PROPOSED PAVEMENT MEETS EXISTING PAVEMENT. THE EDGE OF EXISTING ASPHALT PAVEMENT SHALL BE PROPERLY SEALED WITH A TACK COAT MATERIAL IN ALL AREAS WHERE NEW ASPHALT PAVEMENT IS INDICATED TO JOIN EXISTING.

D. ALL DIMENSIONS TO FACE OF CURB AND/OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

E. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT.

F. REFER TO ARCHITECTURAL DRAWINGS FOR BUILDING DIMENSIONS AND ADDITIONAL INFORMATION.

G. ALL CONSTRUCTION METHODS AND MATERIALS MUST CONFORM TO CURRENT STANDARDS AND SPECIFICATIONS OF THE FEDERAL, STATE, COUNTY, CITY OR LOCAL REQUIREMENTS, WHICHEVER HAS JURISDICTION.

H. ALL EXCAVATED AREAS TO BE SEEDED AND/OR SODDED AFTER FINISH GRADING UNLESS OTHERWISE NOTED. ALL NEWLY SEEDED/SODDED AREAS SHALL HAVE A MINIMUM OF 4" OF TOPSOIL. HOLD SOIL DOWN 1" FROM PAVEMENT ELEVATION. CONTRACTOR TO SUPPLY STRAW MULCH WHERE GRASS SEED HAS BEEN PLANTED.

I. ALL RADII ARE 3.0 FEET UNLESS OTHERWISE SHOWN. ALL RADII INDICATED ON PLANS SHALL BE CONSTRUCTED AS CIRCULAR ARCS.

KEYED NOTES:

1. PROPOSED HEAVY DUTY ASPHALT PAVEMENT, SEE DETAIL ON SHEET C-7.0.
2. PROPOSED HEAVY DUTY CONCRETE PAVEMENT, SEE DETAIL ON SHEET C-7.0.
3. PROPOSED ASPHALT PAVEMENT TO BE FLUSH WITH EXISTING ASPHALT PAVEMENT.
4. PROPOSED PAINTED PARKING STRIPING (TYPICAL). ALL PARKING STRIPES ARE TO BE 4" PAINTED WHITE, UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS OR SPECIFICATIONS.
5. PROPOSED 6" CONCRETE CURB. SEE DETAIL ON SHEET C-7.0.
6. PROPOSED CONCRETE SIDEWALK. SEE DETAIL ON SHEET C-7.0.
7. PROPOSED BOLLARD, TYP. OF 8. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILS.
8. PROPOSED ILLUMINATED BOLLARD, TYP. OF 4. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILS.
9. GENERAL CONTRACTOR TO PROVIDE AND INSTALL (1) POLE-MOUNTED ADA PARKING SIGNS. SIGNS PROVIDED BY CONTRACTOR TO MEET LOCAL REQUIREMENTS, SEE DETAIL ON SHEET C-7.0.
10. GENERAL CONTRACTOR TO PROVIDE AND INSTALL (1) POLE-MOUNTED ADA PARKING SIGN WITH "VAN ACCESSIBLE" SIGN. SIGNS PROVIDED BY CONTRACTOR TO MEET LOCAL REQUIREMENTS, SEE DETAIL ON SHEET C-7.0.
11. PROPOSED PRE-CAST CONCRETE WHEEL STOP (TYP. OF 54) SEE DETAIL ON SHEET C-7.0.
12. CONCRETE TO BE FLUSH WITH ADJACENT ASPHALT PAVEMENT. SEE DETAIL ON SHEET C-7.1.
13. FLAGPOLE WITH GROUND-MOUNTED LIGHTS, UNITEDFLAG AND BANNER, GARRISON TYPE OR OWNER APPROVED EQUAL, 30' HIGH, 5" BUTT ALUMINUM WITH 14 GAUGE ALUMINUM BALL FINIAL. INCLUDE ALUMINUM ROLLER AND SLEEVE. HARDWARE TO INCLUDE STATIONARY STRUCK, NYLON FLAGSNAPS, AND HALYARDS. ENTIRE ASSEMBLY (INCLUDING FOUNDATION) TO CONFORM TO APPLICABLE CODES, INCLUDING WIND LOADS. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILS.
14. PROPOSED 35' HT POLE SIGN, CONTRACTOR TO COORDINATE WITH OWNER. SEE ELECTRICAL PLANS AND SIGNAGE PACKAGE FOR DETAILS.
15. PROPOSED DUMPSTER ENCLOSURE AND CONCRETE PAD. SEE THE STRUCTURAL AND ARCHITECTURAL SHEETS FOR DETAILS.
16. PROPOSED HEADACHE BAR. SEE ARCHITECTURAL PLANS FOR DETAILS.
17. PROPOSED MENU BOARD CANOPY. SEE ARCHITECTURAL PLANS FOR DETAILS.
18. PROPOSED EXTERIOR MENU BOARD. SEE ARCHITECTURAL PLANS FOR DETAILS.
19. PROPOSED 1' WIDE CRUSHED GRANITE STRIP. SEE DETAIL ON SHEET L-1.0.
20. PROPOSED CONCRETE ISLAND NOSE. SEE DETAIL ON SHEET L-1.0.
21. PROPOSED 6" MONOLITHIC CURB. SEE DETAIL ON SHEET C-7.1.
22. PROPOSED CURB RAMP. SEE DETAIL ON SHEET C-7.1.
23. CONCRETE DUMPSTER ENCLOSURE APRON. SEE DETAIL ON SHEET C-7.0.
24. PROPOSED SIDEWALK TO BE FLUSH WITH PROPOSED ASPHALT PAVEMENT.
25. PROPOSED SIDEWALK RAMP. SEE DETAIL ON SHEET C-7.1
26. PROPOSED SIDEWALK CROSSING. SEE DETAIL ON SHEET C-7.2.
27. CONNECT PROPOSED CURB TO EXISTING CURB.
28. PROPOSED 2' X 2' STORM STRUCTURE. SEE SHEETS C-5.0 AND C-7.1 FOR DETAILS.
29. PROPOSED 48" DIAMETER STORM STRUCTURE. SEE SHEETS C-5.0 AND C-7.1 FOR DETAILS.
30. PROPOSED ELECTRIC TRANSFORMER. COORDINATE DETAILS AND LOCATION WITH UTILITY OWNER AND ELECTRICAL PLANS. SEE SHEET C-6.0.
31. EXISTING CURB TO BE DEMOLISHED.
32. EXISTING CONCRETE TO BE DEMOLISHED.
33. CONTRACTOR TO ADD BLACK COLORING TO CONCRETE PAVEMENT THAT IS ADJACENT TO ASPHALT TO MATCH ASPHALT COLORING.
34. PROPOSED HAND RAIL. SEE ARCHITECTURAL SHEETS FOR DETAILS.
35. PROPOSED STRUCTURAL FOUNDATION.
36. EXISTING WOODEN FENCE TO REMAIN.

LEGEND

FEATURE	DESCRIPTION
	CONCRETE SIDEWALK
	HEAVY DUTY ASPHALT PAVEMENT
	HEAVY DUTY CONCRETE PAVEMENT
	CONSTRUCTION LIMITS
	BUILDING SETBACK LINE
	PARKING SETBACK LINE
ESMT	PROPOSED SIDEWALK EASEMENT
ESMT	EXISTING EASEMENT
EXISTING PROPOSED	

SITE DATA

	SQ. FT.	ACRES	PERCENT
TOTAL SITE AREA	63083	1.45	100.0
LIMITS OF DISTURBANCE	66640	1.53	105.5
EXISTING PERVIOUS	62787	1.44	99.5
EXISTING IMPERVIOUS	296	0.01	0.5
TOTAL PROPOSED PERVIOUS	24129	0.55	38.2
TOTAL PROPOSED IMPERVIOUS	38954	0.89	61.8

PARKING DATA

	REQUIRED	PROVIDED
STANDARD	53	43
HANDICAP	3	2
TOTAL	56	45
*14 PARKING SPACE REQUIRED PER 1000 S.F. OF THE GROSS BUILDING FLOOR AREA (3,751 SF OF DINING AREA)		
**1 ADA SPACE PER 25 STANDARD SPACES		
***FEWER SPACES ALLOWABLE IF EVIDENCE OF SUCCESS ON SIMILAR PROJECTS CAN BE PROVIDED.		

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

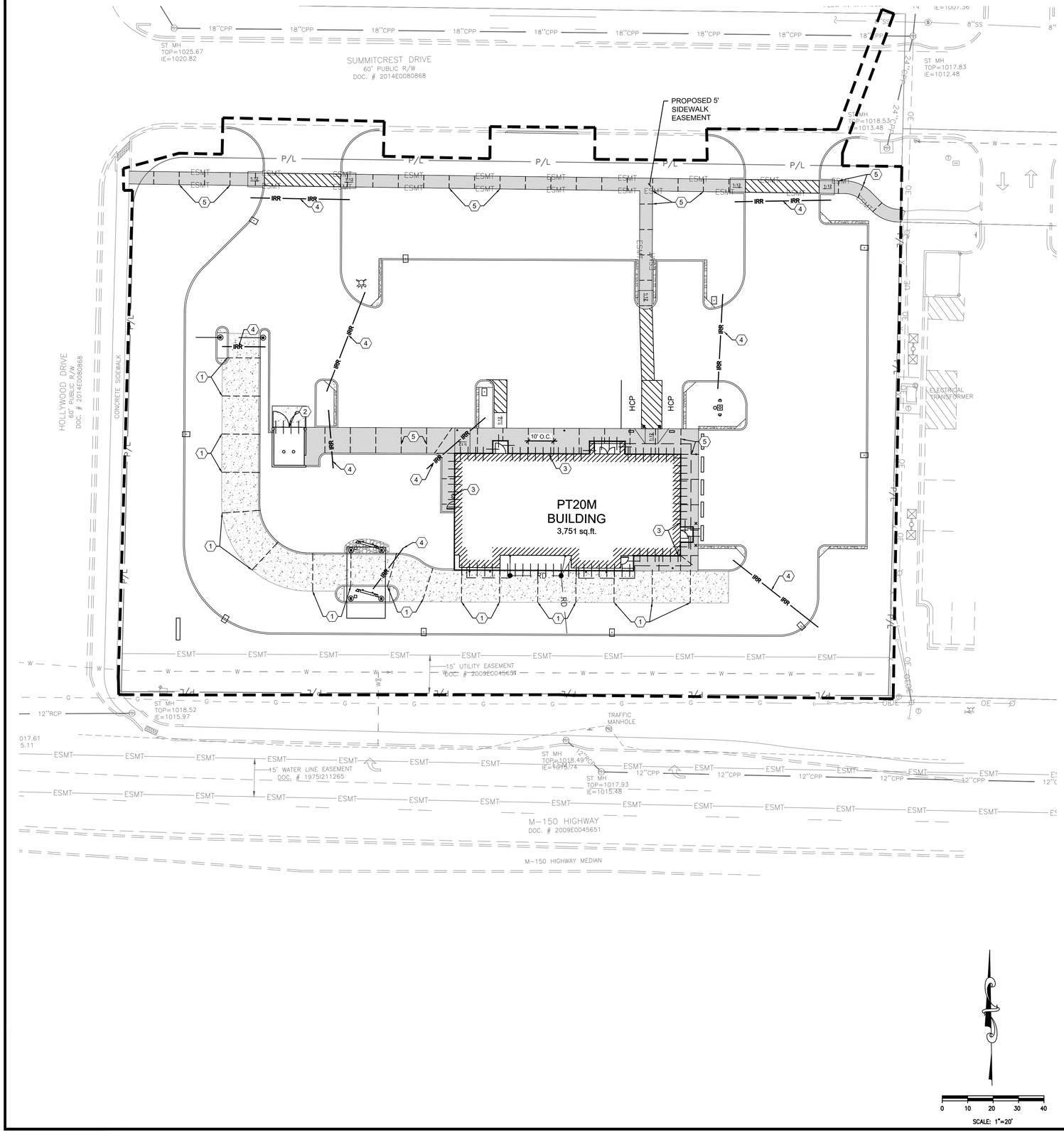
SHEET TITLE

SITE DIMENSION PLAN

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

C-3.0



GENERAL NOTES:

A. PAVEMENT SPECIFICATION AND RECOMMENDATIONS TO BE TAKEN FROM GEOTECHNICAL REPORT.

B. PORTLAND CEMENT CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.

C. MAXIMUM CONTROL JOINT SPACING SHALL NOT EXCEED 15 FEET.

D. EXPANSION JOINTS SHALL BE USED WHEREVER THE PAVEMENT WILL ABUT A STRUCTURAL ELEMENT SUBJECT TO DIFFERENT MAGNITUDE OF MOVEMENT (E.G., LIGHT POLES, RETAINING WALLS, EXISTING PAVEMENT, STAIRWAYS, ENTRYWAY PIERS, BUILDING WALLS, MANHOLES, ETC.)

E. EXPANSION JOINTS SHALL BE SEALED PER DETAILS ON SHEET C-7.0 TO MINIMIZE MOISTURE INFILTRATION INTO SUBGRADE SOILS AND RESULTANT CONCRETE DETERIORATION AT THE JOINTS.

F. SLEEVES SHOWN ARE FOR IRRIGATION ONLY. ADDITIONAL SLEEVES MAY BE REQUIRED FOR OTHER FRANCHISE UTILITIES. CONTRACTOR SHALL COORDINATE LOCATION AND SUPPLY ADDITIONAL SLEEVES REQUIRED FOR ELECTRICAL AND TELECOMMUNICATION SERVICES.

G. ALL CONCRETE JOINTS SHALL RUN CONTINUOUSLY THROUGH CURBS.

KEYED NOTES:

1. SAWED CONSTRUCTION JOINT REQUIRED, TYPICAL. SEE DETAIL ON SHEET C-7.0 .
2. DOWELED EXPANSION JOINT REQUIRED, TYPICAL. SEE DETAIL ON SHEET C-7.0.
3. EXPANSION JOINT REQUIRED WHERE CONCRETE OR CURB ABUTS BUILDING FOUNDATION, STORM STRUCTURE, FLUME, OR SIDEWALK OPENING. SEE DETAIL ON SHEET C-7.0.
4. SCHEDULE 40 PVC IRRIGATION SLEEVE, SEE SHEET I-1.0 FOR MORE INFORMATION.
5. INSTALL CONTRACTION JOINTS 10' ON CENTER AS SHOWN ON DETAIL C ON SHEET C-7.0 (TYP).

LEGEND

PROPOSED	DESCRIPTION
	CONTRACTION JOINT
	EXPANSION JOINT
IRR IRR	4" SCHEDULE 40 PVC SLEEVE
	CONCRETE SIDEWALK
	HEAVY DUTY ASPHALT PAVEMENT
	HEAVY DUTY CONCRETE PAVEMENT

0 10 20 30 40

SCALE: 1"=20'

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REVISION/DATE/DESCRIPTION	
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60% SET	01/24/22

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PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

SHEET TITLE

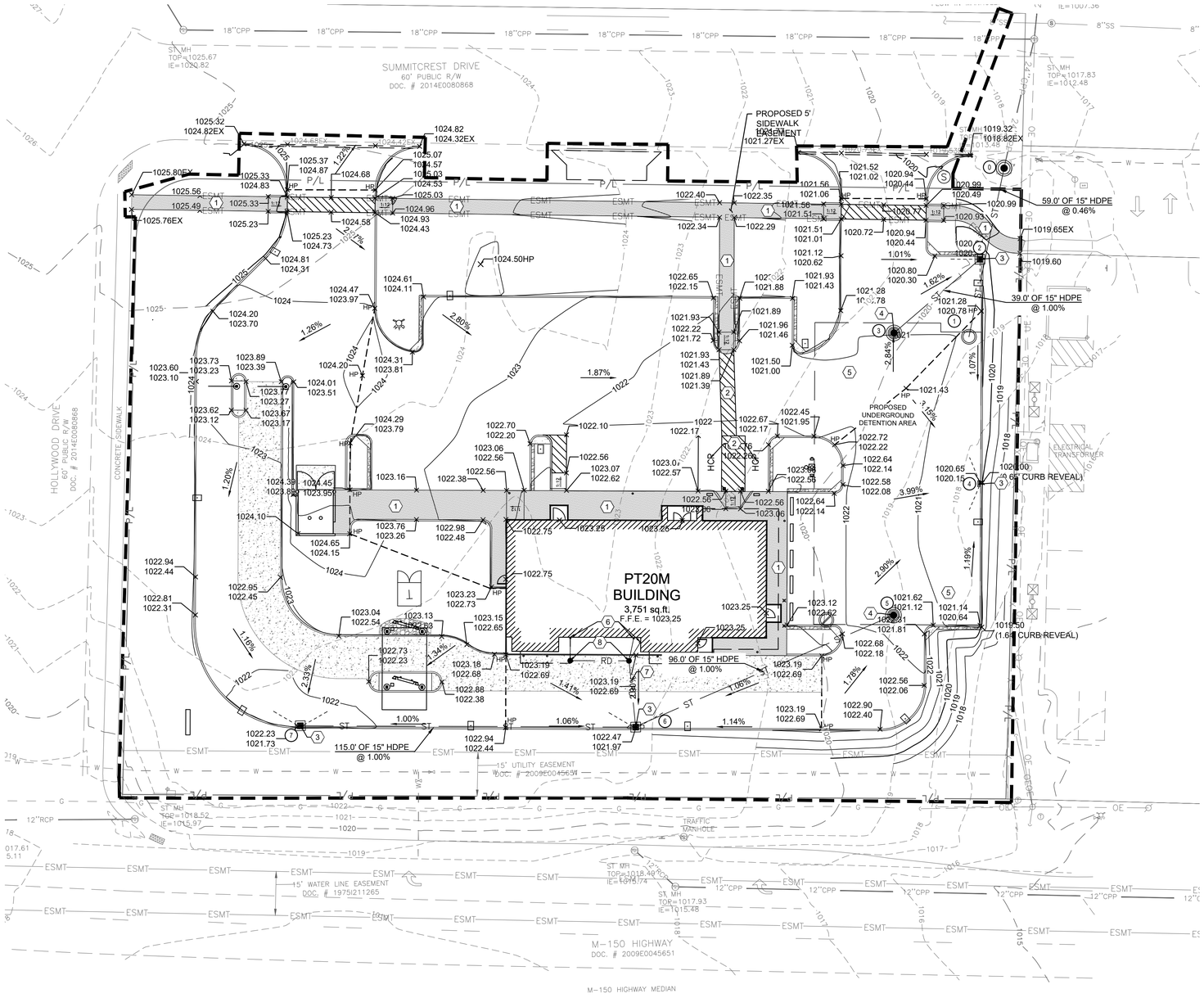
CONCRETE JOINTING PLAN

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

C-4.0

N:\03\62\40497\21-Lee's Summit, MO Market\Docs\CAD\CIVIL\SHEETS\C-4.0 Concrete Jointing Plan.dwg, 2/24/2022 2:51 PM, chiusano, joseph



GENERAL NOTES:

A. ALL EXISTING CONDITIONS, TOPOGRAPHY, UTILITIES AND PROPERTY INFORMATION ARE TAKEN FROM A SURVEY OF LAND SITUATED IN THE CITY OF LEE'S SUMMIT, COUNTY OF JACKSON AND STATE OF MISSOURI, BY SURVEYOR: YOUNG-HOBBS AND ASSOCIATES, 1202 CROSSLAND AVENUE CLARKSVILLE, TN 37040.

B. ALL CONSTRUCTION METHODS AND MATERIAL MUST CONFORM TO CURRENT STANDARDS AND SPECIFICATIONS OF THE FEDERAL, STATE, COUNTY, CITY OR LOCAL REQUIREMENTS, WHICHEVER HAS JURISDICTION.

C. ALL PROPOSED SPOT ELEVATIONS SHOWN ARE TOP OF CURB AND FINAL GRADE ELEVATIONS UNLESS OTHERWISE NOTED.

D. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

E. CONTRACTOR TO VERIFY ALL EXISTING GRADES AND CONTACT ENGINEER PRIOR TO BEGINNING WORK IF DISCREPANCY IS FOUND. CONTRACTOR TO VERIFY ASSUMED FINISHED FLOOR ELEVATION PRIOR TO BEGINNING WORK.

F. THE EXCAVATING CONTRACTOR MUST TAKE PARTICULAR CARE WHEN EXCAVATING IN AND AROUND EXISTING UTILITY LINES AND EQUIPMENT. VERIFY COVER REQUIREMENTS BY UTILITY CONTRACTORS AND/OR UTILITY COMPANIES SO AS TO NOT CAUSE DAMAGE.

G. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES 48 HOURS BEFORE CONSTRUCTION IS TO START, TO VERIFY IF ANY UTILITIES ARE PRESENT ON SITE. ALL VERIFICATIONS (LOCATION, SIZE AND DEPTH) SHALL BE MADE BY THE APPROPRIATE UTILITY COMPANIES. WHEN EXCAVATION IS AROUND OR OVER EXISTING UTILITIES, THE CONTRACTOR MUST NOTIFY THE UTILITY SO A REPRESENTATIVE OF THAT UTILITY COMPANY CAN BE PRESENT TO INSTRUCT AND OBSERVE DURING CONSTRUCTION.

H. ALL WORK SHALL BE PERFORMED FROM PRIVATE PROPERTY. ALL TRAFFIC LANES MUST REMAIN OPEN AT ALL TIMES.

I. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING UTILITIES DURING CONSTRUCTION AND ALL DAMAGE SHALL BE REPAIRED TO ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER OR CITY.

J. CONTRACTOR SHALL INSTALL AND BACKFILL STRUCTURES AND TRENCHES PER DETAILS ON SHEET C-7.1.

K. ALL EXISTING UTILITIES ARE TAKEN FROM SURVEY AND DO NOT NECESSARILY REPRESENT ALL UNDERGROUND UTILITIES ADJACENT TO OR UPON PREMISES SHOWN ON PLAN.

L. ALL STORM CONDUITS ARE ADS N-12 SMOOTH INTERIOR HDPE PIPE OR APPROVED EQUAL, UNLESS OTHERWISE NOTED.

M. ALL GRADING BEYOND THE LIMITS OF THE WHATABURGER SITE TO BE DONE BY DEVELOPER.

KEYED NOTES:

1. CONTRACTOR TO MAINTAIN 2.00% MAX CROSS SLOPE ON SIDEWALK.
2. CONTRACTOR TO MAINTAIN MAX 2.00% SLOPE IN ALL DIRECTIONS IN HANDICAP ACCESSIBLE AREA.
3. PROPOSED CURB INLET AND FINGER DRAIN. SEE DETAILS ON SHEET C-7.1.
4. PROPOSED STORM MANHOLE.
5. PROPOSED UNDERGROUND DETENTION SYSTEM, ADS STORMTECH MC-3500 CHAMBER SYSTEM, 19665 CF. SEE DETAILS ON SHEETS C-7.3 AND C-7.4.
6. PROPOSED DOWNSPOUT COLLECTOR SYSTEM.
7. 6" STORM LINE FROM ROOF DRAIN TO CONNECT TO PROPOSED STORM SYSTEM. CONTRACTOR TO MAINTAIN A MINIMUM SLOPE OF 1.00% ON ALL ROOF DRAIN PIPES.
8. PROPOSED STORM CLEANOUT. SEE DETAIL ON SHEET C-7.1 FOR DETAILS.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
950.00 EX.	950.00	TOP OF CURB
949.50 EX.	949.50	TOP OF PAVEMENT
950.00 EX.	950.00	FINISHED GRADE SPOT ELEVATION
	1.00%	GRADE SLOPE
	HP HP	HIGH POINT
ST	ST	STORM MAIN
	RD	ROOFDRAIN / UNDERDRAIN
		CONSTRUCTION LIMITS
950	950	MAJOR CONTOUR LINES
	950	MINOR CONTOUR LINES
		INLET
		CATCH BASIN
MH		STORM MANHOLE
		MAJOR FLOOD ROUTING

STORM STRUCTURE DATA

0. EXISTING STORM MANHOLE
RIM = 1018.53
EX: 24" INV. (NE) = 1013.48
PR: 15" INV (SW) = 1013.48

1. PROPOSED OUTLET CONTROL STRUCTURE
RIM = 1020.84
PR: 15" INV (NW) = 1013.75

2. PROPOSED CURB INLET
RIM = 1020.16
PR: 15" INV (NW) = 1014.14

3. PROPOSED STORM MANHOLE
RIM = 1020.97
PR: 15" INV (NE) = 1013.75

4. PROPOSED CURB INLET
RIM = 1020.17

5. PROPOSED STORM MANHOLE
RIM = 1021.49
PR: 15" INV (SE) = 1013.75

6. PROPOSED CURB INLET
RIM = 1021.71
PR: 15" INV (NE) = 1014.71

7. PROPOSED CURB INLET
RIM = 1021.75
PR: 15" INV (E) = 1015.85

SCALE: 1"=20'

Know what's below. Call before you dig.

REVISION/DATE/DESCRIPTION

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60% SET	01/24/22

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

SHEET TITLE

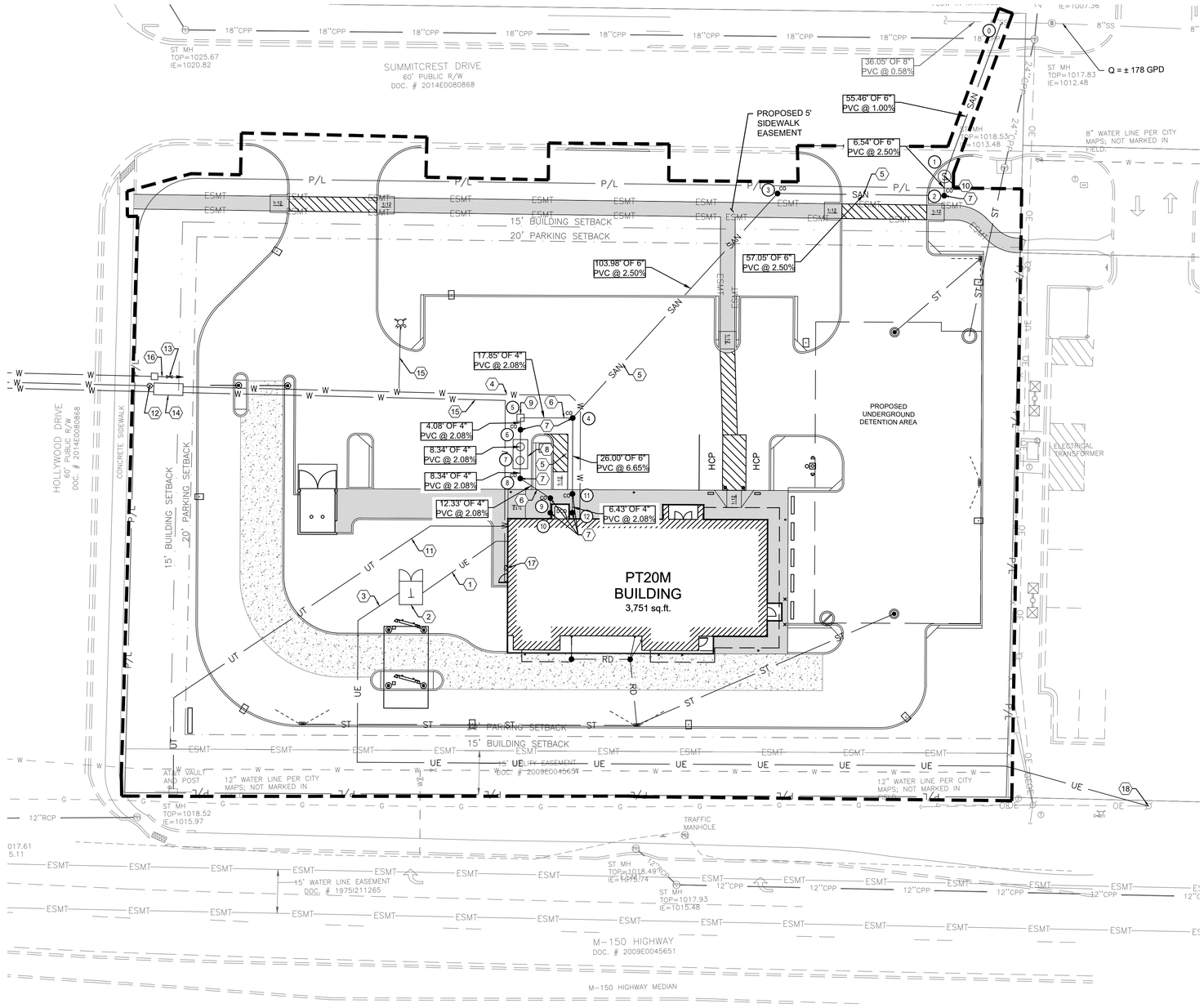
SITE GRADING AND DRAINAGE PLAN

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

C-5.0

N:\03\62240497'21-Lee's Summit, MO Market\Docs\CAD\CIVIL\SHEETS\C-5.0 Site Grading and Drainage Plan.dwg, 2/24/2022 2:52 PM, chiusano, joseph



GENERAL NOTES:

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B. ALL EXISTING UTILITIES, ARE TAKEN FROM SURVEY AND DO NOT NECESSARILY REPRESENT ALL UNDERGROUND UTILITIES ADJACENT TO OR UPON PREMISES SHOWN ON PLAN.

C. CONTRACTOR RESPONSIBLE FOR MAINTAINING A MIN. COVER OF 42" OVER PROPOSED WATER SERVICE.

D. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION, AND IS RESPONSIBLE FOR ANY DAMAGE TO THEM DURING CONSTRUCTION.

E. CLEANOUT LOCATIONS ARE NUMBERED ON PLAN. ALL CLEANOUTS IN PAVEMENT AREAS ARE TO BE H-20 RATED. CLEANOUTS SHALL BE INSTALLED PER DETAIL ON SHEET C-7.1.

F. SEE PLUMBING PLANS FOR CONTINUATION OF UTILITY LINES INTO BUILDING.

G. CONTRACTOR SHALL INSTALL AND BACKFILL ALL TRENCHES AND STRUCTURES PER DETAIL ON SHEET C-7.1.

H. STORM SEWER SHOWN HERE FOR REFERENCE ONLY. SEE GRADING PLAN FOR DESIGN DATA.

I. THERE SHALL BE A MINIMUM 10 FOOT HORIZONTAL SEPARATION BETWEEN WATER TAPS, WATER SERVICES, PRIVATE WATER SYSTEMS, AND ANY SANITARY AND/OR STORM SEWER SYSTEMS. WHERE 10 FEET HORIZONTAL SEPARATION CANNOT BE OBTAINED, THE BOTTOM OF THE WATER LINE SHALL BE AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

J. THE EXCAVATING CONTRACTOR MUST TAKE PARTICULAR CARE WHEN EXCAVATING IN AND AROUND EXISTING UTILITY LINES AND EQUIPMENT. VERIFY COVER REQUIREMENTS BY UTILITY CONTRACTORS AND/OR UTILITY COMPANIES SO AS TO NOT CAUSE DAMAGE.

K. CAUTION: OVERHEAD LINES ARE PRESENT ON SITE. CONTRACTOR TO TAKE SPECIAL CARE TO PREVENT DAMAGE TO THE LINES AND COORDINATE WITH UTILITY OWNER.

L. A SANITARY SEWER IMPACT STATEMENT THAT WILL ADDRESS THE PROPOSED DISCHARGE INTO THE EXISTING SANITARY SEWER RECEIVING SYSTEM, IF REQUIRED BY THE CITY ENGINEER.

M. APPROPRIATE WATER SERVICE DEMAND DATA (INCLUDING, BUT NOT LIMITED TO, PLANNED LAND USAGE, DENSITIES OF PROPOSED DEVELOPMENT, PIPE SIZES, CONTOURS AND FIRE HYDRANT LAYOUT) TO ALLOW FOR THE PRELIMINARY ANALYSIS OF THE DEMAND FOR WATER SERVICE IF REQUIRED BY THE CITY ENGINEER.

KEYED NOTES:

1. PROPOSED PRIMARY ELECTRICAL SERVICE. CONTRACTOR TO COORDINATE CONDUIT SIZE, NUMBER OF CONDUITS, CONNECTIONS, AND BEND RADII WITH UTILITY OWNER AND MEP PLANS. CONTRACTOR TO COORDINATE CONNECTION WITH UTILITY OWNER.
2. PROPOSED ELECTRIC TRANSFORMER. COORDINATE DETAILS AND LOCATION WITH UTILITY OWNER AND ELECTRICAL PLANS.
3. PROPOSED SECONDARY ELECTRICAL SERVICE. CONTRACTOR TO COORDINATE CONDUIT SIZE, NUMBER OF CONDUITS, CONNECTIONS, AND BEND RADII WITH UTILITY OWNER AND MEP PLANS. CONTRACTOR TO COORDINATE CONNECTION WITH UTILITY OWNER.
4. PROPOSED TYPE K COPPER 1.5" DOMESTIC WATER SERVICE. INCLUDE IN BASE BID ALL VALVES, PIPING, STRUCTURES, ETC. THAT WILL BE REQUIRED. SEE MEP PLANS FOR CONTINUATION INTO BUILDING. SEE DETAIL ON SHEET C-7.2.
5. PROPOSED 6" SANITARY SEWER. ASTM D3034, SDR-26. SEWER TO HAVE MINIMUM SLOPE OF 1.00%. CONTRACTOR TO MAINTAIN A MINIMUM OF 36" OF COVER OF SEWER LINES.
6. PROPOSED 4" SANITARY SEWER. ASTM D3034, SDR-26. SEWER TO HAVE MINIMUM SLOPE OF 2.08%. CONTRACTOR TO MAINTAIN A MINIMUM OF 36" OF COVER OF SEWER LINES.
7. PROPOSED SANITARY CLEANOUT (TYP.). SEE DETAIL ON SHEET C-7.1.
8. GREASE TRAP REQUIRED. SEE PLUMBING SHEETS FOR DETAILS.
9. MONITORING WELL, SEE PLUMBING PLANS FOR DETAILS.
10. PROPOSED SANITARY SEWER SERVICE CONNECTION AND MANHOLE.
11. 2" PVC CONDUIT FOR UNDERGROUND TELEPHONE SERVICE. CONTRACTOR TO COORDINATE CONNECTION WITH UTILITY OWNER.
12. PROPOSED DOMESTIC WATER METER PER CITY OF LEE'S SUMMIT STANDARD DRAWING WAT-11. SEE SHEET C-7.2.
13. PROPOSED WATER VALVE PER LOCAL REGULATIONS AND DETAILS.
14. PROPOSED BACKFLOW PREVENTER VAULT PER CITY OF LEE'S SUMMIT STANDARD DRAWING WAT-12. SEE SHEET C-7.2.
15. PROPOSED 6" FIRE SERVICE LINE.
16. PROPOSED 1" IRRIGATION LINE. SEE IRRIGATION PLAN FOR MORE INFORMATION.
17. PROPOSED FIRE DEPARTMENT CONNECTION.
18. PROPOSED ELECTRICAL CONNECTION. CONTRACTOR TO COORDINATE WITH UTILITY OWNER.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		CONSTRUCTION LIMITS
ST	ST	STORM LINE
	RD	ROOFDRAIN/UNDERDRAIN
SAN	SAN	SANITARY LINE
		SANITARY CLEANOUT
		SANITARY MANHOLE
		SANITARY GREASE TRAP
W	W	WATER LINE
		FIRE HYDRANT
		WATER METER
UE	UE	UNDERGROUND ELECTRIC LINE
		ELECTRIC TRANSFORMER
	UT	UNDERGROUND TELEPHONE LINE
		LIGHT POLE

SANITARY STRUCTURE DATA

0. PROPOSED MANHOLE
TC: 1017.61
EX. 8" INV (E) = 1007.46
EX. 8" INV (W) = 1007.46
PR. 6" INV (N) = 1007.63

1. PROPOSED DROP MANHOLE
TC: 1020.19
PR. 6" INV (NW) = 1008.18
PR. 6" INV (S) = 1012.73

2. PROPOSED MANHOLE
TC: 1020.23
PR. 4" INV (W) = 1012.90
PR. 4" INV (N) = 1012.90

3. PROPOSED MANHOLE
TC: 1022.12
PR. 6" INV (SW) = 1014.32
PR. 6" INV (E) = 1014.32

4. PROPOSED CLEANOUT
TC: 1021.99
PR. 6" INV (S) = 1016.92
PR. 6" INV (NE) = 1016.92
PR. 4" INV (W) = 1017.09

5. PROPOSED SAMPLING WELL
TC: 1022.42
PR. 4" INV (S) = 1017.46
PR. 4" INV (E) = 1017.46

6. PROPOSED CLEANOUT
TC: 1022.28
PR. 4" INV (N) = 1017.54
PR. 4" INV (S) = 1017.54

7. PROPOSED GREASE TRAP
TC: 1022.27
PR. 4" INV (NE) = 1017.72
PR. 4" INV (NW) = 1017.72

8. PROPOSED CLEANOUT
TC: 1022.48
PR. 4" INV (SW) = 1017.89
PR. 4" INV (SE) = 1017.89

9. PROPOSED CLEANOUT
TC: 1023.12
PR. 4" INV (NW) = 1018.15
PR. 4" INV (S) = 1018.15

10. PROPOSED CLEANOUT
TC: 1023.21
PR. 4" INV (N) = 1018.25
PR. 4" INV (S) = 1018.25

11. PROPOSED CLEANOUT
TC: 1023.09
PR. 6" INV (N) = 1018.65
PR. 4" INV (S) = 1018.82

12. PROPOSED CLEANOUT
TC: 1023.21
PR. 4" INV (N) = 1018.95
PR. 4" INV (S) = 1018.95

NOTE: CONTRACTOR TO VERIFY INVERT OF EXISTING SANITARY SEWER MAIN PRIOR TO CONSTRUCTING PROPOSED SANITARY SEWER SERVICE LINE.

0 10 20 30 40
SCALE: 1"=20'

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PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 &
HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

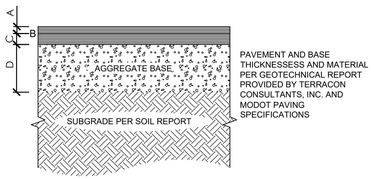
SHEET TITLE

SITE UTILITY PLAN

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

C-6.0



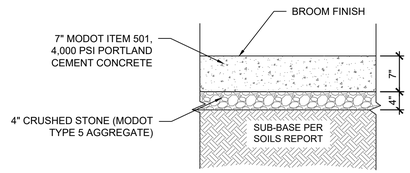
HEAVY DUTY PAVING

A = 2.0" ASPHALT SURFACE COURSE (MODOT ITEM 903)
B = TACK COAT (0.05 GAL/S.Y.)
C = 3.0" ASPHALT BASE COURSE (MODOT ITEM 903)
D = 8" AGGREGATE BASE (MODOT TYPE 5)

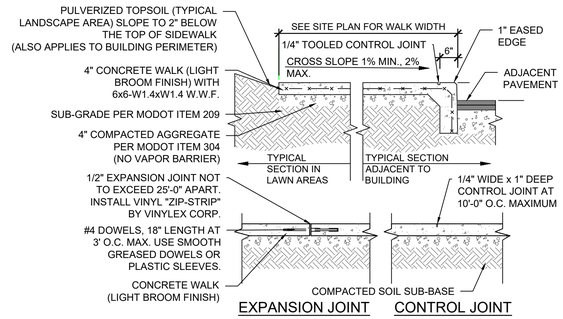
NOTES

A. SUBGRADE COMPACTION: COMPACTED TO 95% OF THE STANDARD PROCTOR (ASTM D-698) MAXIMUM DRY DENSITY.
B. BASE COURSE TO CONFORM TO MODOT STANDARDS FOR BASE COURSE COMPACTED TO 100% OF THE MODIFIED PROCTOR (ASTM D-1557) MAXIMUM DRY DENSITY.
C. ALL SUBGRADE AND PAVEMENT OPERATIONS AND MATERIALS SHALL MEET THE MINIMUM REQUIREMENTS OF THE CURRENT MODOT SPECIFICATIONS.
D. PROOFROLL PAVEMENT SUBGRADE WITHIN TWO (2) DAYS PRIOR TO COMMENCEMENT OF PAVING OPERATIONS. PROOFROLL SHOULD BE COMPLETED USING A LOADED TANDEM-AXLE DUMP TRUCK WITH A MINIMUM GROSS WEIGHT OF 20 TONS OR SIMILARLY LOADED RUBBER-TIRE EQUIPMENT UNDER THE SUPERVISION OF THE GEOTECHNICAL ENGINEER.

A / C7.0 ASPHALT PAVING SECTION
N.T.S.



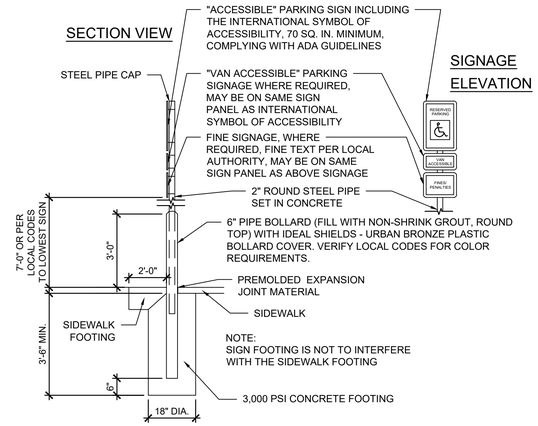
B / C7.0 TRASH ENCLOSURE APRON DETAIL
N.T.S.



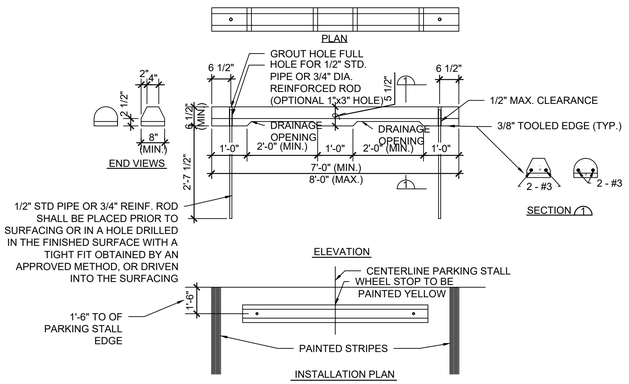
NOTES:

A. LOCATE CONTROL JOINTS AS SHOWN ON PLAN OR 10' O.C. MAXIMUM. VERIFY WITH SITE REPRESENTATIVE.
B. CONCRETE WALKS AGAINST THE BUILDING OR CONCRETE PAVEMENT SHALL HAVE ½" PREFORMED EXPANSION JOINT BETWEEN WALK AND BUILDING OR WALK AND CONCRETE PAVEMENT.
C. CONCRETE PADS OVER 4" THICK REQUIRE CONTROL JOINTS TO BE 12' O.C. MAXIMUM.

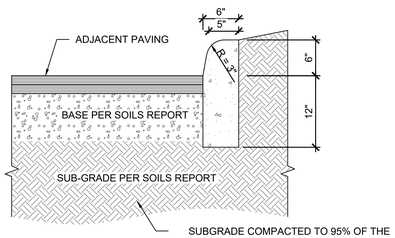
C / C7.0 CONCRETE WALK
N.T.S.



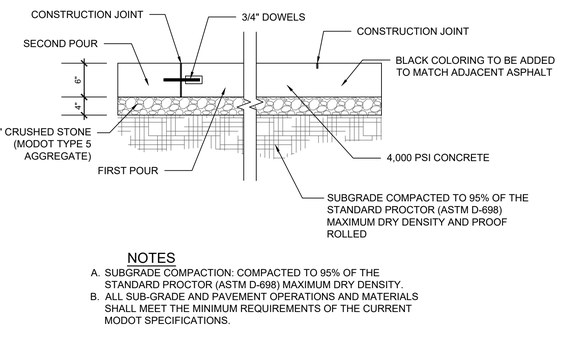
D / C7.0 POLE-MOUNTED HANDICAP PARKING SIGN
N.T.S.



E / C7.0 PRE-CAST CONCRETE WHEEL STOP
N.T.S.



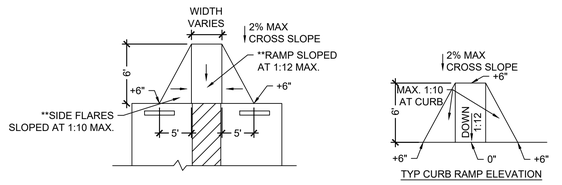
F / C7.0 CURB DETAIL
N.T.S.



NOTES

A. SUBGRADE COMPACTION: COMPACTED TO 95% OF THE STANDARD PROCTOR (ASTM D-698) MAXIMUM DRY DENSITY.
B. ALL SUB-GRADE AND PAVEMENT OPERATIONS AND MATERIALS SHALL MEET THE MINIMUM REQUIREMENTS OF THE CURRENT MODOT SPECIFICATIONS.

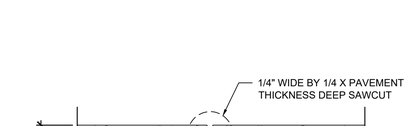
G / C7.0 HEAVY DUTY CONCRETE PAVEMENT
N.T.S.



**NOTE:

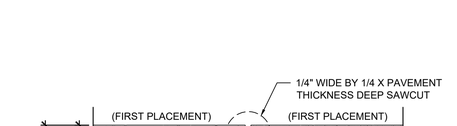
1. DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES PER CURRENT ADA SPECIFICATIONS. COLOR: TERRA COTTA OR APPROVED COLOR BY OWNER.
2. SLOPE NOTE: IF CIVIL GRADING PLAN INDICATES A CROSS SLOPE GREATER THAN 2% AT ADA SPACES, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER FOR CLARIFICATION AND PLAN REVISION.

H / C7.0 CURB RAMP
N.T.S.



NOTE:
A. SEE PLAN FOR JOINT SPACING.

CONTRACTION JOINT



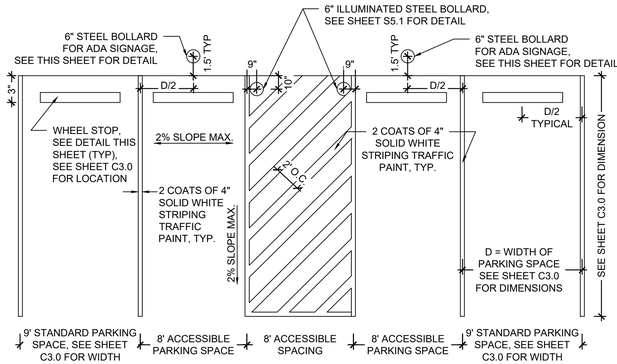
CONSTRUCTION JOINT

NOTES:

A. ENSURE JOINTS ARE CLEAN AND DRY PRIOR TO THE APPLICATION OF THE GREENSTREAK #610.
B. INSTALL REDWOOD PLANK AFTER JOINTS HAVE BEEN CLEANED AND DRIED.
C. GREENSTREAK #610 APPLICATION SHALL BE IN STRICT COMPLIANCE WITH MANUFACTURER'S REQUIREMENTS.

EXPANSION JOINT

I / C7.0 CONCRETE JOINT DETAILS
N.T.S.



NOTE:
SEE DIMENSIONAL CONTROL PLAN FOR PARKING DIMENSIONS. DIMENSIONS SHOWN ARE MINIMUM REQUIRED.

SLOPE NOTE:
IF CIVIL GRADING PLAN INDICATES A CROSS SLOPE GREATER THAN 2% AT ADA SPACES, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER FOR CLARIFICATION AND PLAN REVISION.

J / C7.0 PARKING STRIPING
N.T.S.

Know what's below. Call before you dig.

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

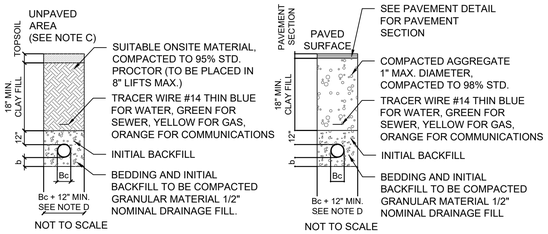
SHEET TITLE

SITE DETAILS

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

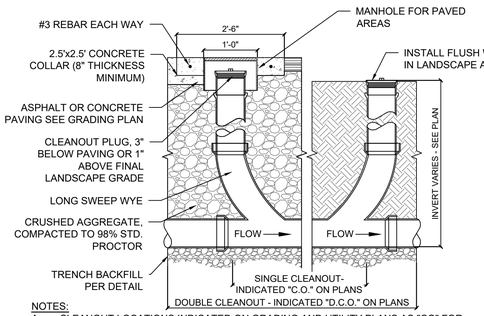
C-7.0



TRENCH / BACKFILL NOTES

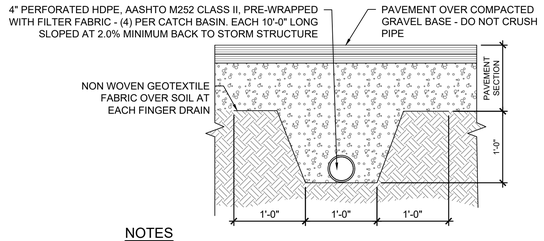
A. BEDDING THICKNESS UNDER PIPE BARREL b, SHALL BE 1/8 OF Bc; 6" MIN. Bc IS OUTSIDE DIAMETER OF PIPE AT BELL.
B. THE HAUNCH AREA OF THE PIPE MUST BE FULLY SUPPORTED; THEREFORE THE BEDDING MATERIAL SHALL BE HAND PLACED AND COMPACTED UNDER THE PIPE HAUNCH.
C. IF UNPAVED AREA IS WITHIN 10' OF PAVEMENT OR STRUCTURE THEN FOLLOW TRENCH GUIDELINES FOR PAVED AREA.
D. PIPE DIAMETER OF 4" OR SMALLER SHALL HAVE A MAXIMUM TRENCH WIDTH OF 12".
E. BEDDING AND INITIAL BACKFILL SHALL BE SAND FOR ALL UTILITY CONDUIT CARRYING WATER, ELECTRIC, GAS, AND TELEPHONE.

A C7.1 TRENCH BACKFILL DETAIL
N.T.S.



NOTES:
A. CLEANOUT LOCATIONS INDICATED ON GRADING AND UTILITY PLANS AS "CO" FOR SINGLE CLEANOUT AND "DCO" FOR DOUBLE CLEAN OUT.
B. PROVIDE CLEANOUTS AS SPECIFIED:
1. ZURN Z-1400 CLEANOUTS IN NON-TRAFFIC AREAS AND SIDEWALKS
2. ZURN-1449 CLEANOUTS IN LANDSCAPED AREAS
3. ZURN Z-1400 HD CLEANOUTS IN TRAFFIC AREAS WITH A "SERVICE STATION" TYPE MANHOLE, OPW #104 A12 - DOVER CORP./OPW DIV.

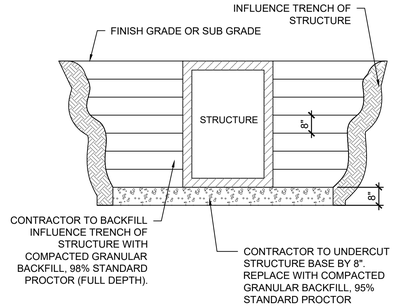
B C7.1 PIPE CLEANOUT DETAIL
N.T.S.



NOTES

A. THE INTENTION OF THE FINGER DRAIN SYSTEM IS TO PREVENT EXCESS WATER ACCUMULATION AT THE LOW POINTS IN THE GRAVEL BASE AT DRAINAGE STRUCTURES. SYSTEM TO BE INSTALLED TO ASSURE ADEQUATE DRAINAGE OF PAVEMENT BASE.

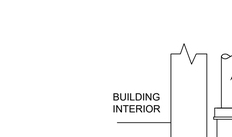
C C7.1 FINGER DRAIN
N.T.S.



STRUCTURE BACKFILL NOTES

A. BACKFILL TO BE PLACED IN 8" LIFTS
B. NO ON SITE FILL WILL BE ALLOWED FOR UTILITY STRUCTURES.

D C7.1 STRUCTURE BACKFILL
N.T.S.



PLAN VIEW
(CASTING REMOVED)

CASTING SPECIFICATIONS		
	NEENAH	EAST JORDAN
SINGLE BOX FRAME	R-3290	7030
DOUBLE BOX FRAME	R-3295-A	7031
TRIPLE BOX FRAME	R-3295-B	7032
GRATE (SUMPS)	TYPE C	TYPE M2
VANE GRATE (SLOPES)	TYPE V	TYPE M4
DRIVEWAY FRAME & GRATE	R-3290-A	7034

ALL FRAMES, GRATES & CURB BOXES FOR CURB & GUTTER INLETS SHALL MEET THE ABOVE SPECIFICATIONS, OR SHALL BE APPROVED EQUALS.

ELEVATION

SECTION A-A

NOTES:
1. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6" AND BE REINFORCED SUFFICIENTLY TO PERMIT SHIPPING AND HANDLING WITHOUT DAMAGE.

2. THE INLET BOTTOM SHALL BE SHAPED TO PROVIDE SLOPE OF 3" TO 4" TO OUTLET PIPE. THE CROSS SECTIONAL FORM OF BOTTOM AND LONGITUDINAL SLOPE IS TO BE ADAPTED TO LOCATION OF OUTLET PIPE AS DIRECTED.

3. INLET/OUTLET PIPE LOCATION PER PLAN.

4. THE EXISTING GUTTER WITHIN THE AREA AROUND THE INLET WHERE CUT OUT, SHALL BE REPLACED WITH CLASS QC1 CONCRETE OR ASPHALT CONCRETE PAVING AS ORDERED.

5. THE BACKFILLING WITHIN PROPOSED PAVED AREAS SHALL BE WELL TAMPED IN LAYERS NOT EXCEEDING 4" IN THICKNESS, LOOSE MEASUREMENT, OR BACKFILLED WITH AN APPROVED MATERIAL.

6. WALLS MAY BE BRICK, PRECAST SOLID CONCRETE BLOCKS, OR CAST IN PLACE CONCRETE, CLASS QC1 OR PRECAST CONCRETE.

7. MAXIMUM PIPE DIAMETERS ARE 18" INTO SIDE WALLS AND 27" INTO FRONT AND BACK WALLS FOR SINGLE BOX INLETS.

8. STEPS SHALL MEET THE REQUIREMENTS OF ASTM C478, AND SHALL BE INSTALLED WITH A UNIFORM VERTICAL SPACING OF 12" TO 16".

E C7.1 CURB INLET DETAIL
N.T.S.

F C7.1 MONOLITHIC CURB DETAIL
N.T.S.

G C7.1 PAVEMENT TRANSITION
N.T.S.

H C7.1 EXTERIOR DOWNSPOUT BOOT
N.T.S.

Know what's below. Call before you dig.

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

NOTICE

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

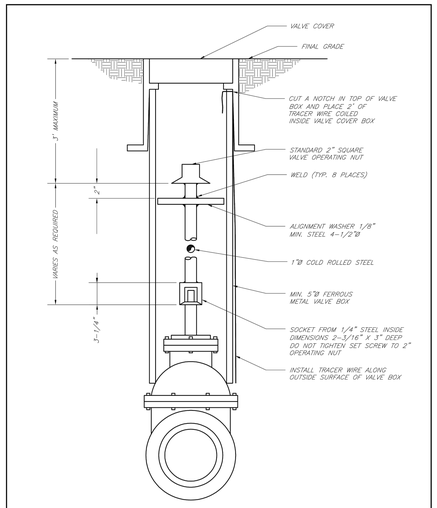
SHEET TITLE

SITE DETAILS

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

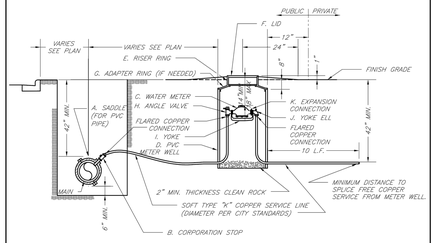
DRAWING

C-7.1



LEE'S SUMMIT MISSOURI	Date: 02/13
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: JN
VALVE STEM EXTENSION AND VALVE BOX	Checked By: DL
	FILE: WAT-9
	Rev: 1/14
	Rev:

A C7.2 VALVE STEM EXTENSION AND VALVE BOX
N.T.S.



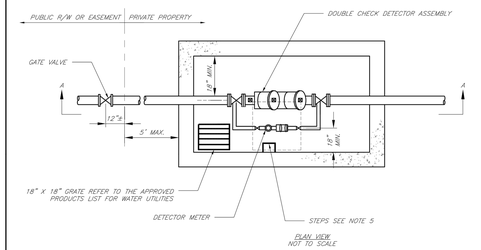
TYPICAL METER INSTALLATION – 2" AND SMALLER
NOT TO SCALE

NOTES:

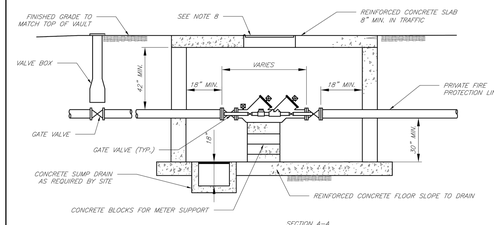
1. METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE PAVEMENT WITHOUT CITY APPROVAL.
2. IF METER IS TO BE LOCATED OTHER THAN IN FRONT OF PROPERTY LINE, CITY APPROVAL SHALL BE OBTAINED.
3. CITY TO FURNISH ITEMS A–K.
4. NO OTHER EQUIPMENT SHALL BE INSTALLED IN THIS PIT.
5. 42" MINIMUM BURY DEPTH FOR ALL SERVICE LINES.
6. EXCAVATION FOR TAP TO EXPOSE 4 LINEAR FEET OF MAIN.
7. NO SPLICES ALLOWED BETWEEN METER AND MAIN.
8. SERVICE CONNECTION TAP AT APPROXIMATELY 45 DEGREES.
9. LID AND RISER RING SHALL BE SET SO THAT GROUND WATER WILL DRAIN AWAY FROM THE WELL.
10. CONTACT WATER UTILITIES, 816-969-1900, FOR REQUIREMENTS OF A METER LARGER THAN 2"

LEE'S SUMMIT MISSOURI	Date: 02/13
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: JN
SERVICE CONNECTION/METER WELL	Checked By: DL
	FILE: WAT-11
	Rev: 1/14
	Rev:

B C7.2 SERVICE CONNECTION/METER WELL
N.T.S.



PLAN VIEW
NOT TO SCALE

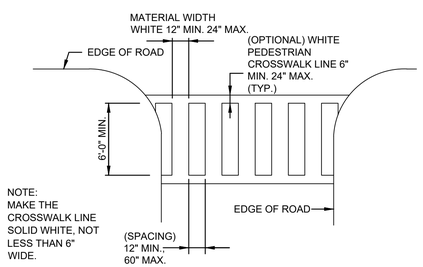


SECTION A–A
NOT TO SCALE

GENERAL NOTES:

1. METER VAULT WALLS TO BE POURED OR PRECAST CONCRETE. METER VAULT ROOF TO BE REINFORCED CONCRETE WITH OPENING CENTERED OVER DETECTOR METER. REINFORCED WALLS AND SLABS ARE TO BE DESIGNED BY THE OWNER'S ENGINEER OR PRECAST ENGINEER.
2. METER VAULT TO BE LOCATED, WHEN POSSIBLE, OUTSIDE TRAFFIC AREA AND WHERE SURFACE WATER WILL NOT DRAIN INTO IT. PROVIDE CONCRETE SUMP TO DRAIN TO AN ABOVE GROUND DISCHARGE POINT.
3. ALL PIPE AND FITTINGS FROM THE CITY WATER MAIN THROUGH THE VAULT SHALL BE PROVIDED WITH RESTRAINED JOINT FITTINGS.
4. ALL FITTINGS FOR THE DETECTOR METER TO BE BRASS.
5. STEPS SHALL BE IN ACCORDANCE WITH THE APPROVED PRODUCTS LIST FOR WATER UTILITIES AND SHALL BE ON 16" CENTERS.
6. A DEPARTMENT OF NATURAL RESOURCES APPROVED DOUBLE CHECK DETECTOR ASSEMBLY BACKFLOW PREVENTER MUST BE USED, FOR A COPY OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES APPROVED BACKFLOW PREVENTION ASSEMBLIES, CONTACT WATER UTILITIES AT 816-969-1900.
7. ALL VALVES SHALL HAVE RISING STEMS.
8. MANHOLE COVER SHALL BE A BILCO K-1 MODEL UNLESS IN A VEHICLE TRAFFIC AREA. SEE THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR TRAFFIC CONDITIONS. THE COVER SHALL HAVE A 1-3/4" ø HOLE DRILLED FOR A TOUCH/READ DEVICE.
9. A MINIMUM OF 18" CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING, VALVES, APPURTENANCES, ETC.
10. CONTACT PUBLIC WORKS ENGINEERING FOR VAULTS THAT INCLUDE A FIRE DEPARTMENT CONNECTION OR A 3" OR LARGER METER.

C C7.2 VAULT FOR DOUBLE CHECK DETECTOR CHECK
N.T.S.



D C7.2 SIDEWALK CROSSING DETAIL
N.T.S.

Know what's below. Call before you dig.

CITY OF LEE'S SUMMIT, MO
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE Green Street
Lee's Summit, MO 64063

STANDARD DRAWINGS

VAULT FOR DOUBLE CHECK DETECTOR CHECK

Drawn By: JN
Checked By: DL
Date: 1/14
Rev: 1/14
of
WAT-12

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

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2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

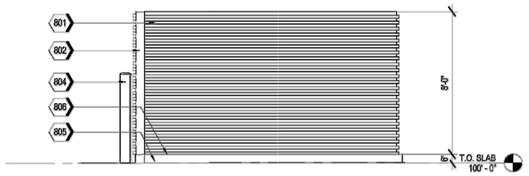
SHEET TITLE

SITE DETAILS

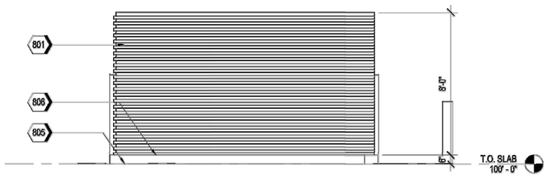
DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

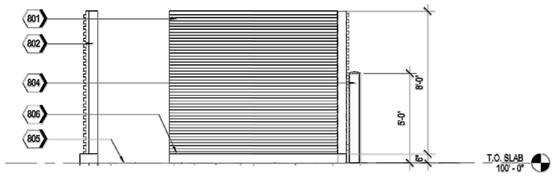
C-7.2



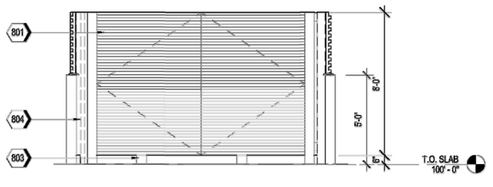
C2 DUMPSTER - ELEVATION @ EAST
SCALE 1/4" = 1'-0"



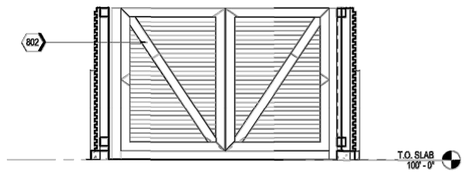
C1 DUMPSTER - ELEVATION @ REAR
SCALE 1/4" = 1'-0"



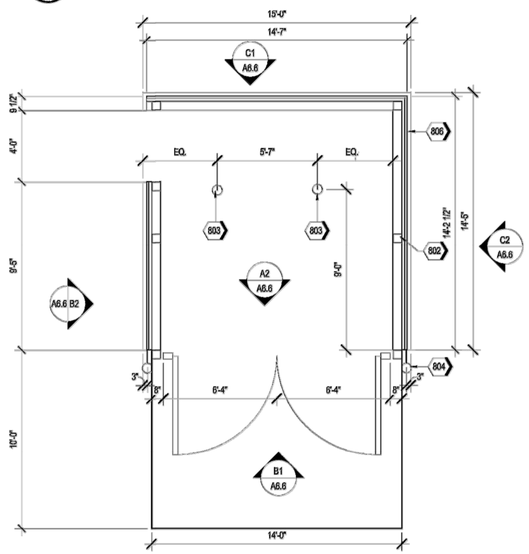
B2 DUMPSTER - ELEVATION @ SIDE ENTRY
SCALE 1/4" = 1'-0"



B1 DUMPSTER - ELEVATION @ GATE
SCALE 1/4" = 1'-0"



A2 DUMPSTER - GATE INSIDE FACE
SCALE 1/4" = 1'-0"



A1 DUMPSTER - ENLARGED
SCALE 1/4" = 1'-0"

REVISION/DATE/DESCRIPTION

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engineers, architects, planners
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Columbus, Ohio 43229-1547
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fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 &
HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

SHEET TITLE

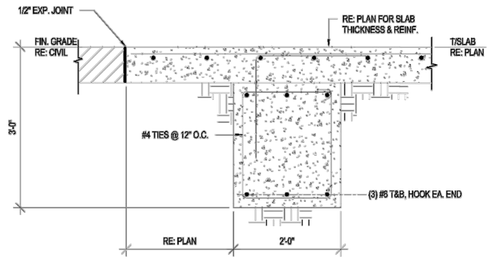
SITE DETAILS

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

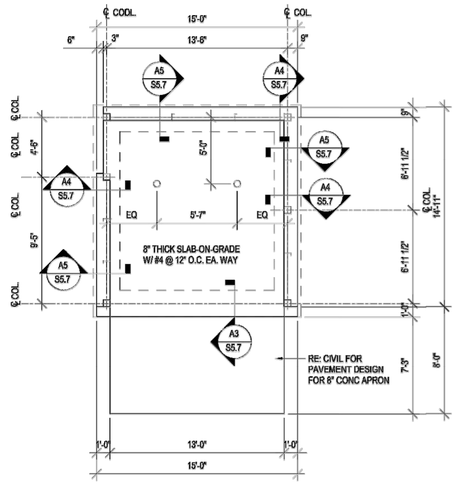
DRAWING

C-7.3

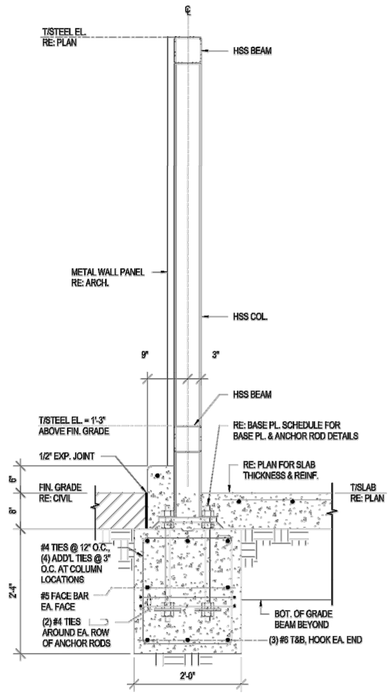
811 Know what's below. Call before you dig.



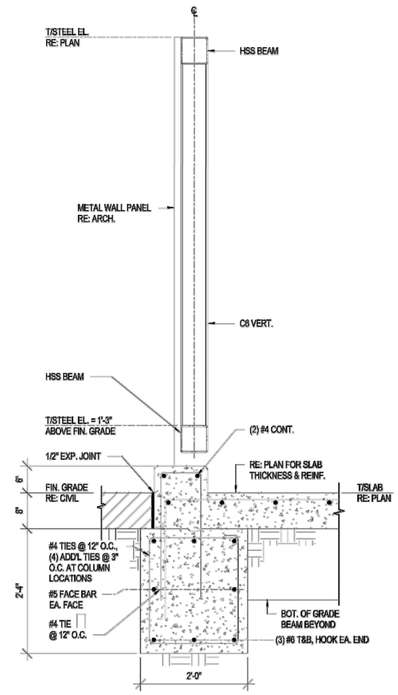
A3 SECTION
3/4" = 1'-0"



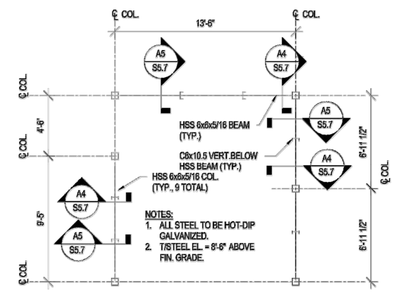
A1 TRASH ENCLOSURE FOUNDATION PLAN
3/16" = 1'-0"



A4 SECTION
3/4" = 1'-0"



A5 SECTION
3/4" = 1'-0"



B3 TRASH ENCLOSURE FRAMING PLAN
3/16" = 1'-0"

FINAL PLAT

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

NOTICE

WHATABURGER

ms consultants, inc.
engineers, architects, planners
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Columbus, Ohio 43229-1547
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fax 614.898.7570

PROJECT

PROPOSED PT20M
BUILDING

NWQ HWY 150 &
HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

SHEET TITLE

SITE DETAILS

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

C-7.4

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

Advanced Drainage Systems, Inc.

SiteASSIST™ FOR STORMTECH INSTRUCTIONS, DOWNLOAD THE INSTALLATION APP

WHATABURGER - LEES SUMMIT (2)

LEES SUMMIT, MO

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. 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.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE 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 SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION 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. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. 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 MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 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 CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

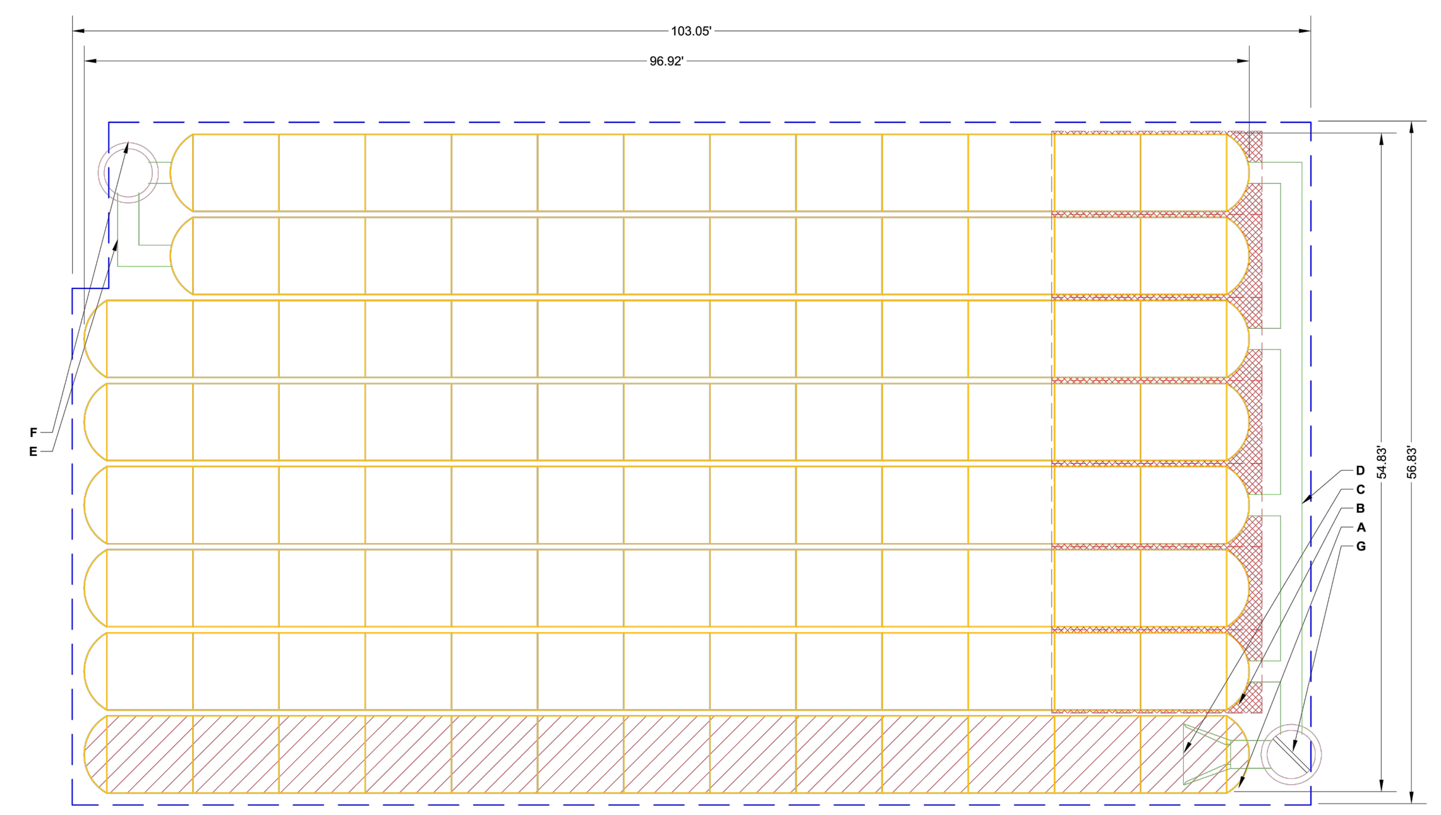
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT	
102	STORMTECH MC-3500 CHAMBERS
16	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	STONE VOID
19665	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
5815	SYSTEM AREA (SF)
319.8	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	1026.25
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	1020.25
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	1019.75
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	1019.75
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	1019.75
TOP OF STONE:	1019.25
TOP OF MC-3500 CHAMBER:	1018.25
24" ISOLATOR ROW PLUS INVERT:	1014.67
18" x 18" BOTTOM MANIFOLD INVERT:	1014.65
18" x 18" BOTTOM MANIFOLD INVERT:	1014.65
18" BOTTOM CONNECTION INVERT:	1014.65
BOTTOM OF MC-3500 CHAMBER:	1014.50
BOTTOM OF STONE:	1013.75

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
PREFABRICATED END CAP	B	18" BOTTOM CORED END CAP, PART#: MC3500IEPP18BC / TYP OF ALL 18" BOTTOM CONNECTIONS	1.77"	
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MC350024RAMP (TYP 2 PLACES)		
MANIFOLD	D	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.77"	
MANIFOLD	E	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.77"	
CONCRETE STRUCTURE	F	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		8.0 CFS OUT
CONCRETE STRUCTURE W/WEIR	G	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		20.9 CFS IN



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

WHATABURGER - LEES SUMMIT (2) LEES SUMMIT, MO | DATE: | DRAWN: TB | PROJECT #: | CHECKED: N/A

StormTech® Chamber System 888-892-2694 | WWW.STORMTECH.COM

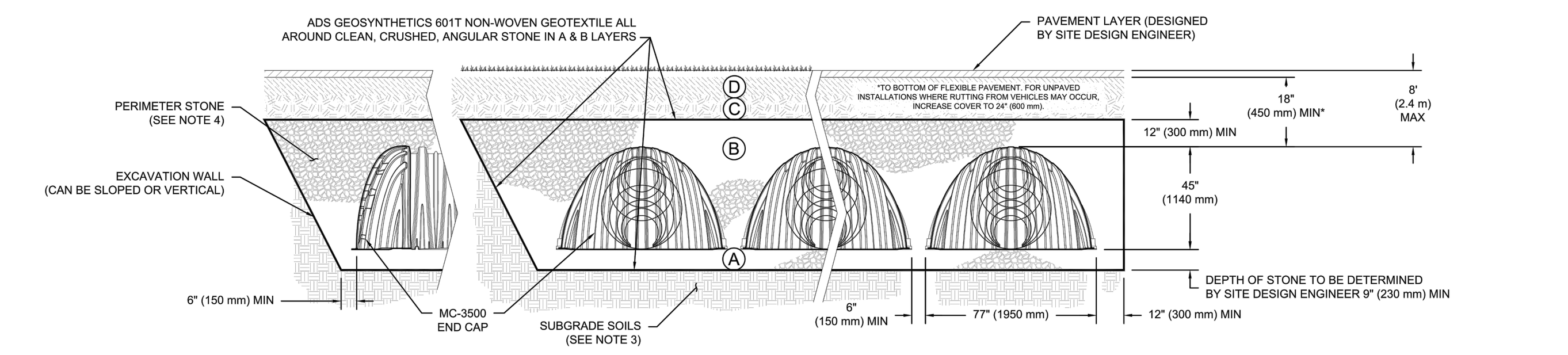
ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

SHEET 2 OF 5

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

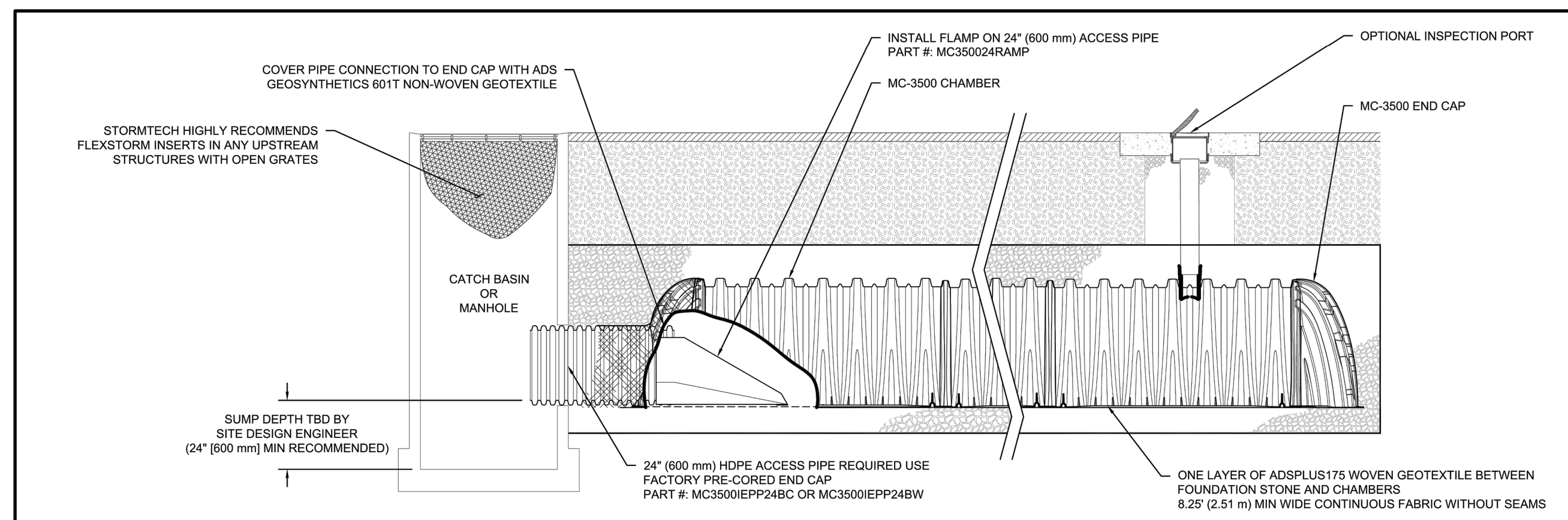
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

SHEET 3 OF 5



MC-3500 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

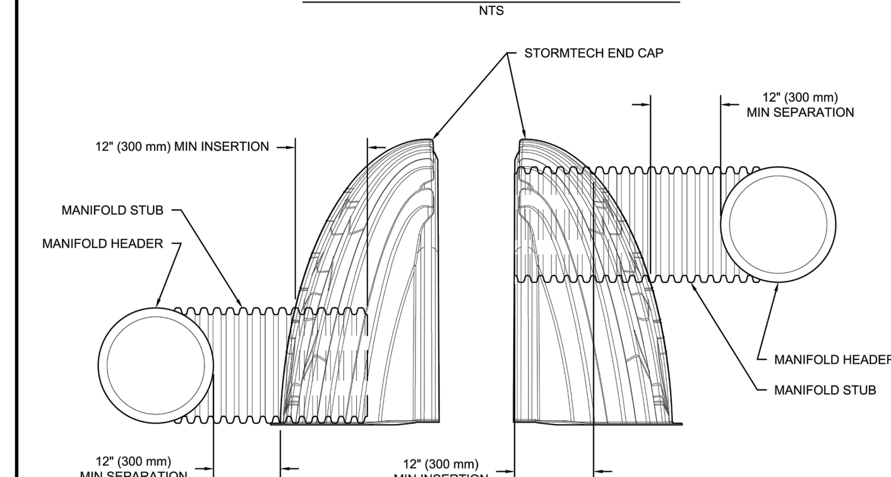
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

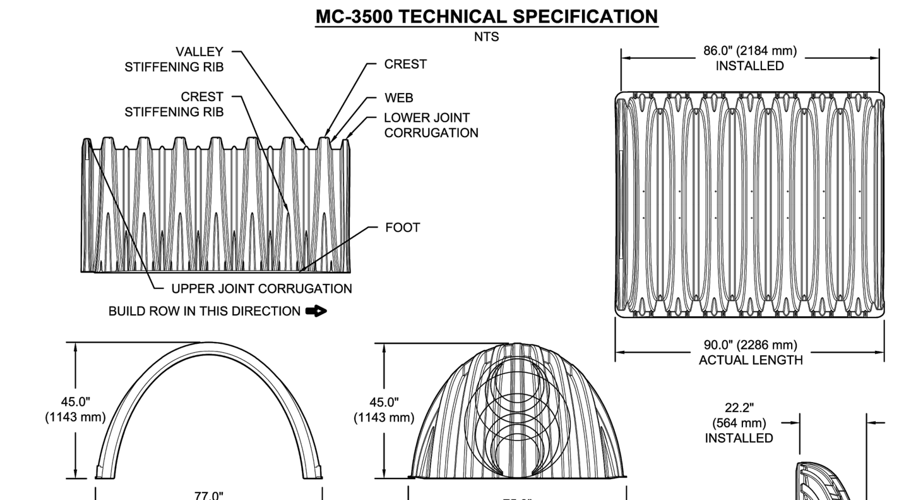
SHEET 4 OF 5

MC-SERIES END CAP INSERTION DETAIL
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-3500 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

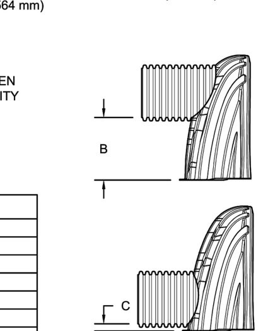
SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
WEIGHT	49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW			
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW			
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

SHEET 5 OF 5

REVISION/DATE/DESCRIPTION	
SIR UPDATES	09/13/21
60% SET	01/24/22

NOTICE

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

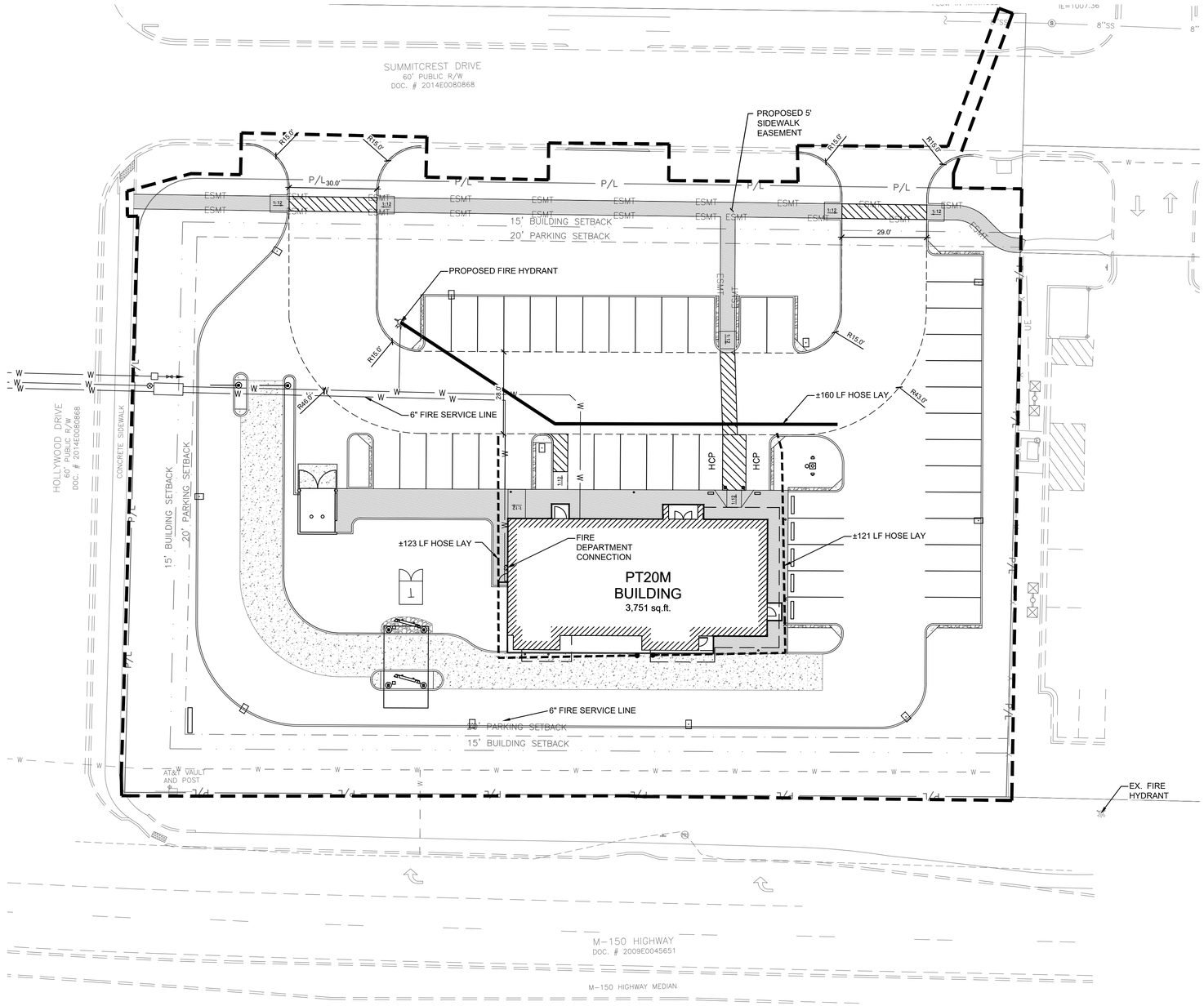
NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

SHEET TITLE

SITE DETAILS

Know what's below. Call before you dig. 811

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21
DRAWING	C-7.5

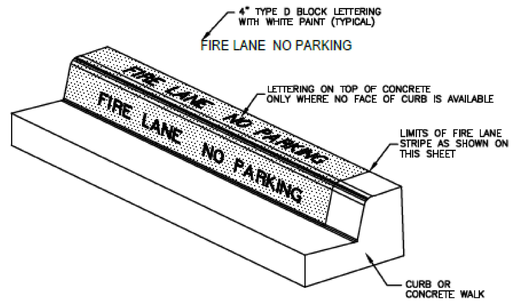


GENERAL NOTES:

A. DETAILS SHOWN ON THIS SHEET ARE SCHEMATIC. CONTRACTOR TO CONFIRM MARKINGS CONFORM TO ALL CODES AND REGULATIONS.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
P/L		PROPERTY LINE
		FIRE HYDRANT
		FIRE LANE
		FIRE HOSE HAND LAY



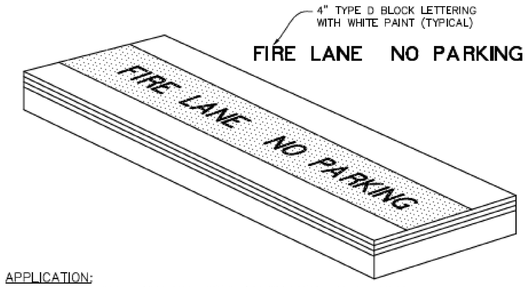
MARKINGS

APPLICATION:

1. ON 6" CURB:
   PAINT RED LANE STRIPE ON BOTH FACE AND TOP OF CURB
   PAINT WHITE LETTERS ON FACE OF CURB ONLY
2. LOW CURB (HEADER CURB) OR CONCRETE PAVEMENT:
   PAINT RED LANE STRIPE AND WHITE LETTERS ON TOP OF CURB
3. 15 FEET SPACING BETWEEN THE BEGINNING OF THE WHITE LETTERING.

FIRE LANE STRIPING DETAIL

NOT-TO-SCALE



APPLICATION:

1. CONTRACTOR SHALL COORDINATE WITH FIRE INSPECTOR FOR STRIPING LOCATIONS
2. PAINT A 6" WIDE RED STRIPE LOCATED 3" OFF EDGE OF PAVEMENT WITH 4" WHITE LETTERING ON RED STRIPE.
3. SEE SITE, STRIPING AND DIMENSIONAL CONTROL PLAN FOR CURB TYPES & LOCATIONS.
4. 15 FOOT SPACING BETWEEN THE BEGINNING OF THE WHITE LETTERING.

TYPICAL FIRE LANE MARKING DETAIL

NOT TO SCALE

0 10 20 30 40

SCALE: 1"=20'

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REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

SHEET TITLE

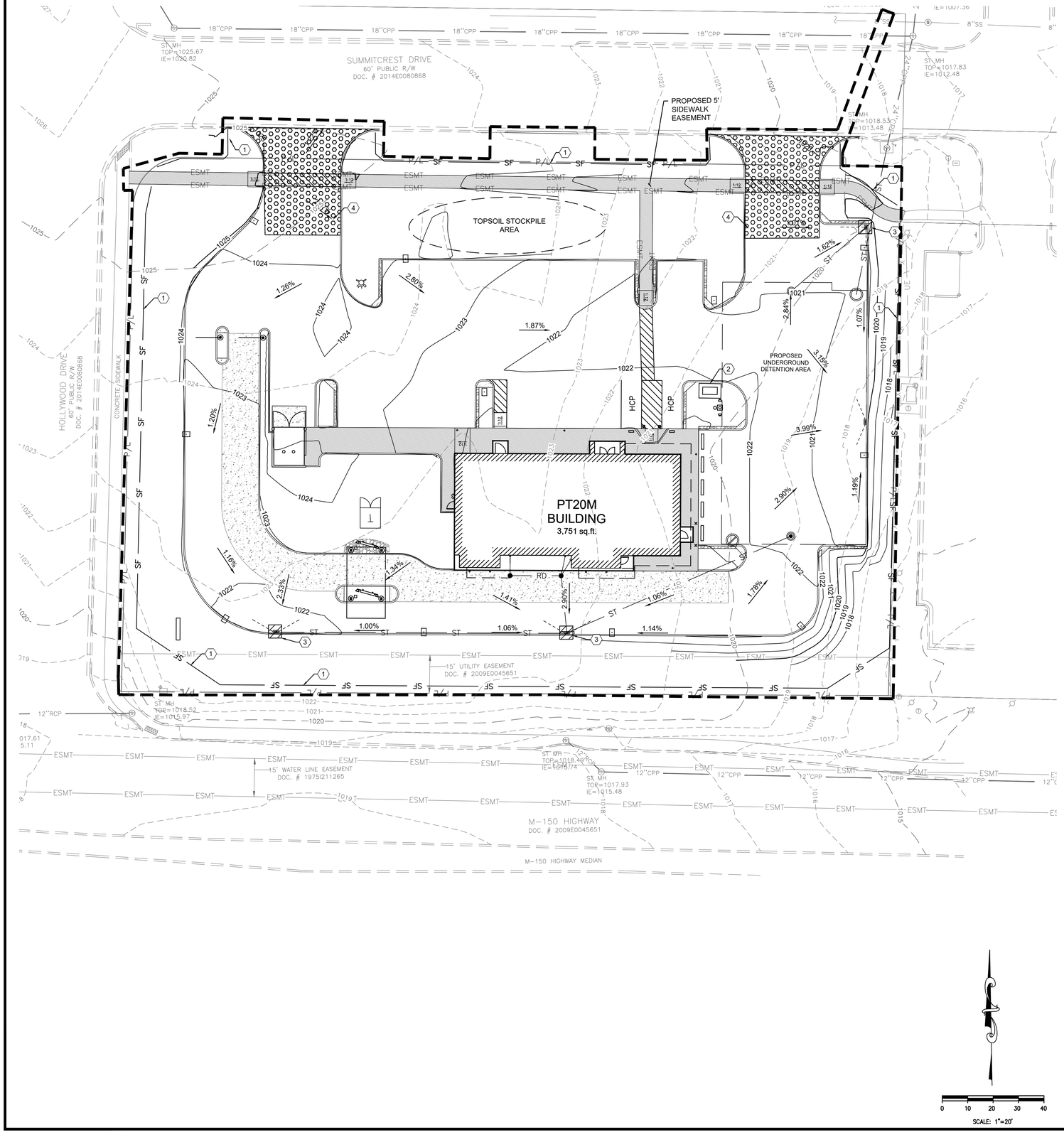
FIRE PROTECTION PLAN

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

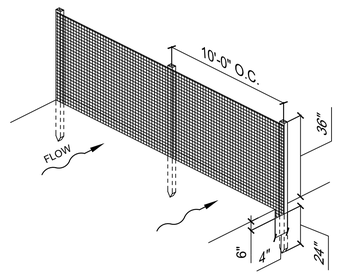
C-8.0

N:\03\62\40497\21-Lee's Summit, MO Market\Docs\CAD\CIVIL\SHEETS\C-8.0 Fire Protection Plan.dwg, 2/24/2022 2:55 PM, chiusano, joseph



KEYED NOTES:

1. TEMPORARY SILT FENCE, SEE DETAIL A ON THIS SHEET.
2. CONCRETE WASHOUT, SEE DETAIL A ON SHEET C-10.0.
3. INLET PROTECTION. SEE DETAIL B ON SHEET C-10.0.
4. CONSTRUCTION ENTRANCE, SEE DETAIL A ON SHEET C-10.1



A / C9.0 TEMPORARY SILT FENCE N.T.S.

1. THIS SEDIMENT BARRIER UTILIZES STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS. IT IS DESIGNED FOR SITUATIONS IN WHICH ONLY SHEET OR OVERLAND FLOWS ARE EXPECTED.
2. THE HEIGHT OF A SEDIMENT FENCE SHALL NOT EXCEED 36-INCHES (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE).
3. 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 SEALED.
4. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET.
5. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
6. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1-INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. 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.
8. WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSURE 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 WITH ALL OTHER PROVISIONS OF ITEM NO. 6 APPLYING.
9. THE TRENCH SHALL BE BACKFILLED AND SOIL COMPACTED OVER THE FILTER FABRIC.
10. SEDIMENT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

MAINTENANCE:

1. SEDIMENT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC ON A SEDIMENT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SEDIMENT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
950	1015	CONTOUR
	SF	SILT FENCE
		INLET PROTECTION
		CONCRETE WASHOUT
		CONSTRUCTION ENTRANCE

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NOTICE

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PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

SHEET TITLE

STORMWATER POLLUTION PREVENTION PLAN

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

C-9.0

PROJECT NAME AND LOCATION
WHATABURGER
NWQ HWY 150 & HOLLYWOOD ST
LEE'S SUMMIT, MO 64802

OWNER NAME AND ADDRESS
WHATABURGER
300 CONCORD PLAZA DR.
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EMAIL: cespinoza@wbhq.com

SITE CONTACT
WHATABURGER
300 CONCORD PLAZA DR.
SAN ANTONIO, TX 78216
PHONE: (210) 476-6842
CONTACT: CINDY ESPINOZA
EMAIL: cespinoza@wbhq.com

GENERAL SCOPE OF PROJECT
THIS PROJECT WILL CONSIST OF A RESTAURANT AND THE CONSTRUCTION OF ASSOCIATED DRAINAGE FACILITIES AND OTHER MISCELLANEOUS SITE WORK.

NATURE OF CONSTRUCTION ACTIVITY (CHECK ALL THAT APPLY)

SUBDIVISION	
COMMERCIAL	X
INDUSTRIAL	
P.U.D.	
OTHER	

SOIL TYPES

CONSTRUCTION SITE ESTIMATES

TOTAL SITE AREA:	1.45 AC.
CONSTRUCTION SITE AREA TO BE DISTURBED:	1.53 AC.
PERCENTAGE IMPERVIOUS AREA BEFORE CONSTRUCTION:	0.5%
RUNOFF COEFFICIENT BEFORE CONSTRUCTION:	
PERCENTAGE IMPERVIOUS AREA AFTER CONSTRUCTION:	61.8%
RUNOFF COEFFICIENT AFTER CONSTRUCTION:	

RECEIVING WATERS
LAKE WINNEBAGO

CONSTRUCTION SEQUENCE
THE ORDER OF MAJOR ACTIVITIES WILL BE AS FOLLOWS:

1. PRE-CONSTRUCTION MEETING
2. BEFORE AND SITE GRADING ACTIVITIES BEGIN
   a. INSTALL PERIMETER SILT FENCES
   b. INSTALL INLET PROTECTION ON EXISTING INLETS
   c. CONSTRUCT TEMPORARY CONSTRUCTION ENTRANCE
3. BEGIN SITE GRADING AND TOPSOIL STRIPPING
   a. ESTABLISH TOPSOIL STOCKPILE WITHIN SILT FENCE PERIMETER
   b. STABILIZE DENUDED AREAS AND STOCKPILES WITHIN 14 DAYS OF LAST CONSTRUCTION ACTIVITY IN THAT AREA
   c. INSTALL EROSION CONTROL MATTING AT LOCATIONS INDICATED ON PLAN
4. INSTALL UTILITIES, SANITARY SEWERS, WATER SERVICES AND STORM SEWERS
6. BEGIN CONSTRUCTION OF BUILDING FOUNDATION AND STRUCTURE
7. INSTALL CURBS, PREPARE PAVEMENT SUBGRADE AND PROVIDE GOOD AGGREGATE BASE TO AREAS TO BE PAVED.
8. PAVE AREAS AND EXTERIOR BUILDING CONSTRUCTION.
9. FINAL GRADING AND PERMANENT SEEDING OF THE NON-PAVED AREAS OF THE SITE WITHIN 7 DAYS OF FINISHING FINAL GRADE
10. ONCE 70% VEGETATIVE COVERAGE IS ACHIEVED, REMOVE EROSION PROTECTION.

POTENTIAL SOURCES OF POLLUTION
CONCRETE
DETERGENTS
WOOD
FERTILIZERS
PAINTS (ENAMEL AND LATEX)
CLEANING SOLVENTS
PETROLEUM BASED PRODUCTS

EROSION AND SEDIMENT CONTROLS

BMP DESCRIPTION:	CLEARING AND GRUBBING
MAINTENANCE AND INSPECTION:	AS NEEDED
REFERENCE:	TECHNICAL SPECIFICATION
BMP DESCRIPTION:	DUST CONTROL
MAINTENANCE AND INSPECTION:	AS NEEDED
REFERENCE:	E&S DETAILS
BMP DESCRIPTION:	TEMPORARY SEEDING AND MULCHING
MAINTENANCE AND INSPECTION:	WEEKLY AND AFTER HEAVY RAIN
REFERENCE:	E&S DETAILS
BMP DESCRIPTION:	PERMANENT SEEDING AND MULCHING
MAINTENANCE AND INSPECTION:	WEEKLY AND AFTER HEAVY RAIN
REFERENCE:	E&S DETAILS
BMP DESCRIPTION:	CONSTRUCTION ENTRANCE
MAINTENANCE AND INSPECTION:	AS NEEDED
REFERENCE:	E&S DETAILS
BMP DESCRIPTION:	ADS - ISOLATOR ROW
MAINTENANCE AND INSPECTION:	AS NEEDED
REFERENCE:	O&M MANUAL
BMP DESCRIPTION:	TOPSOIL STOCKPILE
MAINTENANCE AND INSPECTION:	AS NEEDED
REFERENCE:	O&M MANUAL

POST CONSTRUCTION BMP'S

- GREEN SPACE

OTHER SEDIMENT AND EROSION CONTROL NOTES

- TEMPORARY EROSION CONTROLS WILL BE APPLIED PRIOR TO ONSET OF WINTER WEATHER FOR DISTURBED AREAS THAT WILL BE LEFT IDLE OVER WINTER.
- PERMANENT EROSION CONTROLS WILL BE APPLIED WITHIN 7 DAYS FOR DISTURBED AREAS REMAINING DORMANT FOR OVER 1 YEAR OR AT FINAL GRADE.
- SEDIMENT CONTROL DEVICES WILL BE IMPLEMENTED FOR ALL AREAS REMAINING DISTURBED OVER 7 DAYS.

ADDITIONAL BMP'S

OPEN BURNING: NO MATERIALS MAY BE BURNED WHICH CONTAIN RUBBER, GREASE, ASPHALT, OR PETROLEUM PRODUCTS SUCH AS TIRES, CARS, AUTO PARTS, PLASTICS OR PLASTIC COATED WIRE. OPEN BURNING IS NOT ALLOWED IN RESTRICTED AREAS. RESTRICTED AREAS ARE DEFINED AS:

1. WITHIN CORPORATION LIMITS
2. WITHIN 1,000 FEET OF A MUNICIPAL CORPORATION
3. WITHIN A ONE MILE ZONE OUTSIDE OF A CORPORATION OF 10,000 OR MORE

OUTSIDE THE RESTRICTED AREA, NO OPEN BURNING CAN TAKE PLACE WITHIN 1,000 FEET OF AN INHABITED BUILDING LOCATED OFF THE PROPERTY WHERE THE FIRE IS SET. OPEN BURNING IS PERMISSIBLE IN A RESTRICTED AREA FOR THE FOLLOWING ACTIVITIES: HEATING TAR, WELDING AND ACETYLENE TORCHES, SMUDGE POTS AND SIMILAR OCCUPATIONAL NEEDS, AND HEATING OR WARMTH FOR OUTDOOR BARBEQUES. OUTSIDE OF RESTRICTED AREAS, OPEN BURNING IS PERMISSIBLE FOR LANDSCAPE WASTES (PLANT MATERIAL), LAND-CLEARING WASTES (PLANT MATERIAL, WITH PRIOR WRITTEN PERMISSION FROM EPA), AND AGRICULTURAL WASTES (MATERIAL GENERATED BY CROP, HORTICULTURAL, OR LIVESTOCK PRODUCTION PRACTICES.

DUST CONTROL/SUPPRESSANTS: DUST CONTROL IS REQUIRED TO PREVENT NUISANCE CONDITIONS. DUST CONTROLS MUST BE USED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION AND NOT BE APPLIED IN A MANNER, WHICH WOULD RESULT IN A DISCHARGE TO WATERS OF THE STATE. ISOLATION DISTANCES FROM BRIDGES, CATCH BASINS, AND OTHER DRAINAGE WAYS MUST BE OBSERVED. APPLICATION (EXCLUDING WATER) MAY NOT OCCUR WHEN PRECIPITATION IS IMMINENT AS NOTED IN THE SHORT TERM FORECAST. USED OIL MAY NOT BE APPLIED FOR DUST CONTROL.

AIR PERMITTING REQUIREMENTS: ALL CONTRACTORS AND SUB CONTRACTORS MUST BE MADE AWARE THAT CERTAIN ACTIVITIES ASSOCIATED WITH CONSTRUCTION WILL REQUIRE AIR PERMITS. ACTIVITIES INCLUDING BUT NOT LIMITED TO MOBILE CONCRETE BATCH PLANTS, MOBILE ASPHALT PLANTS, CONCRETE CRUSHERS, LARGE GENERATORS, ETC., WILL REQUIRE SPECIFIC MISSOURI EPA AIR PERMITS FOR INSTALLATION AND OPERATION. THESE ACTIVITIES MUST SEE AUTHORIZATION FROM THE CORRESPONDING OF MISSOURI EPA. NOTIFICATION FOR RESTORATION AND DEMOLITION MUST BE SUBMITTED TO MISSOURI EPA FOR ALL COMMERCIAL SITES TO DETERMINE IF ASBESTOS CORRECTIVE ACTIONS ARE REQUIRED.

WASTE DISPOSAL: THE CONTRACTOR SHALL PROVIDE LITTER CONTROL AND COLLECTION OF MATERIALS WITHIN THE PROJECT BOUNDARIES DURING CONSTRUCTION. ALL FERTILIZER, HYDROCARBON, OR OTHER CHEMICAL CONTAINERS SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH THE EPA'S STANDARD PRACTICES. NO SOLID MATERIAL INCLUDING BUILDING AND CONSTRUCTION MATERIAL SHALL BE DISPOSED OF, DISCHARGED OR BURIED ONSITE.

OFFSITE VEHICLE TRACKING: LOADED HAUL TRUCKS SHALL BE COVERED WITH A TARPAULIN. EXCESS DIRT MATERIAL ON THE ROADS SHALL BE REMOVED IMMEDIATELY. HAULING ON UNPAVED SURFACES SHALL BE MONITORED TO MINIMIZE DUST AND CONTROL EROSION. HAUL ROADS SHALL BE WATERED OR OTHER CONTROLS PROVIDED AS NECESSARY TO REDUCE DUST AND CONTROL SEDIMENTS.

SANITARY WASTE: THE CONTRACTOR SHALL PROVIDE PORTABLE SANITARY WASTE FACILITIES. THESE FACILITIES SHALL BE COLLECTED OR EMPTIED BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR AS REQUIRED BY STATE REGULATIONS.

FERTILIZERS AND PESTICIDES: FERTILIZER SHALL BE APPLIED AT A RATE SPECIFIED BY THE SPECIFICATIONS OR THE MANUFACTURER. THE APPLICATION OF FERTILIZERS SHALL BE ACCOMPLISHED IN A MANNER AS DESCRIBED BY THE SPECIFICATION OR MANUFACTURER TO ENSURE THE PROPER INSTALLATION AND TO AVOID OVER FERTILIZING. PESTICIDES ARE NOT ANTICIPATED FOR THIS PROJECT.

MAINTENANCE

THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE AND REPAIRS OF EROSION AND SEDIMENT CONTROL DEVICES AND THE REMOVAL OF THE EROSION AND SEDIMENT CONTROL DEVICES AFTER THE NOTICE OF TERMINATION IS EXECUTED.

THE CONTRACTOR SHALL REVIEW THE PROJECT AND ALL EROSION AND SEDIMENT CONTROLS ON A DAILY BASIS AND DURING AND FOLLOWING RAINFALL EVENTS. AN INSPECTION FORM HAS BEEN PROVIDED IN THE SPECIFICATIONS. THE CONTRACTOR SHALL BE REQUIRED TO KEEP A LOG OF ALL THE DAILY INSPECTION REPORTS, GRADING AND STABILIZATION ACTIVITIES, AND SWPPP AMENDMENTS AT THE SITE. THE FOLLOWING PRACTICES WILL BE IMPLEMENTED TO MAINTAIN AND MONITOR EROSION AND SEDIMENT CONTROLS.

A. PROJECT REVIEW ON A DAILY BASIS.

B. PROVIDE AND MAINTAIN RAIN GAUGES ONSITE (IF NOT AVAILABLE IN THE AREA) TO RECORD RAINFALL DATA DAILY.

C. REVIEW STABILIZATION PRACTICES AND CONTROLS ON A DAILY BASIS AND MAINTAIN AND REPAIR THESE MEASURES AND CONTROLS AS NECESSARY. TEMPORARY AND/OR PERMANENT SEEDING, MULCHING AND SODDING SHALL BE REPAIRED IN BARE SPOTS AND WASHOUTS, AND HEALTHY GROWTH ESTABLISHED.

D. ONCE HEALTHY GROWTH OF TURF IS ESTABLISHED, THE CONTRACTOR SHALL MAINTAIN THESE AREAS TO INSURE THE HEIGHT OF THE GRASS DOES NOT REACH MORE THAN 6 INCHES ABOVE THE ESTABLISHED GRADE.

E. REVIEW STRUCTURAL PRACTICES ON A DAILY BASIS AND MAINTAIN AND REPAIR THESE MEASURES AND CONTROLS AS NECESSARY. BUILT UP SEDIMENTS SHALL BE REMOVED FROM SILT FENCES AND FILTER CLOTH SHALL BE REPLACED AS NECESSARY AND WHEN THEY HAVE SERVED THEIR USEFULNESS.

F. AN INSPECTION AND MAINTENANCE REPORT SHALL BE COMPLETED WEEKLY AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR SHALL CREATE AN INSPECTION AND MAINTENANCE REPORT LOG AND NOTE ANY AMENDMENTS TO THE SWPPP THAT OCCUR DURING CONSTRUCTION.

G. IF THE CONTRACTOR ELECTS TO APPLY FOR PERMITS FOR DISCHARGE OF STORMWATER FROM THE SITE DURING CONSTRUCTION, ALL POINTS OF DISCHARGE OF STORMWATER RUNOFF FROM THE SITE SHALL BE INSPECTED ON A DAILY BASIS AND CONTROLS AND MEASURES REPAIRED AS NECESSARY TO MAINTAIN ACCEPTABLE WATER QUALITY AND DISCHARGE VOLUMES IN ACCORDANCE WITH THE PERMIT.

INSPECTIONS
QUALIFIED PERSONNEL SHALL INSPECT ALL POINTS OF DISCHARGE, AS APPLICABLE, FROM THE PROJECT SITE AND ALL DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN STABILIZED. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF, OR POTENTIAL FOR POLLUTANTS ENTERING THE STORMWATER MANAGEMENT SYSTEM. THE STORMWATER MANAGEMENT SYSTEM AND EROSION AND SEDIMENT CONTROL MEASURES SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. INSPECTION AND MAINTENANCE REPORTS SHALL BE COMPLETED AT LEAST EVERY WEEK AND FOLLOWING A RAINFALL EVENT OF 0.5 INCHES OF WATER OR GREATER (SEE ATTACHED FORM). THESE FORMS SHALL BE RETAINED FOR A PERIOD OF AT LEAST 3 YEARS FOLLOWING THE DATE THE SITE IS FINALLY STABILIZED.

ALLOWABLE NON-STORMWATER DISCHARGE MANAGEMENT
ALLOWABLE NON-STORMWATER DISCHARGES AND THE MEASURES USED TO ELIMINATE OR REDUCE THEM AND TO PREVENT THEM FROM BECOMING CONTAMINATED MAY INCLUDE DEPENDING ON THE PERMIT:

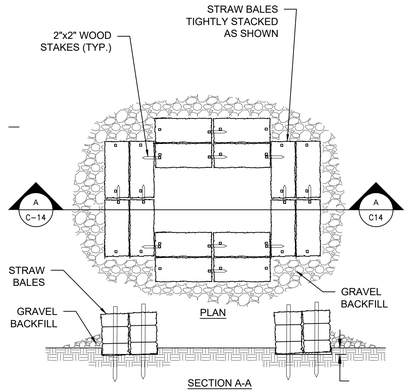
1. WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED
2. WATER USED TO CONTROL DUST
3. POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHINGS
4. ROUTINE EXTERNAL BUILDING WASH DOWN THAT DOES NOT USE DETERGENTS
5. PAVEMENT WASH WATER WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED (UNLESS ALL SPILLED MATERIAL HAS BEEN REMOVED) AND WHERE DETERGENTS ARE NOT USED
6. UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE
7. UNCONTAMINATED GROUND WATER OR SPRING WATER
8. FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS SUCH AS SOLVENTS
9. UNCONTAMINATED EXCAVATION DEWATERING
10. LANDSCAPE IRRIGATION

ESTABLISH PROPER EQUIPMENT/VEHICLE FUELING AND MAINTENANCE PRACTICES
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 STORAGE TANKS. THESE AREAS MUST BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HOURS OF A 0.5 INCH OR GREATER RAIN EVENT TO ENSURE THERE ARE NO EXPOSED MATERIALS WHICH WOULD CONTAMINATE STORM WATER.

SPILL PREVENTION CONTROL PLAN
SITE OPERATORS MUST BE AWARE THAT SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) REQUIREMENTS APPLY. AN SPCC PLAN IS REQUIRED FOR SITES WITH ONE SINGLE ABOVEGROUND STORAGE OF 1,320 GALLONS OR MORE, OR 42,000 GALLONS OF UNDERGROUND STORAGE. SOILS THAT HAVE BEEN CONTAMINATED MUST BE DISPOSED OF IN ACCORDANCE WITH SECTION "CONTAMINATED SOILS" FOUND BELOW.

SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, CAT LITTER OR OTHER ABSORBENT MATERIAL AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL. 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 EPA (1-913-281-0991). SPILLS OF 25 GALLONS OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO EPA (1-913-281-0991), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE DISCOVERY OF THE RELEASE. ALL SPILLS, WHICH RESULT IN CONTACT WITH WATER OF THE STATE, MUST BE REPORTED TO THE EPA'S HOTLINE.

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 A LICENSED SANITARY LANDFILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). PLEASE BE AWARE THAT STORM WATER RUN OFF ASSOCIATED WITH CONTAMINATED SOILS ARE NOT BEING AUTHORIZED UNDER THE EPA'S GENERAL STORMWATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES. IN THE EVENT THERE ARE LARGE EXTENSIVE AREAS OF CONTAMINATED SOILS ADDITIONAL MEASURES ABOVE AND BEYOND THE CONDITIONS OF THE EPA'S GENERAL CONSTRUCTION STORMWATER PERMIT WILL BE REQUIRED. DEPENDING ON THE EXTENT OF CONTAMINATION, ADDITIONAL TREATMENT AND/OR COLLECTION AND DISPOSAL MAY BE REQUIRED. ALL STORMWATER DISCHARGES ASSOCIATED WITH CONTAMINATED SOILS MUST BE AUTHORIZED UNDER AN ALTERNATE NPDES PERMIT.



NOTES:

A. THE RESIDUE OR CONTENTS OF ALL CONCRETE MIXERS, DUMP TRUCKS, OTHER CONVEYANCE EQUIPMENT AND FINISHING TOOLS SHALL BE WASHED INTO CONCRETE CLEAN-OUT STRUCTURES CONSISTING OF A STRAW BALE BARRIER WITH GRAVEL BACKFILL. THE LENGTH AND WIDTH OF THESE STRUCTURES SHALL BE AS DETERMINED BY THE CONTRACTOR TO FACILITATE THE PARTICULAR EQUIPMENT USED. THESE STRUCTURES SHALL BE CONSTRUCTED ON LEVEL GROUND AT LEAST 100' FROM THE NEAREST WATERCOURSE, DRAINAGE SWALE OR INLET. AT NO TIME SHALL THE STRUCTURE BE ALLOWED TO BE MORE THAN 50% FULL. THE CONTRACTOR SHALL MAINTAIN THESE PONDS UNTIL ALL CONCRETE PLACEMENT IS COMPLETE FOR THE PROJECT.

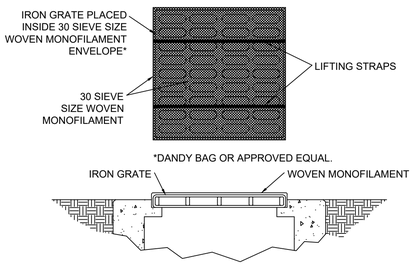
B. EMBED THE STRAW BALES 4" INTO THE SOIL. PROVIDE TWO ROWS OF BALES, AS SHOWN ON THE DETAIL, WITH ENDS AND CORNERS TIGHTLY ABUTING. ORIENT THE STRAW BALES LENGTHWISE WITH BINDINGS AROUND THE SIDES OF THE BALES SO THE WIRE DOES NOT CONTACT THE SOIL. DRIVE 2"X2" WOOD STAKES THROUGH EACH BALE. TO SECURELY ANCHOR THE BALE AND CONNECT ADJACENT BALES, GRAVEL BACKFILL SHALL BE PROVIDED AND TAMPED AROUND THE OUTSIDE PERIMETER OF THE BALES TO PREVENT EROSION AND FLOW AROUND THE BALES.

C. THE INTENT OF THESE STRUCTURES IS TO COLLECT ALL CONCRETE WASH OUT WATER AND ALLOW IT TO DRY TO A SOLID MATERIAL. AFTER DRYING, THE SOLID MATERIAL CAN BE REMOVED WITH A LOADER OR EXCAVATOR FOR PROPER DISPOSAL. WASH OUT WILL NOT BE PERMITTED IN ANY OTHER AREAS.

D. USE THE MINIMUM AMOUNT OF WATER TO WASH THE VEHICLES AND EQUIPMENT. NEVER DISPOSE OF WASH OUT INTO THE STREET, STORM INLET, DRAINAGE SWALE OR WATERCOURSE. DISPOSE OF SMALL AMOUNTS OF EXCESS DRY CONCRETE, GROUT AND MORTAR IN THE TRASH. ANY SOAPS THAT ARE UTILIZED SHALL BE PHOSPHATE-FREE AND BIODEGRADABLE.

E. ADDITIONAL CONCRETE CLEAN-OUT STRUCTURES SHALL BE CONSTRUCTED WITHIN THE SPECIFIED AREA AS NEEDED BASED UPON THE VOLUME OF WASH OUT GENERATED DAILY.

A / C10.0 CONCRETE WASHOUT N.T.S.



INSTALLATION AND MAINTENANCE GUIDELINES
INSTALLATION:
THE EMPTY BAG SHOULD BE PLACED OVER THE GRATE AS THE GRATE STANDS ON END. IF USING OPTIONAL OIL ABSORBENTS; PLACE ABSORBENT PILLOW IN POUCH, ON THE BOTTOM (BELOW-GRADE SIDE) OF THE UNIT. ATTACH ABSORBENT PILLOW TO TETHER LOOP. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE. HOLDING THE LIFTING DEVICES (DO NOT RELY ON LIFTING DEVICES TO SUPPORT THE ENTIRE WEIGHT OF THE GRATE), PLACE THE GRATE INTO ITS FRAME.

MAINTENANCE:
REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT. REMOVE SEDIMENT THAT HAS ACCUMULATED WITHIN THE CONTAINMENT AREA OF THE BAG AS NEEDED. IF USING OPTIONAL OIL ABSORBENTS; REMOVE AND REPLACE ABSORBENT PILLOW WHEN NEAR SATURATION.

B / C10.0 INLET PROTECTION N.T.S.

Know what's below. Call before you dig.

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
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PROJECT
PROPOSED PT20M BUILDING
NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

SHEET TITLE
SWPPP NOTES AND DETAILS

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING
C-10.0

TEMPORARY SEEDING

DESCRIPTION

TEMPORARY SEEDINGS ESTABLISH TEMPORARY COVER ON DISTURBED AREAS BY PLANTING APPROPRIATE RAPIDLY GROWING ANNUAL GRASSES OR SMALL GRAINS. TEMPORARY SEEDING PROVIDES EROSION CONTROL ON AREAS IN BETWEEN CONSTRUCTION OPERATIONS. GRASSES, WHICH ARE QUICK GROWING, ARE SEEDED AND USUALLY MULCHED TO PROVIDE PROMPT, TEMPORARY SOIL STABILIZATION. IT EFFECTIVELY MINIMIZES THE AREA OF A CONSTRUCTION SITE PRONE TO EROSION AND SHOULD BE USED EVERYWHERE THE SEQUENCE OF CONSTRUCTION OPERATIONS ALLOWS VEGETATION TO BE ESTABLISHED.

SPECIFICATIONS FOR TEMPORARY SEEDING

TEMPORARY SEEDING SPECIES SELECTION

SEEDING DATES	SPECIES	LB/1000 SF	LB/ACREA
MAR 1 TO AUG 15	OATS	3	128-4 BUSHEL
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYGRASS	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	55
	PERENNIAL RYEGRASS	3.25	142
	CREEPING RED FESCUE	0.40	17
	KENTUCKY BLUEGRASS	0.40	17
	OATS	3	128-3 BUSHEL
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
AUG 16 TO NOV	RYE	3	112-3 BUSHEL
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	WHEAT	3	120-2 BUSHEL
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYE	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	40
	PERENNIAL RYEGRASS	3.25	40
	CREEPING RED FESCUE	0.40	40
	KENTUCKY BLUEGRASS	0.40	
NOV 1 TO FEB 29	USE MULCH ONLY OR DORMANT SEEDING		

1. 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 SEED 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. SOIL AMENDMENTS—TEMPORARY VEGETATION SEEDING RATES SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.
5. SEEDING METHOD—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.

MULCHING TEMPORARY SEEDING:

1. 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.
2. MATERIALS:
   - 2.1. STRAW—IF STRAW IS USED, IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 LBS./ 1,000 SQ. FT. (2-3 BALES)
   - 2.2. HYDROSEEDERS—IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2000 LBS./ AC. OR 46 LB./ 1,000-SQ.-FT.
   - 2.3. OTHER—OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TON/ AC.
3. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS:
   - 3.1. MECHANICAL—A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT LEFT TO A LENGTH OF APPROXIMATELY 6 INCHES.
   - 3.2. MULCH NETTING—NETTING SHALL BE USED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.
   - 3.3. SYNTHETIC BINDERS—SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TRACK OR EQUIVALENT MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.
   - 3.4. WOOD-CELLULOSE FIBER—WOOD-CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WT. 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.

DUST CONTROL

DESCRIPTION

DUST CONTROL INVOLVES PREVENTING OR REDUCING DUST FROM EXPOSED SOILS OR OTHER SOURCES DURING LAND DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES TO REDUCE THE PRESENCE OF AIRBORNE SUBSTANCES WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS OR HARM ANIMAL OR PLANT LIFE.

SPECIFICATIONS FOR DUST CONTROL

1. VEGETATIVE COVER AND/MULCH – APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 21 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MULCHING PRACTICES; AND TREE AND NATURAL AREA PROTECTION PRACTICES.
2. WATERING – SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS INSTRUCTIONS.
3. SPRAY-ON ADHESIVES – APPLY ADHESIVE ACCORDING TO THE FOLLOWING TABLE OR MANUFACTURER'S INSTRUCTIONS.
4. STONE – GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABILIZED USING CRUSHED STONE OR COARSE GRAVEL AS SOON AS PRACTICABLE AFTER REACHING AN INTERIM OR FINAL GRADE. CRUSHED STONE OR COARSE GRAVEL CAN BE USED AS A PERMANENT COVER TO PROVIDE CONTROL OF SOIL EMISSIONS.
5. BARRIERS – EXISTING WINDBREAK VEGETATION SHALL BE MARKED AND PRESERVED. SNOW FENCING OR OTHER SUITABLE BARRIER MAY BE PLACED PERPENDICULAR TO PREVAILING AIR CURRENTS AT INTERVALS OF ABOUT 15 TIMES THE BARRIER HEIGHT TO CONTROL AIR CURRENTS AND BLOWING SOIL.
6. OPERATION AND MAINTENANCE - WHEN TEMPORARY DUST CONTROL MEASURES ARE USED; REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL. STREET CLEANING - PAVED AREAS THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE CLEANED DAILY, OR AS NEEDED, UTILIZING A STREET SWEEPER OR BUCKET -TYPE END LOADER OR SCRAPER.

PERMANENT SEEDING

DESCRIPTION

PERENNIAL VEGETATION IS ESTABLISHED ON AREAS THAT WILL NOT BE RE-DISTURBED FOR PERIODS LONGER THAN 12 MONTHS. PERMANENT SEEDING INCLUDES SITE PREPARATION, SEEDBED PREPARATION, PLANTING SEED, MULCHING, IRRIGATION AND MAINTENANCE.

PERMANENT VEGETATION IS USED TO STABILIZE SOIL, REDUCE EROSION, PREVENT SEDIMENT POLLUTION, REDUCE RUNOFF BY PROMOTING INFILTRATION, AND PROVIDE STORMWATER QUALITY BENEFITS OFFERED BY DENSE GRASS COVER.

SPECIFICATION FOR PERMANENT SEEDING

SITE PREPARATION:
1. SUBSOILER, PLOW, OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM INFILTRATION. (MAXIMIZING 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 SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED TO WHAT IS NECESSARY FOR ESTABLISHING VEGETATION.
2. THE SITE SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION AND SEEDING.
3. TOPSOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION.

SEEDBED PREPARATION:
1. TEST THE SOIL CONDITIONS FOR FEEDING BEFORE STARTING SEEDING AND MULCHING.
2. LIME—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.
3. FERTILIZER—FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. CONTRACTOR SHALL PERFORM LAB TESTING ON SOIL AND PROVIDE A CERTIFIED FERTILIZER RATIO FOR THE SITE SOILS AND SPECIFIED SEED MIX.
4. THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, 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.

SEEDING DATES AND SOIL CONDITIONS:
SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUGUST 1 TO SEPTEMBER 30. IF SEEDING 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 COMPRESSED BY HAND. FOR WINTER SEEDING, SEE THE FOLLOWING SECTION ON DORMANT SEEDING.

DORMANT SEEDINGS:
1. SEEDINGS 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.
2. THE FOLLOWING METHODS MAY BE USED FOR 'DORMANT SEEDING':
   - 2.1. 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.
   - 2.2. 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.
   - 2.3. APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDRO-SEEDER (SLURRY MAY INCLUDE SEED AND FERTILIZER) ON A FIRM, MOIST SEEDBED.
   - 2.4. 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.

MULCHING:
1. MULCH MATERIAL SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. DORMANT SEEDING SHALL BE MULCHED. 100% OF THE GROUND SURFACE SHALL BE COVERED WITH AN APPROVED MATERIAL.
2. MATERIALS:
   - 2.1. STRAW—IF STRAW IS USED IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT THE RATE OF 2 TONS PER ACRE OR 90 POUNDS (TWO TO THREE BALES) PER 1,000-SQ. FT. THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY APPLIED SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000-SQ.-FT. SECTIONS AND SPREAD TWO 45-LB. BALES OF STRAW IN EACH SECTION.
   - 2.2. HYDROSEEDERS—IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE APPLIED AT 2,000 LB./AC. OR 46 LB./1,000 SQ. FT.
   - 2.3. OTHER—OTHER ACCEPTABLE MULCHES INCLUDE ROLLED EROSION CONTROL MATTINGS OR BLANKETS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TONS PER ACRE.
3. STRAW AND MULCH ANCHORING METHODS-STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER:
   - 3.1. MECHANICAL—A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY, BE LEFT LONGER THAN 6 INCHES.
   - 3.2. MULCH NETTING—NETTING SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.
   - 3.3. ASPHALT EMULSION—ASPHALT SHALL BE APPLIED AS RECOMMENDED BY THE MANUFACTURE OR AT THE RATE OF 160 GALLONS PER ACRE.
   - 3.4. SYNTHETIC BINDERS—SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR EQUIVALENT MAY BE USED AT RATES SPECIFIED BY THE MANUFACTURER.
   - 3.5. WOOD CELLULOSE FIBER—WOOD CELLULOSE FIBER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER WITH THE MIXTURE CONTAINING A MAXIMUM OF 50 POUNDS CELLULOSE PER 100 GALLONS OF WATER.

IRRIGATION:
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 RATES SHALL BE MONITORED TO PREVENT EROSION AND DAMAGE TO SEEDED AREAS FROM EXCESSIVE RUNOFF. CONTRACTOR SHALL MAINTAIN PERMANENT SEEDING FOR UP TO ONE YEAR FROM SUBSTANTIAL COMPLETION TO FIX, REPAIR, WATER, REFERTILIZE AND/OR RESEED GRASSED AREAS.

SEED MIX	SEEDING RATE		NOTES
	LBS/ACRE	LBS/1,000 SF	
GENERAL USE			
CREEPING RED FESCUE	20-40	½-1	FOR CLOSE MOWING AND FOR WATERWAYS WITH <2.0 FT/SEC VELOCITY
DOMESTIC RYEGRASS	10-20	¼-½	
KENTUCKY BLUEGRASS	20-40	½-1	
TALL FESCUE	40-50	1-1¼	
TURF-TYPE (DWARF) FESCUE	90	2¼	
STEEP BANKS OR CUT SLOPES			
TALL FESCUE	40-50	1-1¼	
CROWN VETCH	10-20	¼-½	DO NOT SEED LATER THAN AUGUST
TALL FESCUE	20-30	½-¾	
FLAT PEA	20-25	½-¾	DO NOT SEED LATER THAN AUGUST
TALL FESCUE	20-30	½-¾	
ROAD DITCHES AND SWALES			
TALL FESCUE	40-50	1-1¼	
TURF-TYPE (DWARF) FESCUE	90	2¼	
KENTUCKY BLUE GRASS	5	⅛	
LAWNS			
KENTUCKY BLUEGRASS	100-120	2	
PERENNIAL RYEGRASS		2	
KENTUCKY BLUEGRASS	100-120	2	FOR SHADED AREAS
CREEPING RED FESCUE		1-½	

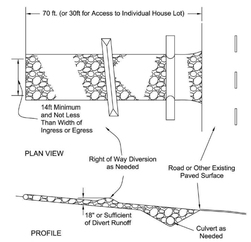
CONSTRUCTION ENTRANCE

DESCRIPTION

A CONSTRUCTION ENTRANCE IS A STABILIZED PAD OF STONE UNDERLAIN WITH GEOTEXTILE AND IS USED TO REDUCE THE AMOUNT OF MUD TRACKED OFF-SITE WITH CONSTRUCTION TRAFFIC. LOCATED AT POINTS OF INGRESS/EGRESS, THE PRACTICE IS USED TO REDUCE THE AMOUNT OF MUD TRACKED OFF-SITE WITH CONSTRUCTION TRAFFIC.

SPECIFICATIONS FOR CONSTRUCTION ENTRANCE

(Not To Scale)



A C10.1 CONSTRUCTION ENTRANCE N.T.S.

1. STONE SIZE - 1.5-2.5 INCH STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.

2. LENGTH- THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY30 FT. MINIMUM TO SINGLE RESIDENCE LOTS).

3. THICKNESS - THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.

4. WIDTH - THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.

5. GEOTEXTILE - A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA, PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:

FIGURE 7.4.1

GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE	
MINIMUM TENSILE STRENGTH	200 LBS.
MINIMUM PUNCTURE STRENGTH	80 PSI.
MINIMUM TEAR STRENGTH	50 LBS.
MINIMUM BURST STRENGTH	320 PSI.
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EOS < 0.6 MM.
PERMITTIVITY	1X10-3 CM/SEC.

6. TIMING - THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.

7. CULVERT - A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.

8. 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.

9. 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.

10. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.

11. REMOVAL - THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

PERMANENT STABILIZATION

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 STREAM OR A RIPARIAN SETBACK AREA 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.

TEMPORARY STABILIZATION

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREA WITHIN 50 FEET OF A STREAM OR A RIPARIAN SETBACK AREA AND NOT AT FINAL GRADE.	WITHIN 2 DAYS OF THE MOST RECENT DISTURBANCE IF THAT AREA WILL REMAIN IDLE FOR MORE THAN 14 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.	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA.
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER.	PRIOR TO NOVEMBER 1.

NOTE: WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. THESE TECHNIQUES MAY INCLUDE MULCHING OR EROSION MATTING.

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

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

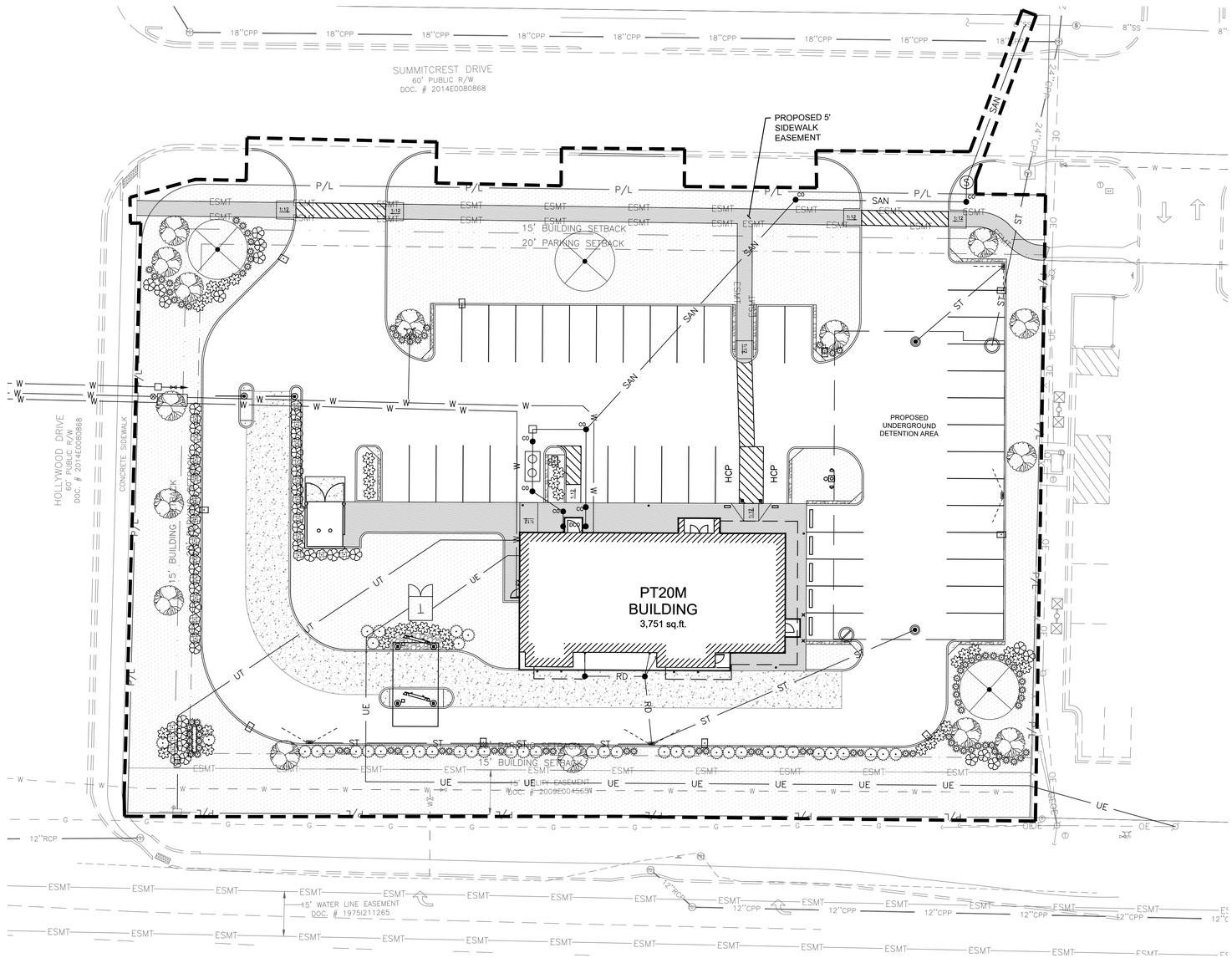
SHEET TITLE

SWPPP NOTES AND DETAILS

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

C-10.1



GENERAL NOTES:

A. ALL PLANT MATERIALS TO COMPLY WITH THE LATEST EDITION OF A.N.A. STANDARDS FOR NURSERY STOCK AND BE GUARANTEED UNTIL THE CERTIFICATE OF OCCUPANCY IS OBTAINED OR FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE, WHICHEVER IS GREATER. ANY PLANTINGS NEEDING REPLACEMENT WILL BE GUARANTEED FROM THE TIME OF REPLACEMENT IF AFTER FINAL ACCEPTANCE.

B. LANDSCAPE CONTRACTOR IS TO VERIFY LOCATION OF ALL UNDERGROUND UTILITIES AND RECEIVE APPROVAL FROM GENERAL CONTRACTOR OR SITE SUPERVISOR, IF NECESSARY, TO MAKE CHANGES IN PLANT LOCATIONS.

C. LANDSCAPE CONTRACTOR MUST COORDINATE WITH GENERAL CONTRACTOR AND OTHER SITE OPERATIONS.

D. MINOR ADJUSTMENTS TO THE PLANT LOCATIONS ARE TO BE MADE IN THE CASE OF ANY CONFLICTS WITH PROPOSED UTILITIES.

E. ALL PLANTING BEDS AND FREE STANDING TREES TO BE MULCHED WITH 4" OF SHREDDED HARDWOOD MULCH. BEDS ARE TO BE GRADED SMOOTH AND FREE OF SOIL CLODS AND STONES. ALL TREES TO BE STAKED AND WRAPPED WITH KRAFT TREE WRAP.

F. ALL PLANTS ARE TO BE REMOVED FROM CONTAINERS, CAGES AND NON-BIODEGRADABLE MATERIALS.

G. GENERAL CONTRACTOR IS RESPONSIBLE FOR FINISHED GRADES; LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR FINE GRADING AND TO PROVIDE 4" OF AMENDED TOPSOIL FOR PLANTING BEDS.

H. ALL ORGANIC MATTER AND DEBRIS ARE TO BE REMOVED FROM THE SITE BY THE LANDSCAPE CONTRACTOR. LAWN AREAS AND BEDS SHOULD BE FREE OF STONES GREATER THAN 2".

I. PLANT QUANTITIES HAVE BEEN PROVIDED FOR CONVENIENCE ONLY; THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR HIS OWN "TAKE OFFS". DRAWING PREVAILS OVER WRITTEN QUANTITIES.

J. THE LANDSCAPE CONTRACTOR SHALL SUBMIT A ONE (1) YEAR MAINTENANCE CONTRACT FOR CONSIDERATION BY THE OWNER. CONTRACT SHALL BE SEPARATE FROM INSTALLATION CONTRACT.

K. PLANTING BEDS SHALL BE TREATED WITH A PRE-EMERGENT HERBICIDE APPLIED AT PRODUCT SPECIFIED RATE UNLESS OTHERWISE NOTED.

L. PLANTING SHALL BE FERTILIZED UPON INSTALLATION. RECOMMENDED FERTILIZER SHALL BE MIXED WITH BACKFILL AT PRODUCT SPECIFIED RATE.

M. BED EDGE SHALL BE SMOOTH, CONSISTENT 4 1/2" DEEP AND HAND CUT, EDGES TO BE LOCATED BETWEEN ALL BEDS (INCLUDING TREES) AND LAWN AREAS.

N. CONTRACTOR TO SEED ALL DISTURBED AREAS WITH A LOCALLY ADAPTIVE SEED MIX UNLESS OTHERWISE DIRECTED BY THE GENERAL CONTRACTOR.

O. TOPSOIL SHALL BE BACK FILLED TO PROVIDE POSITIVE DRAINAGE OF ALL LANDSCAPE AREAS. SEE GRADING AND DRAINAGE PLAN SHEET C-5.0.

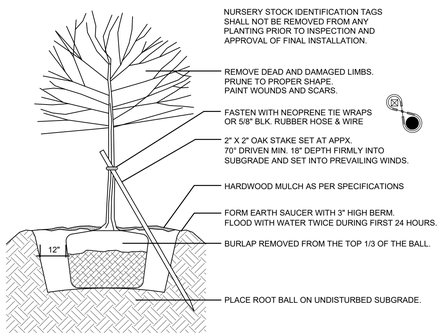
PROPOSED PLANT SCHEDULE

DECIDUOUS TREES	BOTANICAL NAME	COMMON NAME	QTY	CAL	CONT
AR	ACER RUBRUM	RED MAPLE	3	1.5"	B+B
AC	AMELANCHIER CANADENSIS	SERVICEBERRY	15	1.0"	B+B

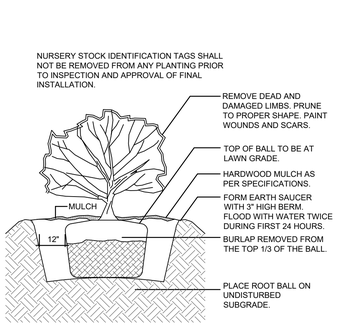
SHRUBS	BOTANICAL NAME	COMMON NAME	QTY	HEIGHT
CP	CHAMAECYPARIS PISIFERA 'GOLDEN MOP'	GOLD MOP CYPRESS	94	18" MIN.
WF	WEIGELA FLORIDA 'ALEXANDRA'	WINE AND ROSES WEIGELA	40	18"-24"
RI	RHAPHIOLEPIS INDICA 'MAJESTIC BEAUTY'	MAJESTIC BEAUTY INDIAN HAWTHORN	27	
HP	HYDRANGEA PANICULATA 'LITTLE LIME'	LITTLE LIME HYDRANGEA	35	
IV	ILEX VOMITORIA 'NANA'	DWARF YAUPON	41	

LEGEND

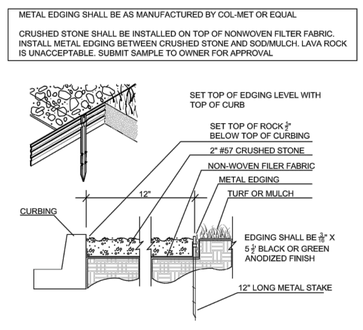
PROPOSED	DESCRIPTION
	GRASS/LANDSCAPED AREA TO BE IRRIGATED
	CONCRETE SIDEWALK
	HEAVY DUTY CONCRETE PAVEMEN
	ROCK AREA
	HEAVY DUTY ASPHALT PAVEMENT



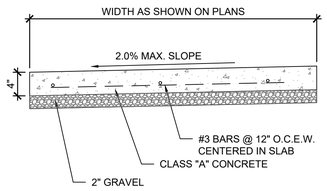
A DECIDUOUS TREE PLANTING DETAIL
L-1.0 N.T.S.



B SHRUB PLANTING DETAIL
L-1.0 N.T.S.



C GRANITE DETAIL
L-1.0 N.T.S.



NOTES:
1. CONCRETE FOR SIDEWALK SHALL BE 3,000 PSI MINIMUM.

2. CONCRETE NOSE SHALL BE DOWELED INTO ADJACENT CURB

D CONCRETE CURB NOSE DETAIL
L-1.0 N.T.S.

Know what's below. Call before you dig.

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

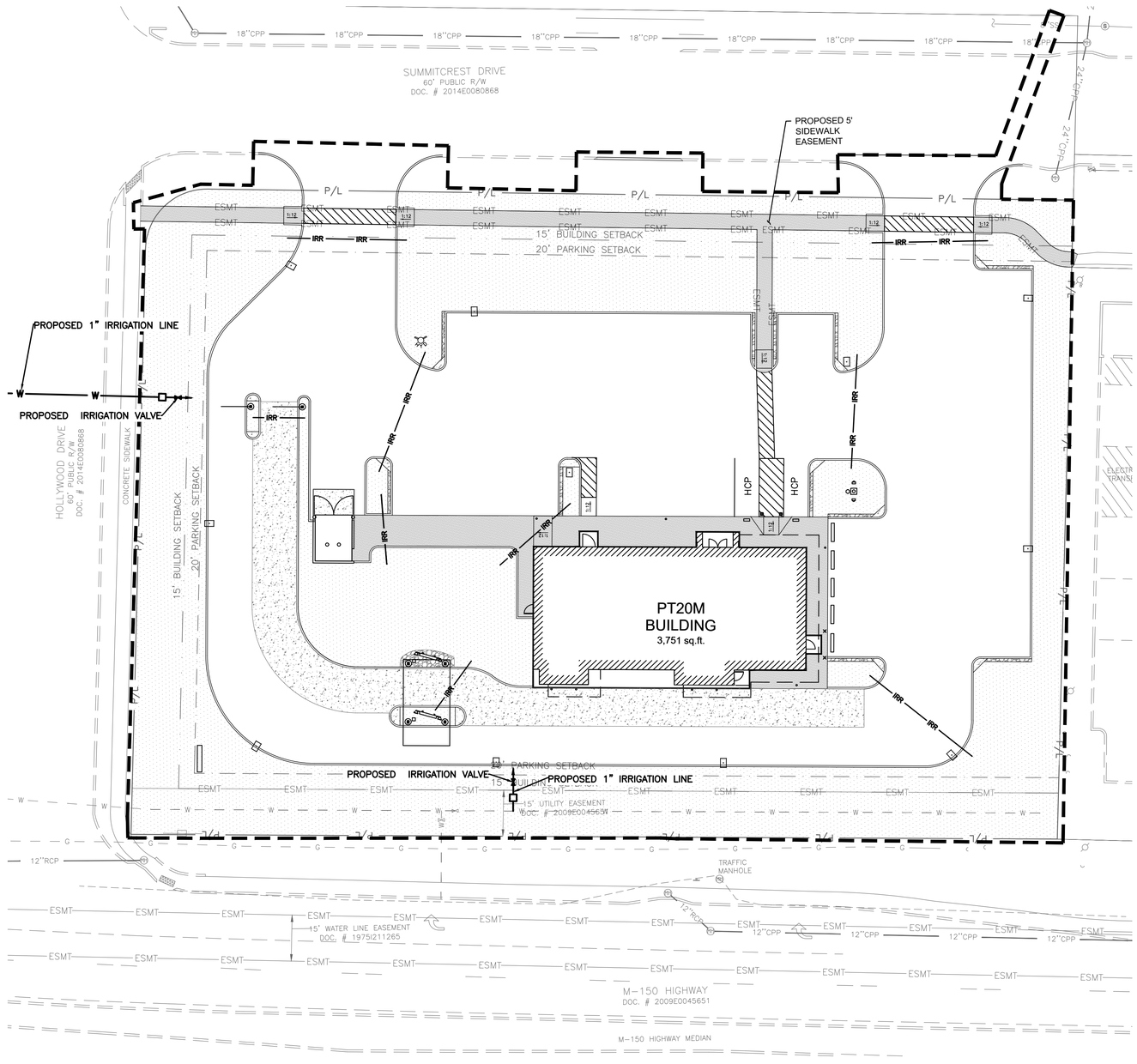
SHEET TITLE

LANDSCAPE PLAN

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

L-1.0



LEGEND

PROPOSED	DESCRIPTION
	GRASS/LANDSCAPED AREA TO BE IRRIGATED
	CONCRETE SIDEWALK
	HEAVY DUTY CONCRETE PAVEMENT

PROPOSED	DESCRIPTION
	ROCK AREA
	HEAVY DUTY ASPHALT PAVEMENT
IRR IRR	4" SCHEDULE 40 PVC SLEEVE FOR FUTURE IRRIGATION LINES. CONTRACTOR TO MARK END OF SLEEVES.

A. THE LANDSCAPE IRRIGATION SYSTEM SHALL IRRIGATE ALL PROPOSED LANDSCAPE AND GRASS AREAS ON THE PROPERTY. THE DESIGN, PERMITTING, AND INSTALLATION OF THE SYSTEM SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE/IRRIGATION CONTRACTOR (CONTRACTOR).

B. THE CONTRACTOR IS TO INSTALL EQUIPMENT NECESSARY TO PROVIDE A COMPLETE, FUNCTIONAL SYSTEM THAT IS IN COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS.

C. THE IRRIGATION CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE OWNER'S REPRESENTATIVE FOR APPROVAL, PRIOR TO CONSTRUCTION, WHICH WILL ILLUSTRATE TYPE OF HEADS, VALVES, CONTROLLER, PIPING AND ACCESSORIES. IRRIGATION HEADS, VALVES AND CONTROLLER ARE TO BE FROM A SINGLE MANUFACTURER. ALL EQUIPMENT MUST HAVE A MANUFACTURERS FIVE YEAR WARRANTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND FIELD ADJUSTMENT OF THE ABOVE ITEMS.

D. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE OWNER THE FINAL LOCATION OF THE CONTROL PANEL(S). NO ADDITIONAL COSTS SHALL BE ALLOWED FOR ANY ADJUSTMENTS MADE TO THE FINAL LOCATION OF ALL EQUIPMENT.

E. THE IRRIGATION CONTRACTOR SHALL SUBMIT A WARRANTY POLICY TO THE OWNER WHICH SHALL COVER THE FUNCTION OF THE ENTIRE SYSTEM FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE SYSTEM BY THE OWNER.

F. CONTRACTOR WILL VERIFY STATIC PRESSURE AND VOLUME OF SITE WATER SUPPLY AND ADJUST ENTIRE IRRIGATION SYSTEM ACCORDINGLY. EACH ZONE OF IRRIGATION SYSTEM IS TO BE DESIGNED WITH A MINIMUM OPERATING PRESSURE OF 45 PSI. IF THE PRESSURE IS BELOW 45 PSI, A PROPERLY SIZED BOOSTER PUMP WILL BE REQUIRED. AS PART OF THE SHOP DRAWINGS, THE IRRIGATION CONTRACTOR WILL PROVIDE CALCULATIONS SHOWING PRESSURE LOSS FROM THE POINT OF CONNECTION TO THE FURTHEST HEAD (AND FOR THE FURTHEST HEAD ON THE LARGEST ZONE). ADJUST DESIGN TO MEET AVAILABLE PRESSURES AND VOLUMES. A CURRENT STATIC PRESSURE READING AT THE POINT OF CONNECTION WAS NOT AVAILABLE PRIOR TO DESIGN.

G. THE CONTRACTOR IS TO INSTALL ALL EQUIPMENT SUCH THAT THE BUILDING, PARKING AREAS, AND SIDEWALKS ARE NOT SPRAYED OR SUBJECT TO EXCESSIVE RUNOFF. FIELD ADJUSTMENTS MAY BE NECESSARY TO AVOID UNFORESEEN OBSTACLES AND SIMPLIFY INSTALLATION. IRRIGATION SYSTEM ACCESSORIES SUCH AS QUICK COUPLER VALVES, ISOLATION VALVES, AND MANUAL DRAIN VALVES ARE TO BE LOCATED AS NECESSARY TO COMPLETE THE SYSTEM.

H. THE IRRIGATION CONTROLLER IS TO BE A HYBRID SOLID STATE TYPE WITH PLASTIC LOCKABLE CABINET. CONTROLLER MUST HAVE DUAL PROGRAMMING FOR TURF SPRAY ZONES AND SHRUB SPRAY ZONES AND BE CAPABLE OF OPERATING MULTIPLE VALVES PER STATION.

I. PROVIDE DESIGNATED PVC SLEEVES FOR IRRIGATION PIPES AND WIRING THAT CROSSES UNDER WALKS, STREETS AND CONCRETE PADS. COMBINE PIPING WHENEVER POSSIBLE TO REDUCE QUANTITY OF SLEEVING MATERIALS. WHEN INSTALLING IRRIGATION PIPE ALONG CURBS OR IN ISLANDS, PLACE PIPE AS CLOSE TO CURB AS POSSIBLE TO ALLOW FOR PLANTING OF FUTURE TREES AND SHRUBS.

PART 1 GENERAL

1.1 REFERENCES

A. ASTM INTERNATIONAL:
1. ASTM B32 - STANDARD SPECIFICATION FOR SOLDER METAL.
2. ASTM B42 - STANDARD SPECIFICATION FOR SEAMLESS COPPER PIPE, STANDARD SIZES.
3. ASTM B88 - STANDARD SPECIFICATION FOR SEAMLESS COPPER WATER TUBE.
4. ASTM D2235 - STANDARD SPECIFICATION FOR SOLVENT CEMENT FOR ACRYLONITRILE-BUTADIENE-STYRENE (ABS) PLASTIC PIPE AND FITTINGS.
5. ASTM D2241 - STANDARD SPECIFICATION FOR POLYETHYLENE (PE) PLASTIC PIPE (SIDR-PR) BASED ON CONTROLLED INSIDE DIAMETER.
6. ASTM D2564 - STANDARD SPECIFICATION FOR SOLVENT CEMENTS FOR POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPING SYSTEMS.

B. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION:
1. NEMA 250 - ENCLOSURES FOR ELECTRICAL EQUIPMENT (1000 VOLTS MAXIMUM).

1.2 SYSTEM DESCRIPTION

C. HYBRID SOLID STATE CONTROLLED UNDERGROUND IRRIGATION SYSTEM, WITH PRESSURE BLOW-OUT DRAIN.

D. SOURCE POWER: 120 VOLT.

1.3 SUBMITTALS

A. SHOP DRAWINGS: INDICATE PIPING LAYOUT TO WATER SOURCE, LOCATION OF SLEEVES UNDER PAVEMENT, LOCATION AND COVERAGE OF SPRINKLER HEADS, COMPONENTS, PLANT AND LANDSCAPING FEATURES, SITE STRUCTURES, SCHEDULE OF OUTLETS AND FITTINGS TO BE USED.

B. PRODUCT DATA: SUBMIT COMPONENT AND CONTROL SYSTEM AND WIRING DIAGRAMS.

1.4 CLOSEOUT SUBMITTALS

A. PROJECT RECORD DOCUMENTS: RECORD ACTUAL LOCATIONS OF CONCEALED COMPONENTS BY NORTHING AND EASTING.

B. OPERATION AND MAINTENANCE DATA TO OWNER:
1. SUBMIT INSTRUCTIONS FOR OPERATION AND MAINTENANCE OF SYSTEM AND CONTROLS, SEASONAL ACTIVATION AND SHUTDOWN, AND MANUFACTURER'S PARTS CATALOG.
2. SUBMIT SCHEDULE INDICATING LENGTH OF TIME EACH VALVE IS REQUIRED TO BE OPEN TO DELIVER DETERMINED AMOUNT OF WATER.

1.5 QUALITY ASSURANCE

A. PERFORM WORK IN ACCORDANCE WITH MANUFACTURER'S STANDARDS.

1.6 COORDINATION

A. COORDINATE THE WORK WITH SITE BACKFILLING, PAVING, LANDSCAPE GRADING AND DELIVERY OF PLANT LIFE.

PART 2 PRODUCTS

2.1 PIPE MATERIALS

A. PVC PIPE: ASTM D2241, SDR 26; 160 PSI SOLVENT WELDED SOCKETS.

B. HDPE PIPE: ASTM D-2239, SDR-15, 100 PSI.

C. COPPER TUBING: ASTM B88 TYPE K.

D. FITTINGS: TYPE AND STYLE OF CONNECTION TO MATCH PIPE.

E. SOLVENT CEMENT: [ASTM D2564 FOR PVC PIPE AND FITTINGS] [ASTM D2235 FOR ABS PIPE AND FITTINGS].

F. SLEEVE MATERIAL: PVC SCH 40.

2.2 OUTLETS

A. OUTLETS: BRASS CONSTRUCTION.

B. ROTARY TYPE SPRINKLER HEAD: POP-UP TYPE WITH SCREENS; FULLY ADJUSTABLE FOR FLOW AND PRESSURE; WITH LETTER OR SYMBOL DESIGNATING DEGREE OF ARC AND ARROW INDICATING CENTER OF SPRAY PATTERN.

C. SPRAY TYPE SPRINKLER HEAD: POP-UP HEAD WITH FULL CIRCLE PATTERN.

D. QUICK COUPLER: GALVANIZED.

2.3 MANUAL VALVES

A. VALVES: HIGHLY CORROSION RESISTANT CONSTRUCTION (BRASS, STAINLESS STEEL, ETC.). ALL VALVES SHALL BE ACCESSIBLE FROM ABOVE THROUGH A VALVE BOX.

B. BACKFLOW PREVENTERS: BRONZE BODY CONSTRUCTION, REDUCED PRESSURE TYPE OR AS DESIGNATED BY LOCAL PLUMBING CODE REQUIREMENTS.

C. VALVE BOX AND COVER: HDPE RESIN THAT IS RESISTANT TO UV LIGHT, CORROSION, MOISTURE, AND CHEMICALS.

2.4 CONTROLS AND CONTROL VALVES

A. CONTROLLER: MUST WORK WITH MANUFACTURER FLOW SENSOR, RAIN SENSOR, AND

****** [OR] ******

B. CONTROLLER: AUTOMATIC CONTROLLER, MICROPROCESSOR SOLID STATE CONTROL WITH VISIBLE READOUT DISPLAY, TEMPORARY OVERRIDE FEATURE TO BYPASS CYCLE FOR INCLEMENT WEATHER, PROGRAMMABLE FOR 7 DAYS IN QUARTER HOUR INCREMENTS, WITH AUTOMATIC START AND SHUTDOWN.

C. CONTROLLER HOUSING: NEMA 250 TYPE 3R; WEATHERPROOF, WATERTIGHT, WITH LOCKABLE ACCESS DOOR.

D. VALVES: HYDRAULIC; NORMALLY CLOSED, INCLUDING REQUIRED FITTINGS AND ACCESSORIES.

E. WIRE CONDUCTORS: COPPER CONDUCTOR, DIRECT BURIAL TYPE.

F. RAIN SENSORS: PER SELECTED MANUFACTURER.

2.5 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. ELECTRICAL CHARACTERISTICS:
1. 120 VOLTS, SINGLE PHASE, 60 HZ.

B. DISCONNECT SWITCH: FACTORY MOUNT DISCONNECT SWITCH IN CONTROL PANEL.

PART 3 EXECUTION

3.1 EXAMINATION

A. VERIFY LOCATION OF EXISTING UTILITIES.

B. VERIFY REQUIRED UTILITIES ARE AVAILABLE, IN PROPER LOCATION, AND READY FOR USE.

3.2 PREPARATION

A. ROUTE PIPING TO AVOID PLANTS, GROUND COVER, AND STRUCTURES.

B. LAYOUT AND STAKE LOCATIONS OF SYSTEM COMPONENTS.

C. REVIEW LAYOUT REQUIREMENTS WITH OTHER AFFECTED WORK. COORDINATE LOCATIONS OF SLEEVES UNDER PAVING TO ACCOMMODATE SYSTEM.

3.3 TRENCHING

A. TRENCH SIZE:
1. MINIMUM COVER OVER INSTALLED SUPPLY PIPING: 18 INCHES.
2. MINIMUM COVER OVER INSTALLED BRANCH PIPING: 15 INCHES.

B. TRENCH TO ACCOMMODATE GRADE CHANGES AND SLOPE TO DRAIN(S).

C. MAINTAIN TRENCHES FREE OF DEBRIS, MATERIAL, OR OBSTRUCTIONS DAMAGING TO PIPE.

3.4 INSTALLATION

A. CONNECT TO UTILITIES.

B. SET OUTLETS AND BOX COVERS AT FINISH GRADE ELEVATIONS.

C. PROVIDE FOR THERMAL MOVEMENT OF COMPONENTS IN SYSTEM.

D. SLOPE PIPING FOR SELF DRAINAGE TO DAYLIGHT.

E. USE THREADED NIPPLES FOR RISERS TO EACH OUTLET.

F. INSTALL CONTROL WIRING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED INSTALLATION PRACTICES. PROVIDE 10 INCH EXPANSION COIL AT EACH CONTROL VALVE, AND AT 100 FT INTERVALS. BURY WIRE BESIDE PIPE. MARK VALVES WITH NEOPRENE VALVE MARKERS CONTAINING LOCKING DEVICE. SET VALVE MARKERS IN VALVE BOXES SET TO FINISH GRADE.

G. AFTER PIPING IS INSTALLED, BUT BEFORE OUTLETS ARE INSTALLED AND BACKFILLING COMMENCES, OPEN VALVES AND FLUSH SYSTEM WITH FULL HEAD OF WATER.

3.5 BACKFILLING

A. BACKFILL WITH COMPACTED BACKFILL IN ACCORDANCE WITH DETAIL A ON SHEET C-7.1.

B. INSTALL 3 INCH SAND BEDDING BELOW AND COVER OVER PIPING.

C. PROTECT PIPING FROM DISPLACEMENT.

3.6 FIELD QUALITY CONTROL

A. PRIOR TO BACKFILLING, TEST SYSTEM FOR LEAKAGE FOR WHOLE SYSTEM TO MAINTAIN 100 PSI PRESSURE FOR ONE HOUR.

B. SYSTEM IS ACCEPTABLE WHEN NO LEAKAGE OR LOSS OF PRESSURE OCCURS DURING TEST PERIOD.

C. PROVIDE ONE COMPLETE SPRING SEASON START-UP AND FALL SEASON SHUTDOWN.

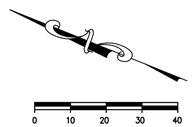
3.7 ADJUSTING

A. ADJUST CONTROL SYSTEM TO ACHIEVE TIME CYCLES REQUIRED

B. ADJUST HEAD TYPES FOR FULL WATER COVERAGE AS DIRECTED BY OWNER'S REPRESENTATIVE.

3.8 DEMONSTRATION AND TRAINING

A. INSTRUCT OWNER'S PERSONNEL IN OPERATION AND MAINTENANCE OF SYSTEM, INCLUDING ADJUSTING OF SPRINKLER HEADS. USE OPERATION AND MAINTENANCE MATERIAL AS BASIS FOR DEMONSTRATION.



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

REVISION/DATE/DESCRIPTION

SIR UPDATES	09/13/21
60% SET	01/24/22

WHATABURGER

ms consultants, inc.
engineers, architects, planners
2221 Schrock Road
Columbus, Ohio 43229-1547
phone 614.898.7100
fax 614.898.7570

PROJECT

PROPOSED PT20M BUILDING

NWQ HWY 150 & HOLLYWOOD ST.
LEE'S SUMMIT, MO 64082

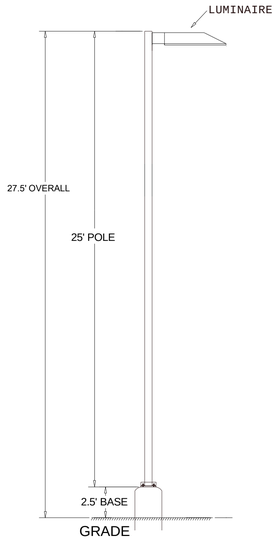
SHEET TITLE

IRRIGATION PLAN

DRAWN BY:	TDB
CHECKED BY:	PJK
PROJECT NO:	40497-21

DRAWING

I-1.0



POLE DETAIL
(NOT TO SCALE)

FOR PRICING CONTACT:
DOUG KILE 214-957-5304
OR dkile@techlight.com

Notes:
1. Calculation at grade.
2. Based on 27.5' AFG pole fixture height including 25' poles and 2.5' AFG bases.

File:
wb-lee-smt-market
Date:
2-24-22

SCALE
0 20 40 60

Luminaire Schedule						
Symbol	Qty	Label	Lumens/Lamp	Arrangement	LLF	Description
	2	S1-3	N.A.	SINGLE	0.900	CTL-N-35L-T3-35,000 LUMEN TYPE 3 LED
	9	S1-3S	N.A.	SINGLE	0.900	CTL-N-35L-T3-S215-30,000 LUMEN TYPE 3 LED W/BACK SHLD

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
SITE	Illuminance	Fc	2.24	8.1	0.0	N.A.	N.A.
PARKING AND DRIVE	Illuminance	Fc	5.39	8.1	1.9	2.84	4.26

Luminaire Location Summary			
LumNo	Label	Z-luminaire height	Tilt
1	S1-3	27.5	0
2	S1-3	27.5	0
3	S1-3S	27.5	0
4	S1-3S	27.5	0
5	S1-3S	27.5	0
6	S1-3S	27.5	0
7	S1-3S	27.5	0
8	S1-3S	27.5	0
9	S1-3S	27.5	0
10	S1-3S	27.5	0
11	S1-3S	27.5	0

TECHLIGHT INC.
- DUE TO CHANGING LIGHTING ORDINANCES IT IS THE CONTRACTORS RESPONSIBILITY TO SUBMIT THE SITE PHOTOMETRICS AND LUMINAIRE SPECS TO THE LOCAL INSPECTOR BEFORE ORDERING TO ENSURE THIS PLAN COMPLIES WITH LOCAL LIGHTING ORDINACES.
- THIS LIGHTING DESIGN IS BASED ON INFORMATION SUPPLIED BY OTHERS. CHANGES IN ELECTRICAL SUPPLY, AREA GEOMETRY AND OBJECTS WITHIN THE LIGHTED AREA MAY PRODUCE ILLUMINATION VALUES DIFFERENT FROM THE PREDICTED RESULTS SHOWN ON THIS LAYOUT.
- THIS LAYOUT IS BASED ON .IES FILES THAT WERE LAB TESTED OR COMPUTER GENERATED. ACTUAL RESULTS MAY VARY.

CUSTOMER APPROVAL

☐ Drawing is approved, proceed with production

☐ Drawing is not approved, make changes as noted

Customer Signature Date

REVISIONS: SYM DATE DESCRIPTION BY

PROJECT:
WHATABURGER
LEE'S SUMMIT, MO
MARKET PLACE

WHATABURGER
300 CONCORD PLAZA DR.
SAN ANTONIO, TEXAS
210-476-6000 ZIP 78216

SHEET TITLE:
Photometric Plan

UNIT NO.
DATE:
SCALE:
DRAWN BY:
APPROVED BY:

SHEET NO:
PH1.0
FILE:

WHATABURGER