LEE'S SUMMIT FIRE STATION NO. 4

5031 NORTHEAST LAKEWOOD WAY

LEE'S SUMMIT, MISSOURI

PRELIMINARY DEVELOPMENT PLAN

CONSULTANT:

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1525 E. Douglas, Wichita, KS 67211
Tel: (316) 265-9367
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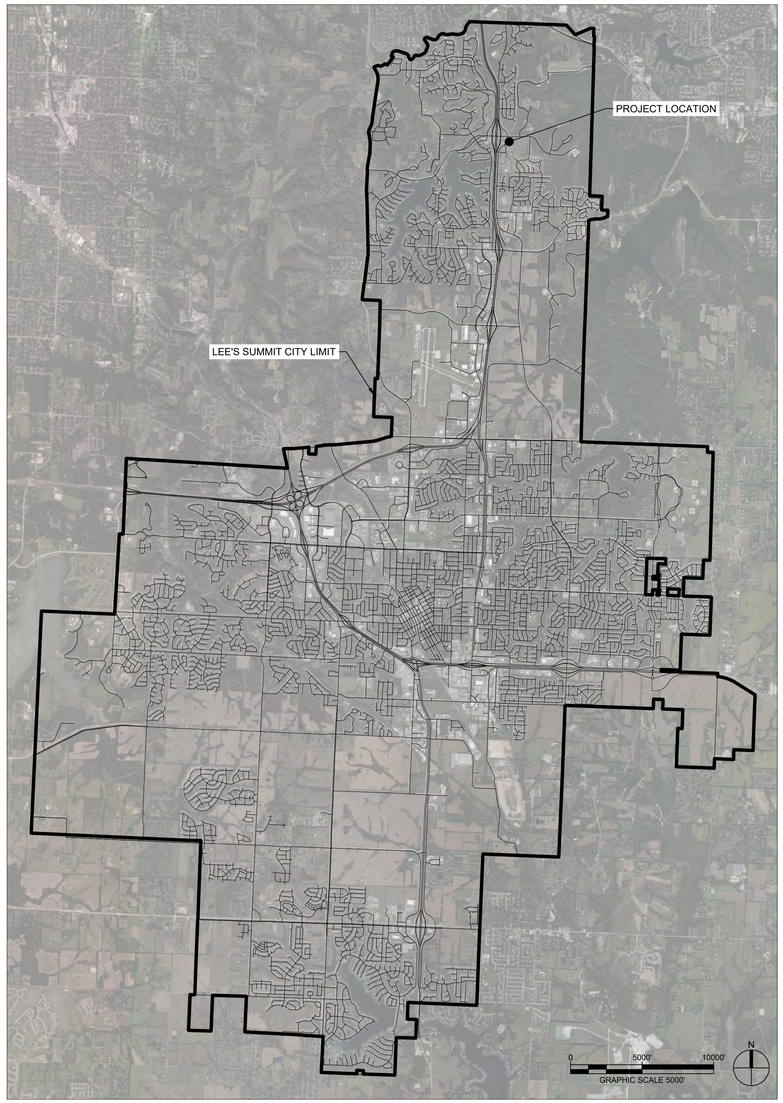
9229 WARD PKWY
KANSAS CITY, MISSOURI 64114
ANGIE MORGAN
angie.morgan@glmv.com
T (816) 444-4200

PARCEL INFORMATION:

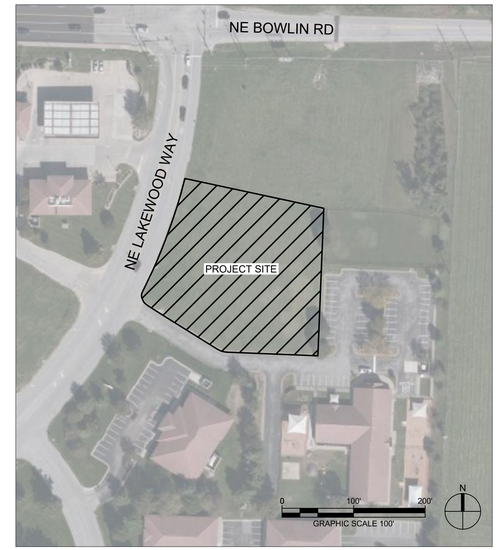
ACREAGE:	1.17
ADDRESS:	5031 NORTHEAST LAKEWOOD WAY LEE'S SUMMIT, MO 64064
LEGAL DESCRIPTION	ALL OF LOT 6-A, EXECUTIVE LAKES CENTER LOTS 6-A AND 8-B, A SUBDIVISION IN THE SE 1/4 OF SECTION 5- T 48 N - R 31 W, LEE'S SUMMIT, JACKSON COUNTY, MISSOURI
FEMA FLOODPLAIN	THE SUBJECT PROPERTY IS LOCATED IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) 29095C0313G, EFFECTIVE JANUARY 20, 2017.
ZONING	CP-2, PLANNED COMMUNITY COMMERCIAL

LAND USE SCHEDULE	
TOTAL FLOOR AREA	12,189 SF
NUMBER OF DWELLING UNITS	8
LAND AREA	1.17 ACRES
REQUIRED PARKING	DIRECTED BY FIRE CHIEF
PROPOSED PARKING	15 SPACES
IMPERVIOUS COVERAGE	32,464 SF (.75 ACRES)
FLOOR AREA RATIO (FAR)	0.24
PERMITTED LAND USE	FIRE STATION - MUNICIPAL = CONDITIONAL
DWELLING UNITS PER ACRE WITH COMMON AREA	6.84
DWELLING UNTIS PER ACRE WITHOUT COMMON AREA	6.84

VICINITY MAP



SITE LOCATION MAP



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C-103	EROSION CONTROL PLAN
C-104	GRADING & DRAINAGE PLAN
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C-503	SITE DETAILS
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L-100	LANDSCAPE SCHEDULE
L-101	LANDSCAPE PLAN
PDP-A1	EXTERIOR BUILDING ELEVATIONS

REFERENCES:

BOUNDARY AND TOPOGRAPHIC SURVEY: J&J SURVEY, LLC

REVISIONS:

#	Description	Date

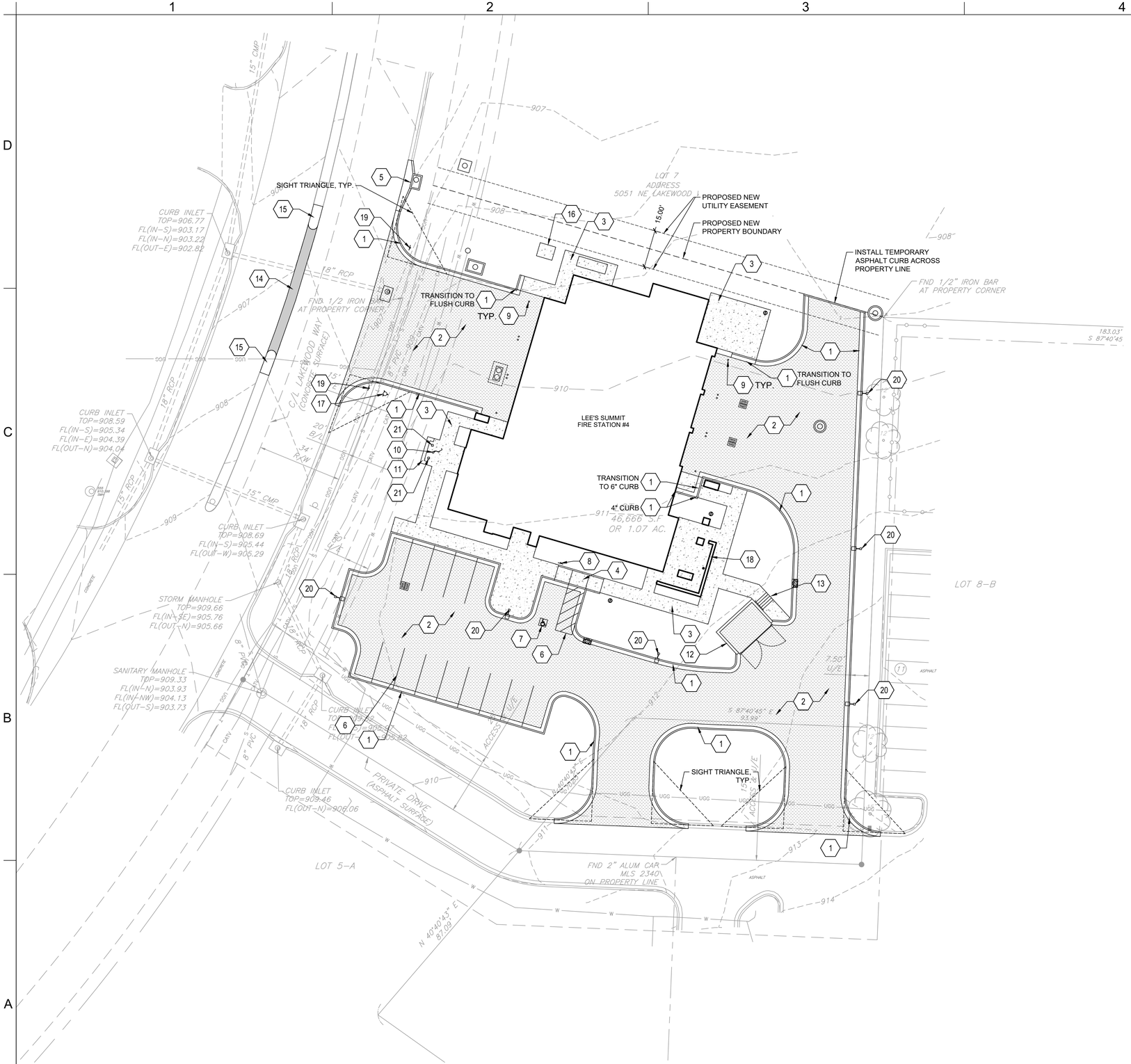
NOT FOR CONSTRUCTION

PROJECT NO: 18225R21001

DATE: 01.20.2022

COVER SHEET

C-001



SITE NOTES

1. PRIOR TO STARTING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.
3. CONTRACTOR SHALL CONTACT DIG SAFE PRIOR TO ANY EXCAVATION/DIGGING.
4. ALL EXISTING CONDITIONS, DIMENSIONS, AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IF ANY DISCREPANCIES EXIST, PRIOR TO PROCEEDING WITH CONSTRUCTION, FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
5. CONTRACTOR SHALL REPAIR ALL DISTURBED LANDSCAPING.
6. COORDINATE IRRIGATION SLEEVE INSTALLATION WITH THE PAVING CONTRACTOR.

KEYNOTES

1. TYP. CURB & GUTTER — LEE'S SUMMIT STANDARD DETAIL REF: 3/C502
2. TYP. CONCRETE PAVING REF: 1/C500
3. CONCRETE SIDEWALK PAVING REF: 2/C500
4. ADA SIDEWALK RAMP. REF: 4/C503
5. CURB INLET REF: 1/C530
6. PAVEMENT STRIPING REF: 5/C500
7. ADA PAVEMENT MARKING REF: 6/C500
8. ADA PARKING SIGN REF: 7/C500
9. TYP. SAFETY BOLLARD REF: 4/C500
10. FLAG POLE REF: 9/C500
11. MONUMENT SIGN REF: 10/C500
12. DUMPSTER ENCLOSURE REF: 1/C501
13. CONCRETE STEPS WITH RAILING REF: 14/C500
14. ROADWAY ASPHALT PATCH — LEE'S SUMMIT STANDARD DETAIL REF: 2/C503
15. MEDIAN TRANSITION — LEE'S SUMMIT STANDARD DETAIL REF: 3/C503
16. TRANSFORMER CONCRETE PAD REF: MEP
17. RELOCATED FIRE HYDRANT REF: 5/C520
18. SCREEN WALL REF: ARCH
19. DO NOT ENTER SIGN REF: 8/C500
20. TYP. AREA LIGHTING REF: ELECTRICAL
21. TYP. FLAG POLE LIGHTING REF: ELECTRICAL

LEGEND

- TYP. CURB & GUTTER
- TYP. CONCRETE PAVING
- ASPHALT PATCH
- CONCRETE SIDEWALK

1 SITE PLAN

1" = 20'-0"

0 20' 40'
GRAPHIC SCALE 20'

N

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100% DESIGN DEVELOPMENT DRAWINGS

REVISIONS:

#	Description	Date

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ANGIE MORGAN - CIVIL ENGINEER
MO# PE-2018031541

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PROJECT NO:	18225R21001
DATE:	01.20.2022
DRAWN BY:	KDW
CHK'D BY:	ALM

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SITE PLAN

C-100

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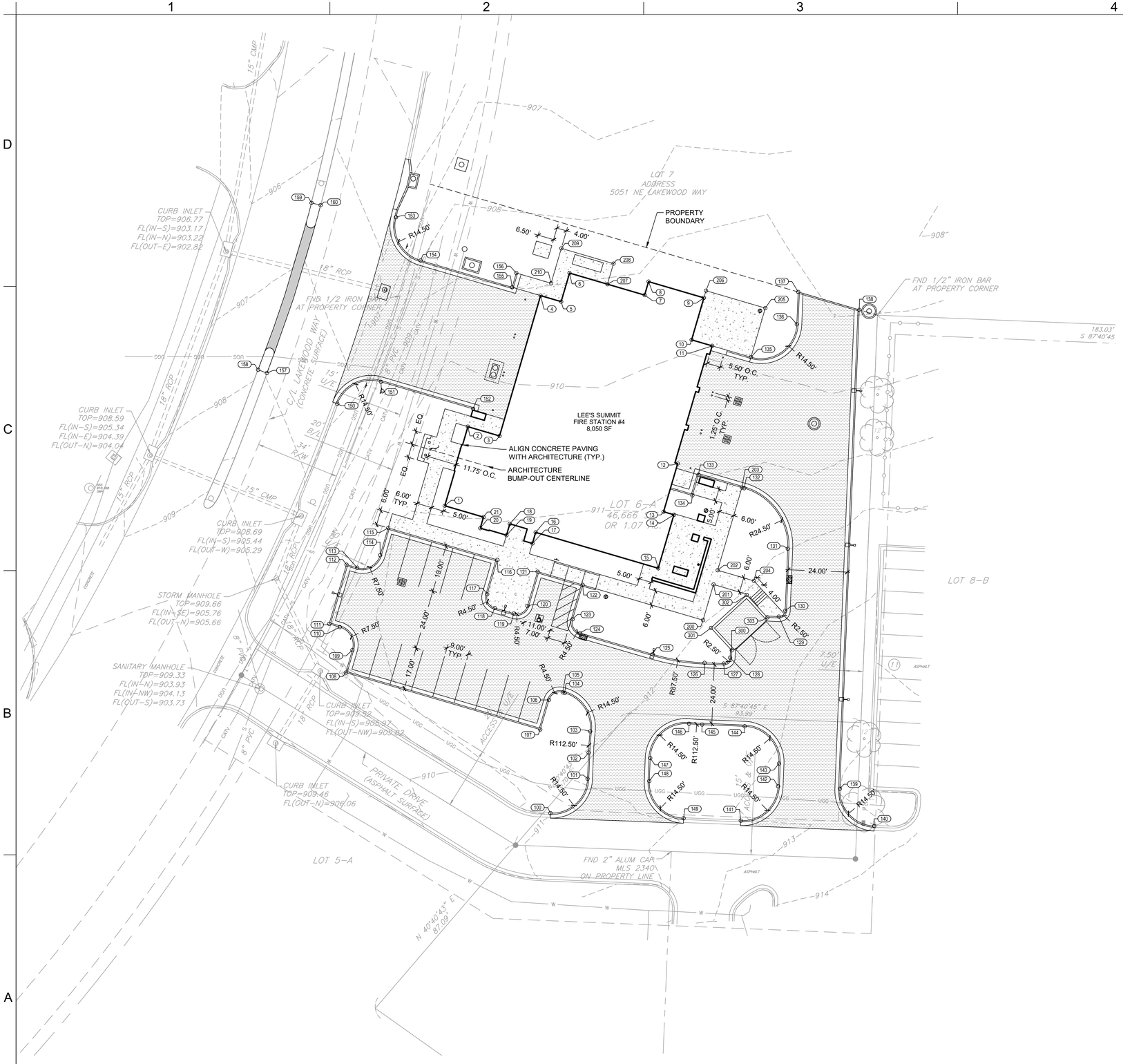

1 LAYOUT PLAN

1" = 20'-0"

GRAPHIC SCALE 20'

LAYOUT NOTES

1. ALL CURB POINTS INDICATE BACK OF CURB UNLESS OTHERWISE NOTED.
2. SEE UTILITY PLAN FOR ALL UTILITY LOCATIONS AND LAYOUT.

LAYOUT TABLE

POINT NO.	NORTHING	EASTING	DESCRIPTION
1	1032898.4666	2830193.3865	BLDG
2	1032930.4565	2830202.7537	BLDG
3	1032926.7096	2830215.5497	BLDG
4	1032983.4921	2830232.1764	BLDG
5	1032981.0566	2830240.4939	BLDG
6	1032992.6130	2830243.8778	BLDG
7	1032983.7142	2830274.2684	BLDG
8	1032989.1525	2830275.8608	BLDG
9	1032982.5955	2830298.2539	BLDG
10	1032965.6007	2830293.2776	BLDG
11	1032963.1653	2830301.5950	BLDG
12	1032915.5400	2830287.6496	BLDG
13	1032896.0460	2830281.9415	BLDG
14	1032894.8224	2830286.1203	BLDG
15	1032873.1752	2830279.7599	BLDG
16	1032887.6943	2830230.1753	BLDG
17	1032883.2157	2830228.8639	BLDG
18	1032891.1454	2830219.7239	BLDG
19	1032886.5468	2830218.3774	BLDG
20	1032889.3981	2830207.7504	BLDG
21	1032893.8767	2830209.0618	BLDG
100	1032774.0984	2830236.1407	CURB
101	1032788.0184	2830251.1687	CURB
102	1032798.6021	2830251.5850	CURB
103	1032807.1474	2830252.2480	CURB
104	1032822.7345	2830241.9193	CURB
105	1032822.9639	2830241.1359	CURB
106	1032819.9098	2830235.5527	CURB
107	1032807.9135	2830232.0400	CURB
108	1032830.9568	2830153.3443	CURB
109	1032840.0739	2830156.0140	CURB
110	1032849.3793	2830150.9238	CURB
111	1032850.6439	2830146.6052	CURB
112	1032874.6365	2830153.6305	CURB
113	1032873.3719	2830157.9492	CURB
114	1032878.4621	2830167.2546	CURB
115	1032889.4987	2830170.4863	CURB
116	1032876.5720	2830214.6326	CURB
117	1032862.6563	2830210.5579	CURB
118	1032857.0730	2830213.6120	CURB
119	1032854.8249	2830221.2896	CURB
120	1032857.8790	2830226.8728	CURB
121	1032871.7947	2830230.9476	CURB
122	1032866.4554	2830249.1819	CURB
123	1032852.5397	2830245.1072	CURB
124	1032846.9565	2830248.1613	CURB
125	1032838.3651	2830277.5021	CURB
126	1032834.9110	2830298.5431	CURB
127	1032834.5973	2830306.2742	CURB
128	1032836.9936	2830308.8735	CURB

LAYOUT TABLE

POINT NO.	NORTHING	EASTING	DESCRIPTION
129	1032853.6174	2830328.5631	CURB
130	1032856.0141	2830331.1625	CURB
131	1032881.0650	2830332.1775	CURB
132	1032905.5696	2830314.5825	CURB
133	1032910.9977	2830296.0450	CURB
134	1032902.6403	2830293.5978	CURB
135	1032958.5666	2830317.3002	CURB
136	1032971.8943	2830335.8630	CURB
137	1032984.9734	2830336.3938	CURB
138	1032977.7330	2830361.1205	CURB
139	1032783.9463	2830353.2567	CURB
140	1032768.8692	2830367.1848	CURB
141	1032771.0685	2830313.1866	CURB
142	1032784.9680	2830328.2776	CURB
143	1032794.1568	2830328.6505	CURB
144	1032809.2328	2830314.7503	CURB
145	1032809.9316	2830297.5294	CURB
146	1032810.2684	2830292.2719	CURB
147	1032796.3937	2830276.5175	CURB
148	1032787.0774	2830276.1510	CURB
149	1032772.0204	2830290.0301	CURB
150	1032939.7241	2830149.9055	CURB
151	1032948.6137	2830167.5813	CURB
152	1032937.6942	2830204.8730	CURB
153	1033015.1953	2830173.6316	CURB
154	1032997.7133	2830183.6113	CURB
155	1032986.8644	2830220.6601	CURB
156	1032992.6225	2830222.3462	CURB
157	1032952.1542	2830121.4178	CURB
158	1032953.4743	2830117.8512	CURB
159	1033021.0271	2830139.4536	CURB
160	1033020.0818	2830143.1406	CURB
200	1032852.1824	2830297.9260	PAVE
201	1032866.6182	2830302.1530	PAVE
202	1032872.3764	2830303.8391	PAVE
203	1032905.8457	2830313.6394	PAVE
204	1032868.0874	2830318.4867	PAVE
205	1032978.4404	2830323.1196	PAVE
206	1032985.4745	2830299.0969	PAVE
207	1032988.1163	2830259.2348	PAVE
208	1032996.4336	2830261.6702	PAVE
209	1033002.6160	2830240.5567	PAVE
210	1032988.5004	2830236.4235	PAVE
300	1032839.9703	2830309.4952	WALL
301	1032849.0374	2830301.1351	WALL
302	1032862.3710	2830315.5962	WALL
303	1032853.3039	2830323.9563	WALL

LEGEND

- TYP. CURB & GUTTER
- TYP. CONCRETE PAVING
- ASPHALT PATCH
- CONCRETE SIDEWALK

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DATE:	01.20.2022
DRAWN BY:	KDW
CHK'D BY:	ALM

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LAYOUT PLAN

C-101

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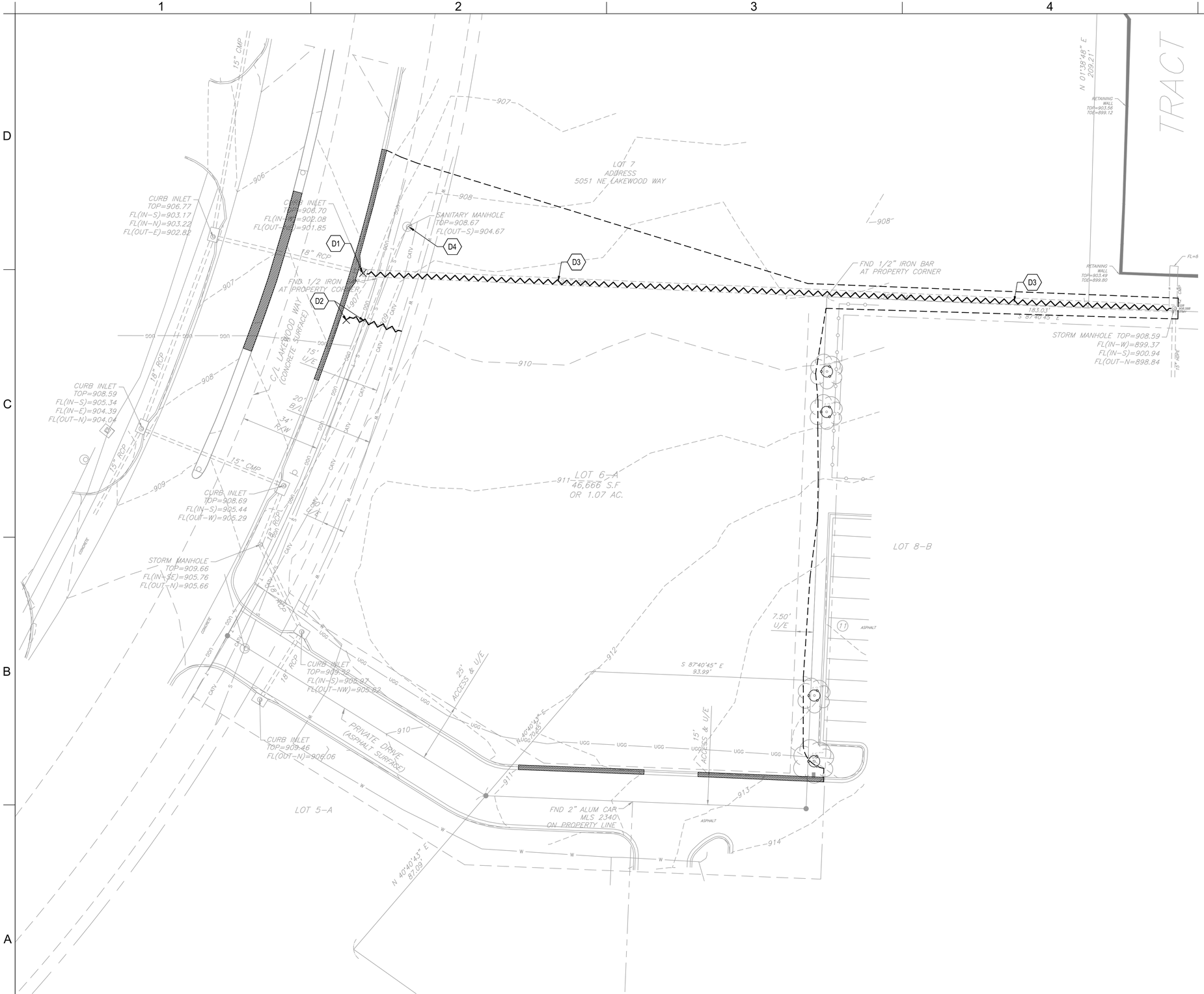

1 DEMOLITION PLAN

1" = 20'-0"

0 20' 40'
GRAPHIC SCALE 20'

N

DEMOLITION NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL (IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES) ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE, STRUCTURES, UTILITIES, UNDERGROUND STORAGE TANKS, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
3. THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
4. EXISTING PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK. UTILITIES DETERMINED TO BE ABANDONED AND LEFT IN PLACE SHALL BE GROUTED IF UNDER BUILDING.
5. ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY AS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN THE ANY ROAD RIGHT OF WAY DURING CONSTRUCTION.
6. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC., (AND OTHER APPROPRIATE BMP'S) AS APPROVED BY CONSTRUCTION MANAGER.
7. CONTINUOUS ACCESS SHALL BE MAINTAINED FOR THE SURROUNDING PROPERTIES AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES.
8. PRIOR TO ANY DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES MUST BE INSTALLED.
9. ALL DISTURBED FEATURES SHALL BE RESTORED OR RELOCATED AS REQUIRED TO THE SATISFACTION OF THE OWNER. CONTRACTOR SHALL REPAIR/REPLACE ANY SURROUNDING FEATURES DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE OWNER.
10. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
11. CONTRACTOR TO CLEAR SITE TO EXTENTS NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS.
12. CONTRACTOR SHALL REMOVE ALL TREES AND SHRUBS WITHIN PROPERTY BOUNDARY LIMITS NOT INDICATED AS PROTECTED OR TO REMAIN.

KEYNOTES

- D1 REMOVE CURB INLET. CONVERT TO JUNCTION BOX
  REF: C-104 - GRADING & DRAINAGE PLAN
- D2 RELOCATE FIRE HYDRANT.
  REF: C-105 - UTILITY PLAN
- D3 REMOVE AND RELOCATE STORMWATER PIPE
  REF: C-104 - GRADING & DRAINAGE PLAN
- D4 REMOVE MANHOLE FOR SANITARY SEWER LINE EXTENSION FOR LOT 7
  REF: C-105 - UTILITY PLAN

LEGEND

- PAVEMENT TO BE REMOVED
- TREE TO BE PROTECTED
- SITE FEATURE TO BE REMOVED
- APPROXIMATE LIMITS OF DEMOLITION

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CHK'D BY:	ALM

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DEMOLITION PLAN

C-102

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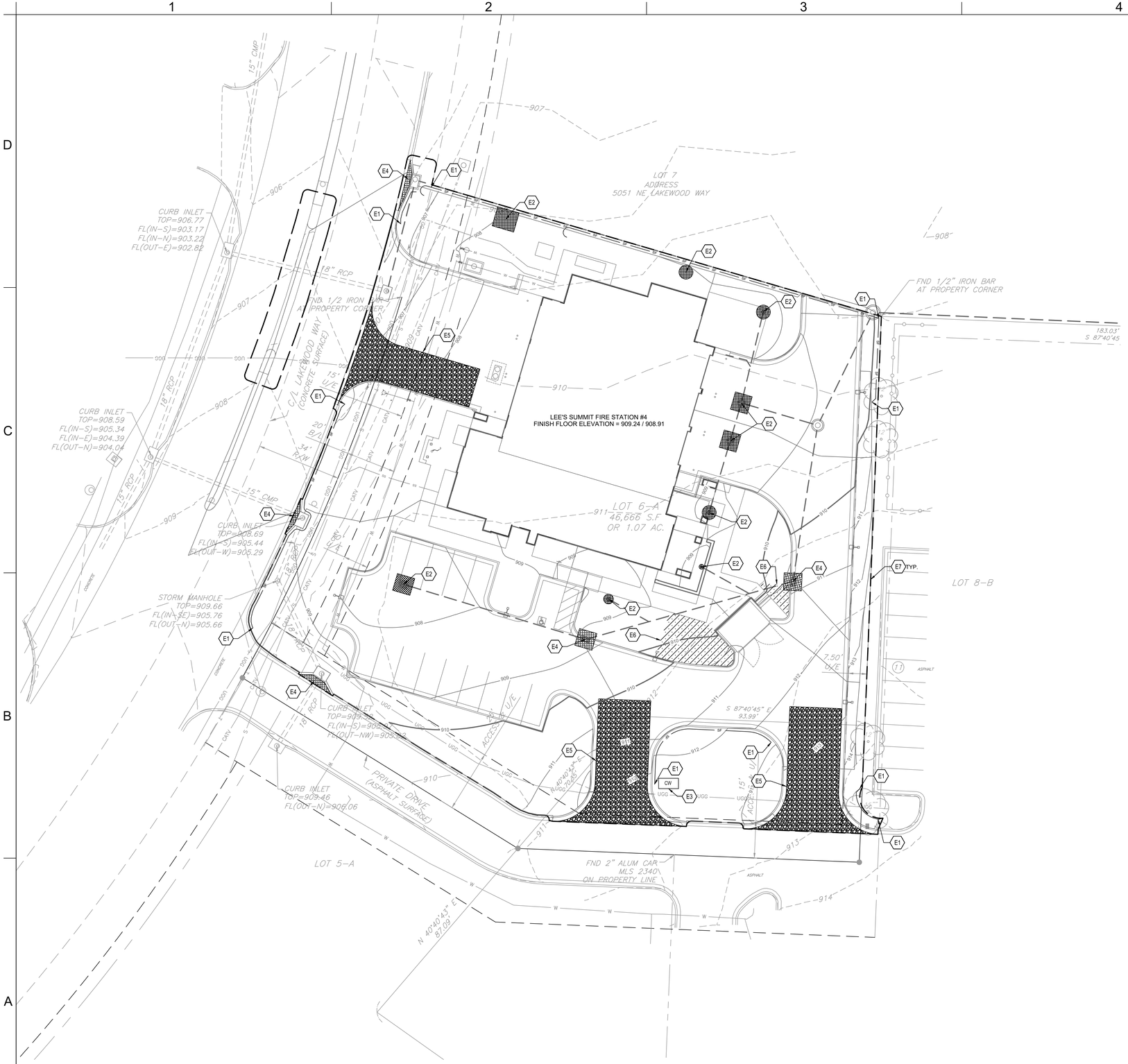

1 EROSION CONTROL PLAN

1" = 20'-0"

0 20' 40'
GRAPHIC SCALE 20'

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GENERAL EROSION AND SEDIMENT CONTROL NOTES:

THIS SHEET OUTLINES MINIMUM STORMWATER PRACTICES TO BE FOLLOWED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR PREVENTION OF SOIL OR SEDIMENT LOSS FROM THE CONSTRUCTION SITE. THE CONTRACTOR SHALL SUBMIT A SITE-SPECIFIC SEDIMENT AND EROSION CONTROL SCHEDULE. THESE NOTES ARE TO BE USED AS A GUIDELINE ONLY. THE PROJECT IS NOT CONSIDERED COMPLETE UNTIL ALL PERMANENT EROSION AND SEDIMENT CONTROLS AND STORMWATER MANAGEMENT PRACTICES ARE IN PLACE TO THE SATISFACTION OF THE OWNER AND ENGINEER. ALL TEMPORARY PRACTICES MUST BE PROPERLY REMOVED.

IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS PURSUANT TO THE GENERAL NPDES PERMIT FOR CONSTRUCTION STORMWATER, A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN DEVELOPED FOR THIS SITE. THE PLAN WAS DEVELOPED TO MINIMIZE THE EFFECTS OF SOIL EROSION AND RESULTING SEDIMENT LOSS. PREVENTION WILL BE PROVIDED THROUGH THE USE OF PROPER CONSTRUCTION TECHNIQUES. THESE TECHNIQUES WILL INCLUDE BOTH TEMPORARY AND PERMANENT MANAGEMENT PRACTICES. TO PREVENT EROSION AND SEDIMENT FROM LEAVING THE CONSTRUCTION SITE THE FOLLOWING STEPS SHALL BE TAKEN DURING CONSTRUCTION:

1. PRIOR TO STARTING ANY SOIL DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES AND GRAVEL CONSTRUCTION ENTRANCES.
2. THE RECOMMENDED SEQUENCE OF CONSTRUCTION ACTIVITIES AND OF THE INSTALLATION AND REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES IS AS FOLLOWS:
   2.1. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCES
   2.2. INSTALL TEMPORARY PERIMETER SILT FENCE
   2.3. INSTALL TEMPORARY EXISTING CURB INLET PROTECTION
   2.4. CONSTRUCT SITE IMPROVEMENTS
   2.5. INSTALL PROTECTION FOR NEWLY INSTALLED CURB INLETS, AREA INLETS, AND JUNCTION BOXES
   2.6. INSTALL EROSION AND SEDIMENT CONTROL BLANKETS
   2.7. SEED, FERTILIZE, AND MULCH ALL SLOPES AND DISTURBED AREAS
   2.8. REMOVE TEMPORARY PRACTICES, PERIMETER CONTROLS, AND SITE CLEANUP.
3. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE KANSAS CITY METRO CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION. INSTALL SILT FENCE AT INDICATED LOCATIONS AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER TO CONTROL SOIL EROSION. SILT FENCE SHALL BE KEPT IN PLACE UNTIL THE PROJECT IS STABILIZED.
4. CONSTRUCTION ENTRANCE SHALL BE MAINTAINED BY THE CONTRACTOR IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS AND PAVED STREETS. THIS MAY INCLUDE PERIODIC TOP DRESSING WITH ADDITIONAL CRUSHED STONE AS CONDITIONS WARRANT. REPAIR OF ENTRANCE(S) AND CLEANING OF RIGHT-OF-WAYS AND PAVED STREETS THAT HAVE BEEN SOILED BY CONSTRUCTION ACTIVITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
5. DURING ALL SOIL DISTURBING ACTIVITIES, THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS USING ACCEPTED CONSTRUCTION METHODS TO MINIMIZE THE TIME OF EXPOSURE OF UNPROTECTED SOIL AND OTHER CONSTRUCTION MATERIALS TO RAINFALL. PARTICULAR CARE MUST BE EXERCISED WHEN DEALING WITH STOCKPILES OF TOPSOIL OR FILL MATERIALS AND WITH SOIL ON SLOPES.
6. SOIL STOCKPILED FOR MORE THAN 7 DAYS WILL HAVE SILT FENCE PLACED ON THE DOWNHILL SIDE TO TRAP SEDIMENT.
7. NO GROUND SHALL BE LEFT DISTURBED FOR MORE THAN 14 DAYS OF NON-ACTIVITY WITHOUT BEING TEMPORARILY MULCHED AND/OR SEEDED.
8. EROSION CONTROLS SHALL BE INSPECTED AND MAINTAINED BY THE CONTRACTOR NOT LESS THAN WEEKLY AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5 INCHES OR MORE. MAINTENANCE SHALL INCLUDE BUT NOT BE LIMITED TO SEDIMENT REMOVAL AND SILT FENCE REPAIR AND/OR REPLACEMENT.
9. WHENEVER DIRT, ROCK, OR OTHER MATERIALS ARE EXPORTED FOR PLACEMENT IN AREAS OFF THE PRIMARY CONSTRUCTION SITE, THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THAT ALL JURISDICTIONAL AUTHORITY REQUIREMENTS ARE MET. PRIOR TO THE REMOVAL OF ANY MATERIALS FROM THE SITE THE CONTRACTOR WILL FURNISH THE ENGINEER WITH A WRITTEN AGREEMENT, SIGNED BY EACH LANDOWNER WHO WILL RECEIVE EXPORTED MATERIALS, STATING THAT THE RECEIVING SITE WILL BE PROPERLY PERMITTED, WHEN REQUIRED.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS AND EXPENSES OF PROVIDING EROSION AND SEDIMENT CONTROL MEASURES.
11. CONTRACTOR SHALL KEEP A WRITTEN LOG OF WHEN CONSTRUCTION ACTIVITIES BEGIN, EROSION AND SEDIMENT CONTROLS ARE INSTALLED, INSPECTED, AND REPAIRED. COPIES OF LOG SHALL BE FURNISHED TO THE ENGINEER.
12. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED UPON STABILIZATION OF DISTURBED AREAS.

EROSION CONTROL KEYNOTES

- E1 SILT FENCE REF: C510
- E2 AREA INLET AND JUNCTION BOX PROTECTION REF: C511
- E3 CONCRETE WASHOUT REF: C510
- E4 CURB INLET PROTECTION REF: C510
- E5 CONSTRUCTION ENTRANCE REF: C510
- E6 TEMPORARY EROSION CONTROL BLANKET REF: C510
- E7 LIMITS OF DISTURBANCE

LEGEND

- LIMITS OF DISTURBANCE
- SF — SILT FENCE
- AREA INLET PROTECTION
- CW — CONCRETE WASHOUT
- CURB INLET PROTECTION
- CONSTRUCTION ENTRANCE
- TEMPORARY EROSION CONTROL BLANKET

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EROSION CONTROL PLAN

C-103

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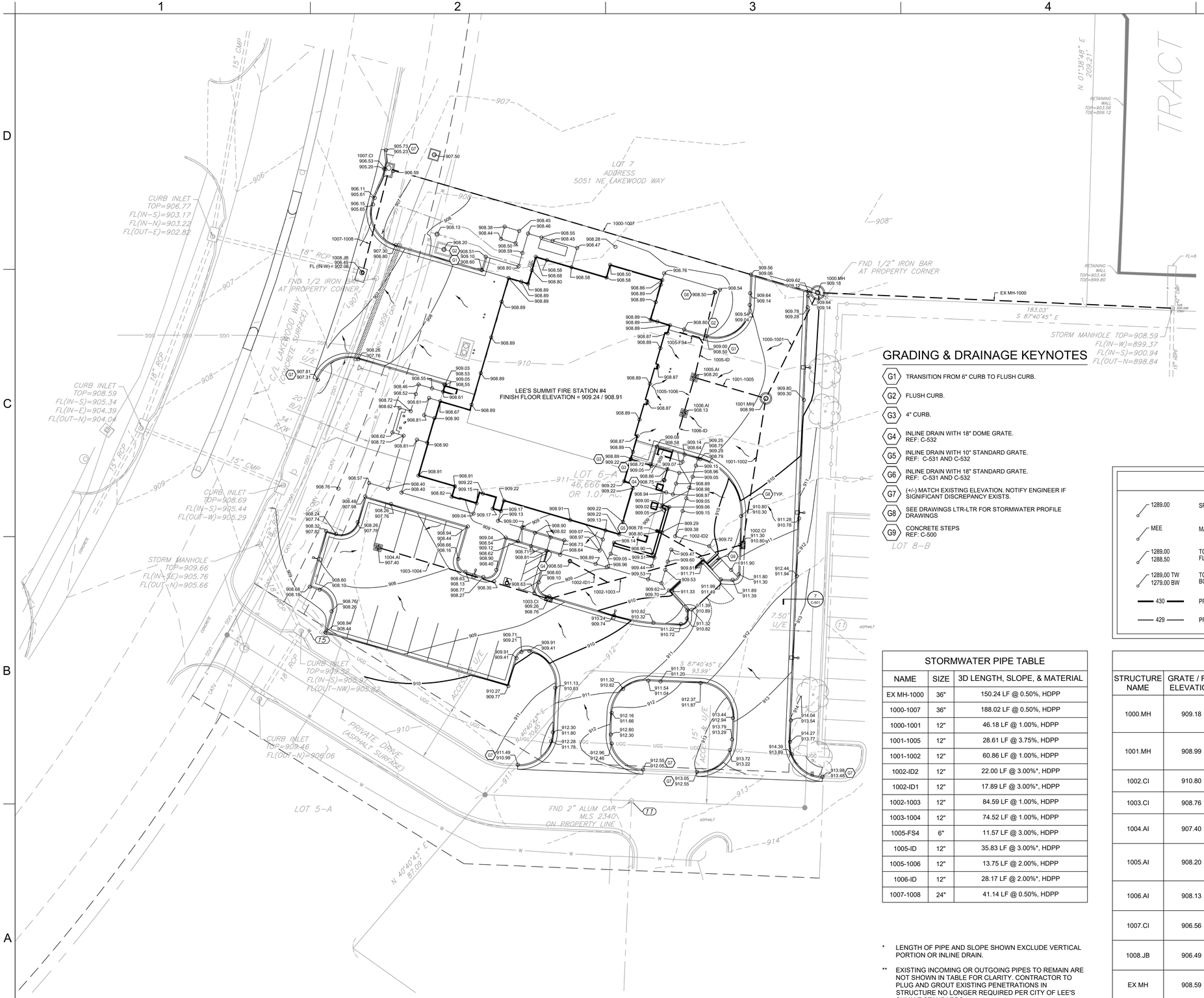

1 GRADING & DRAINAGE PLAN

1" = 20'-0"

GRADING & DRAINAGE KEYNOTES

- G1 TRANSITION FROM 6" CURB TO FLUSH CURB.
- G2 FLUSH CURB.
- G3 4" CURB.
- G4 INLINE DRAIN WITH 18" DOME GRATE. REF: C-532
- G5 INLINE DRAIN WITH 10" STANDARD GRATE. REF: C-531 AND C-532
- G6 INLINE DRAIN WITH 18" STANDARD GRATE. REF: C-531 AND C-532
- G7 (+/-) MATCH EXISTING ELEVATION. NOTIFY ENGINEER IF SIGNIFICANT DISCREPANCY EXISTS.
- G8 SEE DRAWINGS LTR-LTR FOR STORMWATER PROFILE DRAWINGS
- G9 CONCRETE STEPS REF: C-500

GENERAL GRADING & DRAINAGE NOTES:

1. CONTRACTOR SHALL OBTAIN A COPY OF THE GEOTECHNICAL REPORT BEFORE STARTING CONSTRUCTION.
2. ALL PROPOSED CONTOUR LINES AND SPOT ELEVATIONS SHOWN ARE FINISH GROUND ELEVATIONS. CONTRACTOR SHALL ACCOUNT FOR PAVEMENT DEPTHS, BUILDING PADS, TOPSOIL, ETC. WHEN GRADING THE SITE.
3. ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED (GREEN SPACES) SHALL BE FINISH GRADED WITH A MINIMUM OF SIX INCHES OF TOPSOIL.
4. ALL EXCAVATIONS AND EMBANKMENTS SHALL COMPLY WITH THE RECOMMENDATIONS PROVIDED BY THE GEOTECHNICAL ENGINEER.
5. FINISHED GRADES SHALL NOT BE STEEPER THAN 3:1, UNLESS NOTED OTHERWISE ON THE PLANS.
6. ALL SITE WORK FOR THIS PROJECT IS CONSIDERED "UNCLASSIFIED". THE TERM "UNCLASSIFIED" EXCAVATION SHALL BE DEFINED AS MEANING THE CONTRACTOR BEARS THE ENTIRE RISK OF THE SOIL QUANTITIES AND/OR TYPE (E.G. ROCK, CLAY, PEAT, SILT, SHALE, ETC.) ENCOUNTERED EITHER ABOVE OR BELOW PROPOSED SUBGRADES. IN THE EVENT IT BECOMES NECESSARY FOR UNSUITABLE SOIL TO BE HANDLED, REMOVED FROM THE SITE, OR FOR SUITABLE MATERIAL TO BE IMPORTED TO THE SITE, THE CONTRACTOR SHALL BEAR THE ENTIRE COST OF SUCH ADDITIONAL WORK. "UNSUITABLE" SOIL ALSO INCLUDES SATURATED SOILS THAT MAY NEED REPLACING AND/OR TREATING IN ORDER TO MEET SCHEDULE DATES. THIS DEFINITION OF "UNCLASSIFIED" SUPERCEDES ANY CONTRARY DEFINITIONS OR STATEMENTS WHICH MAY BE CONTAINED IN SPECIFICATIONS, PLANS, OR OTHER DOCUMENTS.
7. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELEVATIONS OF CONNECTION POINTS AS SHOWN ON GRADING PLANS. NOTIFY ENGINEER IF DISCREPANCY EXISTS FOR DIRECTION.
8. ALL GRADES SHALL BE CONTOURED SMOOTHLY WITH GENTLE ROUNDING/SHAPING OF ALL AFFECTED LAND SURFACES. ABRUPT TRANSITIONS AT THE TOP OF SLOPES WHERE PROPOSED GRADES MEET EXISTING ARE NOT ACCEPTABLE. GRADING SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO THE ADDITION OF THE TOPSOIL LAYER.

ADA NOTES

1. ANY AND ALL NEW SITE "ADA" FEATURES SHALL BE BUILT IN COMPLIANCE TO CURRENT FEDERAL, STATE, AND LOCAL ACCESSIBILITY RULES AND REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO KNOW AND UNDERSTAND ALL CURRENT ACCESSIBILITY REGULATIONS AS THEY PERTAIN TO THE CONSTRUCTION OF ACCESSIBLE SITE FEATURES.
2. ALL NEW CONCRETE SIDEWALK PAVEMENT SHALL BE INSTALLED WITH A MAXIMUM 5% RUNNING SLOPE AND A MAXIMUM 2% CROSS SLOPE.
3. SURFACES OF ALL NEW CONCRETE PAVEMENT PATHWAYS SHALL BE SMOOTH AND EVEN WITH NO ABRUPT CHANGES IN ELEVATION OF 1/4" OR GREATER AS REQUIRED BY THE ACCESSIBILITY DESIGN REGULATIONS.

LEGEND

1289.00	SPOT ELEVATION	430	EXISTING CONTOUR
MEE	MATCH EXISTING ELEVATION		FLOWLINE ARROW
1289.00 / 1288.50	TOP OF CURB ELEVATION / FLOWLINE ELEVATION		PROPOSED STORM SEWER
1289.00 TW / 1279.00 BW	TOP OF RETAINING WALL / BOTTOM OF RETAINING WALL		PROPOSED CURB INLET
430	PROPOSED MAJOR CONTOUR		PROPOSED STORMWATER MANHOLE
429	PROPOSED MINOR CONTOUR		PROPOSED AREA INLET

STORMWATER PIPE TABLE

NAME	SIZE	3D LENGTH, SLOPE, & MATERIAL
EX MH-1000	36"	150.24 LF @ 0.50%, HDPP
1000-1007	36"	188.02 LF @ 0.50%, HDPP
1000-1001	12"	46.18 LF @ 1.00%, HDPP
1001-1005	12"	28.61 LF @ 3.75%, HDPP
1001-1002	12"	60.86 LF @ 1.00%, HDPP
1002-ID2	12"	22.00 LF @ 3.00%*, HDPP
1002-ID1	12"	17.89 LF @ 3.00%*, HDPP
1002-1003	12"	84.59 LF @ 1.00%, HDPP
1003-1004	12"	74.52 LF @ 1.00%, HDPP
1005-FS4	6"	11.57 LF @ 3.00%, HDPP
1005-ID	12"	35.83 LF @ 3.00%*, HDPP
1005-1006	12"	13.75 LF @ 2.00%, HDPP
1006-ID	12"	28.17 LF @ 2.00%*, HDPP
1007-1008	24"	41.14 LF @ 0.50%, HDPP

* LENGTH OF PIPE AND SLOPE SHOWN EXCLUDE VERTICAL PORTION OR INLINE DRAIN.

** EXISTING INCOMING OR OUTGOING PIPES TO REMAIN ARE NOT SHOWN IN TABLE FOR CLARITY. CONTRACTOR TO PLUG AND GROUT EXISTING PENETRATIONS IN STRUCTURE NO LONGER REQUIRED PER CITY OF LEE'S SUMMIT STANDARDS.

STORMWATER STRUCTURE TABLE

STRUCTURE NAME	GRATE / RIM ELEVATION	PIPES IN	PIPES OUT	CL NORTHING & EASTING	NOTES
1000.MH	909.18	1000-1001, 12" INV IN =900.62 1000-1007, 36" INV IN =900.32	EX MH-1000, 36" INV OUT =900.12	N: 1032977.21 E: 2830365.11	STANDARD PRECAST MANHOLE REF: DETAIL 3/C-540
1001.MH	908.99	1001-1002, 12" INV IN =901.28 1001-1005, 12" INV IN =901.58	1000-1001, 12" INV OUT =901.08	N: 1032931.67 E: 2830342.87	STANDARD PRECAST MANHOLE REF: DETAIL 3/C-540
1002.CI	910.80	1002-1003, 12" INV IN =902.39	1001-1002, 12" INV OUT =901.89	N: 1032868.61 E: 2830332.81	2'x3' CURB INLET REF: DETAIL 2/C-532
1003.CI	908.76	1003-1004, 12" INV IN =903.74	1002-1003, 12" INV OUT =903.24	N: 1032845.41 E: 2830249.41	2'x3' CURB INLET REF: DETAIL 2/C-532
1004.AI	907.40		1003-1004, 12" INV OUT =904.49	N: 1032867.55 E: 2830176.04	STANDARD DOUBLE GRATE INLET REF: DETAIL 5/C-530
1005.AI	908.20	1005-1006, 12" INV IN =903.15 1005-ID, 12" INV IN =903.25	1001-1005, 12" INV OUT =902.65	N: 1032940.69 E: 2830312.07	STANDARD DOUBLE GRATE INLET REF: DETAIL 5/C-530
1006.AI	908.13	1006-ID, 12" INV IN =903.62	1005-1006, 12" INV OUT =903.42	N: 1032925.34 E: 2830307.57	STANDARD DOUBLE GRATE INLET REF: DETAIL 5/C-530
1007.CI	906.56	1007-1008, 24" INV IN =901.64	1000-1007, 36" INV OUT =901.26	N: 1033029.98 E: 2830180.60	STANDARD CURB INLET REF: DETAIL 1/C-530
1008.JB	906.49		1007-1008, 24" INV OUT =901.85	N: 1032984.96 E: 2830168.78	CONVERT CI TO JUNCTION BOX** REF: DETAIL 2/C-530
EX MH	908.59	EX MH-1000, 36" INV IN =899.37		N: 1032970.53 E: 2830516.95	EXISTING MANHOLE**

GRAPHIC SCALE 20' (0, 20', 40')

N

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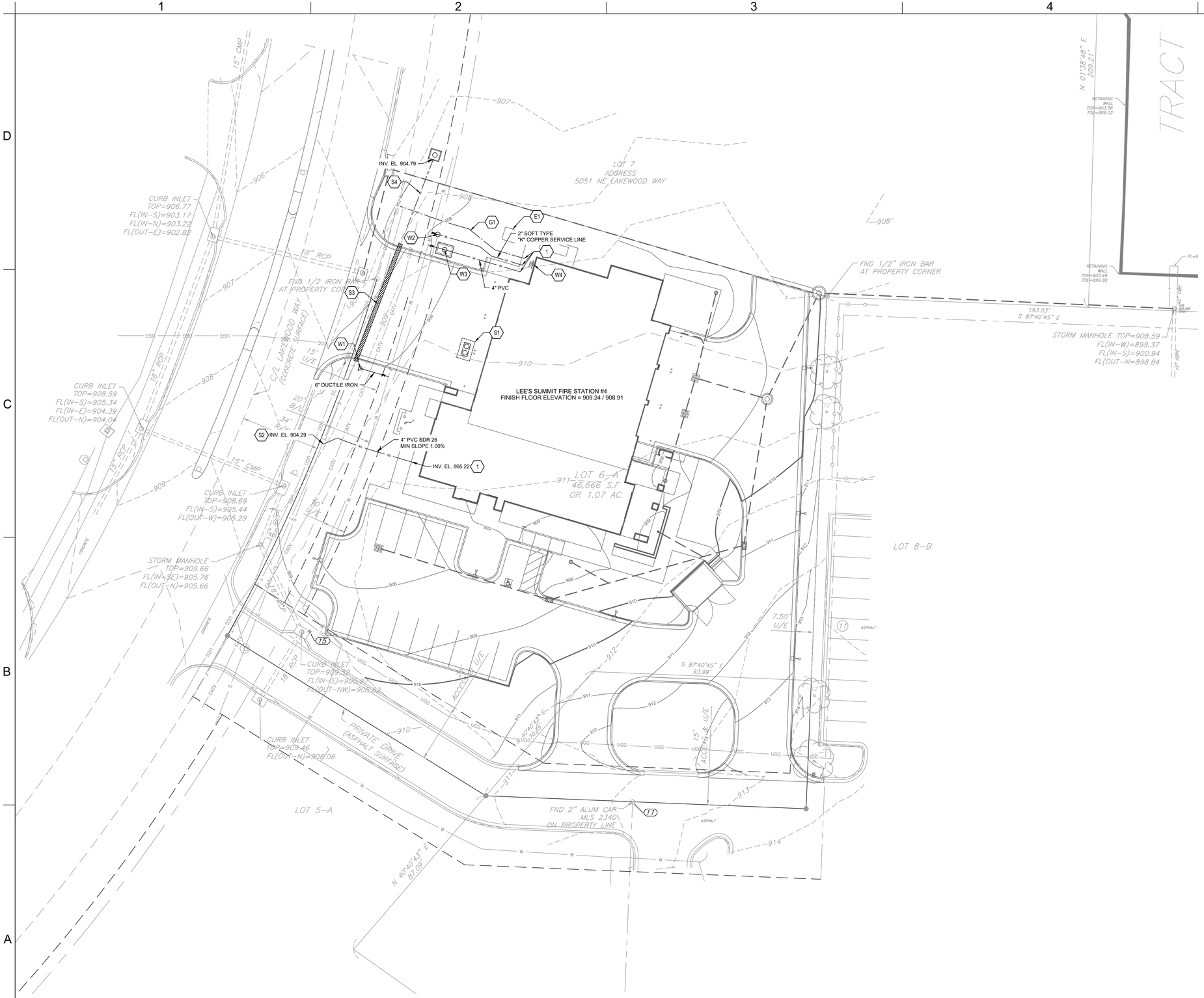
GRADING & DRAINAGE PLAN

C-104



1 UTILITY PLAN

1" = 20'-0"

0 20' 40'
GRAPHIC SCALE 20'

N

GENERAL UTILITY NOTES

UTILITY CONSTRUCTION SHALL COMPLY WITH THE STANDARD SPECIFICATIONS, CODES, AND DETAILS OF THE CITY OF LEE'S SUMMIT, MO AND UTILITY PROVIDERS.

1. INSTALLATION, BEDDING, & TESTING OF UTILITY INSTALLATIONS SHALL BE AS PER CITY OF LEE'S SUMMIT, MO STANDARD SPECIFICATIONS AND STANDARD SPECIAL PROVISIONS.
2. THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES FOR FIELD LOCATION OF ALL UNDERGROUND UTILITY LINES PRIOR TO ANY EXCAVATION AND FOR MAKING HIS OWN VERIFICATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERE TO.
3. PROTECT ALL COMPONENTS DURING DEMOLITION / CONSTRUCTION PROCESS. MAINTAIN BMP'S THROUGHOUT THE DURATION OF CONSTRUCTION.
4. STUB ALL CONNECTIONS TO WITHIN 5' OF THE BUILDING TO PROVIDE CONNECTION INTO THE BUILDING BY MECHANICAL PLUMBING CONTRACTOR.
5. CONTRACTOR TO PROVIDE DETAILED AS-BUILT DRAWINGS TO OWNER/ENGINEER UPON COMPLETION OF ALL UTILITIES.
8. UTILITY TRENCH BACKFILL SHALL BE PER GEOTECHNICAL REPORT.
9. UTILITY PIPE LENGTHS ARE PROVIDED FOR INFORMATION ONLY. CONTRACTOR TO VERIFY ACTUAL LENGTHS OF PIPE REQUIRED PRIOR TO BIDDING & INSTALLING UTILITIES.
10. UTILITY CONTRACTOR TO COORDINATE BUILDING CONNECTION POINTS WITH PLUMBING PLAN AND BUILDING CONTRACTOR.

GENERAL KEYNOTES

1 UTILITY INTERFACE POINT. SEE MEP PLANS FOR CONTINUATION.

ELECTRIC KEYNOTES

E1 ELECTRIC TRANSFORMER. UNDERGROUND ELECTRIC DESIGN AND ROUTING BY OTHERS.

GAS KEYNOTES

G1 GAS LINE DESIGN AND INSTALLATION PER SERVICE PROVIDER.

SANITARY SEWER KEYNOTES

S1 SAND / OIL INTERCEPTOR AND ASSOCIATED SANITARY PIPING DESIGN BY OTHERS.
REF: MECHANICAL

S2 TIE INTO EXISTING 8" SANITARY SEWER LINE.
REF: C-540

S3 CONCRETE ENCASE EXISTING 8" SANITARY SEWER LINE.
REF: C-540

S4 EXTEND EXISTING 8" SANITARY SEWER LINE TO LOT 7. REMOVE EXISTING MANHOLE AND INSTALL A CONNECTION SPLICE AT EXISTING MANHOLE TO BE REMOVED. INSTALL SHALLOW PRECAST SANITARY MANHOLE.
REF: C-102, C-340, AND C-540 (LTR)

DOMESTIC WATER AND FIRE KEYNOTES

W1 HYRANT - STRAIGHT SET
REF: C-520

W2 DOMESTIC WATER SERVICE CONNECTION WITH METER WELL
REF: C-521

W3 FIRE PROTECTION DOUBLE CHECK DETECTOR CHECK WITH VAULT
REF: C-521

W4 FIRE DEPARTMENT CONNECTION.

UTILITY LEGEND

UGE	PROPOSED UNDERGROUND ELECTRIC
FO	PROPOSED FIBER
G	PROPOSED GAS
SS	PROPOSED SANITARY SEWER
CO	PROPOSED SANITARY SEWER CLEANOUT
	PROPOSED STORM SEWER
	PROPOSED CURB INLET
	PROPOSED STORMWATER MANHOLE
	PROPOSED AREA INLET
W	PROPOSED WATER
	PROPOSED ISOLATION VALVE
	PROPOSED FIRE HYDRANT
FDC	PROPOSED FIRE DEPARTMENT CONNECTION

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UTILITY PLAN

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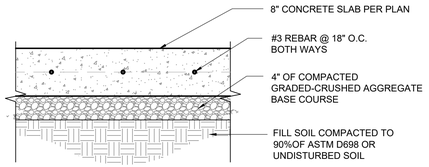
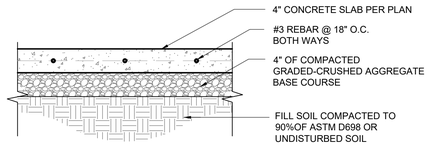


NOTES:

1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. KCMMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL CONCRETE PAVING.
3. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

1 TYP. CONCRETE PAVING

1" = 1'



NOTES:

1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
3. KCMMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS.
4. AN ISOLATION JOINT SHALL BE PLACED AT A MAXIMUM OF 100 FT. CONSTRUCTION JOINTS SHALL BE PLACED THE SAME WIDTH OF THE SIDEWALK, BUT NO GREATER THAN 10 FT.
5. AN ISOLATION JOINT SHALL BE PLACED WHERE THE SIDEWALK MEETS A DRIVEWAY.
6. SIDEWALK FINISHING SHALL BE FULL BROOM FINISH.
7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

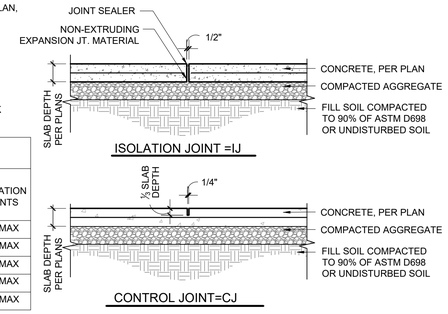
2 CONCRETE SIDEWALK PAVING

1" = 1'

DETAIL NOTES:

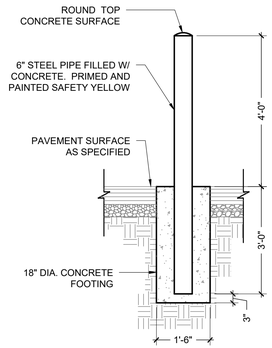
1. ALL CONCRETE AT SIDEWALKS IS NONSTRUCTURAL.
2. JOINTS TO BE LOCATED WHERE SHOWN ON PLAN, OR TO MATCH EXISTING JOINTS WHERE INDICATED. CONTRACTION JOINT LOCATIONS SHALL MEET REQUIREMENTS WITHIN THE CONCRETE WALK JOINT SPACING CHART.
3. CONSTRUCT 1/2" EXPANSION JOINTS WHERE SHOWN ON PLAN AND AT STRUCTURES. EXPANSION JOINT LOCATIONS SHALL MEET REQUIREMENTS WITHIN THE CONCRETE WALK JOINT SPACING CHART

CONCRETE SIDEWALK JOINT SPACING			
CONTROL JOINTS			ISOLATION JOINTS
WIDTH	TRANSVERSE	LONGITUDINAL	
4'	4'	NOT REQ'D	40' MAX
6'	6'	NOT REQ'D	42' MAX
8'	4'	4'	40' MAX
10'	5'	5'	40' MAX
12'	6'	6'	42' MAX



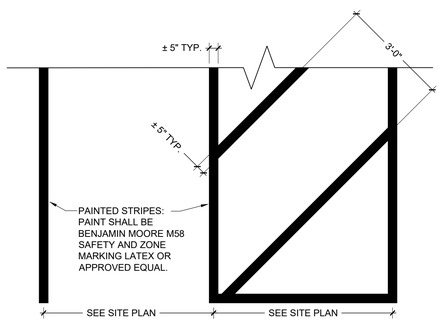
3 CONCRETE JOINTING

3/4" = 1'



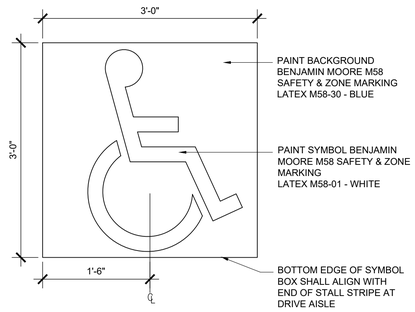
4 TYP. SAFETY BOLLARD

1/2" = 1'



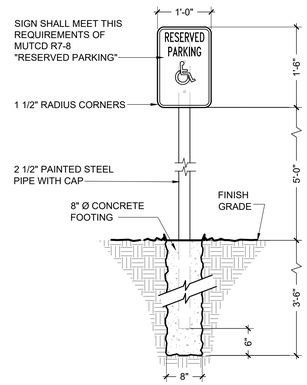
5 PAVEMENT STRIPING

1/2" = 1'



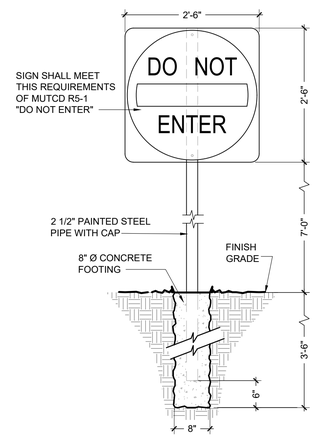
6 ADA PAVEMENT MARKING

1" = 1'



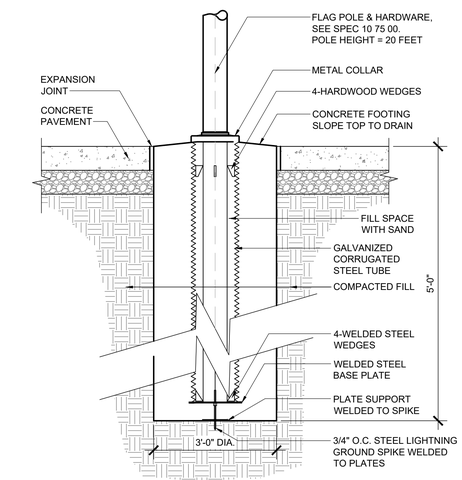
7 ADA PARKING SIGN

3/4" = 1'



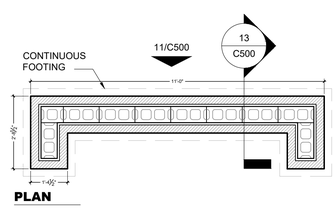
8 DO NOT ENTER SIGN

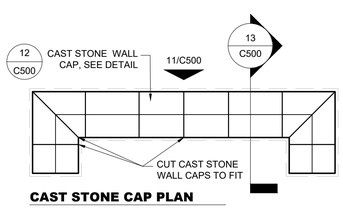
3/4" = 1'



9 FLAG POLE

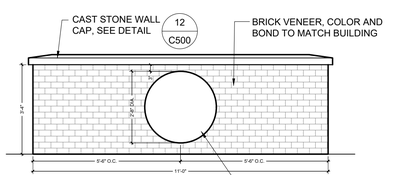
1/2" = 1'





10 MONUMENT SIGN

3/8" = 1'

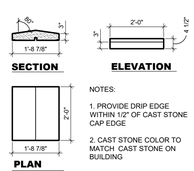


NOTES:

1. CONTRACTOR TO SUBMIT SHOP DRAWINGS AND SAMPLES OF SEAL FOR APPROVAL.
2. ARTWORK PROVIDED BY OWNER.
3. SEAL TO BE MOUNTED 1" MIN. FROM BRICK. SUBMIT MOUNTING METHOD FOR APPROVAL.

11 MONUMENT SIGN ELEVATION

3/8" = 1'



NOTES:

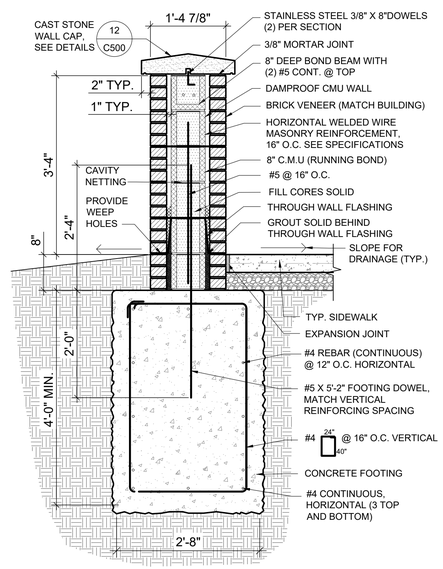
1. PROVIDE DRIP EDGE WITHIN 1/2" OF CAST STONE CAP EDGE
2. CAST STONE COLOR TO MATCH CAST STONE ON BUILDING

12 MONUMENT SIGN CAP

3/8" = 1'

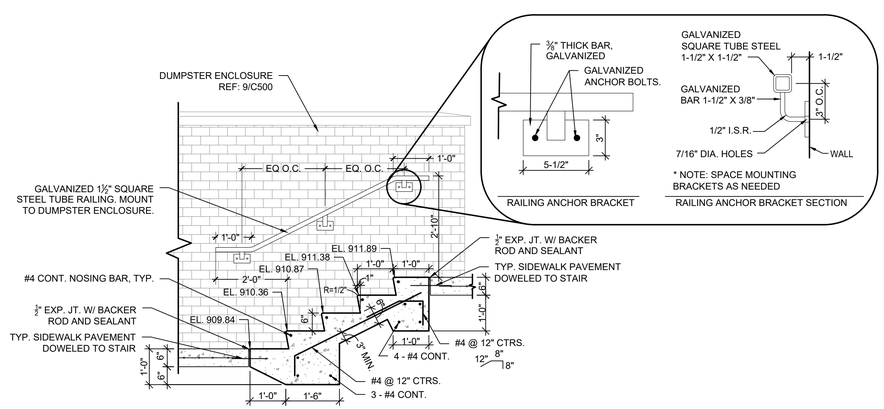
NOTES:

1. MATCH CAST STONE CAP MORTAR TO THE MORTAR COLOR USED ON THE BUILDING.
2. AT ALL JOINTS IN CAP, RAKE MORTAR BACK AND INSTALL BOND BREAKER AND SEALANT.



13 MONUMENT SIGN SECTION

3/4" = 1'



14 CONCRETE STEPS WITH RAILING

3/4" = 1'

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FIRE STATION #4
CITY OF LEE'S SUMMIT

5031 NORTHEAST LAKEWOOD WAY
LEE'S SUMMIT, MISSOURI 64064

100% DESIGN DEVELOPMENT DRAWINGS

REVISIONS:

#	Description	Date

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DATE:	01.20.2022
DRAWN BY:	KDW
CHK'D BY:	ALM

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SITE DETAILS

C-500

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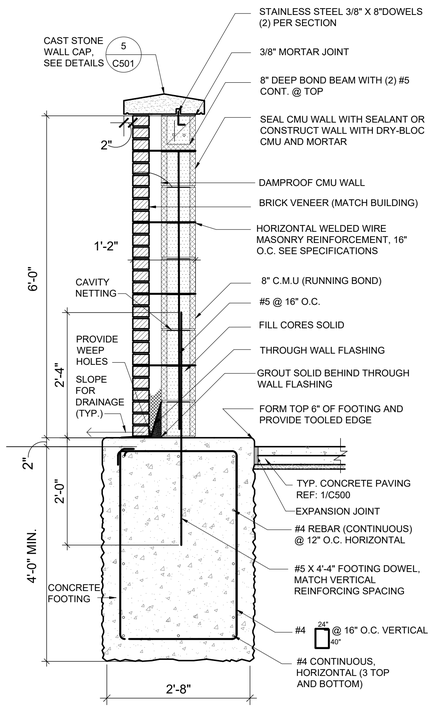
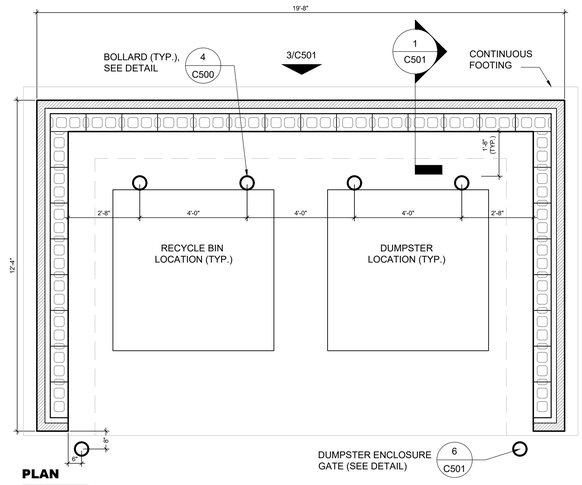
NOTES:

1. MATCH CAST STONE CAP MORTAR TO THE MORTAR COLOR USED ON THE BUILDING.
2. AT ALL JOINTS IN CAP, RAKE MORTAR BACK AND INSTALL BOND BREAKER AND SEALANT.
3. PAINT EXPOSED CMU WALL TO MATCH CAST STONE.

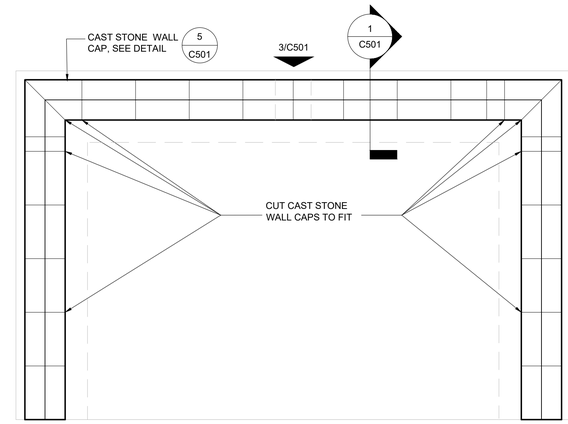


1 DUMPSTER ENCLOSURE WALL SECTION

3/4" = 1'



PLAN



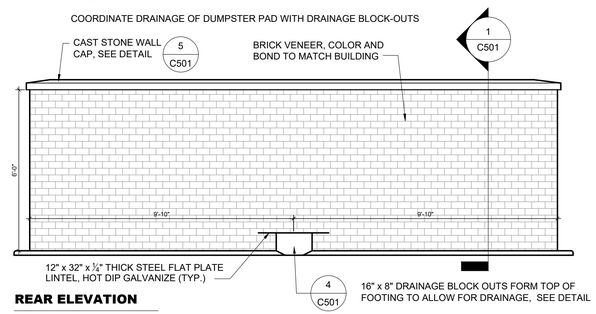
CAST STONE CAP PLAN

2 DUMPSTER ENCLOSURE PLAN

3/8" = 1'

NOTE:

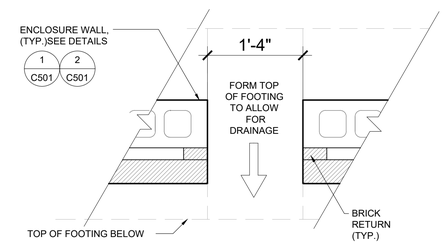
COORDINATE DRAINAGE OF DUMPSTER PAD WITH DRAINAGE BLOCK-OUTS



REAR ELEVATION

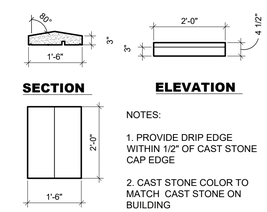
3 DUMPSTER ENCLOSURE ELEVATION

3/8" = 1'



4 DRAINAGE BLOCK-OUT

1" = 1'



SECTION

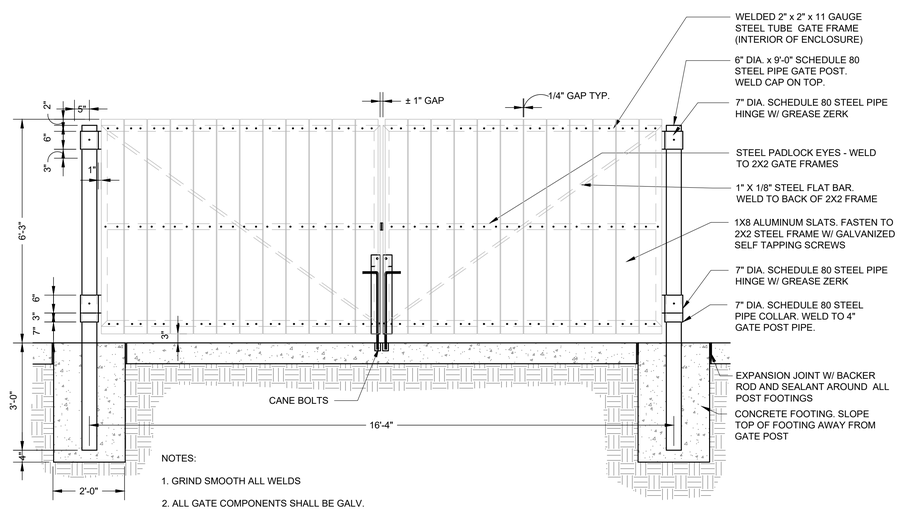
ELEVATION

NOTES:

1. PROVIDE DRIP EDGE WITHIN 1/2" OF CAST STONE CAP EDGE
2. CAST STONE COLOR TO MATCH CAST STONE ON BUILDING

5 CAST STONE WALL CAP

1/2" = 1'

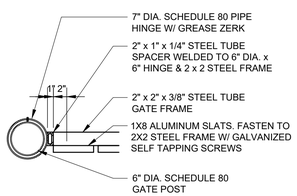


NOTES:

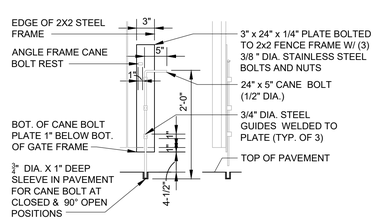
1. GRIND SMOOTH ALL WELDS
2. ALL GATE COMPONENTS SHALL BE GALV.

6 DUMPSTER ENCLOSURE GATE

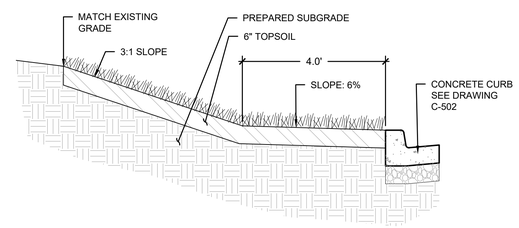
3/4" = 1'



GATE HINGE DETAIL



CANE BOLT (1 PER GATE)



7 SITE PERIMETER CUT SLOPE SECTION

1/2" = 1'

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CHK'D BY:	ALM

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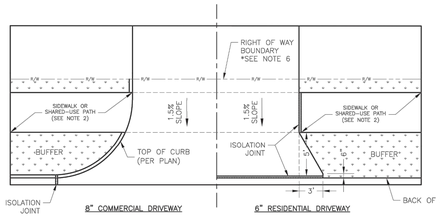
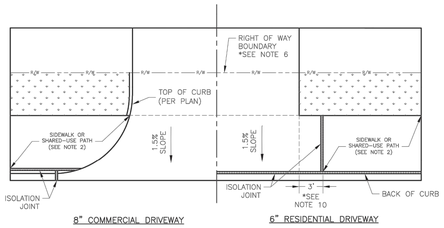


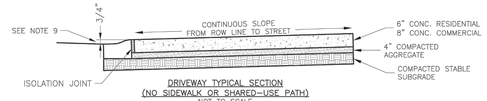
8" COMMERCIAL DRIVEWAY — 6" RESIDENTIAL DRIVEWAY

DRIVEWAY WITH BUFFER
NOT TO SCALE

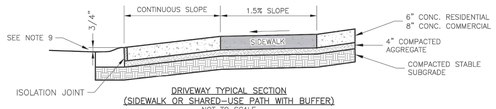


8" COMMERCIAL DRIVEWAY — 6" RESIDENTIAL DRIVEWAY

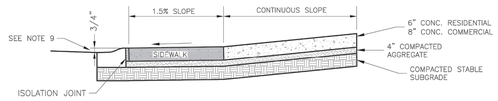
DRIVEWAY WITHOUT BUFFER
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(NO SIDEWALK OR SHARED-USE PATH)
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITH BUFFER)
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITHOUT BUFFER)
NOT TO SCALE

GENERAL NOTES

1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT DETAIL GEN-3B, SIDEWALK/SHARED USE PATH RAMP AT DRIVEWAY DETAIL).
3. JOINT AT BACK OF CURB LINE SHALL BE AN ISOLATION JOINT FOR RESIDENTIAL DRIVEWAYS.
4. KCMMB 4K CONCRETE MIX IS REQUIRED FOR ALL CURBS.
5. COMMERCIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMMB 4K CONCRETE MIX.
6. RESIDENTIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, KCMMB 4K CONCRETE MIX IS RECOMMENDED. OTHER CONCRETE MIXES NEED TO BE APPROVED BY CITY INSPECTOR.
7. A JOINT MUST BE INSTALLED AT THE RIGHT OF WAY BOUNDARY FOR PROPERTY DELINEATION.
8. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
9. ¾" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE CG-1 CURB ONLY). MUST MAINTAIN ORIGINAL FLOWLINE OF CURB.
10. SIDEWALK ADJOINING CURB SHALL BE 6" THICK, EXTENDING 3' FROM THE DRIVEWAY.
11. THE MAXIMUM WIDTH OF A RESIDENTIAL DRIVEWAY IS 36 FEET WITHIN THE RIGHT OF WAY.

1 LEE'S SUMMIT TYPICAL DRIVEWAY

NTS

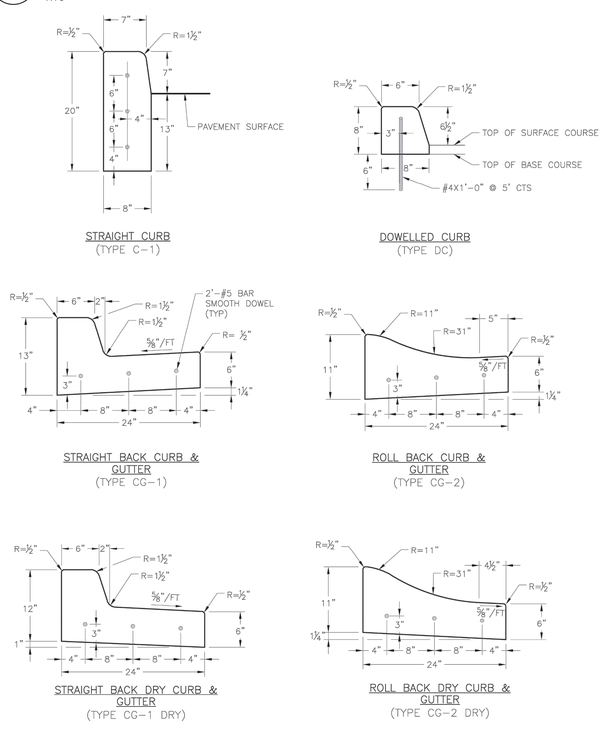
LEE'S SUMMIT MISSOURI — PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
DRIVEWAY DETAIL

Project:
Sheet Name:

Drawn By: MJF
Checked By: SIL
Date: 05/2021
Proj. #:

GEN-1



STRAIGHT CURB
(TYPE C-1)

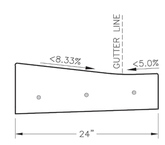
DOWELLED CURB
(TYPE DC)

STRAIGHT BACK CURB & GUTTER
(TYPE CG-1)

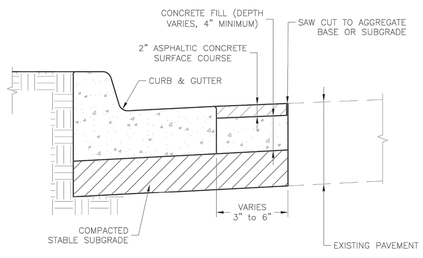
ROLL BACK CURB & GUTTER
(TYPE CG-2)

STRAIGHT BACK DRY CURB & GUTTER
(TYPE CG-1 DRY)

ROLL BACK DRY CURB & GUTTER
(TYPE CG-2 DRY)



CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



CURB REPLACEMENT DETAIL

GENERAL NOTES

1. ¾" ISOLATION JOINTS WITH 3 (2'-#5 BAR) SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
2. 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
3. CONCRETE FILL SHALL HAVE UNIFORM AND SMOOTH FINISH
4. KCMMB 4K CONCRETE SHALL BE USED FOR ALL CURB.
5. ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2205.2.
6. CURBS FOR NEW STREETS SHALL BE BUILT ON ASPHALT OR AGGREGATE BASE AS SHOWN IN TYPICAL SECTION DETAIL.
7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
8. ALL DOWELS & TIE BARS SHALL BE EPOXY COATED.

LEE'S SUMMIT MISSOURI — PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
CURB & GUTTER DETAIL

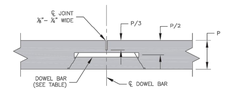
Project:
Sheet Name:

Drawn By: MJF
Checked By: SIL
Date: 05/2021
Proj. #:

GEN-4

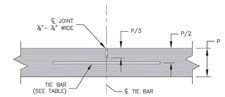
3 LEE'S SUMMIT TYPICAL CURB & GUTTER

NTS

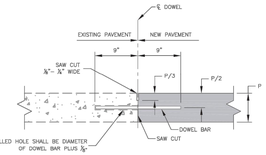


NOTE:
TRANSVERSE CONTRACTION JOINTS FOR CONCRETE PAVEMENT OR BASE WIDENING SHALL MATCH EXISTING JOINTS.

1 TRANSVERSE CONTRACTION JOINT

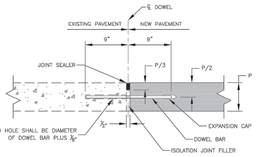


2 LONG. CONTRACTION/CONSTRUCTION JOINT



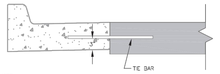
NOTES:
- DOWEL BARS SHALL BE SMOOTH REINFORCING BARS.
- DOWEL BARS SHALL BE BONDED INTO THE EXISTING PAVEMENT.
- BONDING FOR DOWEL BARS SHALL BE EPOXY OR POLYESTER BONDING AGENTS.
- THE PORTION OF THE DOWEL OUTSIDE THE HOLE SHALL BE COATED WITH AN APPROVED LUBRICANT.

3 TRANSVERSE CONSTRUCTION JOINT



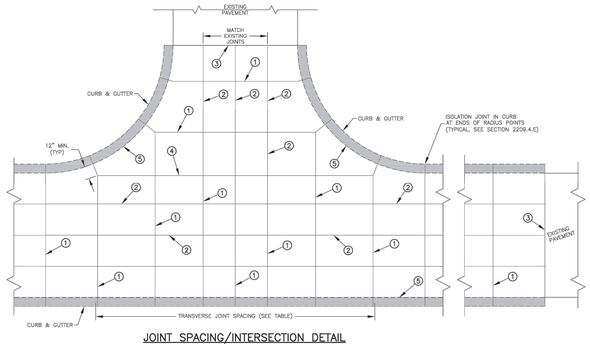
NOTES:
- DOWEL BARS SHALL BE SMOOTH REINFORCING BARS.
- DOWEL BARS SHALL BE BONDED INTO THE EXISTING PAVEMENT.
- BONDING FOR DOWEL BARS SHALL BE EPOXY OR POLYESTER BONDING AGENTS.
- THE PORTION OF THE DOWEL OUTSIDE THE HOLE SHALL BE COATED WITH AN APPROVED LUBRICANT.

4 TRANSVERSE ISOLATION JOINT



NOTE:
- JOINT NOT NEEDED IF CURB & GUTTER IS MONOLITHICALLY POURED.

5 LONG. CONSTRUCTION JOINT (CURB & GUTTER)



JOINT SPACING/INTERSECTION DETAIL

TABLE

PCCP THICKNESS (P)	DOWEL SIZE	TIE BAR SIZE	DOWEL SPACING	TIE BAR SPACING	MAX. TRANS. SPACING	MAX. LONG. SPACING
6"	N/A	#5 x 30"	N/A	30" CTRS.	12'	12'
7"	1" x 18"	#5 x 30"	12" CTRS.	30" CTRS.	14'	14'
8"	1 ¼" x 18"	#5 x 30"	12" CTRS.	30" CTRS.	15'	14'
9"	1 ½" x 18"	#5 x 30"	12" CTRS.	30" CTRS.	15'	15'

GENERAL NOTES:
- THE FINAL POSITION OF ALL DOWELS AND TIE BARS SHALL BE PERPENDICULAR TO THE PLANE OF THE JOINT AND PARALLEL TO THE SURFACE OF THE PAVEMENT AND PARALLEL TO EACH OTHER.
- ALL DOWELS & TIE BARS SHALL BE EPOXY COATED.
- DOWEL BARS SHALL BE PLACED AT 9 INCHES FROM LONGITUDINAL JOINTS.
- TIE BARS SHALL BE PLACED AT 12 INCHES FROM TRANSVERSE JOINTS.
- PANEL LENGTH TO WIDTH RATIO SHALL NOT EXCEED 1.5 TO 1.
- ALL JOINTS SHALL BE SEALED, INCLUDING CURB & GUTTER.
- CONTRACTOR SHALL SUBMIT PROJECT SPECIFIC JOINTING PLAN AT LEAST TWO WEEKS BEFORE PAVING OPERATIONS.
- IN ACCORDANCE WITH 2206.4.D, ALL JOINTS SHALL BE SEALED, INCLUDING CURB & GUTTER.

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STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
TYPICAL PAVEMENT JOINT DETAILS

Project:
Sheet Name:

Drawn By: MJF
Checked By: SMB
Date: 05/2021
Proj. #:

GEN-9

2 LEE'S SUMMIT TYPICAL PAVEMENT JOINTING

NTS

GLMVArchitecture
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KANSAS CITY, MO 64114
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GLMV ARCHITECTURE, INC.
MISSOURI STATE CERTIFICATE OF AUTHORITY
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MISSOURI COA #2018033898
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STRUCTURAL ENGINEER
LEIGH + O'KANE
MISSOURI COA # _____
250 NE MURBERRY, SUITE 201
LEE'S SUMMIT, MO, 64086
(816) 444-3144 PHONE

MECH., ELEC. & PLUMBING ENGINEERS
HOSS & BROWN ENGINEERS
MISSOURI COA # _____
15902 MIDLAND DRIVE
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(913) 362-9090 PHONE

SECURITY & IT ENGINEERS
HENDERSON ENGINEERS
MISSOURI COA # _____
1801 MAIN STREET, SUITE 300
KANSAS CITY, MO 64108
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FIRE STATION #4
CITY OF LEE'S SUMMIT

5031 NORTHEAST LAKEWOOD WAY
LEE'S SUMMIT, MISSOURI 64064

100% DESIGN DEVELOPMENT DRAWINGS

REVISIONS:

#	Description	Date

NOT FOR CONSTRUCTION

ANGIE MORGAN - CIVIL ENGINEER
MO# PE-2018031541

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PROJECT NO:	18225R21001
DATE:	01.20.2022
DRAWN BY:	DMH
CHK'D BY:	ALM

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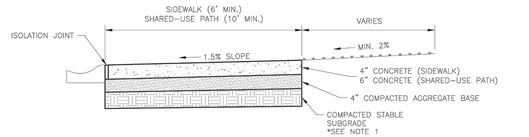
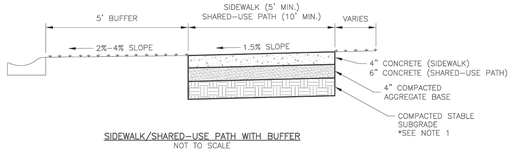
SITE DETAILS

C-502



SIDEWALK/SHARED-USE PATH WITHOUT BUFFER
NOT TO SCALE



SIDEWALK/SHARED-USE PATH WITH BUFFER
NOT TO SCALE

GENERAL NOTES:

1. SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
3. KCMMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS/SHARED-USE PATHS.
4. ALL SIDEWALK/SHARED-USE PATHS SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
5. AN ISOLATION JOINT SHALL BE PLACED AT A MAXIMUM OF 100 FT. CONSTRUCTION JOINTS SHALL BE PLACED THE SAME WIDTH OF SIDEWALK/SHARED-USE PATHS, BUT NO GREATER THAN 10 FT.
6. AN ISOLATION JOINT SHALL BE PLACED WHERE THE SIDEWALK/SHARED-USE PATHS MEETS A RESIDENTIAL DRIVEWAY.
7. SHARED-USE PATHS WIDTH SHALL BE 10 FT. WIDE.
8. SIDEWALK/SHARED-USE PATHS FINISHING SHALL BE FULL BROOM FINISH OR AS DIRECTED BY CITY INSPECTOR.
9. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

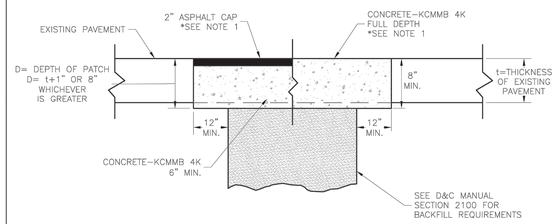
LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SIDEWALK/SHARED-USE PATH DETAIL

Date: 05/2021
Drawn By: MJF
Checked By: DL
GEN-2

1 LEE'S SUMMIT TYPICAL SIDEWALK

NTS



TRENCHING/PATCHING DETAIL
NOT TO SCALE

NOTE:

1. ASPHALT CAP OR FULL DEPTH CONCRETE SHALL BE DETERMINED BY CITY INSPECTOR.

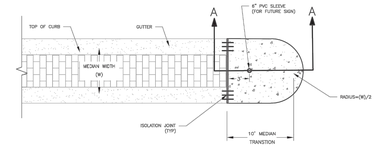
LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

TRENCHING/PATCHING ROADWAYS DETAIL

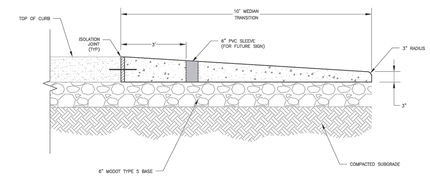
Date: 05/2021
Drawn By: MJF
Checked By: DL
GEN-5

2 LEE'S SUMMIT TYPICAL ROADWAY PATCH

NTS



MEDIAN TRANSITION
PLAN VIEW



MEDIAN TRANSITION
SECTION A-A

NOTES:

1. 3/4" ISOLATION JOINT WITH 3/4"-#8 BAR SMOOTH DOWELS SHALL BE PLACED AT THE BEGINNING OF THE MEDIAN TRANSITION. DOWELS SHALL BE EPOXY COATED, GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
2. ALL MEDIAN TRANSITIONS SHALL BE POURED MONOLITHICALLY USING KCMMB 4K CONCRETE.
3. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 6" COMPACTED, DENSE GRADED AGGREGATE BASE.
4. WHITE CURING COMPOUND SHALL BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

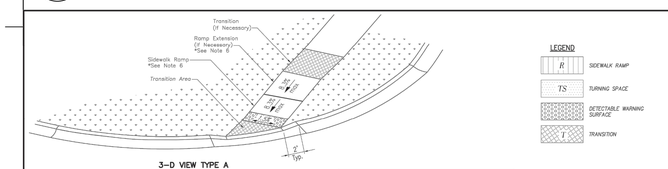
LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

MEDIAN TRANSITION DETAIL

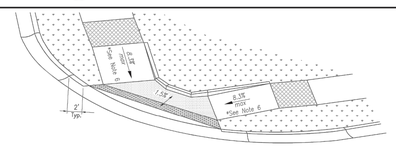
Date: 05/2021
Drawn By: MJF
Checked By: MP
GEN-11

3 LEE'S SUMMIT TYPICAL MEDIAN TRANSITION

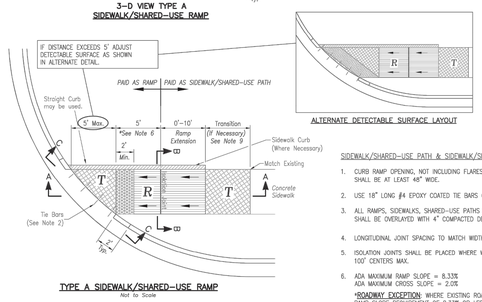
NTS



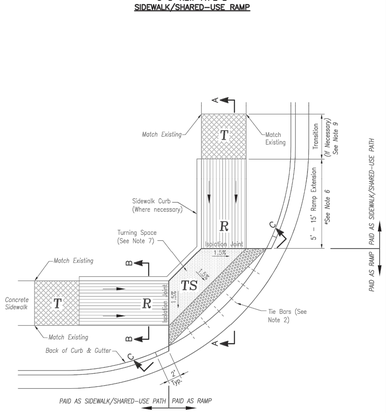
3-D VIEW TYPE A
SIDEWALK/SHARED-USE RAMP



3-D VIEW TYPE B
SIDEWALK/SHARED-USE RAMP



TYPE A SIDEWALK/SHARED-USE RAMP
Not to Scale

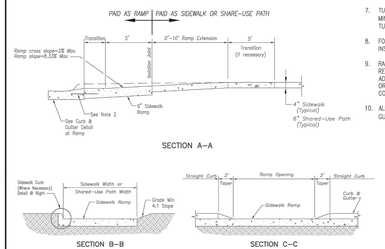


TYPE B SIDEWALK/SHARED-USE RAMP
Not to Scale

ALTERNATE DETECTABLE SURFACE LAYOUT

SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:

1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 100' CENTERS MAX.
6. ADA MAXIMUM RAMP SLOPE = 8.33%
   ADA MAXIMUM CROSS SLOPE = 2.0%
   *ROADWAY EXCEPTION: WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%, ±0.5%.
7. TURNING SPACES SHALL BE 1.5%, ±0.5%, SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'x4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMPS TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

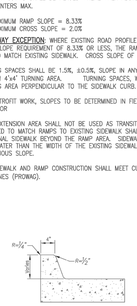


SECTION A-A

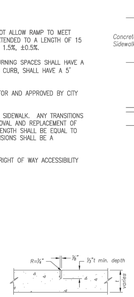
SECTION B-B

SECTION C-C

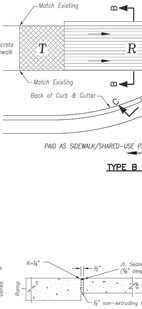
TYPE A & B SIDEWALK RAMP
Not to Scale



SIDEWALK CURB DETAIL
Not to Scale



CONTRACTION JOINT



ISOLATION JOINT

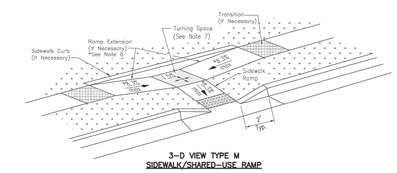
JOINT DETAILS
Not to Scale

CURB & GUTTER DETAIL AT RAMP
Not to Scale

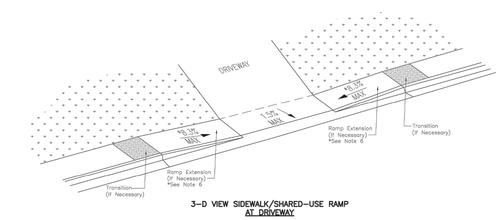
LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
Project
Sheet Name: ADA RAMP RETROFIT DETAIL

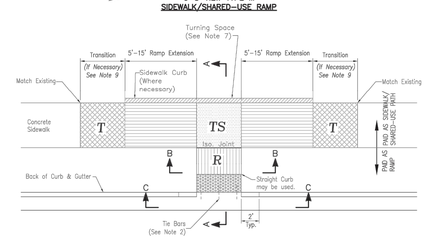
Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj. #:
GEN-3A



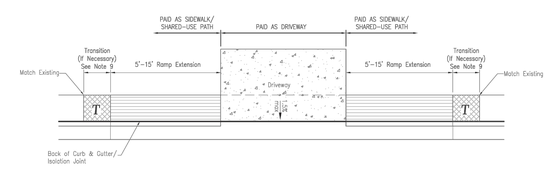
3-D VIEW TYPE M
SIDEWALK/SHARED-USE RAMP



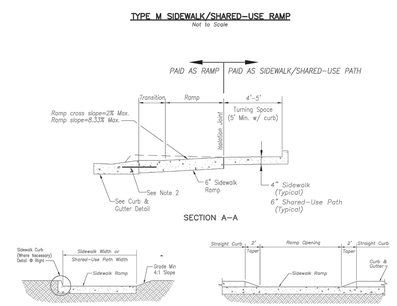
3-D VIEW SIDEWALK/SHARED-USE RAMP
AT DRIVEWAY



TYPE M SIDEWALK/SHARED-USE RAMP
Not to Scale



SIDEWALK/SHARED USE RAMP
AT DRIVEWAY WITH ADJOINING CURB

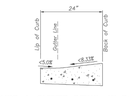


SECTION A-A

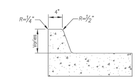
SECTION B-B

SECTION C-C

TYPE M SIDEWALK RAMP
Not to Scale



CURB & GUTTER DETAIL AT RAMP
Not to Scale



SIDEWALK CURB DETAIL
Not to Scale

LEGEND

SIDEWALK RAMP
TURNING SPACE
DETECTABLE WARNING SURFACE
TRANSITION

SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:

1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 100' CENTERS MAX.
6. ADA MAXIMUM RAMP SLOPE = 8.33%
   ADA MAXIMUM CROSS SLOPE = 2.0%
   *ROADWAY EXCEPTION: WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%, ±0.5%.
7. TURNING SPACES SHALL BE 1.5%, ±0.5%, SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'x4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMPS TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

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MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
Project
Sheet Name: ADA RAMP RETROFIT DETAIL

Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj. #:
GEN-3B

4 LEE'S SUMMIT TYPICAL ADA RAMP RETROFIT

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100% DESIGN DEVELOPMENT DRAWINGS

REVISIONS:

#	Description	Date

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DATE:	01.20.2022
DRAWN BY:	DMH
CHK'D BY:	ALM

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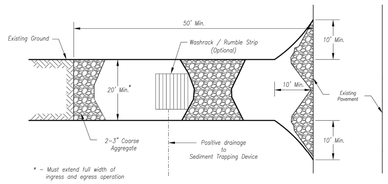
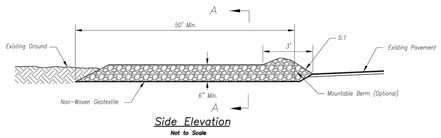
SITE DETAILS

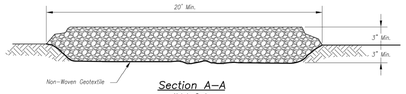
C-503



Plan View
Not to Scale



Side Elevation
Not to Scale



Section A–A
Not to Scale

Notes for Construction Entrance:

1. *Avoid locating on steep slopes, at curves on public roads, or downhill of disturbed area.*
2. *Remove all vegetation and other unsuitable material from the foundation area, grade, and crown for positive drainage.*
3. *If slope towards the public road exceeds 2%, construct a 6– to 8–inch high ridge with 3H:1V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.*
4. *Install pipe under the entrance if needed to maintain drainage ditches along public roads.*
5. *Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.*
6. *Divert all surface runoff and drainage from the entrance to a sediment control device.*
7. *If conditions warrant, place geotextile fabric on the graded foundation to improve stability.*

Maintenance for Construction Entrance:

1. *Reshape entrance as needed to maintain function and integrity of installation. Top dress with clean aggregate as needed.*

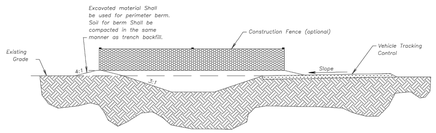
CONSTRUCTION ENTRANCE

Notes for Concrete Washout:

1. *Concrete washout areas shall be installed prior to any concrete placement on site.*
2. *Concrete washout area shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slopes leading out of the subsurface pit shall be 3:1. The vehicle tracking pad shall be sloped towards the concrete washout area.*
3. *Vehicle tracking control is required at the access point to all concrete washout areas.*
4. *Signs shall be placed at the construction site entrance, washout area and elsewhere as necessary to clearly indicate the location(s) of the concrete washout area(s) to operators of concrete truck and pump rigs.*
5. *A one–piece impervious liner may be required along the bottom and sides of the subsurface pit in sandy or gravelly soils.*

Maintenance for Concrete Washout:

1. *Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.*
2. *Concrete washout areas shall be enlarged as necessary to maintain capacity for wasted concrete.*
3. *Concrete washout water, wasted pieces of concrete and all other debris in the subsurface pit shall be transported from the job site in a water–tight container and disposed of properly.*
4. *Concrete washout areas shall remain in place until all concrete for the project is placed.*
5. *When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and topsoil, any disturbed areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.*



CONCRETE WASHOUT

Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control; Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

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KANSAS CITY METRO CHAPTER
CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT
STANDARD DRAWING NUMBER ESC-01
ADOPTED: 10/24/2016

1 CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT

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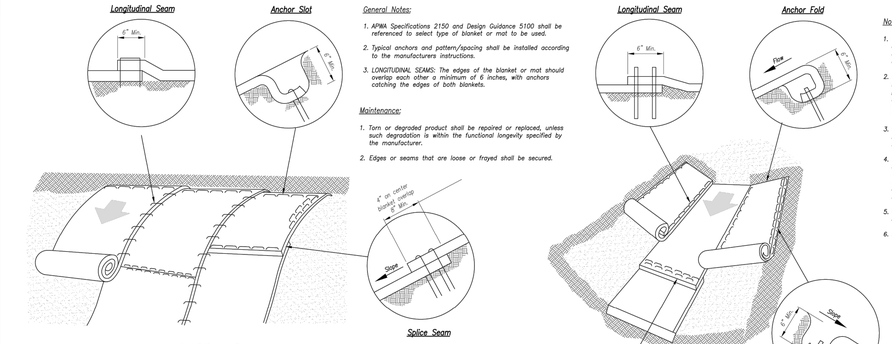


General Notes:

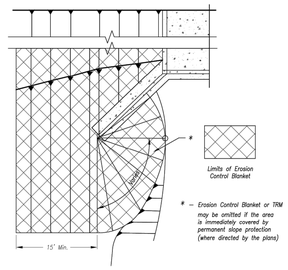
1. *APWA Specifications 2150 and Design Guidance 5100 shall be referenced to select type of blanket or mat to be used.*
2. *Typical anchors and pattern/spacing shall be installed according to the manufacturers instructions.*
3. *LONGITUDINAL SEAMS: The edges of the blanket or mat should overlap each other a minimum of 6 inches, with anchors catching the edges of both blankets.*

Maintenance:

1. *Torn or degraded product shall be repaired or replaced, unless such degradation is within the functional longevity specified by the manufacturer.*
2. *Edges or seams that are loose or frayed shall be secured.*

Notes for Installation in Channels:

1. *Erosion Control Blankets and TRMs shall be laid in the direction of the flow, with the first course at the centerline of channel, where applicable. In order for the mat to be in contact with the soil, lay the mat loosely, avoiding stretching.*
2. *ANCHOR FOLD: The top of the mat should be folded under, buried and secured with wood or other approved anchors placed 6 inches apart. The top edge of the mat should be buried in a slot 6 inches wide x 6 inches deep, anchored in the bottom of the slot, backfilled, and the mat folded over the top as shown in detail.*
3. *SPLICE SEAM: When splices are necessary, overlap end a minimum of 12 inches in direction of water flow. Stagger splice seams.*
4. *CHECK SLOTS: Establish check slots transverse to slope every 30 feet. The slots should be 6 inches wide x 6 inches deep. The mat shall be cut to a length 12 inches beyond the slot. The top of the downstream mat shall be slotted in, secured and buried similar to the edge anchor fold. The upstream mat shall then cover the slot and be anchored as shown.*
5. *EDGE ANCHORS: Lay outside edge of mat into trench at top of the slope and anchor.*
6. *TERMINUS: The bottom edge of the mat shall be anchored.*



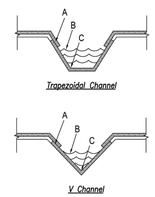
Partial Box Culvert Plan
Not to Scale

\# – Erosion Control Blanket or TRM may be omitted if the area is immediately covered by permanent slope protection (where directed by the plans)

Installation Around Culvert Slope

Notes for Installation on Slopes:

1. *Erosion Control Blankets and TRMs shall be laid in the direction of the slope, in order for blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.*
2. *ANCHOR SLOTS: The top of the blanket should be "slotted in" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.*
3. *SPLICE SEAM: When splices are necessary, overlap end a minimum of 8 inches in direction of water flow. Stagger splice seams.*
4. *TERMINAL FOLD: The bottom edge of the blanket shall be turned under a minimum of 4 inches, then anchored in place with anchors 9 inches apart.*



Installation in Channels

Critical Points:

A – *Overlaps and seams;*

B – *Projected water line;*

C – *Channel bottom / side slope vertices;*

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

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KANSAS CITY METRO CHAPTER
EROSION CONTROL BLANKETS AND TURF REINFORCEMENT MATS
STANDARD DRAWING NUMBER ESC-02
ADOPTED: 10/24/2016

2 EROSION CONTROL BLANKETS AND TURF REINFORCEMENT MATS

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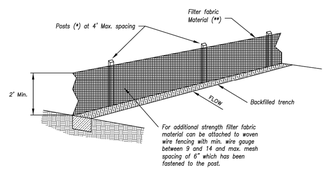
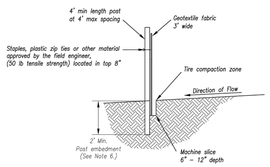


(*) POSTS
- MIN. LENGTH 4'
- HARDWOOD 1 3/4" x 1 3/4"
- NO.2 SOUTHERN PINE 2 1/2" x 2 1/2"
- STEEL 1.33 LB/FT

(**) – Geotextile Fabric shall meet the requirements of AASHTO M288

SILT FENCE DETAILS
Not to Scale



Notes:

1. *In order to contain water, the ends of the silt fence must be turned uphill (Figure A).*
2. *Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).*
3. *Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.*
4. *Attach fabric to upstream side of post.*
5. *Install posts a minimum of 2' into the ground.*
6. *Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably used.*

Maintenance:

1. *Remove and dispose of sediment deposits when the deposit approaches ½ the height of silt fence.*
2. *Repair as necessary to maintain function and structure.*

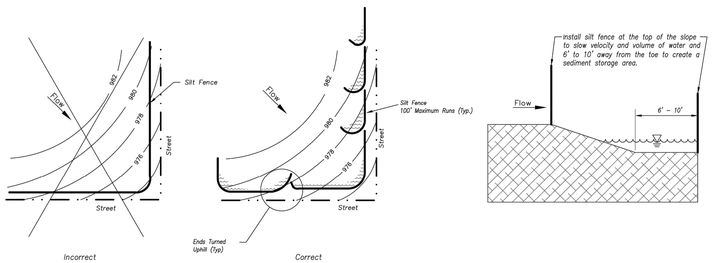
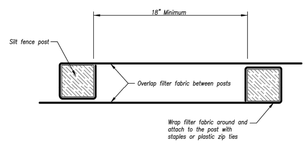


Figure A

SILT FENCE LAYOUT
Not to Scale



JOINING FENCE SECTIONS
Not to Scale

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

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KANSAS CITY METRO CHAPTER
SILT FENCE
STANDARD DRAWING NUMBER ESC-03
ADOPTED: 10/24/2016

3 SILT FENCE

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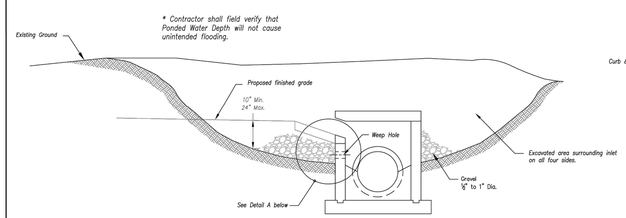
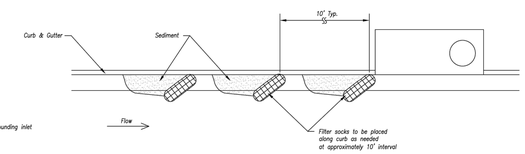
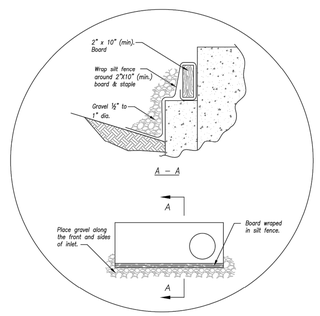




On Grade Curb Inlet Protection



Detail A

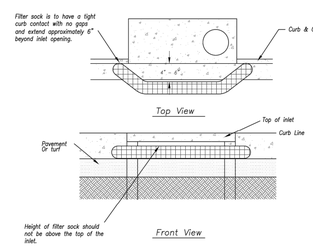
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:

1. *Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" X 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).*
2. *When inlet is completed and curb poured, filter socks or approved equal should be used (Late Stage Curb Inlet). Straw wattles are not approved for curb inlet use.*
3. *Contractor to field verify ponding water shall not create a traffic hazard.*

Maintenance:

1. *Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.*
2. *Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.*
3. *Repair or replace as necessary to maintain function and integrity of installation.*



Sump Inlet Sediment Filter

LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

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CURB INLET PROTECTION
STANDARD DRAWING NUMBER ESC-06
ADOPTED: 10/24/2016

4 CURB INLET PROTECTION

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EROSION CONTROL DETAILS

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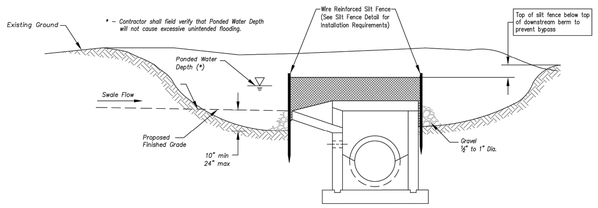
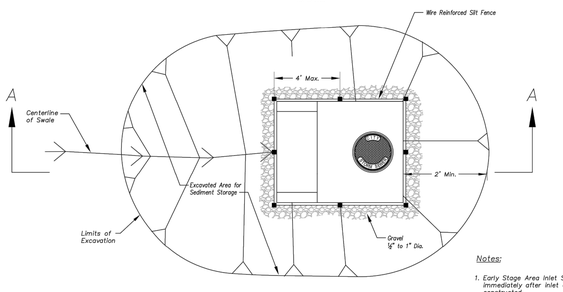


Section A–A
Not to Scale



Plan
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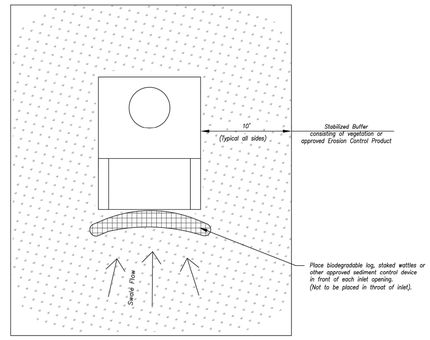
EARLY STAGE AREA INLET
(All open boxes and inlets not at final grade)



Plan
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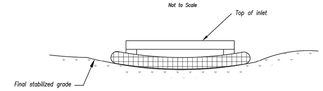

Front View

LATE STAGE AREA INLET
(Area inlets at final grade and existing inlets)

Notes:

1. Early Stage Area Inlet Sediment Barrier to be installed immediately after inlet or junction box is constructed.
2. Silt fence shall remain in place until excavated area is removed and Late Stage Area Inlet is being installed.
3. Backfill excavated area ONLY after final grading of the site. Stabilization of the site is to immediately follow.
4. Wire reinforced silt fence may be used in place of silt fence attached to wood frame.

Maintenance:

1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
3. Repair or replace as necessary to maintain function and integrity of installation.

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

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KANSAS CITY METRO CHAPTER
AREA INLET AND JUNCTION BOX PROTECTION
STANDARD DRAWING NUMBER ESC-07
ADOPTED: 10/24/2016

1 AREA INLET AND JUNCTION BOX PROTECTION

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FIRE STATION #4
CITY OF LEE'S SUMMIT
5031 NORTHEAST LAKEWOOD WAY
LEE'S SUMMIT, MISSOURI 64064
100% DESIGN DEVELOPMENT DRAWINGS

REVISIONS:

#	Description	Date

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MO# PE-2018031541

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PROJECT NO:	18225R21001
DATE:	01.20.2022
DRAWN BY:	DMH
CHK'D BY:	ALM

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EROSION CONTROL DETAILS

C-511

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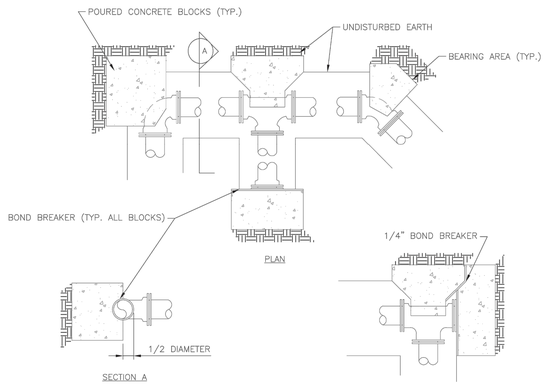
REQUIRED CONCRETE BEARING AREA (SQUARE FEET – SF)

NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	6.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.8	26.7	14.4	7.4	4.0
14	25.7	36.3	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	REST. JT.	32.5	16.5	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8



NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

LEE'S SUMMIT
MISSOURI
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Date: 01/2016
Drawn By: JN
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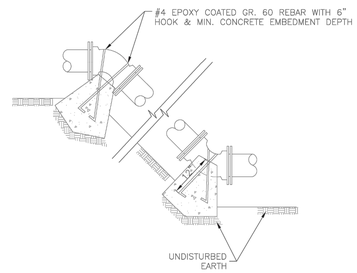
HORIZONTAL THRUST BLOCK — WAT-1

1 HORIZONTAL THRUST BLOCK

NTS

REQUIRED CONCRETE VOLUME (CUBIC FEET – CF)

NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	50.5	71.4	38.6	19.7	9.9
8	89.8	126.9	68.7	35.0	17.6
10	140.2	198.3	107.3	54.7	27.5
12	202.0	REST. JT.	154.6	78.8	39.6
14	REST. JT.	REST. JT.	210.4	107.3	53.9
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	158.4



NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

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Date: WAT-2
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VERTICAL THRUST BLOCK — WAT-2

2 VERTICAL THRUST BLOCK

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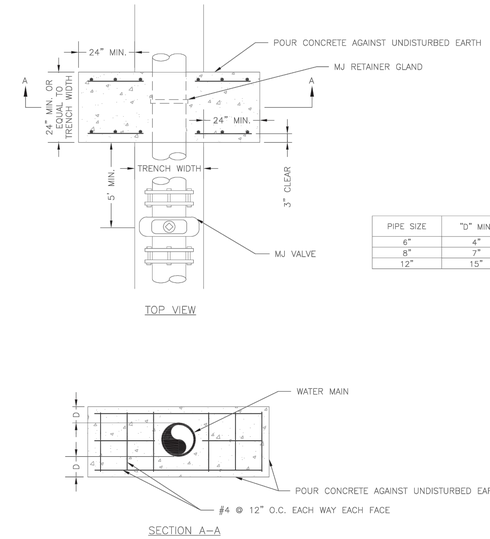

PIPE SIZE	"D" MIN.
6"	4"
8"	7"
12"	15"

NOTE:
THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"

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STRADDLE BLOCK — WAT-3

3 STRADDLE BLOCK

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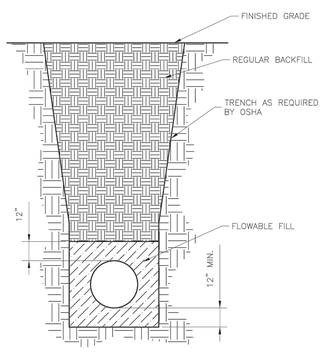

NOTES:
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.
4. LENGTH OF TRENCH CHECK SHALL BE A MINIMUM OF 12".

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WATER TRENCH CHECK DETAIL — WAT-6

4 WATER TRENCH CHECK DETAIL

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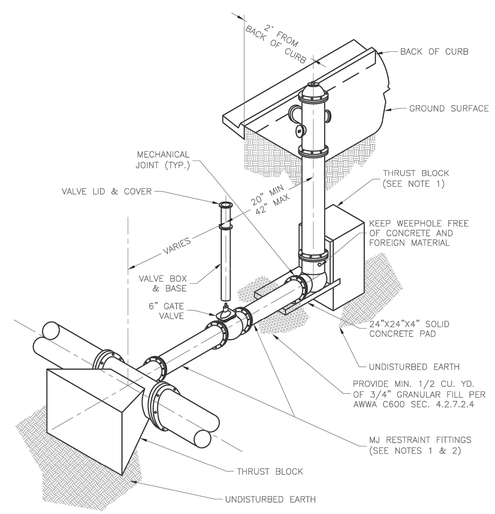

NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
5. FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10' FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.
6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

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HYDRANT - STRAIGHT SET — WAT-7

5 HYDRANT - STRAIGHT SET

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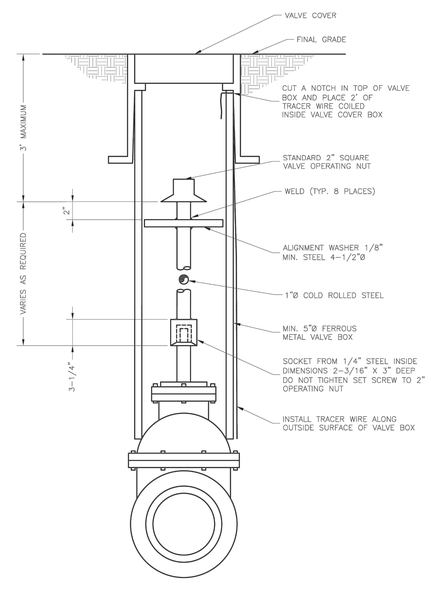

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VALVE STEM EXTENSION AND VALVE BOX — WAT-9

6 VALVE STEM EXTENSION & VALVE BOX

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WATER DETAILS

C-520

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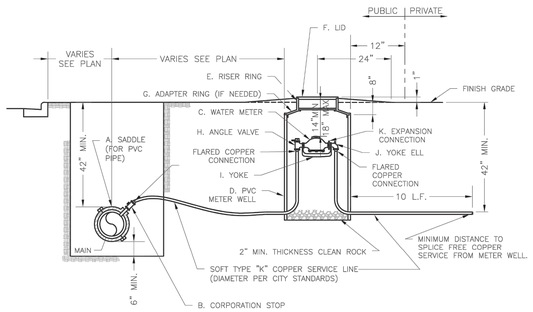

NOTES:

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"

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	SERVICE CONNECTION WITH METER WELL	WAT-11

1 SERVICE CONNECTION WITH METER WELL

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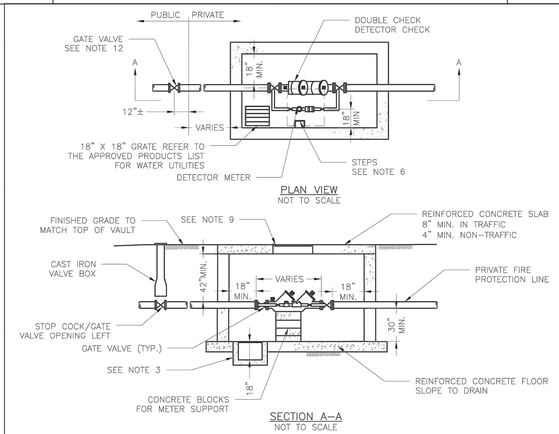

GENERAL NOTES:

1. METER VAULT WALLS TO BE POURED OR PRECAST CONCRETE.
2. METER VAULT ROOF TO BE REINFORCED CONCRETE OPENING CENTERED OVER DETECTOR METER.
3. METER VAULT TO BE LOCATED, WHEN POSSIBLE, OUTSIDE TRAFFIC AREA WHERE SURFACE WATER WILL NOT DRAIN INTO IT. VAULT MUST BE KEPT FREE OF WATER. PROVIDE CONCRETE SUMP AS A MINIMUM. WHERE PRACTICAL, PROVIDE A 2" PIPE DRAIN WITH AN ABOVE–GROUND DISCHARGE POINT. PROJECT OWNER MAY DESIRE A PERMANENTLY INSTALLED SUMP PUMP.
4. ALL PIPE SHALL BE DUCTILE IRON CLASS 50. ALL PIPE FITTINGS FROM THE CITY WATER MAIN THROUGH THE VAULT SHALL BE PROVIDED WITH RESTRAINED JOINT FITTINGS.
5. ALL FITTINGS TO BE BRASS.
6. STEPS SHALL BE IN ACCORDANCE WITH THE APPROVED PRODUCTS LIST FOR WATER UTILITIES AND SHALL BE ON 16" CENTERS.
7. A DEPARTMENT OF NATURAL RESOURCES APPROVED DOUBLE CHECK DETECTOR CHECK BACKFLOW PREVENTER MUST BE USED. FOR A COPY OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES APPROVED BACKFLOW PREVENTION ASSEMBLIES, CONTACT THE WATER UTILITIES OPERATIONS DIVISION AT 816–969–1940. AS OF JANUARY 1, 1987, THE DNR REQUIRES FIRE SPRINKLER SYSTEMS USING CHEMICALS TO HAVE A DNR APPROVED PRESSURE BACKFLOW PREVENTER INSTALLED, PRIOR TO THE MIXING POINT.
8. ALL VALVES SHALL HAVE RISING STEMS.
9. FOR MANHOLE COVERS, SELECT A MANHOLE FOUND ON THE APPROVED PRODUCTS LIST FOR WATER UTILITIES SUITABLE FOR EITHER TRAFFIC OR NON–TRAFFIC CONDITIONS.
10. A MINIMUM OF 18" CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING, VALVES, APPURTENANCES, ETC.
11. METER SHALL BE OWNED AND MAINTAINED BY THE WATER UTILITIES DEPARTMENT.
12. IF PUBLIC WATER IS LOCATED ON THE OPPOSITE SIDE OF THE STREET, THEN THE PUBLIC WATER MAIN RESPONSIBILITY OF THE WATER UTILITIES DEPARTMENT ENDS AT THE GATE VALVE NEAREST THE VAULT.

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	VAULT FOR DOUBLE CHECK DETECTOR CHECK	WAT-12

2 VAULT FOR DOUBLE CHECK DETECTOR CHECK

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DRAWN BY:	DMH
CHK'D BY:	ALM

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WATER DETAILS

C-521

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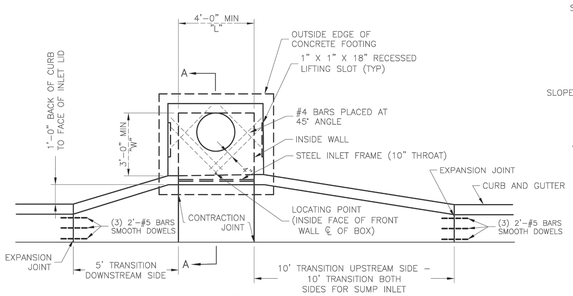
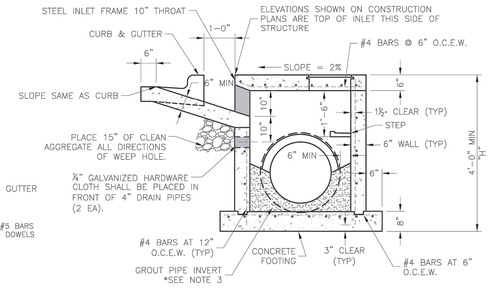
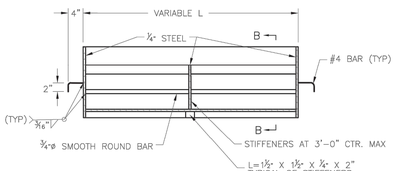


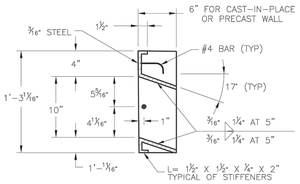
PLAN VIEW



SECTION A–A



FRONT ELEVATION



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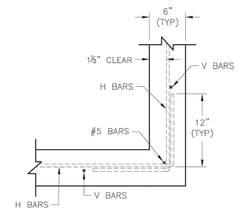
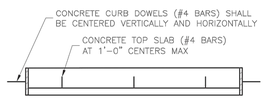


WALL CORNER DETAIL



PLAN VIEW

STEEL FRAME NOTES:
1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM–PRIME #37H–78 PRIMER (GRAY) OR EQUAL.

GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
5. STEPS SHALL BE SPACED AT 1'–4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH ¾"CHAMFER OR ¾" TOOLED EDGE.
7. ON–GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON–SHRINKABLE GROUT
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

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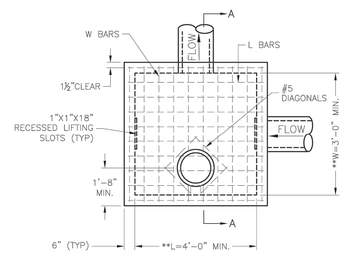
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Project:
Sheet Name: CURB INLET DETAIL

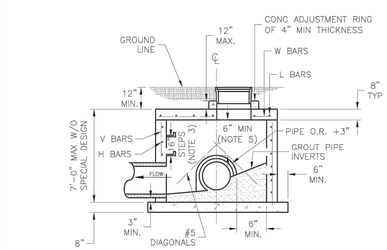
Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj. #:

STM-1

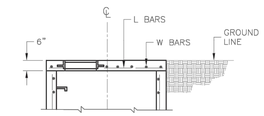
1 CURB INLET DETAIL
NTS



PLAN



SECTION A–A

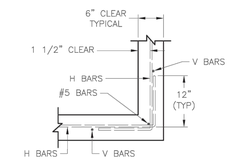


SLAB TOP ALTERNATE FOR JUNCTION BOX (SHALLOW)

** INCREASE IN MULTIPLES OF 6" (7'–0") MAX WITHOUT SPECIAL DESIGN. (SEE PROJECT PLANS FOR DETAILS)

REINFORCING

BARS	BAR SIZE	SPACING (IN.)
H	4	12
V	4	12
L	5	6
W	5	6



WALL CORNER DETAIL

GENERAL NOTES:
1. LOCATE RING AND COVER ON BLANK WALL.
2. USE ¾" CHAMFER STRIP OR ½" R EDGER TOOL ON ALL EXPOSED CONCRETE CORNERS.
3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 4' ON BLANK WALL IF POSSIBLE.
4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE AND THE MINIMUM DISTANCE BETWEEN BOXOUTS IS 6".
5. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LS LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Project:
Sheet Name: JUNCTION BOX DETAIL

Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj. #:

STM-3

2 JUNCTION BOX DETAIL
NTS

STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCT LIST.

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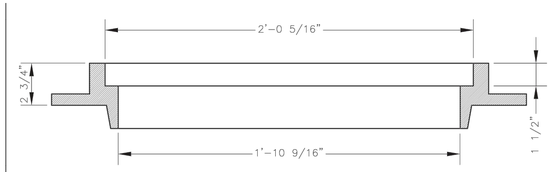
STORM MANHOLE COVER DETAIL

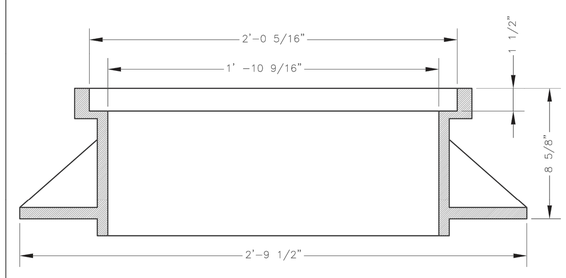
Date: 05/2021
Drawn By: MJF
Checked By: DL

STM-6

3 STORM MANHOLE COVER DETAIL
NTS



SLAB MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB



STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCTS LIST.

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STORM MANHOLE FRAME DETAIL

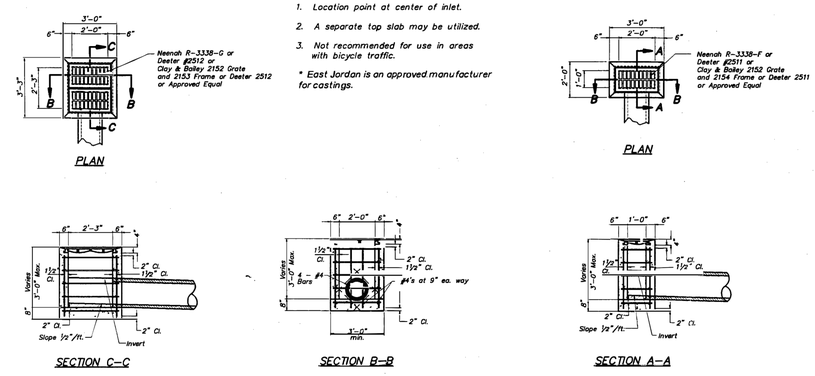
Date: 05/2021
Drawn By: MJF
Checked By: DL

DWG-7

4 STORM MANHOLE FRAME DETAIL
NTS

NOTE:
1. Location point at center of inlet.
2. A separate top slab may be utilized.
3. Not recommended for use in areas with bicycle traffic.

* East Jordan is an approved manufacturer for castings.



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KANSAS CITY METROPOLITAN CHAPTER
GRATE INLET DETAILS
STANDARD DRAWING NUMBER C–1
ADOPTED: APRIL 17, 1996

5 GRATE INLET DETAIL
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STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Project:
Sheet Name: JUNCTION BOX DETAIL

Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj. #:

STM-3

FIRE STATION #4
CITY OF LEE'S SUMMIT

5031 NORTHEAST LAKEWOOD WAY
LEE'S SUMMIT, MISSOURI 64064

100% DESIGN DEVELOPMENT DRAWINGS

REVISIONS:

#	Description	Date

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ANGIE MORGAN - CIVIL ENGINEER
MO# PE-2018031541

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PROJECT NO:	18225R21001
DATE:	01.20.2022
DRAWN BY:	DMH
CHK'D BY:	ALM

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STORMWATER DETAILS

C-530

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Section 2721

Engineered Surface Drainage Products

GENERAL
PVC surface drainage inlets shall include the drain basin type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc., or prior approved equal.

MATERIALS
The drain basins required for this contract shall be manufactured from PVC pipe stock, utilizing a thermoforming process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

The grates and frames furnished for all surface drainage inlets shall be ductile iron for structure sizes 8", 10", 12", 15", 18", 24", 30" and 36" and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for drain basins shall be capable of supporting various wheel loads as specified by Nyloplast. 12" and 15" square grates will be hinged to the frame using pins. Ductile iron used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05. Grates and covers shall be provided painted black.

INSTALLATION
The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or class 3 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For load rated installations, a concrete slab shall be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

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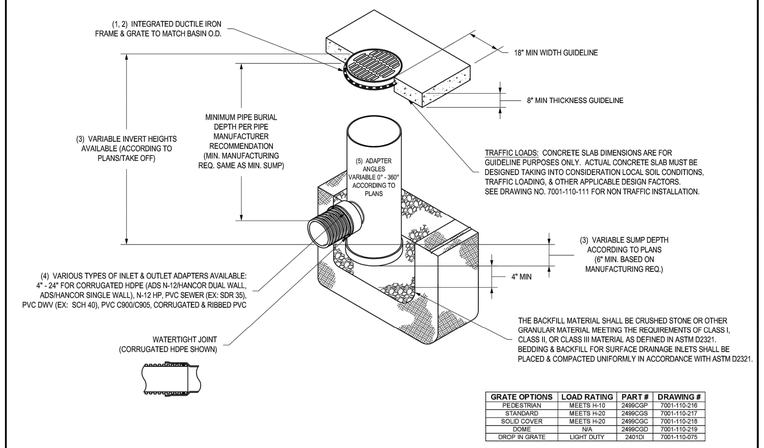
DRAWN BY CJA	MATERIAL	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com
DATE 3-10-00			
REVISED BY NMH	PROJECT NO./NAME	TITLE 8 IN - 36 IN DRAIN BASIN SPECIFICATIONS	
DATE 02-21-18			
DWG SIZE A	SCALE 1:1 SHEET 1 OF 1	DWG NO. 7001-110-011	REV J

1 ENGINEERED SURFACE DRAINAGE PRODUCTS SPECIFICATIONS

NTS

NYLOPLAST 24" DRAIN BASIN: 2824AG _ _X



GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	2499CGP	7001-110-216
STANDARD	MEETS H-20	2499CGS	7001-110-217
SOLID COVER	MEETS H-20	2499CGC	7001-110-218
DOME	N/A	2499CGD	7001-110-219
DROP IN GRATE	LIGHT DUTY	2401DI	7001-110-075

1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

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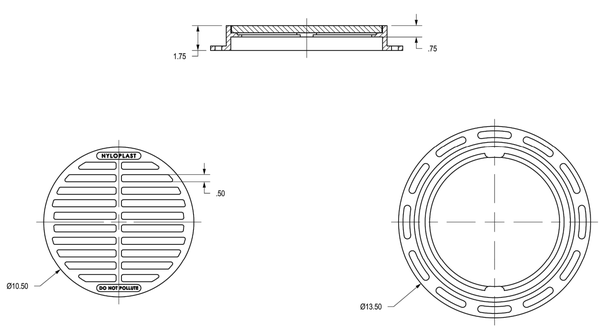
DATE 04-03-06			
REVISED BY NMH	PROJECT NO./NAME	TITLE 24 IN DRAIN BASIN QUICK SPEC INSTALLATION DETAIL	
DATE 03-14-16			
DWG SIZE A	SCALE 1:40 SHEET 1 OF 1	DWG NO. 7001-110-192	REV E

2 24" DRAIN BASIN QUICK SPEC INSTALLATION DETAIL

NTS

1099CGSF

APPROX. DRAIN AREA = 37.35 SQ IN
APPROX. WEIGHT = 15.40 LBS



DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE HAS LIGHT DUTY RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
SIZE OF OPENING MEETS REQUIREMENTS OF AMERICAN DISABILITY ACT AS STATED IN FEDERAL REGISTER PART III, DEPARTMENT OF JUSTICE, 28 CFR PART 36.

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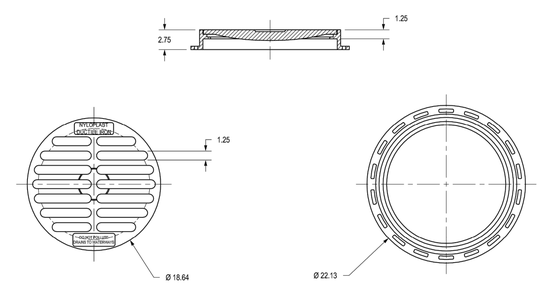
DATE 6-25-18			
APPD BY NMH	PROJECT NO./NAME	TITLE 10 IN STANDARD GRATE ASSEMBLY - TYPE B	
DATE 6-25-18			
DWG SIZE A	SCALE 1:5 SHEET 1 OF 1	DWG NO. 7001-110-540	REV A

3 10" STANDARD GRATE ASSEMBLY - TYPE B

NTS

1899CGS

APPROX. DRAIN AREA = 116.72 SQ IN
APPROX. WEIGHT WITH FRAME = 68.50 LBS



DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE MEETS H-20 LOAD RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-029

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DATE 3-8-06			
REVISED BY EBC	PROJECT NO./NAME	TITLE 18 IN STANDARD GRATE ASSEMBLY - TYPE C	
DATE 3-13-10			
DWG SIZE A	SCALE 1:10 SHEET 1 OF 1	DWG NO. 7001-110-213	REV C

4 18" STANDARD GRATE ASSEMBLY-TYPE C

NTS

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DRAWN BY:	DMH
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STORMWATER DETAILS

C-531

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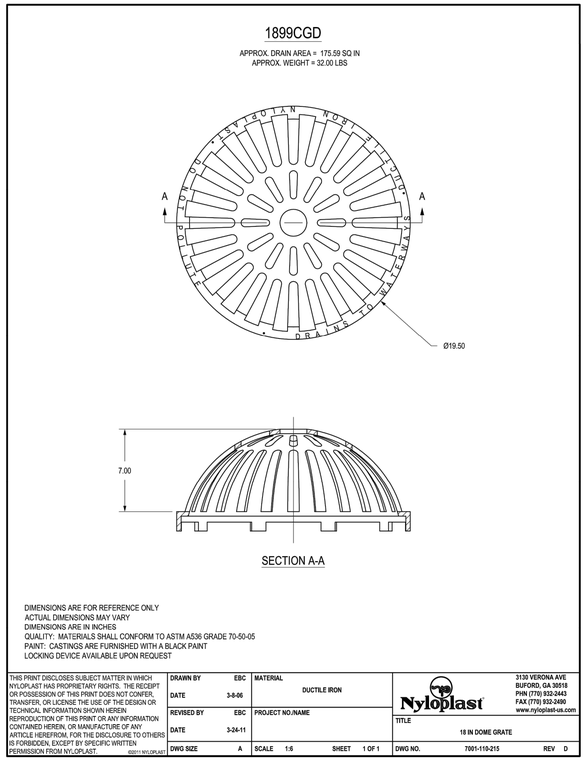

1 18" DOME GRATE

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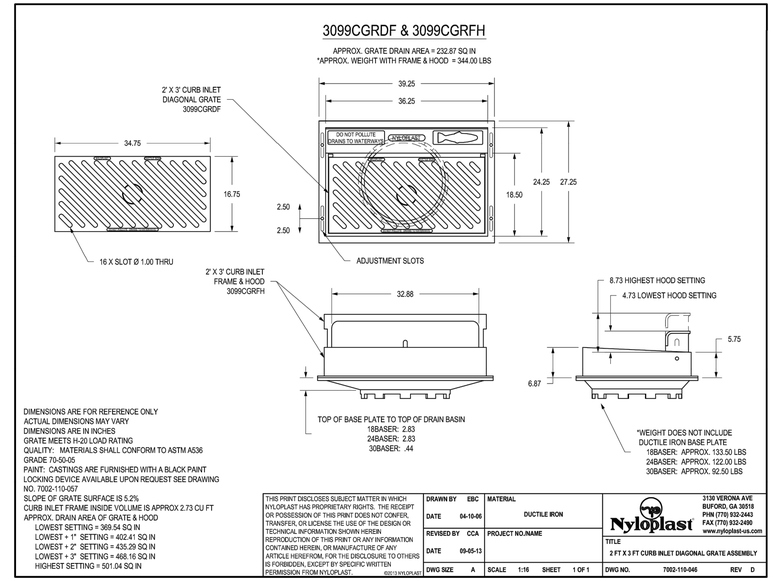

2 2'x3' CURB INLET DIAGONAL GRATE ASSEMBLY

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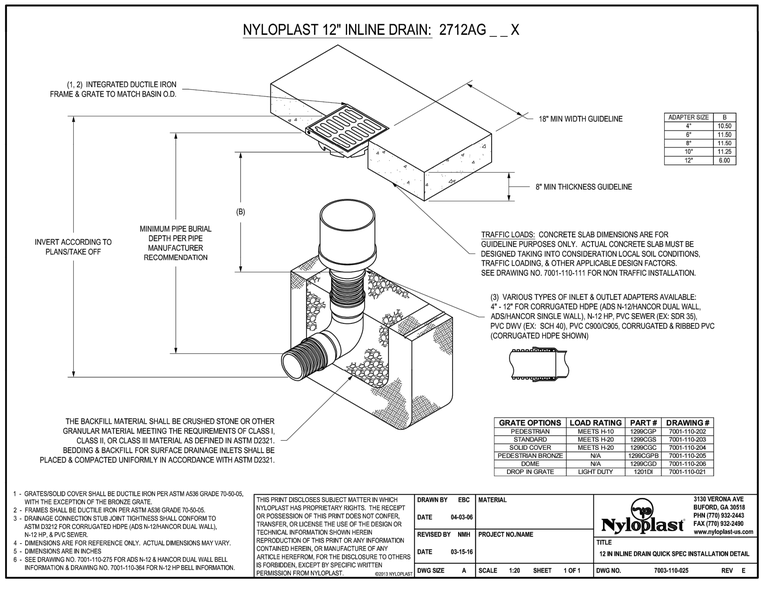

ADAPTER SIZE	B
4"	10.50
6"	11.50
8"	11.50
10"	11.25
12"	6.00

GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN STANDARD	MEETS H-10	1299CGP	7001-110-202
	MEETS H-20	1299CGS	7001-110-203
SOLID COVER	MEETS H-20	1299CGC	7001-110-204
PEDESTRIAN BRONZE	N/A	1299CGPB	7001-110-205
DOME	N/A	1299CGD	7001-110-206
DROP IN GRATE	LIGHT DUTY	1201DI	7001-110-021

3 12" INLINE DRAIN QUICK SPEC INSTALLATION DETAIL

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DRAWN BY:	DMH
CHK'D BY:	ALM

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STORMWATER DETAILS

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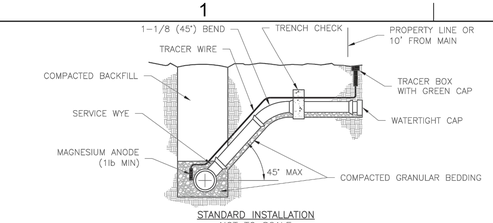
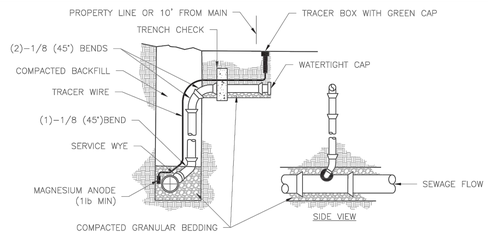


STANDARD INSTALLATION
NOT TO SCALE



VERTICAL RISER
NOT TO SCALE

NOTES:

1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHICHEVER IS GREATER. WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
2. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
3. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE. LENGTH SHALL BE A MINIMUM OF 12". THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
4. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
5. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
6. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
7. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0' OF PROPERTY LINE.
8. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

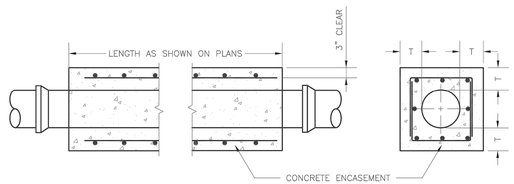
LS **LEE'S SUMMIT**
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SANITARY SEWER STUB DETAIL

Date: 12/2015
Drawn By: MJF
Checked By: DL
SAN-1

1 SANITARY SEWER STUB

NTS



NOTES:

1. FOR PIPES LESS THAN 15", T = 6" MIN.
2. FOR PIPES 15" THRU 36", T = 8" MIN.
3. INTERMEDIATE BELLS SHALL BE ENCASED.
4. REINFORCING STEEL SHALL BE #4 @ 12" O.C. EACH WAY WITH A MINIMUM REBAR LAP OF 12".

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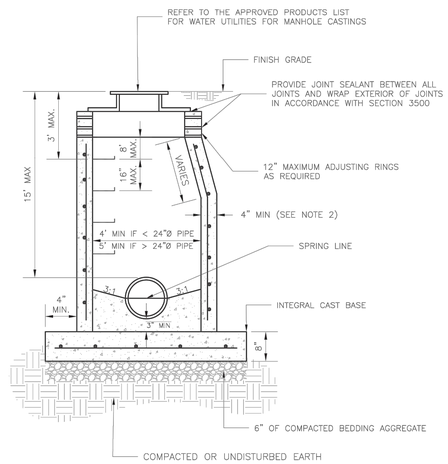
PIPE ENCASEMENT DETAIL

Date: 01/2016
Drawn By: JN
Checked By: DL
SAN-7

2 PIPE ENCASEMENT

NTS



NOTES:

1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH (1/12) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THEN 15'.
3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 14 MILS OF BITUMINOUS COATING.
4. ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
6. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS.
7. REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.

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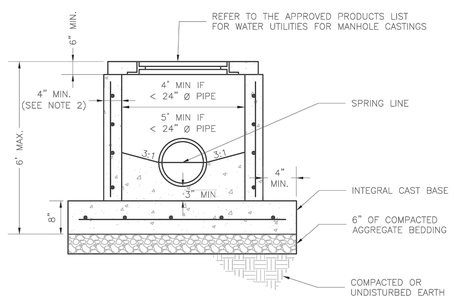
STANDARD SANITARY PRECAST MANHOLE

Date: 12/2015
Drawn By: SC
Checked By: DL
SAN-2

3 STANDARD SANITARY PRECAST MANHOLE

NTS



NOTES:

1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH (1/12) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER SHALL BE USED.
3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THEN 14 MILS OF BITUMINOUS COATING.
4. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
5. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR MANHOLE GASKET MODELS.
6. PROVIDE STEPS AS SHOWN ON THE APPROVED PRODUCTS LIST FOR MANHOLE DEPTHS GREATER THAN 4'.

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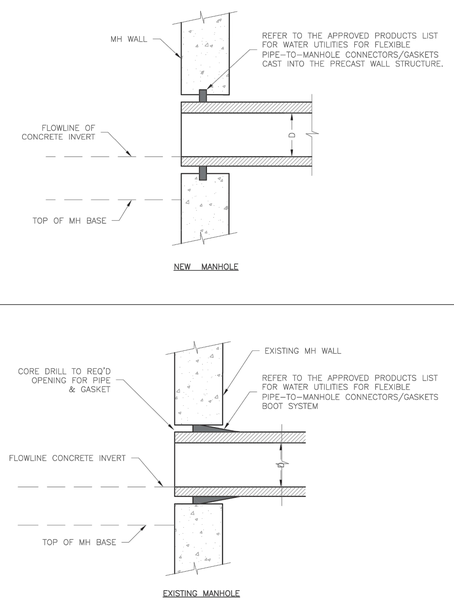
STANDARD SHALLOW SANITARY PRECAST MANHOLE

Date: 12/2015
Drawn By: MJF
Checked By: DL
SAN-3

4 STANDARD SHALLOW SANITARY PRECAST MANHOLE

NTS



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MANHOLE WALL CONNECTION

Date: 02/2013
Drawn By: MJF
Checked By: DL
SAN-5

5 MANHOLE WALL CONNECTION

NTS

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REVISIONS:

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MO# PE-2018031541

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DATE:	01.20.2022
DRAWN BY:	DMH
CHK'D BY:	ALM

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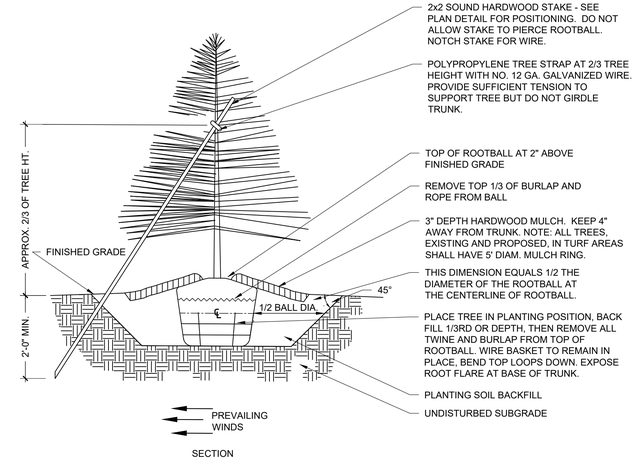
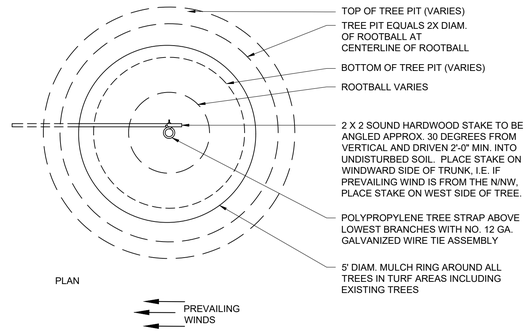
SANITARY SEWER DETAILS

C-540



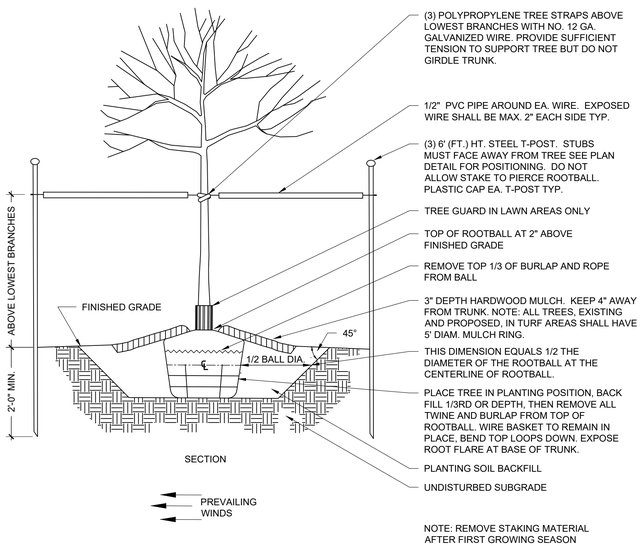
1 EVERGREEN TREE PLANTING

N.T.S.



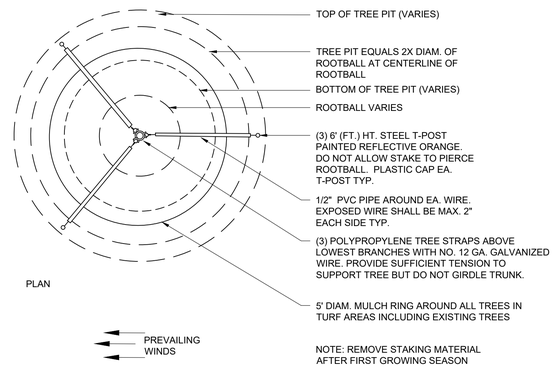
2 EVERGREEN TREE STAKING

N.T.S.



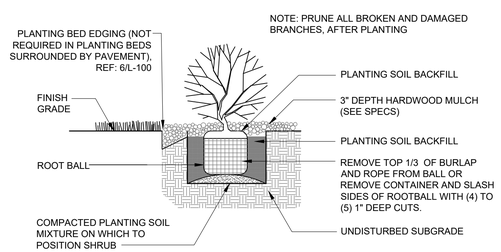
3 DECIDUOUS TREE PLANTING

N.T.S.



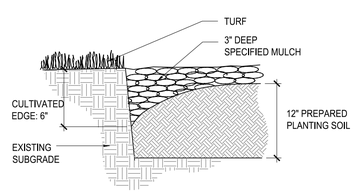
4 DECIDUOUS TREE STAKING

N.T.S.



5 SHRUB PLANTING

N.T.S.



6 CULTIVATED EDGE

N.T.S.

GENERAL LANDSCAPE SITE NOTES

1. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL GIVE 48 HOURS ADVANCE NOTICE TO ALL THOSE COMPANIES/UTILITIES THAT HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PREFORMED.
2. CONTRACTOR SHALL VERIFY ALL PLANT COUNTS, QUANTITIES AND AREAS AND REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT PRIOR TO ORDERING OR INSTALLING MATERIALS SPECIFIED.
3. SEE PLANT SCHEDULE FOR PLANT LEGEND AND QUANTITIES.
4. SYMBOLS INDICATED ON THE PLAN TAKE PRIORITY OVER WRITTEN QUANTITIES AND LABELS.
5. PLANTS CALLED OUT IN PLAN ARE CONSIDERED IN CLUSTERS EVEN IF NOT ATTACHED BY CONNECTING LINES. CALLOUTS HAVE TOTAL COUNTS NEEDED.
6. CONTRACTOR SHALL MAINTAIN THE LANDSCAPE UNTIL SUBSTANTIAL COMPLETION. MAINTENANCE WORK SHALL CONSIST OF APPLYING WATER, WEEDING, AND FERTILIZING.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR DISEASE AND PEST CONTROL DURING THE MAINTENANCE PERIOD.
8. CONTRACTOR TO VERIFY WITH SOIL ANALYSIS, THE SOIL AMENDMENT NEEDED AND CONTACT THE LANDSCAPE ARCHITECT IF THERE ARE ANY INADEQUATE AMENITIES.
9. PLANT MATERIAL SHALL NOT BE DELIVERED TO THE SITE NOR INSTALLED WHEN TEMPERATURES ARE ABOVE 90°F OR BELOW 40°F AT THE TIME OF PLANTING AND FORECASTED FOR A PERIOD OF 2 WEEKS AFTER INSTALLATION.
10. CONTRACTOR TO PROVIDE A 1 YEAR WARRANTY ON ALL INSTALLED PLANTINGS FROM POINT OF SUBSTANTIAL COMPLETION.

PLANTING NOTES

1. ALL PLANT MATERIAL SHALL BE OF EXCELLENT QUALITY, FREE OF DISEASE AND INFESTATION, AND TRUE TO TYPE, VARIETY, SIZE SPECIFIED, AND FORM PER THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1, CURRENT VERSION), PUBLISHED BY THE AMERICAN NURSERYMEN'S ASSOCIATION.
2. PLANT MATERIAL SHALL BE PLANTED AND MAINTAINED TO ASNS SPECIFICATIONS.
3. CONTRACTOR SHALL VERIFY ALL LANDSCAPE MATERIAL QUANTITIES AND SHALL REPORT ANY DISCREPANCIES IMMEDIATELY TO THE LANDSCAPE ARCHITECT.
4. NO SUBSTITUTIONS FOR VARIETY OR CULTIVAR SHALL BE ACCEPTED WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM LANDSCAPE ARCHITECT.
5. ALL TREES AND SHRUBS SHALL BE LAID OUT IN A UNIFORM AND CONSISTENT PATTERN, FOLLOWING THE LANDSCAPE PLAN ACCURATELY, PAYING ATTENTION TO EVEN SPACING IN THE ROW OR COVERAGE AREA OF THE INDIVIDUAL SPECIES AND HOW IT IS BEING USED.
6. ALL PLANTING BEDS ABUTTING LAWN AREAS SHALL HAVE STEEL EDGING (COLMET 1014 OR APPROVED EQUAL) INSTALLED AS THE BED EDGE RESTRAINT. NO STEEL EDGING SHALL BE INSTALLED BETWEEN MULCH AND PAVEMENT.
7. ALL PLANTINGS SHALL BE THOROUGHLY WATERED IN WITH A GARDEN HOSE, TWICE, THE SAME DAY AS INSTALLATION TO ELIMINATE AIR POCKETS IN THE BACKFILL.
8. NO PLANTINGS SHALL BE PLACED CLOSER THAN 3' FROM THE BACK OF THE CURB TO ALLOW FOR VEHICLE BUMPER OVERHANG.
9. PROPOSED TREES SHALL NOT BE PLACED OVER EXISTING OR PROPOSED UTILITY SERVICE LINES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND UTILITY LOCATIONS AND HAVE THEM MARKED DURING TREE PLANTING OPERATIONS. IF UTILITY IS DAMAGED DURING PLANTING, CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE GENERAL CONTRACTOR AND OWNER OF UTILITY AND PAYING FOR REPAIR OF THE DAMAGED UTILITY.
10. ALL PLANTING BEDS WILL HAVE 3-INCHES OF SHREDDED BROWN HARDWOOD MULCH UNLESS OTHERWISE SPECIFIED.

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE
	AA	2	Acer rubrum 'Armstrong'	Armstrong Red Maple	B & B	3"
	GA	1	Ginkgo biloba 'Autumn Gold' TM	Autumn Gold Maidenhair Tree	B & B	3"
	MA	5	Malus x 'Adirondack'	Adirondack Crabapple	B & B	3"
	NW	7	Nyssa sylvatica `Wildfire`	Black Gum	B & B	3"
	ZM	6	Zelkova serrata 'Musashino'	Musashino Sawleaf Zelkova	B & B	3"

CONIFERS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE
	PB	2	Picea pungens `Baby Blue`	Baby Blue Colorado Spruce	8` Ht.	
	TS	18	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	8` Ht.	

SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SIZE	SPACING
	Ca	17	Cornus sericea `Artic Fire`	Artic Fire Dogwood	5 gal	Pot	48" o.c.
	Ec	13	Euonymus alatus `Compactus`	Compact Burning Bush	5 gal	Pot	72" o.c.
	Ho	44	Hemerocallis x 'Stella de Oro'	Stella de Oro Daylily	Quart	Pot	18" o.c.
	Hf	25	Hosta x 'First Frost'	First Frost Hosta	2 gal	Pot	30" o.c.
	Il	10	Itea virginica `Little Henry` TM	Virginia Sweetspire	2 gal	Pot	36" o.c.
	Pl	6	Perovskia atriplicifolia `Little Spire` TM	Little Spire Russian Sage	2 gal	Pot	24" o.c.
	Rr	19	Rosa x `Knockout` TM	Rose	2 gal	Pot	48" o.c.

GRASSES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SIZE	SPACING
	Ck	21	Calamagrostis x acutiflora `Karl Foerster`	Feather Reed Grass	3 gal.	Pot	36" o.c.
	Fe	28	Festuca glauca `Elijah Blue`	Elijah Blue Fescue	1 gal.	Pot	18" o.c.
	Sp	57	Schizachyrium scoparium `Prairie Munchkin`	Prairie Munchkin Little Bluestem	2 gal	Pot	24" o.c.
	Sh	133	Sporobolus heterolepis	Prairie Dropseed	2 gal	Pot	30" o.c.

EVERGREEN	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SIZE	SPACING
	Jl	11	Juniperus chinensis 'Gold Lace'	Gold Lace Juniper	5 gal	Pot	60" o.c.
	Ja	8	Juniperus horizontalis `Andorra`	Andorra Juniper	2 gal	Pot	48" o.c.

SOD/SEED	CODE	QTY	BOTANICAL NAME	COMMON NAME	TYPE
	Fa	13,571 sf	Festuca arundinacea 90% Fescue, 10% Bluegrass Mix	Tall Fescue	sod

7 LANDSCAPE SCHEDULE

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LEE'S SUMMIT, MISSOURI 64064

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#	Description	Date

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DATE:	01.20.2022
DRAWN BY:	KDW
CHK'D BY:	CDW

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LANDSCAPE SCHEDULE

L-100

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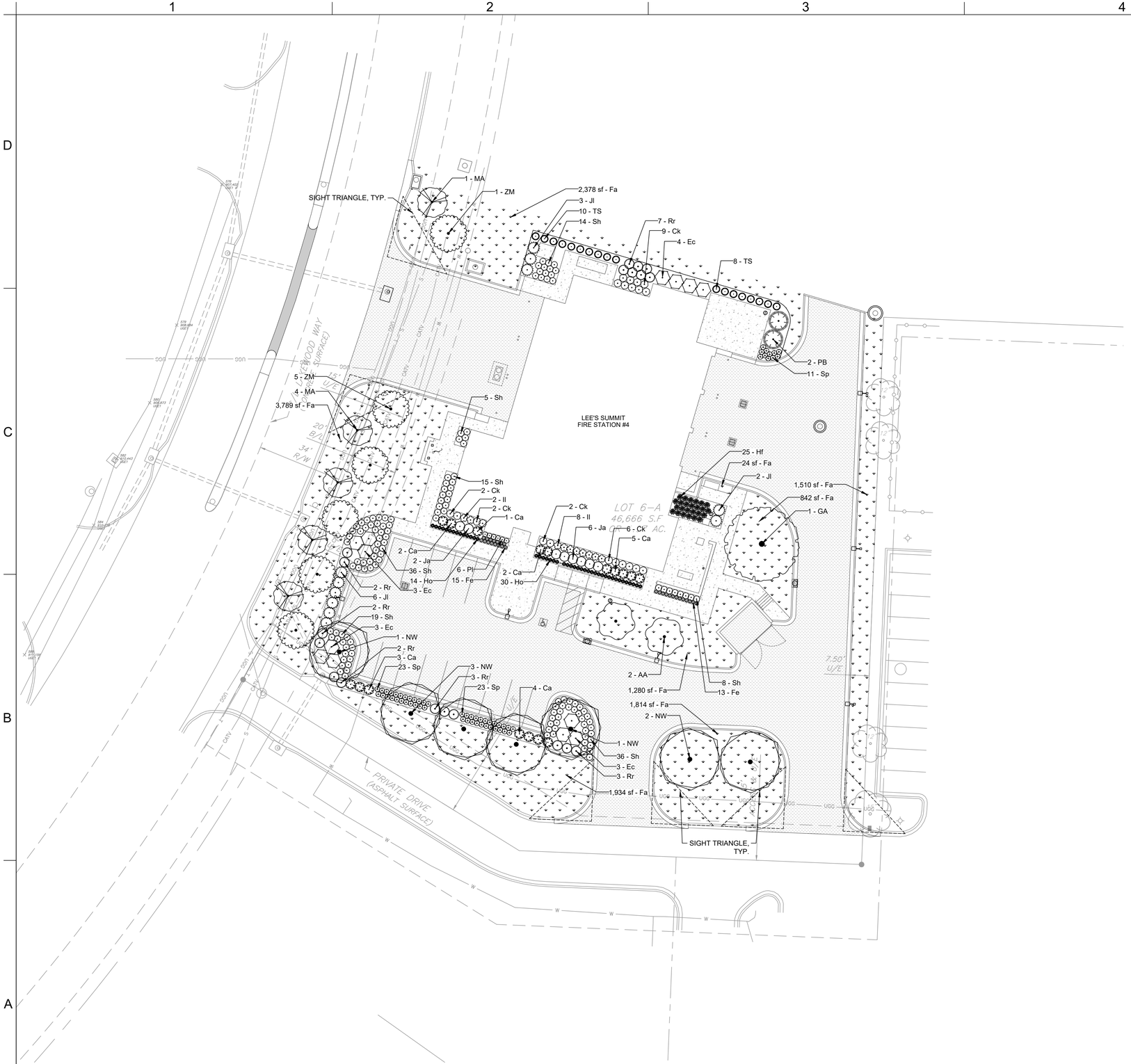

1 LANDSCAPE PLAN

1" = 20'-0"

GRAPHIC SCALE 20'

LANDSCAPE NOTES

1. ALL SHRUBS ADJACENT TO A SIDEWALK OR EDGE SHALL BE PLANTED ½ THE SPACING SPECIFIED IN THE PLANT SCHEDULE.
2. SEE SHEET L100 FOR PLANT SCHEDULE AND QUANTITIES.
3. FINAL PLANT LOCATIONS TO BE VERIFIED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
4. ALL PLANTING BED EDGES SHALL BE A CULTIVATED EDGE. SEE DETAIL 7 ON SHEET L100.
5. ALL LANDSCAPE AREAS (EXCLUDING SOD) ARE TO BE MULCHED WITH A 3" DEEP LAYER OF BROWN HARDWOOD MULCH AT THE CONCLUSION OF THE PLANTING OPERATIONS. MULCH SHALL BE DOUBLE GROUND, HARDWOOD, 1" DIAMETER IN SIZE OR SMALLER.

LANDSCAPE LEGEND

TREES	CODE	BOTANICAL NAME	COMMON NAME
	AA	Acer rubrum 'Armstrong'	Armstrong Red Maple
	GA	Ginkgo biloba 'Autumn Gold' TM	Autumn Gold Maidenhair Tree
	MA	Malus x 'Adirondack'	Adirondack Crabapple
	NW	Nyssa sylvatica `Wildfire`	Black Gum
	ZM	Zelkova serrata 'Musashino'	Musashino Sawleaf Zelkova
CONIFERS	**CODE**	**BOTANICAL NAME**	**COMMON NAME**
	PB	Picea pungens `Baby Blue`	Baby Blue Colorado Spruce
	TS	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae
SHRUBS	**CODE**	**BOTANICAL NAME**	**COMMON NAME**
	Ca	Cornus sericea `Artic Fire`	Artic Fire Dogwood
	Ec	Euonymus alatus `Compactus`	Compact Burning Bush
	Ho	Hemerocallis x 'Stella de Oro'	Stella de Oro Daylily
	Hf	Hosta x 'First Frost'	First Frost Hosta
	Il	Itea virginica `Little Henry` TM	Virginia Sweetspire
	Pl	Perovskia atriplicifolia `Little Spire` TM	Little Spire Russian Sage
	Rr	Rosa x `Knockout` TM	Rose
GRASSES	**CODE**	**BOTANICAL NAME**	**COMMON NAME**
	Ck	Calamagrostis x acutiflora `Karl Foerster`	Feather Reed Grass
	Fe	Festuca glauca `Elijah Blue`	Elijah Blue Fescue
	Sp	Schizachyrium scoparium `Prairie Munchkin`	Prairie Munchkin Little Bluestem
	Sh	Sporobolus heterolepis	Prairie Dropseed
EVERGREEN	**CODE**	**BOTANICAL NAME**	**COMMON NAME**
	Jl	Juniperus chinensis 'Gold Lace'	Gold Lace Juniper
	Ja	Juniperus horizontalis `Andorra`	Andorra Juniper
SOD/SEED	**CODE**	**BOTANICAL NAME**	**COMMON NAME**
	Fa	Festuca arundinacea 90% Fescue, 10% Bluegrass Mix	Tall Fescue

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CHK'D BY:	CDW

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LANDSCAPE PLAN

L-101

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