

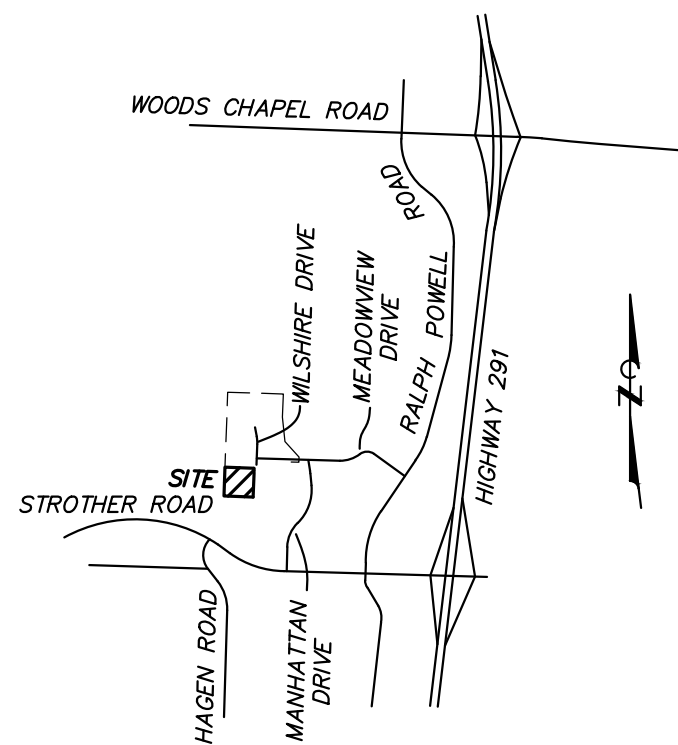
WILSHIRE HILLS PHASE III

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SITE PLAN

JUNE 30, 2023

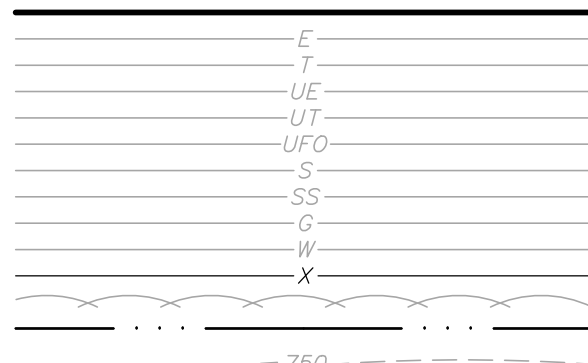
REVISED: FEBRUARY 22, 2024



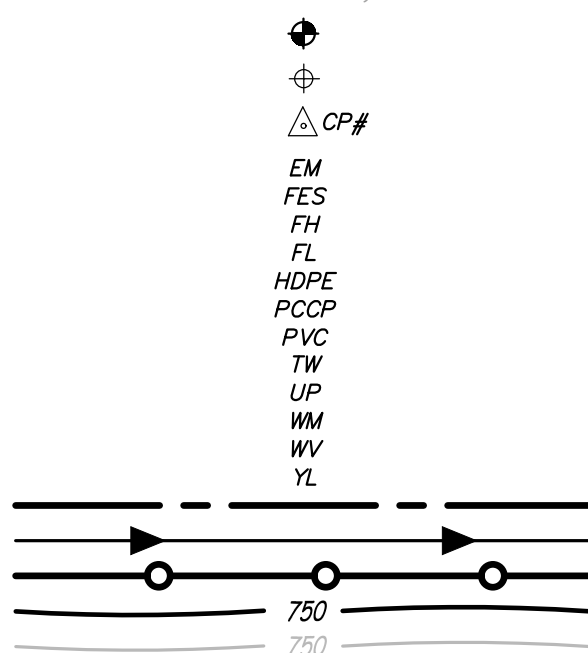
VICINITY MAP

NOT TO SCALE

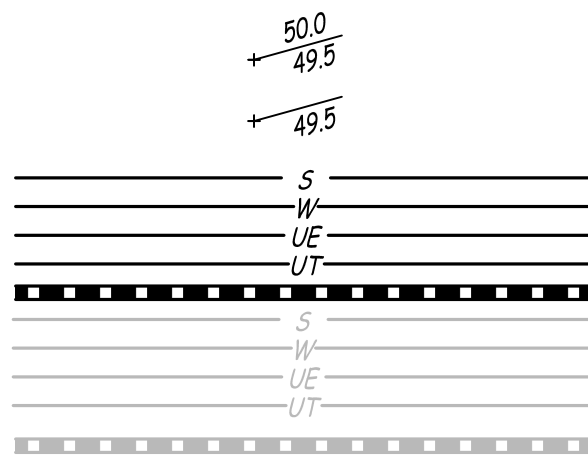
LEGEND



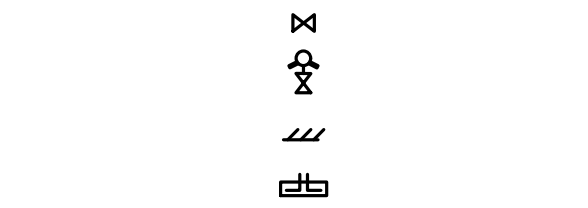
PROPERTY LINE
ELECTRIC LINE
TELECOMMUNICATIONS LINE
UNDERGROUND ELECTRIC LINE
UNDERGROUND TELECOMMUNICATIONS LINE
UNDERGROUND FIBER OPTIC LINE
SANITARY SEWER LINE
STORM SEWER LINE
GAS LINE
WATER LINE
FENCE
TREE & BRUSH LINE
DRAINAGE SWALE
EXISTING CONTOUR
ANCHOR
TEST BORING
IRON



CONTROL POINT
ELECTRIC METER
FLARED END SECTION
FIRE HYDRANT
FLOW LINE
HIGH DENSITY POLYETHYLENE PIPE
PRESTRESSED CONCRETE CYLINDER PIPE
POLYVINYL CHLORIDE PIPE
TOP OF WALL
UTILITY POLE
WATER METER
WATER VALVE
YARD LIGHT
TEMPORARY DIVERSION DIKE
TREE PRESERVATION BARRIER
FINISH CONTOUR
FINISH GRADE CONTOUR



TOP OF CURB ELEVATION
TOP OF PAVEMENT ELEVATION
FINISH GRADE ELEVATION



PROPOSED FIRE HYDRANT & VALVE
THRUST BLOCK
THRUST COLLAR
STANDARD DUTY CONCRETE



HEAVY DUTY CONCRETE

UTILITY NOTES

THE LOCATIONS, SIZES, AND MATERIAL TYPES OF UNDERGROUND UTILITIES INDICATED ON THE PLAT, NOT VISIBLE OR APPARENT FROM THE SURFACE, ARE SHOWN IN THEIR APPROXIMATE LOCATIONS FROM A MISSOURI ONE CALL SYSTEM LOCATE, OR UTILITY COMPANY RECORDS AND WERE NOT VERIFIED IN THE FIELD.

WATER

JACKSON COUNTY PWS #14
CITY OF LEE'S SUMMIT
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
CONTACT: PUBLIC WORKS DEPARTMENT 816-969-1800
12" DI ALONG THE NORTH SIDE OF MEADOWVIEW DRIVE.
30" PCCP ALONG THE WEST PROPERTY LINE.

SANITARY SEWER

CITY OF LEE'S SUMMIT
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
CONTACT: WES OWEN 816-969-1955
AS SHOWN

STORM SEWER

CITY OF LEE'S SUMMIT
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
CONTACT: SHAWN GRAFF 816-969-1800
AS SHOWN

ELECTRIC

EVERGY
1300 SE HAMLEN ROAD
LEE'S SUMMIT, MISSOURI 64081
CONTACT: 888-471-5275

FIBER OPTIC

GOOGLE FIBER
2812 WEST 47TH STREET
KANSAAS CITY, KS 66103
CONTACT: CRAIG YOUNG 870-219-5630

GAS

MISSOURI GAS ENERGY
3025 SE CLOVER ROAD
LEE'S SUMMIT, MISSOURI 64081
CONTACT: BECCA ORR 816-969-2230

TELECOM

AT&T
215 N. SPRING STREET, 2nd FLOOR
INDEPENDENCE, MO 64200
CONTACT: MARK MANION 816-275-2341
AS SHOWN

TIME WARNER CABLE
CONTACT: ROY BELLIS 913-643-1914
AS SHOWN

COMCAST CABLE COMMUNICATIONS
3400 NW DUNCAN ROAD
BLUE SPRINGS, MO 64015
CONTACT: BARBARA BROWN 816-795-2255
AS SHOWN



Call BEFORE you DIG
TOLL FREE
1-800-DIG-RITE
MISSOURI ONE-CALL SYSTEM, INC.

SURVEY CONTROL POINTS

MODIFIED STATE PLANE COORDINATES NAD 83, MISSOURI CENTRAL ZONE, NAVD 88, U.S. SURVEY FEET				
POINT #	NORTH	EAST	ELEVATION	DESCRIPTION
CP1	1021333.86	2826648.68	929.50	PK
CP176	1021358.38	2827317.26	923.23	DH
CP177	1020927.07	2826507.36	951.74	IR
CP178	1021669.21	2826691.72	922.55	IR
CP179	1021367.58	2826896.04	922.38	IR
CP500	1021193.58	2826970.42	921.04	IR
CP501	1020639.36	2827222.04	925.57	DH

ENTERPRISE GREEN COMMUNITIES NOTE

CONSTRUCTION SHALL ADHERE TO ALL ENTERPRISE GREEN COMMUNITIES REQUIREMENTS. ALL MANDATORY ITEMS LISTED BELOW.

1. LOCATION AND NEIGHBORHOOD FABRIC

2.1 - SENSITIVE SITE PROTECTION (CIVIL)

2.1.1 - NO SENSITIVE AREAS ONSITE. NO FLOODPLAINS ONSITE, NO AQUATIC ECOSYSTEMS (I.E. WETLANDS OR DEEPWATER HABITATS) ONSITE, NO ENDANGERED SPECIES (NO ENDANGERED SPECIES ONSITE AND THUS NO DESTRUCTION OF HABITAT), AND NO AGRICULTURAL SOILS ONSITE

2.2 - CONNECTIONS TO EXISTING DEVELOPMENT AND INFRASTRUCTURE (CIVIL)

2.2.1 - >25% OF THE SURROUNDING SITE IS DEVELOPED AND HAS ACCESS TO EXISTING ROAD, WATER, AND SEWER

2.2.2 - NEW DRIVEWAYS AND SIDEWALKS WERE PROVIDED TO GIVE ACCESS TO THE EXISTING PEDESTRIAN NETWORKS ALONG NE WILSHIRE DRIVE.

2.2.3 - SITE LESS THAN 5 ACRES

2.3 - COMPACT DEVELOPMENT (CIVIL)

2.3.1 - 50 UNITS/2.54 AC = 19.68 UNITS/AC > 3.01 (PER CENTER FOR NEIGHBORHOOD TECHNOLOGY "RESIDENTIAL DENSITY OF A LOCATION" CALCULATOR)

2.3.2 - 19.68 UNITS/AC > 15 UNITS PER ACRE FOR MULTI-FAMILY BUILDINGS GREATER THAN 2 STORIES

2.5 - PROXIMITY TO SERVICES AND COMMUNITY RESOURCES (CIVIL)

2.5.1 - GREATER THAN FOUR SERVICES AND/OR COMMUNITY RESOURCES ARE LOCATED WITHIN A HALF MILE OF THE PROJECT SITE.

2.6 - PRESERVATION OF AND ACCESS TO OPEN SPACE FOR RURAL/TRIBAL/SMALL TOWN

2.6.1 - GREATER THAN 10% OF THE PROJECT ACREAGE HAS BEEN SET ASIDE AS ACCESSIBLE OPEN SPACE FOR ALL RESIDENTS TO USE.

2.15 - ACCESS TO BROADBAND: BROADBAND READY (CIVIL)

2.15.1 - SITE WILL HAVE BROADBAND INFRASTRUCTURE INSTALLED AND INTERNET SERVICE WILL BE PROVIDED THROUGHOUT THE BUILDING

2. SITE IMPROVEMENTS

3.1 - ENVIRONMENTAL REMEDIATION (CIVIL)

3.1.1 - NO HAZARDOUS MATERIAL IS FOUND ON THE SITE. IT HAS BEEN MASS GRADED AND PAD READY BEFORE CONSTRUCTION.

3.2 - MINIMIZATION OF DISTURBANCE DURING STAGING AND CONSTRUCTION (CIVIL)

3.2.1 - SWPPP AND ESC PLANS WERE CREATED TO BE IMPLEMENTED DURING THE CONSTRUCTION PHASE PROCESS OF THIS PROJECT.

3.3 - ECOSYSTEM SERVICES/LANDSCAPE (CIVIL)

3.3.1 - NO INVASIVE PLANT SPECIES WERE USED IN THE LANDSCAPE PLAN. ALL PLANT SPECIES ARE SUSCEPTIBLE TO THE PLANTING REGION AND SHALL BE WELL SUITED WITHIN THE ENVIRONMENT. ALL DISTURBED AREAS WILL BE PLANTED, SEEDING OR XERISCAPED.

3.4 - SURFACE STORMWATER MANAGEMENT

3.4.1 - ONSITE RUNOFF HAS BEEN TREATED FOR THE WATER QUALITY STORM EVENT USING AN ONSITE REGIONAL DETENTION BASIN.

3.6 - EFFICIENT IRRIGATION AND WATER REUSE (IRRIGATION CONTRACTOR)

BUILDING & PARKING NOTE

LOT SIZE = 110,478 SQ. FT.

BUILDING AREA
BUILDING FOOTPRINT = 17,860 SQ. FT.
TOTAL SQ. FT. = 53,580 SQ. FT.

FLOOR AREA RATIO = 1:0.67

NUMBER OF DWELLING UNITS = 50 UNITS

NUMBER OF BEDS = 82

IMPERVIOUS COVERAGE = 76,230 SQ. FT.

REQUIRED PARKING

1 SPACE PER 2 BEDS = 50 SPACES

1 SPACE PER EMPLOYEE ON MAX SHIFT = 2 SPACES

TOTAL REQUIRED = 52 SPACES

PROVIDED PARKING

STANDARD = 48 SPACES

ACCESSIBLE = 11 SPACES

TOTAL PROVIDED = 59 SPACES

IMPERVIOUS AREA

PRE PROJECT

PERVIOUS = 0.00 ACRE

IMPERVIOUS = 2.54 ACRE

TOTAL = 2.54 ACRE

POST PROJECT

PERVIOUS = 1.29 ACRE

IMPERVIOUS = 1.25 ACRE

TOTAL = 2.54 ACRE

MDNR PERMIT

MDNR PERMIT NO. XXXX XXXXX

PROPERTY DESCRIPTION

PROPOSED LOT 5 OF WILSHIRE HILLS - 5TH PLAT

BENCH MARK

BM - MISSOURI DEPARTMENT OF TRANSPORTATION VRS NETWORK.

PROPERTY OWNER

JEFFREY E. SMITH INVESTMENT CO, LLC
206 PEACH WAY
COLUMBIA, MISSOURI 65203

ZONING NOTE

THIS PROPERTY IS ZONED "P-MIX" PLANNED MIXED USE DISTRICT

FLOODPLAIN NOTE

THIS PROPERTY IS LOCATED IN ZONE X "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD" AS SHOWN BY FIRM COMMUNITY PANEL NUMBER 29095C0430G, DATED JANUARY 20, 2017.

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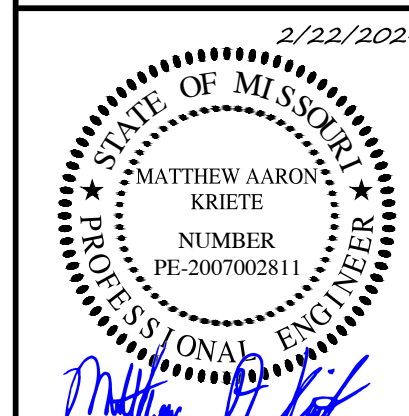


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www.ess-inc.com

MO Engineering Corp. # 2004005018

WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



MATTHEW A. KRIETE
PROFESSIONAL ENGINEER
PE-2007002811

IF ORIGINAL SIGNATURE OR DIGITAL AUTHENTICATION IS NOT PRESENT THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT.

Date
JUNE 30, 2023

Revised
FEBRUARY 22, 2024

Design: ST Drawn: MJS

COVER

Sheet

C0.01

ES&S PROJECT NO. 15925

SEQUENCE OF EVENTS

1. PRIOR TO CONSTRUCTION, COORDINATE AND HAVE A PRE-CONSTRUCTION MEETING REGARDING SWPPP TRAINING WITH CONSTRUCTION PERSONNEL.
2. DETERMINE ALL UTILITY FIELD LOCATES AS NECESSARY.
3. CONSTRUCT TEMPORARY CONSTRUCTION ENTRANCE AND CONCRETE WASH OUT. INSTALL ALL PERIMETER EROSION AND SEDIMENT CONTROL PER PLAN.
4. COMMENCE ALL CLEARING AND GRUBBING PER PLAN. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS.
5. STRIP TOPSOIL IN GRADING AREAS AND STOCKPILE IN AREAS AS SHOWN ON PLAN.
6. COMMENCE SITE GRADING. FILL ACTIVITIES SHALL MEET THE REQUIREMENTS OF THE GEOTECHNICAL REPORT.
7. CONSTRUCT RETAINING WALL AND FENCE.
8. INSTALL STORM SEWERS PER PLAN. INSTALL INLET PROTECTION IMMEDIATELY UPON COMPLETION OF EACH STORM STRUCTURE.
9. UTILIZE ONSITE FILL MATERIALS FOR OVER EXCAVATED AREAS. FOLLOW GEOTECHNICAL REPORT REQUIREMENTS FOR FILL MATERIAL.
10. INSTALL SITE UTILITIES AS GRADING ALLOWS.
11. FINALIZE BUILDING SUBGRADE PREPARATION IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT.
12. BEGIN BUILDING CONSTRUCTION.
13. FINALIZE PAVEMENT SUBGRADE PREPARATION. INSTALL BASE MATERIAL AS REQUIRED FOR PAVED AREAS. REMOVE INLET PROTECTION AROUND INLETS NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
14. COMMENCE PAVEMENT AND SIDEWALK CONSTRUCTION. REMOVE TEMPORARY CONSTRUCTION ENTRANCE ONLY PRIOR TO PAVEMENT CONSTRUCTION IN THAT AREA (PAVE THIS AREA LAST).
15. COMPLETE FINISH GRADING, TOPSOIL, PLACEMENT, SEED/SOD, AND MULCH ALL DISTURBED AREAS. EXCESS TOPSOIL SHALL BE MOVED TO NEIGHBORING SITE.
16. INSTALL LANDSCAPING.
17. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL WHEN ALL DISTURBED AREAS ARE STABILIZED.

CONSTRUCTION NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL IDENTIFIED PROPERTY CORNERS, LAND SURVEY CORNERS, AND ACCESSORIES. THE CONTRACTOR SHALL CAUSE THE CORNERS AND ACCESSORIES TO BE REFERENCED BY A LICENSED LAND SURVEYOR, AND ANY SUCH CORNER OR ACCESSORIES DISTURBED OR DESTROYED DURING CONSTRUCTION SHALL BE RESET BY THE SURVEYOR AT THE ORIGINAL LOCATION, AND FILE THE RESTORATIONS AND MONUMENT DOCUMENTS AS THE LAW REQUIRES.
4. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEERING SURVEYS AND SERVICES FOR REVIEW AND APPROVAL FOR ALL MATERIALS BEFORE ORDERING.
5. ALL DIMENSIONS ARE TO BACK OF CURB, FACE OF SIDEWALK, OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
6. CONCRETE DRIVEWAY APRONS SHALL BE CONSTRUCTED AS PER CITY OF LEE'S SUMMIT SPECIFICATIONS. CONTRACTOR SHALL OBTAIN PERMIT FROM CITY TO WORK WITHIN STREET RIGHT-OF-WAY.
7. ALL STRIPING SHALL BE 4" WIDE WHITE LINES. ACCESSIBLE SPACES SHALL BE 4" WIDE BLUE LINES AND ALL STRIPING SHALL BE A MINIMUM OF 2 COATS.
8. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
9. ALL TRAFFIC CONTROL SHALL BE PER CURRENT MUTCD REQUIREMENTS AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. A TRAFFIC CONTROL PLAN WILL BE REQUIRED FOR ANY WORK WITHIN THE RIGHT-OF-WAY.
10. CONTRACTOR SHALL NOTIFY ADJACENT PROPERTY OWNERS IN WRITING 30 DAYS PRIOR TO CONSTRUCTION
11. IF A CONFLICT EXISTS BETWEEN THE CIVIL PLANS AND CIVIL SPECIFICATIONS, THE CIVIL PLANS SHALL GOVERN.
12. ALL INCIDENTAL ITEMS INCLUDING BUT NOT LIMITED TO SIGNS, PAVEMENT MARKING, PAVEMENT, CURBS, TRUNCATED DOWNS, FENCING, LANDSCAPING, IRRIGATION, ETC. EITHER DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE RETURNED TO ORIGINAL CONDITIONS BY THE CONTRACTOR.

HAZARDOUS SUBSTANCE NOTE

1. SUBSTANCES REGULATED BY FEDERAL LAW UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) OR THE COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA) WHICH ARE TRANSPORTED, STORED OR USED FOR MAINTENANCE, CLEANING OR REPAIRS SHALL BE MANAGED ACCORDING TO THE PROVISIONS OF RCRA AND CERCLA.
2. ALL PAINTS, SOLVENTS, PETROLEUM PRODUCTS AND PETROLEUM WASTE PRODUCTS (EXCEPT FUELS) AND STORAGE CONTAINERS (SUCH AS DRUMS, CANS OR CARTONS) SHALL BE STORED SUCH THAT THESE MATERIALS ARE NOT EXPOSED TO STORM WATER. SUFFICIENT PRACTICES OF SPILL PREVENTION, CONTROL AND/OR MANAGEMENT SHALL BE PROVIDED TO PREVENT ANY SPILLS OF THESE POLLUTANTS FROM ENTERING A WATER OF THE STATE. ANY CONTAINMENT SYSTEM USED TO IMPLEMENT THIS REQUIREMENT SHALL BE CONSTRUCTED OF MATERIALS COMPATIBLE WITH THE SUBSTANCES CONTAINED AND SHALL ALSO PREVENT THE CONTAMINATION OF GROUNDWATER.
3. THE APPLICANT SHALL NOTIFY BY TELEPHONE AND IN WRITING THE DEPARTMENT OF NATURAL RESOURCES, WATER POLLUTION CONTROL PROGRAM, POST OFFICE BOX 176, JEFFERSON CITY, MO 65102, 1-800-361-4827, OF ANY OIL SPILLS OR IF HAZARDOUS SUBSTANCES ARE FOUND DURING THE PROSECUTION OF WORK UNDER THIS PERMIT.

ELECTRIC NOTES

SITE CONTRACTOR SHALL CONTACT EVERY TO COORDINATE INSTALLATION OF ELECTRIC SERVICES. RESPONSIBILITY OF INSTALLATION SHALL BE AS FOLLOWS:		
	SUPPLIED BY:	INSTALLED BY:
SECONDARY CONDUIT	CONTRACTOR	CONTRACTOR
CONDUCTOR	EVERGY	EVERGY
METER CONNECTIONS	EVERGY	EVERGY
TRANSFORMER	EVERGY	EVERGY
TRANSFORMER PAD	EVERGY	CONTRACTOR
PRIMARY CONDUIT, CONNECTORS, ETC.	CONTRACTOR	CONTRACTOR
CONDUCTOR	EVERGY	EVERGY
CONNECTIONS	----	EVERGY

GRADING AND STORM SEWER CONSTRUCTION NOTES

1. ALL STORM SEWER PIPES AND INLETS SHALL MEET HEAVY DUTY TRAFFIC (HS20) LOADING AND BE INSTALLED ACCORDINGLY.
2. CONCRETE STORM SEWER INLETS & JUNCTION BOXES SHALL BE INSTALLED PER THE CITY OF LEE'S SUMMIT SPECIFICATIONS AND AS DETAILED IN THESE PLANS.
3. REINFORCED CONCRETE PIPE (RCP) SHALL BE INSTALLED PER THE "EMBEDMENT OF RCP STORM SEWER PIPE" DETAIL. PIPE CLASS SHALL BE APPROPRIATE TO DEPTH AND BEDDING MATERIAL AS SHOWN IN SCHEDULE.
4. ALL RCP PIPE JOINTS SHALL BE SOIL TIGHT PER CURRENT MODOT SPECIFICATIONS SECTION 726.3.1.
5. ALL HDPE PIPE SHALL BE ADS N-12 ST SOIL TIGHT, SMOOTH INTERIOR PIPE OR APPROVED EQUAL. INSTALLATION SHALL FOLLOW THE "EMBEDMENT OF PLASTIC STORM SEWER PIPE" DETAIL.
6. PVC PIPE MAY BE USED IN LIEU OF HDPE FOR DIAMETERS LESS THAN 15". PVC PIPE SHALL BE SDR 35 OR GREATER, AS REQUIRED BY DEPTH OR AS NOTED IN THESE PLANS.
7. INLINE DRAIN AND DRAIN BASINS SHALL BE NYLOPLAST, HARCO, OR APPROVED EQUAL AND SHALL BE PVC CONFORMING TO ASTM D1784 CELL CLASS 12454. JOINTS SHALL BE WATER TIGHT FLEXIBLE ELASTOMERIC SEALS CONFORMING TO ASTM D3212. INLINE DRAIN AND DRAIN BASIN GRATES AND FRAMES SHALL BE DUCTILE IRON CONFORMING TO ASTM A536 GRADE 70-50-05, OR 80-55-06.
8. CONTRACTOR SHALL ADJUST ALL GRATES, MANHOLES, VALVE BOXES, ETC. TO MATCH FINISH GRADES, AS REQUIRED.
9. ALL STRUCTURE CONNECTIONS SHALL BE WATERTIGHT.
10. ALL CONCRETE STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED CONCRETE INVERT FROM INVERT IN TO INVERT OUT.
11. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RIG & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE FLUSH WITH FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER". TOP OF BOXES SHALL BE SLOPED TO MATCH PAVEMENT GRADE.
12. PIPE LENGTHS ARE GIVEN FROM CENTER OF STRUCTURE OR DOWNSTREAM END OF FLARED END SECTIONS.
13. ALL FLARED END SECTIONS FOR CONCRETE PIPE SHALL BE REINFORCED PRECAST CONCRETE. ALL FLARED END SECTIONS FOR PLASTIC PIPE SHALL BE GALVANIZED METAL UNLESS OTHERWISE NOTED.
14. ALL SITES USED FOR IMPORTING OR EXPORTING OF FILL MATERIAL SHALL HAVE AN ACTIVE MISSOURI DEPARTMENT OF NATURAL RESOURCES LAND DISTURBANCE PERMIT, AS REQUIRED.
15. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS, TREES AND BRUSH, AND OTHER MATERIAL CREATED AS A RESULT OF CONSTRUCTION. MATERIAL SHALL BE DISPOSED OF IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. BURNING ON SITE SHALL BE ALLOWED BY PERMIT ONLY.
16. CONTRACTOR SHALL REMOVE ALL STUMPS BY EXCAVATING TO INCLUDE REMOVAL OF ASSOCIATED ROOT SYSTEM.
17. CONTRACTOR SHALL NOT ADVANCE TRENCH EXCAVATION BEYOND AMOUNT THAT CAN ACCOMMODATE PIPE INSTALLATION AND BACKFILL AT THE END OF EACH DAY.
18. ENGINEERED FILL SHOULD BE FREE OF FROZEN SOIL, ORGANICS, RUBBISH, LARGE ROCKS, WOOD, OR OTHER DELETERIOUS MATERIAL. COHESIVE FILLS SHOULD BE UNIFORMLY COMPACTED TO AT LEAST 95 PERCENT OF THE "STANDARD" MAXIMUM DRY DENSITY AND BE WITHIN -2 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT AS DESCRIBED BY ASTM D698. GRANULAR FILLS SHOULD BE UNIFORMLY COMPACTED TO AT LEAST 95 PERCENT OF THE "STANDARD" MAXIMUM DRY DENSITY. THE MOISTURE CONTENT SHOULD BE HIGH ENOUGH TO PROVIDE FOR PROPER COMPACTION BUT LOW ENOUGH TO PREVENT UNDUCE PUMPING. PLACE FILL MATERIAL IN LOOSE LIFTS NOT TO EXCEED 8 INCHES IN THICKNESS.
19. ROCKS AND STONES THAT EXCEED THE THICKNESS OF THE LOOSE LIFT FILL LAYER SHOULD BE REMOVED AND DISPOSED OF OFF THE IMMEDIATE CONSTRUCTION AREA.
20. IMPORTED SOILS PROPOSED FOR USE AS FILL OR BACKFILL SHOULD BE REVIEWED AND ANALYZED BY THE GEOTECHNICAL ENGINEER PRIOR TO USE ON SITE. SOIL CLASSIFIED AS MH, OH, OL, OR PT (HIGH PLASTICITY SOILS AND ORGANIC SOILS) BY THE UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487) SHOULD NOT BE IMPORTED FOR USE AS ENGINEERED FILL. SUITABLE IMPORTED MATERIALS FOR GENERAL SITE FILL ARE THOSE THAT CLASSIFY AS GW, GC, GG, SC, AND CL IN ACCORDANCE WITH ASTM D 2487. MATERIALS CLASSIFIED AS OH SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO THEIR IMPORTATION AND ONLY USED OUTSIDE THE BUILDING PAD AT DEPTHS BELOW THE UPPER 2 FEET OF SUBGRADE. SUBJECT TO FINAL DESIGN REQUIREMENTS FOR WALL BACKFILL, SUITABLE IMPORTED MATERIALS FOR WALL AND TRENCH BACKFILL ARE THOSE THAT CLASSIFY AS GW, GP, GM, GC, SM, SW, SP, SC, AND CL IN ACCORDANCE WITH ASTM D2487.
21. FILLS PLACED IN AREAS WHERE THE NATURAL SLOPE IS GREATER THAN 5H:1V (HORIZONTAL TO VERTICAL) SHOULD BE BENCHED INTO THE EXISTING GRADE TO REDUCE THE POTENTIAL FOR SLIPPAGE BETWEEN EXISTING SLOPES & ENGINEERED FILL. BENCHES SHOULD BE LEVEL AND WIDE ENOUGH TO ACCOMMODATE COMPACTION AND EARTH MOVING EQUIPMENT.
22. FILL AND SUBGRADE CONSTRUCTION SHOULD NOT BE STARTED ON FOUNDATION SOIL, PARTIALLY COMPLETED FILL, OR SUBGRADES THAT CONTAIN FROST OR ICE. FILL SHOULD NOT BE CONSTRUCTED USING FROZEN SOIL. FROZEN SOIL SHOULD BE REMOVED PRIOR TO PLACING FILL MATERIAL.
23. AFTER STRIPPING AND GRUBBING OPERATIONS ARE COMPLETED AND PRIOR TO FILL PLACEMENT, AREAS TO BE FILLED SHALL BE PROOF ROLLED USING A LOADED TANDEM AXLE DUMP TRUCK TO IDENTIFY SOFT AND UNSUITABLE AREAS. SOFT MATERIAL MAY BE MOISTURE CONDITIONED AND REUSED AS ENGINEERED FILL. UNSUITABLE AND DELETERIOUS MATERIAL SHALL BE REMOVED FROM SITE.
24. ALL NEW UTILITY TRENCHES SHOULD BE BACKFILLED IN ACCORDANCE WITH APPROPRIATE CONTROLLED ENGINEERED FILL SPECIFICATIONS.
25. FIELD DENSITY TESTS SHOULD BE CONDUCTED IN ACCORDANCE WITH ASTM D6938 (NUCLEAR METHODS) OR ASTM D 1556 (SAND CONE METHOD). FIELD DENSITY TESTS SHOULD BE PERFORMED AT THE RATE OF ONE TEST PER 2,500 SQUARE FEET PER LIFT WITHIN THE BUILDING AND 10,000 SQUARE FEET PER LIFT BENEATH PAVEMENTS, SIDEWALKS, AND OTHER POTENTIAL STRUCTURAL AREAS WITH A MINIMUM OF 3 TESTS PER LIFT AND ONE TEST PER 150 LINEAL FEET PER LIFT FOR FOUNDATION, TRENCH AND WALL BACKFILL.
26. BUILDING PAD AND PARKING AREAS SHALL BE PROOF-ROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK TO IDENTIFY ANY SOFT OR UNSUITABLE AREAS. PRIOR TO BASE ROCK PLACEMENT, THE PROOF-ROLL SHALL BE OBSERVED BY THE PROJECT GEOTECHNICAL ENGINEER. AREAS IDENTIFIED AS UNSUITABLE SHALL BE OVER EXCAVATED AND RECONSTRUCTED WITH ENGINEERED FILL.
27. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS FOR ALL LANDSCAPED AND PAVED AREAS.
28. CONTRACTOR SHALL PLACE STOCKPILED TOPSOIL FROM SITE IN ALL LANDSCAPE AREAS TO A MINIMUM DEPTH OF 6", UNLESS NOTED OTHERWISE IN PROJECT SPECIFICATIONS. ANY EXCESS TOPSOIL SHALL BE DISPOSED OF ONSITE PER OWNER.

PLAN REFERENCE NOTES

1. THESE PLANS ARE PART OF A LARGE PLAN FOR THE DEVELOPMENT OF WILSHIRE HILLS. THE FULL SET OF PLANS INCLUDES THE FOLLOWING LIST, PREPARED BY AND DATED SPECIFICALLY FEBRUARY 16, 2024.
 - a. ROAD & STORM SEWER PLAN
 - b. UTILITY EXTENSION PLAN
 - c. SANITARY SEWER EXTENSION PLAN
 - d. MASS GRADING & EROSION CONTROL PLAN
2. IMPROVEMENTS FROM THE PUBLIC IMPROVEMENT PLAN (PDP) ARE SHOWN AS GREY SCALED ON THIS PLAN AND ARE ASSUMED TO BE THE EXISTING CONDITION FOR THESE PLANS.

SUBSTITUTION AND ALTERNATIVE MATERIALS NOTE

1. THE FOLLOWING MATERIALS WILL BE CONSIDERED ACCEPTABLE AS ALTERNATIVE/SUBSTITUTE MATERIAL.
 - a. WATER MAIN, SERVICE FITTINGS, AND PIPES MAY BE SUBSTITUTED WITH EQUIVALENT ALTERNATIVE MATERIAL. ACCEPTABLE MATERIALS, SELECTED AS APPROPRIATE FOR PIPE SIZE, INCLUDE:
 - i. 280 PSI PRESSURE RATED, GASKETED BELL AND JOINT PVC
 - ii. DUCTILE IRON (BAGGED)
 - iii. SMALL DIAMETER TUBING: PEX-A, PEX-B, SDR9 PVC
 - b. STORM: HDPE CAN BE SUBSTITUTED WITH RCP AND CMP (ALUMINIZED/SMOOTH WALL). CMP MUST BE INSTALLED UNDER MANUFACTURERS OBSERVATION. RCP MAY NOT BE SUBSTITUTED.
- ALL SUBSTITUTIONS MUST BE NOTED IN THE BID PROVIDING A DEDUCTED ALTERNATIVE VALUE VERSUS THE AS DESIGANATED MATERIALS. ALL SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER AND OWNER PRIOR TO USE.

WATER NOTES

1. ALL WATER LINE CONSTRUCTION SHALL BE PER CURRENT CITY OF LEE'S SUMMIT WATER UTILITY STANDARDS AND SPECIFICATIONS UNLESS NOTED OTHERWISE.
2. SITE CONTRACTOR SHALL FURNISH AND INSTALL:
 - a. ALL WATER MAINS AND FIRE HYDRANTS
 - b. DOMESTIC LINES TO WITHIN 5' OF BUILDING
 - c. METERS
 - d. BACKFLOW PREVENTERS
 - e. ALL VALVES
 - f. FIRE RISER
3. BUILDING CONTRACTOR SHALL CONNECT TO DOMESTIC WITHIN 5' OF BUILDING.
4. SITE CONTRACTOR SHALL INSTALL FIRE RISERS IN BUILDINGS TURN AND CAP 18 INCHES ABOVE FINISH FLOOR (SEE MEP PLANS FOR EXACT LOCATION).
5. ALL VALVES, TEES, CROSSES, BENDS AND REDUCERS SHALL BE RESTRAINED.
6. WATER METER BOXES SHALL BE PLACED INTERVAL TO BUILDING.
7. ACTUAL DEPTH OF THE 30-INCH WATER MAIN ON THE WEST EDGE OF THE PROPERTY WILL BE FIELD VERIFIED BEFORE ANY GRADING WORK BEGINS.
8. ALL WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 LATEST EDITION.

FIRE NOTES

1. ALL ISSUES PERTAINING TO LIFE SAFETY AND PROPERTY PROTECTION FROM THE HAZARDS OF FIRE, EXPLOSION OR DANGEROUS CONDITIONS IN NEW AND EXISTING BUILDINGS, STRUCTURES AND PREMISES, AND TO THE SAFETY, TO FIRE FIGHTERS AND EMERGENCY RESPONDERS DURING EMERGENCY OPERATIONS, SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL FIRE CODE.
2. AN APPROVED WATER SUPPLY CAPABLE OF SUPPLYING THE REQUIRED FIRE FLOW FOR FIRE PROTECTION SHALL BE PROVIDED TO PREMISES UPON WHICH FACILITIES, BUILDINGS OR PORTIONS OF BUILDINGS ARE HEREAFTER CONSTRUCTED OR MOVED INTO OR WITHIN THE JURISDICTION.
3. PRIOR TO ANY COMBUSTIBLE CONSTRUCTION, WILSHIRE DRIVE SHALL BE COMPLETED THROUGH STROTHER ROAD, ALL PUBLIC AND PRIVATE HYDRANTS SHALL BE IN PLACE AND OPERABLE, AND THE APARTMENT PARKING LOTS' ASPHALT BASE SHALL BE IN PLACE.
4. THE LOCATION OF FIRE DEPARTMENT CONNECTIONS SHALL BE APPROVED BY THE FIRE CODE OFFICIAL. CONNECTIONS SHALL BE 4-INCH STORZ TYPE FITTING AND LOCATED WITHIN 100 FEET OF A FIRE HYDRANT, OR AS APPROVED BY THE CODE OFFICIAL.

STORM WATER POLLUTION PREVENTION PLAN NOTES

1. CONTRACTOR SHALL FOLLOW THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.D.E.S. PERMIT FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES. A COPY OF THIS PLAN, SWPPP, AND ALL PERMITS SHALL REMAIN ON SITE THROUGHOUT CONSTRUCTION.
2. CONTRACTORS ARE REQUIRED TO SUBMIT TO CITY INSPECTION STAFF COPIES OF THEIR INSPECTION REPORTS REQUIRED BY THE SWPPP ON A MONTHLY BASIS.
3. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVAL HAS BEEN RECEIVED FROM ALL GOVERNING AUTHORITIES.
4. IMMEDIATELY UPON COMPLETION OF FINISH GRADING IN EACH AREA, ALL LANDSCAPING AREAS SHALL BE STABILIZED PER PLANS AND/OR SPECIFICATIONS.
5. SHOULD CONSTRUCTION STOP FOR LONGER THAN 14 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED IN THE SWPPP.
6. SITE INSPECTION SHOULD OCCUR ON A REGULAR SCHEDULE AND WITHIN 24 HOURS OF A STORM EVENT OF 0.25 INCHES OR GREATER. REGULARLY SCHEDULED INSPECTION SHALL BE A MINIMUM OF ONCE EVERY 7 CALENDAR DAYS. ANY DEFICIENCIES SHALL BE NOTED IN A WEEKLY REPORT OF THE INSPECTION AND CORRECTED WITHIN SEVEN CALENDAR DAYS OF THE REPORT.
7. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
8. CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
9. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
10. CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
11. ALL SLOPES GREATER THAN 3:1 SHALL BE REINFORCED BY NORTH AMERICAN GREEN P300 PERMANENT TURF REINFORCEMENT MAT OR APPROVED EQUAL.
12. ALL ROLLED EROSION CONTROL MATS, BIONETS, BLANKETS, ETC. SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS. INSTALLATION SHALL RESULT IN A PRODUCT THAT IS TIGHTLY SECURED TO THE GROUND THAT FORCES RUNOFF TO DRAIN OVER, NOT UNDER, THE PRODUCT. GRASS SHALL BE PLANTED PRIOR TO PRODUCT PLACEMENT SO IT WILL GROW THRU THE BLANKET. ALL ASPECTS OF THE PRODUCT SHALL BE FIRMLY SECURED TO THE GROUND SO IT CAN BE MOVED OVER WITHOUT GETTING TANGLED IN THE MOWER.
13. CONTRACTOR SHALL REMOVE ALL TRASH, DEBRIS, TREES & BRUSH AND OTHER MATERIAL CREATED AS A RESULT OF THE CONSTRUCTION WORK AND THE SITE SHALL BE RETURNED TO ITS ORIGINAL CONDITION.
14. ALL PERIMETER LANDSCAPED AREAS SHALL BE GRASS COVERED.
15. IN ORDER TO TERMINATE A MISSOURI DEPARTMENT OF NATURAL RESOURCES (MONR) STATE OPERATING PERMIT, THE CONTRACTOR SHALL SUBMIT A REQUEST FOR TERMINATION OF OPERATING PERMIT FORM TO MONR. A PERMIT IS ELIGIBLE FOR TERMINATION WHEN EITHER PERENNIAL VEGETATION, PAVEMENT, BUILDINGS, OR STRUCTURES USING PERMANENT MATERIALS COVER ALL AREAS THAT HAVE BEEN DISTURBED. VEGETATIVE COVER SHOULD BE AT LEAST 70% OF FULLY ESTABLISHED PLANT DENSITY OVER 100% OF THE DISTURBED AREA. A COPY OF THE REQUEST FOR TERMINATION OF OPERATING PERMIT FORM SHALL BE SUBMITTED TO THE CITY OF COLUMBIA AT WHICH TIME THE CITY WILL REMOVE THE PROJECT FROM ITS INSPECTION SCHEDULE.
16. THE SITE CONTRACTOR SHALL INCLUDE MAINTENANCE OF ALL BMP'S AS PART OF THEIR CONTRACT AND SHALL BE RESPONSIBLE FOR THE PROJECT UNTIL THE NPDES PERMIT IS TERMINATED.
17. SOIL STOCKPILES SHALL COMPLY WITH THE CITY OF LEE'S SUMMIT.

GENERAL CONSTRUCTION NOTES

1. PARKING SUMMARY
 - a. REQUIRED PARKING
 - b. PROVIDED PARKING
 - i. 48 STANDARD SPACES
 - ii. 11 ACCESSIBLE SPACES
 - iii. 59 TOTAL SPACES
2. SITE PAVEMENT SHALL BE PLACE AS FOLLOWS:
 - a. CONCRETE PAVING
 - i. STANDARD DUTY SHALL BE A MINIMUM OF 6-INCHES THICK REINFORCED CONCRETE WITH A MINIMUM 4" OF CRUSHED STONE BASE (SEE DETAIL SHEET C10.01).
 - ii. HEAVY DUTY SHALL BE A MINIMUM 8-INCHES THICK REINFORCED CONCRETE WITH A MINIMUM 6-INCHES OF CRUSHED STONE BASE (SEE DETAIL SHEET C10.01).
 - b. CONCRETE CURB (SEE DETAIL ON SHEET C10.01)
 - i. ALL CURB SHALL BE 24-INCHES WIDE FROM BACK OF CURB TO EDGE OF CUTTER PAN.
 - ii. CURB SHALL HAVE A MINIMUM 4-INCH OF CRUSHED STONE BASE.
 - iii. ALL ACCESSIBLE CONCRETE PAVING SHALL BE DOWELED TO CURB.
 - c. SIDEWALKS (SEE DETAIL ON SHEET C10.01-C10.03)
 - i. TO BE FOUR INCH (4") THICK CONCRETE.
 - ii. ALL SIDEWALK AT BACK OF CURB SHALL BE DOWELED TO CURB (SEE DETAIL ON SHEET C10.01).
 - iii. SIDEWALKS SHALL NOT BE POURED UNTIL BUILDING EXTERIOR FINISHES ARE SUBSTANTIALLY COMPLETE. ANY PLACEMENT OF SIDEWALK PRIOR, WITHOUT OWNER'S APPROVAL, SHALL BE AT THE PAVING CONTRACTOR'S SOLE RISK.
 - d. CONCRETE JOINTS
 - i. CONCRETE PARKING LOT PAVING AND SIDEWALK SHALL BE PROVIDED JOINTS FOR PER THE JOINT PLAN AND PER DETAIL ON SHEET C10.01.
 - ii. EXPANSION JOINTS SHOULD BE PLACED EVERY 100 LINEAL FEET FOR PARKING LOT PAVEMENT AND EVERY 50 LINEAL FEET FOR SIDEWALK, MINIMUM.
 - iii. PAVING JOINTS SHALL BE CONTINUOUS THRU CURB AND GUTTER.
 - iv. PAVING JOINTS FOR SIDEWALK AT BACK OF CURB SHALL ALIGN WITH CURB AND GUTTER JOINTS.
 - e. STANDARD DUTY CONCRETE PAVEMENT SHALL BE USED BELOW THE PORTE COCHERE.
 - f. ALL DUMPSTER PADS AND APPROACHES SHALL BE HEAVY DUTY CONCRETE PAVEMENT.
3. SITE ACCESSIBILITY
 - a. ALL ACCESSIBLE PARKING STALLS, CROSSWALKS, AND OTHER ACCESSIBLE ROUTES WITHIN THE PARKING AREA SHALL BE STANDARD DUTY CONCRETE, UNLESS NOTED OTHERWISE
 - b. ACCESSIBLE CONCRETE PARKING SHALL HAVE A MAXIMUM SLOPE OF 1.7% IN ALL DIRECTIONS.
 - c. ALL SIDEWALKS SHALL BE CONSTRUCTED AS FOLLOWS:
 - i. 1.7% MAXIMUM CROSS SLOPE.
 - ii. 4.7% MAXIMUM RUNNING SLOPE.
 - iii. LANDINGS AT 1.7% MAX SLOPE IN ALL DIRECTIONS.
 - d. RAMPS SHALL BE CONSTRUCTED AS FOLLOWS:
 - i. 7.5% MAXIMUM RISE
 - ii. MAXIMUM RISE 6-INCHES
 - iii. MAXIMUM CROSS SLOPE OF 1.7%
 - e. LANDINGS SHALL BE PROVIDED AS THE INTERSECTION OF ALL SIDEWALKS AND AT THE TOP AND BOTTOM OF ALL RAMPS.
 - f. ALL SIDEWALKS SHALL BE CONSIDERED ACCESSIBLE, UNLESS NOTED OTHERWISE.
 - g. ALL SITE AMENITIES SHALL BE ACCESSIBLE.
 - h. ALL DUMPSTERS SHALL BE ACCESSIBLE.
 - i. NO ELEMENTS SHALL PROJECT MORE THAN 4" INTO AN ACCESSIBLE ROUTE.
4. FENCING
 - a. ALL FENCING ABOVE RETAINING WALL SHALL BE 4' BLACK VINYL COATED CHAINLINK FENCE.
5. DUMPSTER ENCLOSURE
 - a. ALL ENCLOSURES SHALL BE BLOCK WITH BRICK VENEER.
 - b. ALL GATES SHALL BE STEEL FRAME AND VINYL SLATS.
 - c. SEE ARCHITECTURAL PLANS FOR DETAILS.
6. MONUMENT SIGN
 - a. SHALL BE BLOCK AND BRICK VENEER CONSTRUCTION.
 - b. SIGN SHALL HAVE A 4' BY 8' SIGN FACE WITH 2' X 2' COLUMNS EACH END.
 - c. ALL LIGHTING SHALL BE GROUND MOUNTED.
 - d. A MINIMUM 2" PVC CONDUIT SHALL BE EXTENDED FROM THE HOUSE PANEL TO THE MONUMENT SIGN FOR POWER.
7. MAINTENANCE BUILDING
 - a. PROVIDE A MINIMUM 2" PVC CONDUIT FROM THE HOUSE PANEL FOR ELECTRICAL SERVICE.
 - b. MAINTENANCE BUILDING SHALL BE BRICK WAINSCOT AND SIDING.
 - c. SEE ARCHITECTURAL PLANS.
8. FLAG POLE
 - a. SEE ARCHITECTURAL PLANS FOR LOCATION AND DETAIL OF FLAG POLE
 - b. FLAG POE SHALL BE PROVIDED WITH AN ACCESSIBLE PATH.
 - c. ALL LIGHTING SHALL BE GROUND MOUNTED, SEE MEP PLANS FOR LIGHTING DESIGN.
 - d. A MINIMUM 2" PVC CONDUIT SHALL BE EXTENDED FROM THE HOUSE PANEL TO THE FLAG POLE FOR POWER.
9. SANITARY SEWER SERVICES SHALL BE TIED NEAR THE MIDDLE OF SLAB TO REDUCE RISK OF DAMAGE TO SLAB. ALL SANITARY SEWER SHALL INVERT TO BE MINIMUM 5' BELOW FFE IN ORDER TO COME OUT BELOW THE FOOTING.
10. SITE CONTRACTOR SHALL BE RESPONSIBLE FOR
 - a. COORDINATION OF THE INSTALLATION OF THE WATER METER WITH THE UTILITY.
 - b. COORDINATION OF WITH UTILITY PROVIDER FOR THE WATER MAIN TAP
 - c. THE STANDARD SERVICE CONNECTION OR NEW MANHOLE LOCATION
 - d. INSTALLATION OF THE FIRE RISER FOR WATER SERVICE INTO THE BUILDING, STUBBED 18" ABOVE FINISH FLOOR.
11. SITE CONTRACTOR SHALL BE RESPONSIBLE FOR
 - a. INSTALLATION THE CONNECTION OF THE SITE SEWER SERVICE TO THE MAIN INCLUDING ALL MATERIALS AND LABOR. THE CONTRACTOR SHALL PROVIDE TWENTY-FOUR (24) HOURS' NOTICE TO THE DEPARTMENT FOR CONNECTION. NONE OF THE BUILDING SEWER OR PLUMBING OR SANITARY DRAINAGE SYSTEM SHALL BE COVERED OR ENCLOSED UNTIL INSPECTED, HYDRAULICALLY TESTED, AND APPROVED BY THE DEPARTMENT
12. THE SITE CONTACTOR SHALL PERFORM A SITE SURVEY AFTER CLEARING & GRUBBING IN ORDER TO CONFIRM TOPO ON PLANS IS ACCURATE PRIOR TO MASS GRADING.
13. ALL 3-STORY OR TALLER BUILDINGS SHALL HAVE A LIGHTNING ROD (SEE ARCHITECTURAL).
14. LANDSCAPING
 - a. PLANTS SHALL BE PROPERLY SELECTED TO FOR SITE CONDITION CONDITIONS SUCH AS:
 - i. SHADE, PARTIAL SHADE, FULL SUN
 - ii. WELL DRAINED OR POORLY DRAINED SOILS.
 - iii. SUITABLE FOR USDA PLANT HARDINESS ZONE.
 - b. SHADE TREES SHALL BE MINIMUM 2" CALIPER, UNLESS NOTED OTHERWISE.
 - c. EVERGREEN TREES SHALL BE AT LEAST 6-FOOT TALL.
 - d. SHRUBS SHALL BE 1-5 GALLON.
 - e. SOD SHALL BE PLACE ON ALL DISTURBED AREAS AND AT A MINIMUM:
 - i. BETWEEN THE BUILDING/PARKING LOT AND DISTURBED SITE FRONTAGE.
 - ii. BETWEEN THE PARKING LOT AND BUILDING(S).
 - iii. BETWEEN PARKING LOT AND SIDEWALKS.
 - iv. A MINIMUM 15-FEET BEYOND EDGE OF SIDEWALK, PARKING LOT, AND DRIVEWAY.
 - f. ALL AREAS NOT SODDED SHALL BE HYDROSEEDED.
 - g. TURF REINFORCEMENT MATS AND EROSION CONTROL BLANKETS SHALL BE PLACED AS NOTED ON PLAN.
15. IRRIGATION SYSTEM NOTES
 - a. ALL SODDED AREA SHALL BE IRRIGATED.
 - b. ALL HYDROSEEDED LAWN AREAS SHALL BE IRRIGATED.
 - c. IRRIGATION METER AND BACKFLOW PREVENT SHALL BE PLACED PER PLAN.
 - d. IRRIGATION METER SHALL BE INSTALLED PER LOCAL JURISDICTION.
 - e. IRRIGATION CONTROLLER SHALL BE PLACED PER PLAN.
 - f. IRRIGATION BACKFLOW PREVENTOR SHALL BE PLACED ABOVE GROUND WITHIN A LOCKABLE HOUSING CONSTRUCTED OR POWDER COATED STEEL FRAME AND MESH. BACKFLOW PREVENTOR SHALL BE PROPERLY PROTECTED FROM FROST.
 - g. IRRIGATION SHALL BE ZONED. ALL PLANTING BEDS AND TURF SHALL BE SEPARATELY ZONED.
 - h. CONTRACTOR SHALL SUBMIT IRRIGATION PLANS TO THE OWNER A MINIMUM OF 30 DAYS PRIOR TO PROPOSED INSTALLATION FOR APPROVAL. SHOW NOTE THAT IRRIGATION DESIGN DRAWINGS ARE TO BE SUBMITTED FOR APPROVAL.
16. THE MISSOURI DEPARTMENT OF NATURAL RESOURCES DATABASE OF WELLS (WSDM) DOES NOT PROVIDE EVIDENCE FOR ANY ACTIVE, INACTIVE, OR ABANDONED OAL AND/OR GAS WELLS ON THE PROPERTY.

UTILITY CONSTRUCTION NOTES

1. LOCATION OF SITE UTILITIES SHALL BE VERIFIED BY CONTRACTOR AND THE PROPER UTILITY COMPANY PROVIDING SERVICE PRIOR TO THE START OF CONSTRUCTION.
2. EXISTING UTILITIES SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION OF ANY NEW LINES.
3. UTILITY TIE-INS ARE SHOWN IN APPROXIMATE LOCATIONS. REFER TO MEP PLANS FOR EXACT TIE-IN OF ALL UTILITIES.
4. SITE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE SPECIFIC UTILITY WATER DEPARTMENT AND CITY OF LEE'S SUMMIT PUBLIC WORKS WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER LINES, RESPECTIVELY.
5. OWNER OR OWNER'S AGENT WILL BE RESPONSIBLE FOR ALL TAP AND TIE ON FEES REQUIRED. SITE CONTRACTOR IS RESPONSIBLE FOR COST OF UNDERGROUND SERVICE CONNECTIONS TO THE BUILDING.
6. ALL WATER AND SANITARY LEADS TO BUILDING SHALL END 5" OUTSIDE THE BUILDING LINES AS SHOWN ON PLAN AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AT END, VISIBLE ABOVE FINISHED GRADE.
7. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS. BACKFILL OF TRENCHES THROUGH ANY IMPROVED AREAS, SUCH AS STREET, DRIVES OR PARKING LOTS SHALL BE COMPACTED TO MINIMUM 98% STANDARD PROCTOR DENSITY (ASTM D-698).
8. PROPOSED ELECTRIC, TELEPHONE, TELEVISION, AND GAS LINES ARE SHOWN FOR COORDINATION PURPOSES ONLY. SYSTEM DESIGN PREPARED BY EACH RESPECTIVE AGENCY. REFER TO MEP PLANS FOR CONDUIT REQUIREMENTS.
9. ALL UNDERGROUND UTILITY CONDUITS SHALL BE PLACED 48" BELOW FINISH GRADE UNLESS NOTED OTHERWISE.
10. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY, MEASURED EDGE TO EDGE, FROM ANY EXISTING OR PROPOSED SANITARY SEWER. WATER MAINS CROSSING SANITARY SEWERS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL CLEAR DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SANITARY SEWER. CENTER TO FULL LENGTH OF WATER MAIN UNDER THE SEWER SO BOTH WATER MAIN JOINTS ARE AS FAR FROM THE SEWER AS POSSIBLE. AT SANITARY SEWER CROSSINGS, PLACE COMPACTED CLAY SOIL BACKFILL 18 INCHES ABOVE OR BELOW THE WATER MAIN FOR A DISTANCE OF AT LEAST 10 FEET ON EITHER SIDE OF THE SANITARY SEWER. CONTRACTOR SHALL NOTIFY ENGINEER IF HORIZONTAL AND VERTICAL SEPARATION CANNOT BE PROVIDED.
11. ALL UNDERGROUND LINES SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
12. TOPS OF EXISTING ELECTRIC, SANITARY, STORM, WATER, TELECOMMUNICATION, GAS, IRRIGATION, CHILLED WATER, AND STEAM STRUCTURES SHALL BE RAISED AS NECESSARY TO BE FLUSH WITH PROPOSED FINISHED ELEVATIONS.
13. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH OF 3000 P.S.I.
14. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODE AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICE.
15. REFER TO ARCHITECTURAL <MEP> PLANS FOR SITE LIGHTING PLAN.
16. PVC CONDUIT SHALL BE SCHEDULE 40 PVC WITH LONG SWEEPS ONLY (36" MINIMUM RADIUS) AND CONTAIN PULLTAPE, UNLESS OTHERWISE NOTED.
17. SITE CONTRACTOR SHALL PROVIDE AND INSTALL THE CONCRETE PAD FOR THE TRANSFORMER PER THE ELECTRIC COMPANY SPECIFICATIONS.
18. SITE CONTRACTOR SHALL CONTACT EVERY TO COORDINATE INSTALLATION OF NEW TRANSFORMERS.
19. A MINIMUM 18" OF VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE OUTSIDE OF THE ELECTRIC CONDUIT AND THE OUTSIDE OF THE WATER, STORM SEWER, SANITARY SEWER, OR GAS PIPE AT ALL CROSSINGS.
20. STUBS FOR FUTURE UTILITIES SHOULD BE CLEARLY MARKED AND ES&S CONTACTED FOR DATA COLLECTION.



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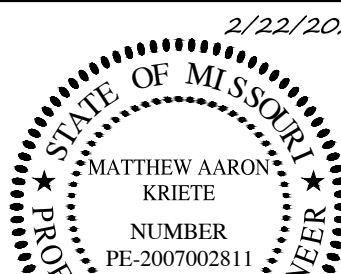
www.es-inc.com

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WILSHIRE HILLS PHASE III

3200 NE WILSHIRE DR

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



MATTHEW A. KRIETE
PROFESSIONAL ENGINEER
PE-2007002811

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Date

JUNE 30, 2023

Revised

FEBRUARY 22, 2024

Design: ST Drawn: MJS

GENERAL NOTES

Sheet

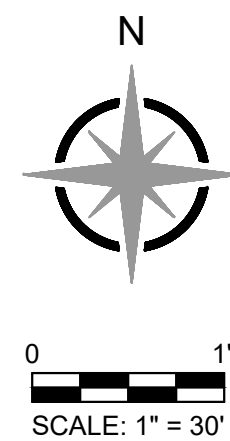
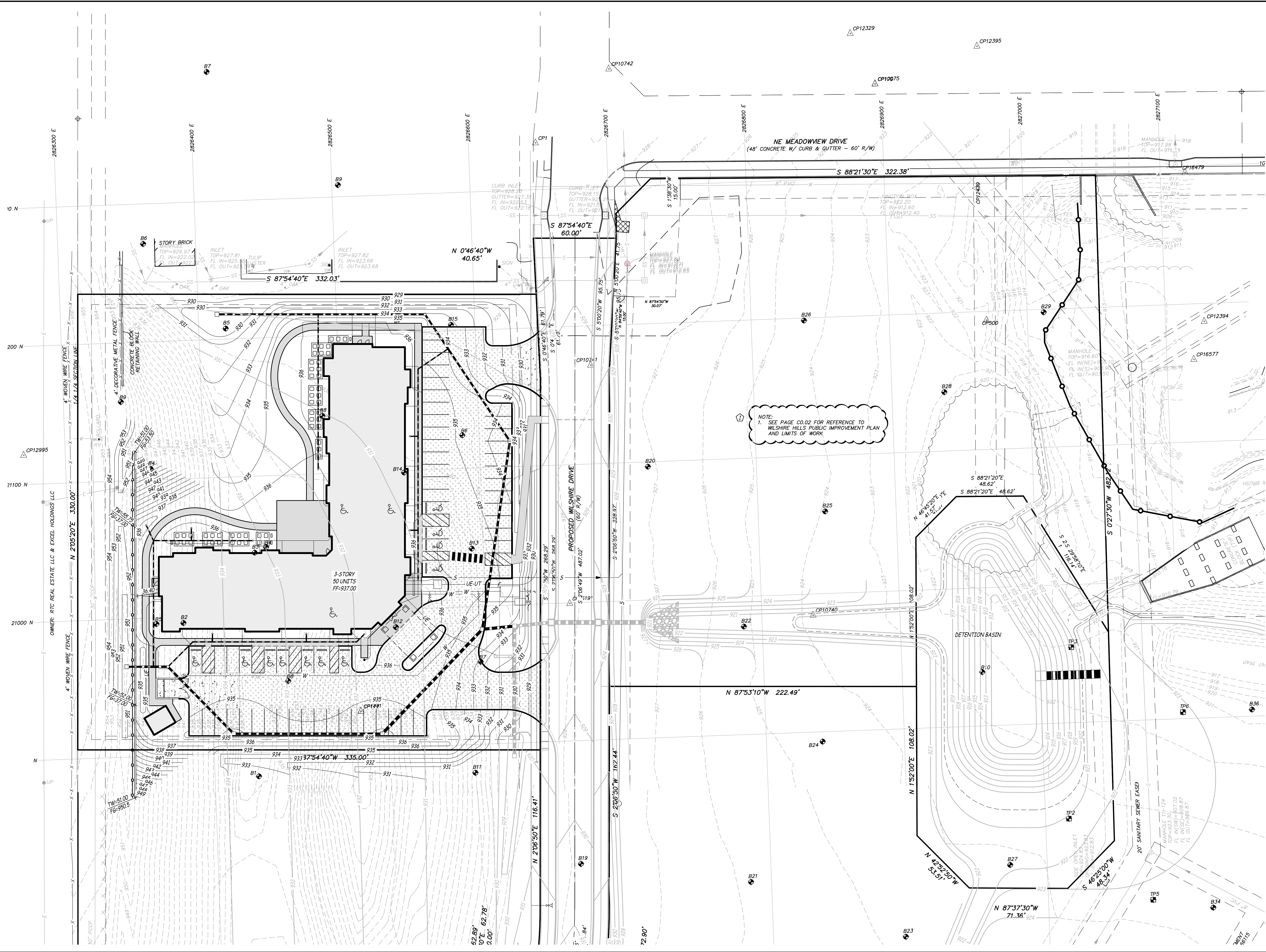
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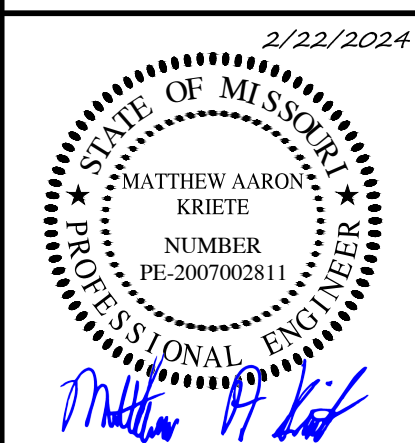
CONSTRUCTION DOCUMENTS

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P:\GENERAL PROJECTS\15925E-KES-WILSHIRE-HILLS-3-ENG\CAD\15925 SITE PLANDWG 2/26/2024



WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



MATTHEW A. KRIETE
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FEBRUARY 22, 2024

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OVERALL PLAN

Sheet

C1.01

ES&S PROJECT NO. 15925

CONSTRUCTION DOCUMENTS

2/22/2024

STATE OF MISSOURI
MATTHEW AARON
KRIETE
NUMBER
PE-2007002811
PROFESSIONAL ENGINEER

Matthew A Kriete

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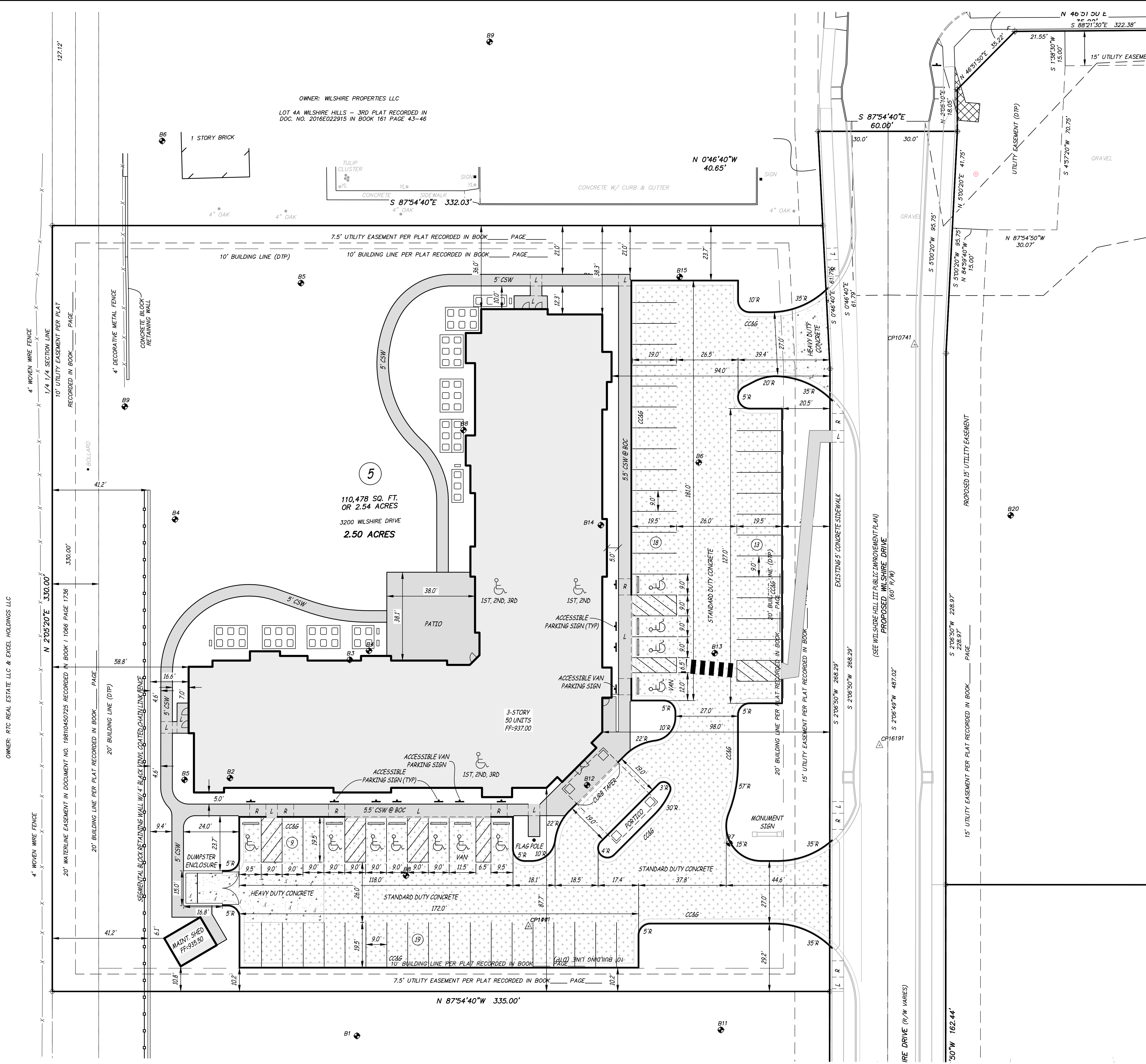
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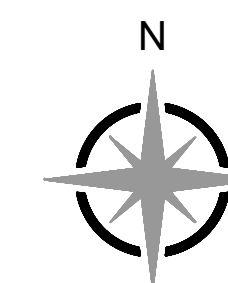
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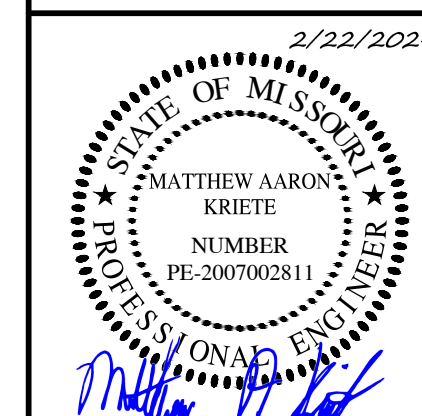
NOTE:
1. SEE PAGE C0.02 FOR REFERENCE TO
WILSHIRE HILLS PUBLIC IMPROVEMENT PLAN
AND LIMITS OF WORK





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SCALE: 1" = 2'

WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



MATTHEW A. KRIETE
PROFESSIONAL ENGINEER
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FEBRUARY 22, 2024

Design: ST Drawn: MJS

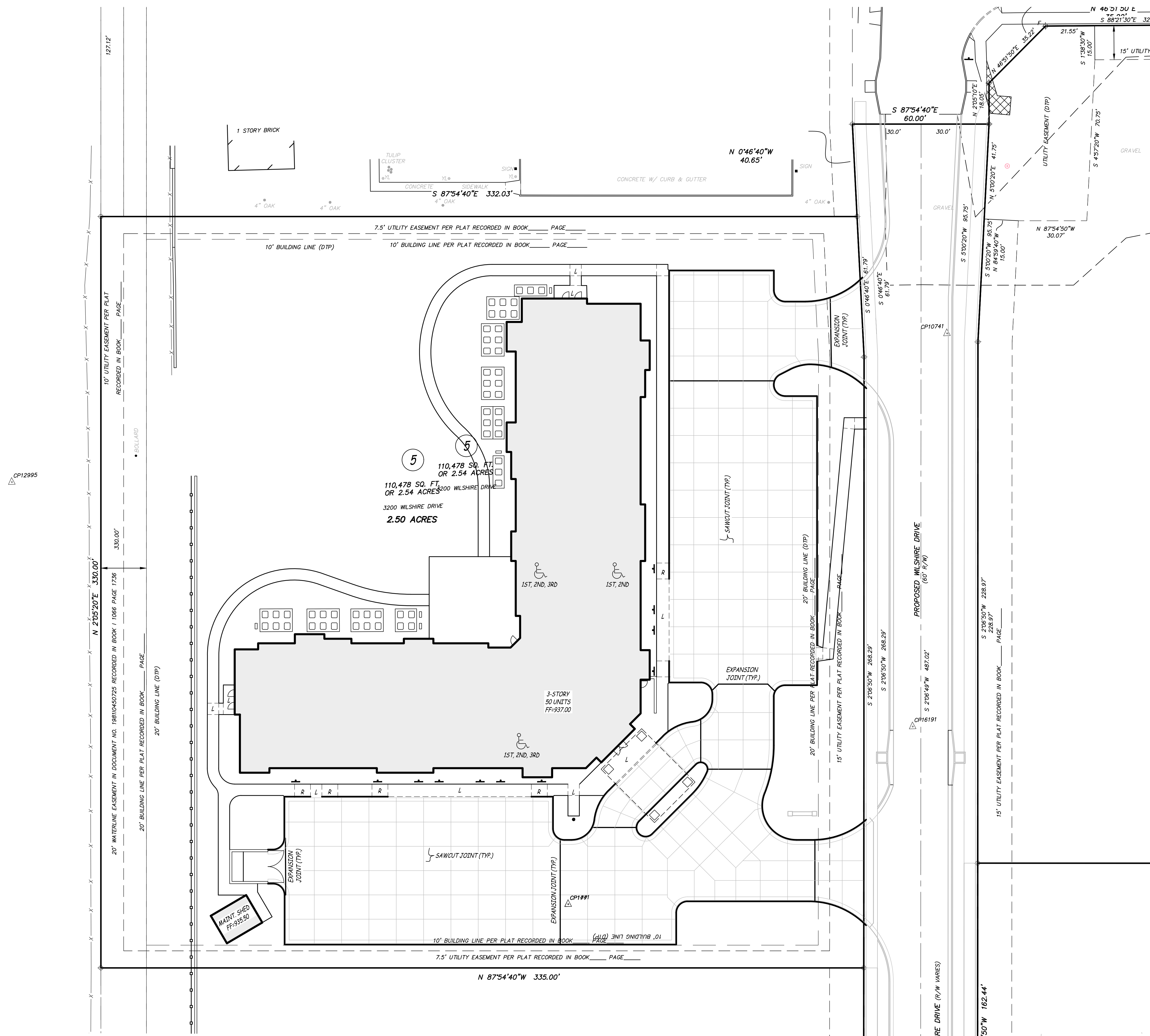
JOINT PLAN

Sheet

C3.01

ES&S PROJECT NO. 15925

CONSTRUCTION DOCUMENTS



NOTE:
1. SEE PAGE C0.02 FOR REFERENCE TO
WILSHIRE HILLS PUBLIC IMPROVEMENT PLAN
AND LIMITS OF WORK

2/22/2024

MATTHEW AARON
KRIETE
NUMBER
PE-2007002311

Matthew A. Kriete

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Revised
 FEBRUARY 22, 2024

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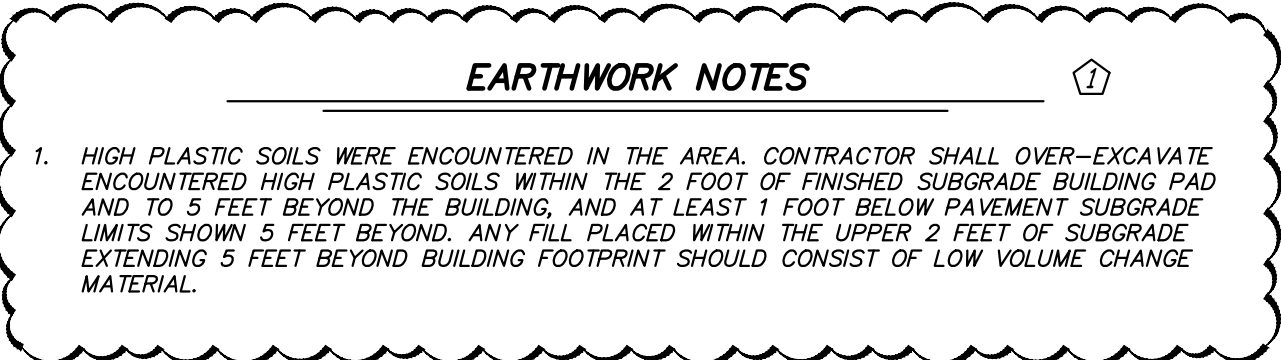
GRADING & DRAINAGE PLAN

Sheet

C4.01

C4.01

ES&S PROJECT NO. 15925



NOTE:
1. SEE PAGE C0.02 FOR REFERENCE TO
WILSHIRE HILLS PUBLIC IMPROVEMENT PLAN
AND LIMITS OF WORK

CONSTRUCTION DOCUMENTS

Design: ST	Drawn: MJS
STORM SEWER PLAN	

Sheet

Design: ST Drawn: MJS

Revised
FEBRUARY 22, 2024

Date _____

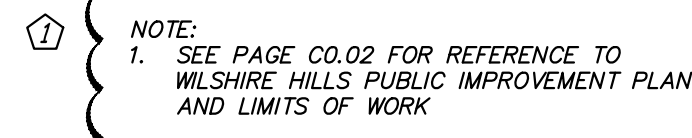
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MATTHEW A. KRIETE
PROFESSIONAL ENGINEER
PE-2007002811

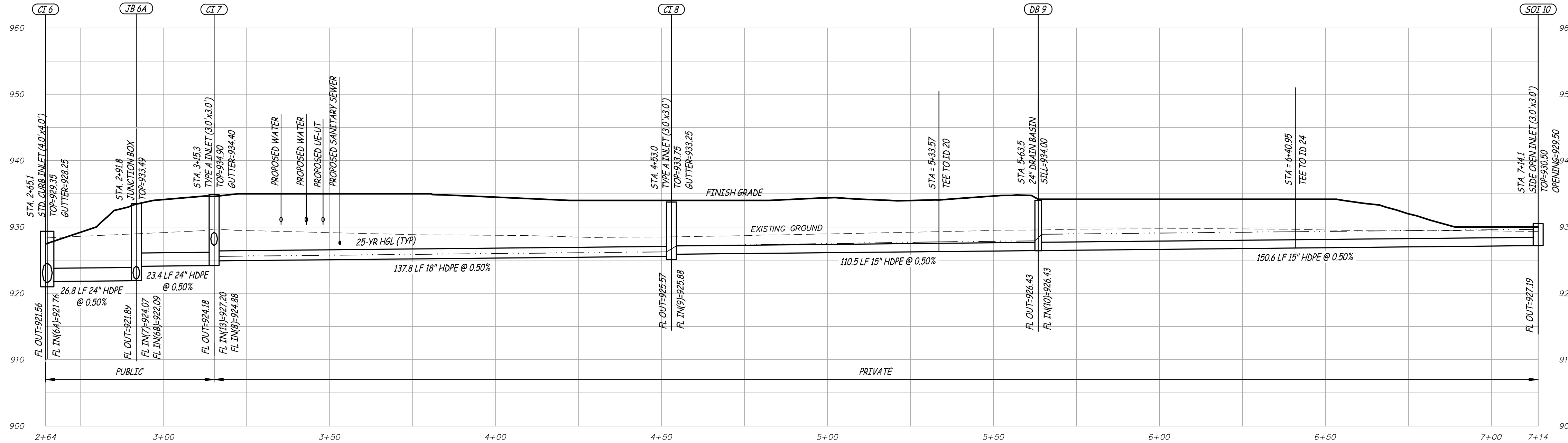
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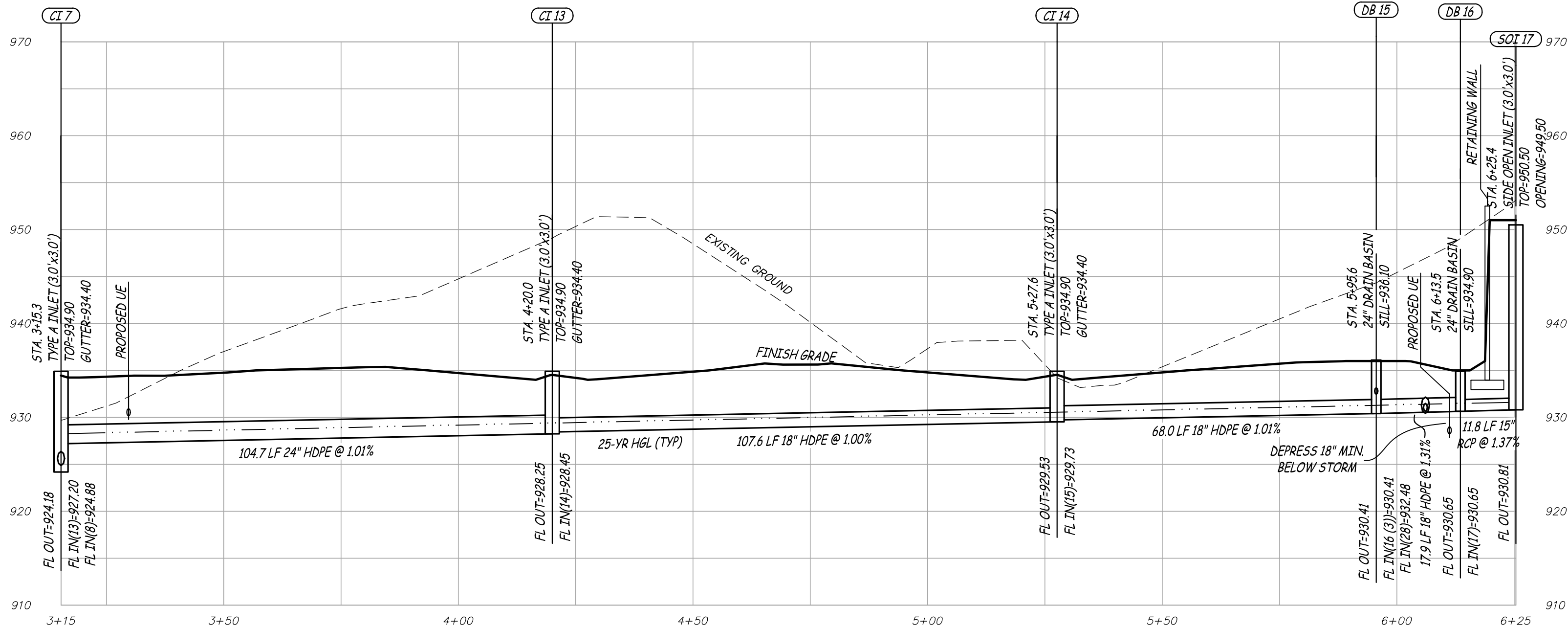
MATTHEW AARON
KRIETE
NUMBER
PE-2007002811
PROFESSIONAL ENGINEER



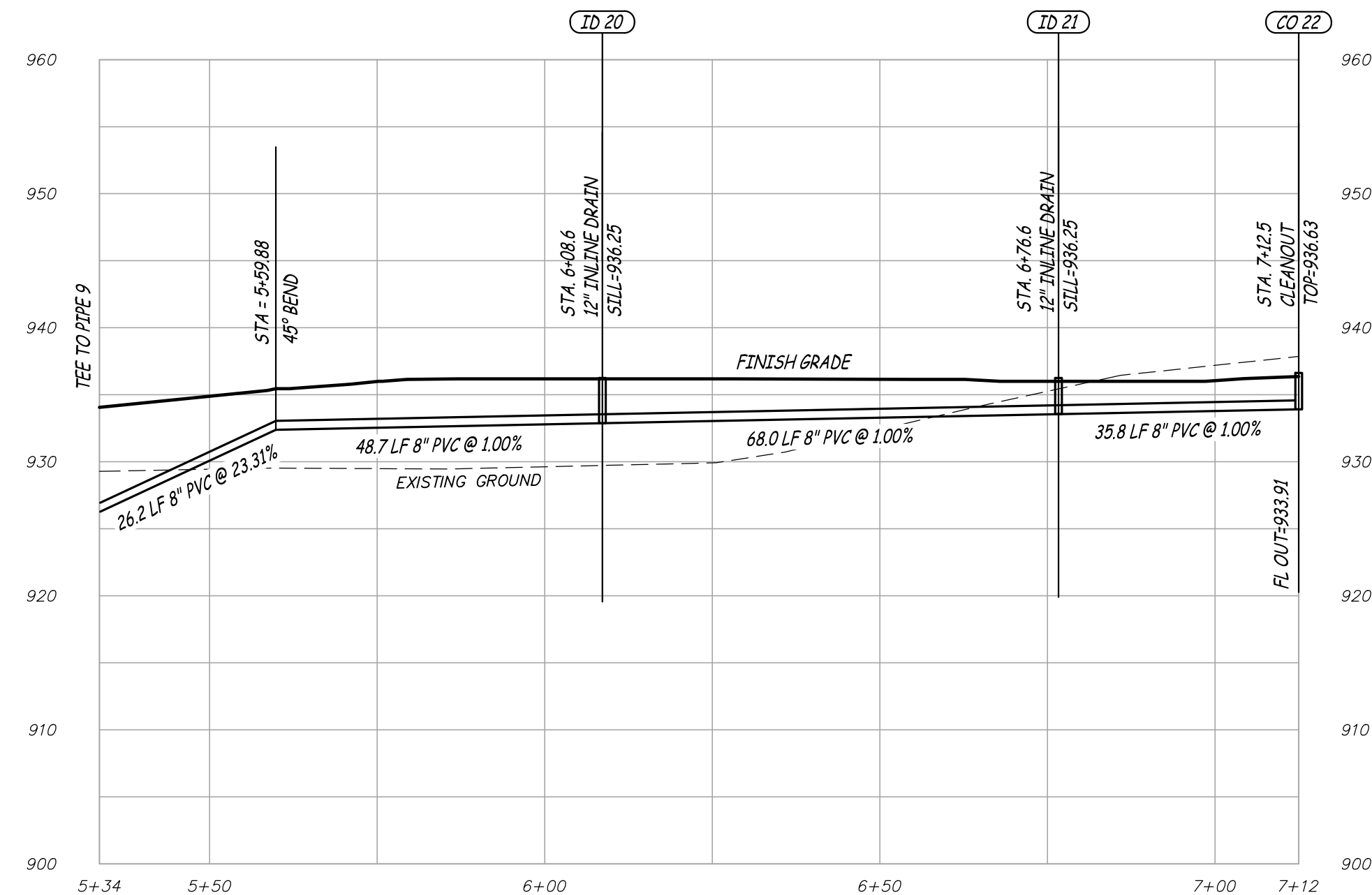
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VERT. 1" = 10'



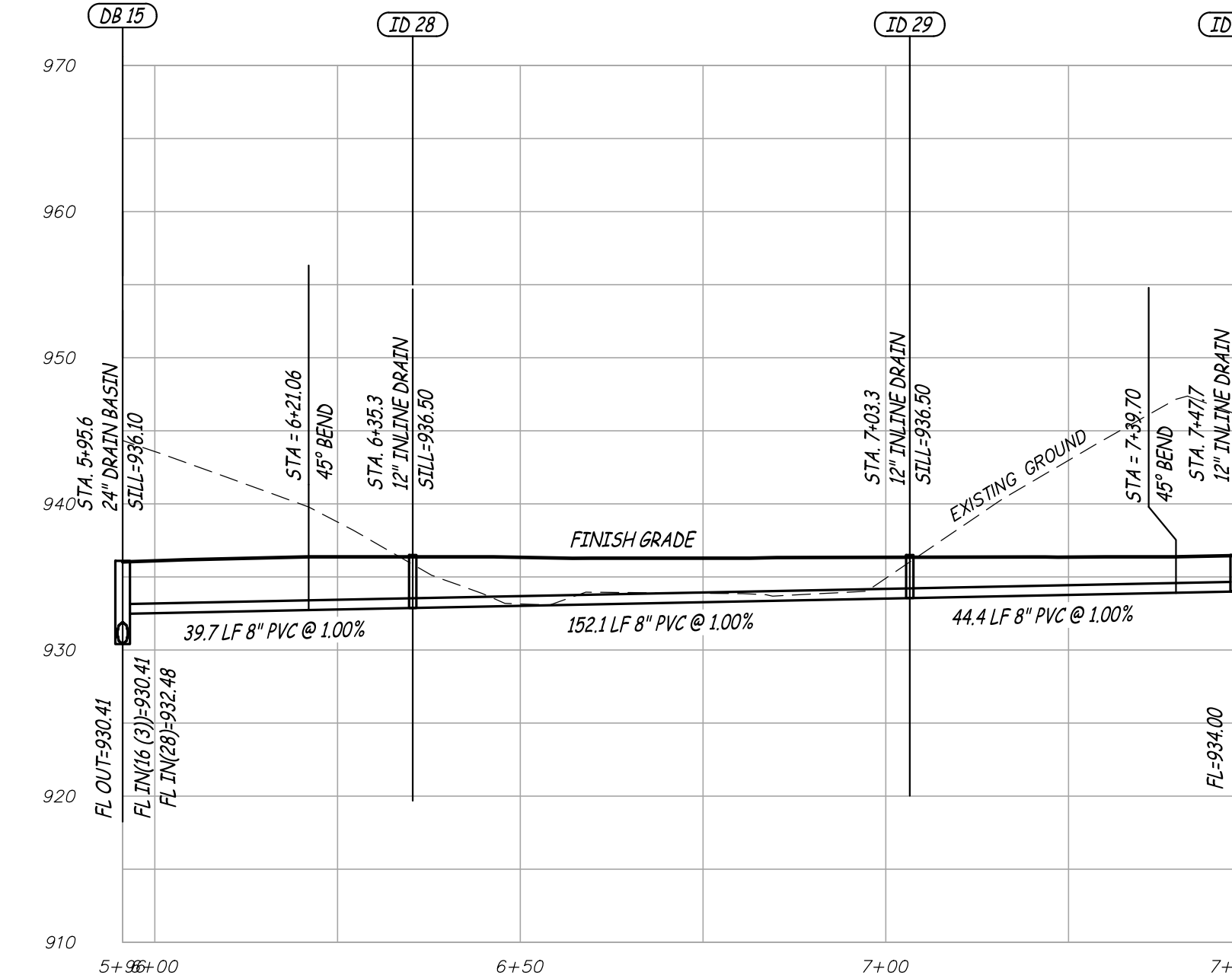
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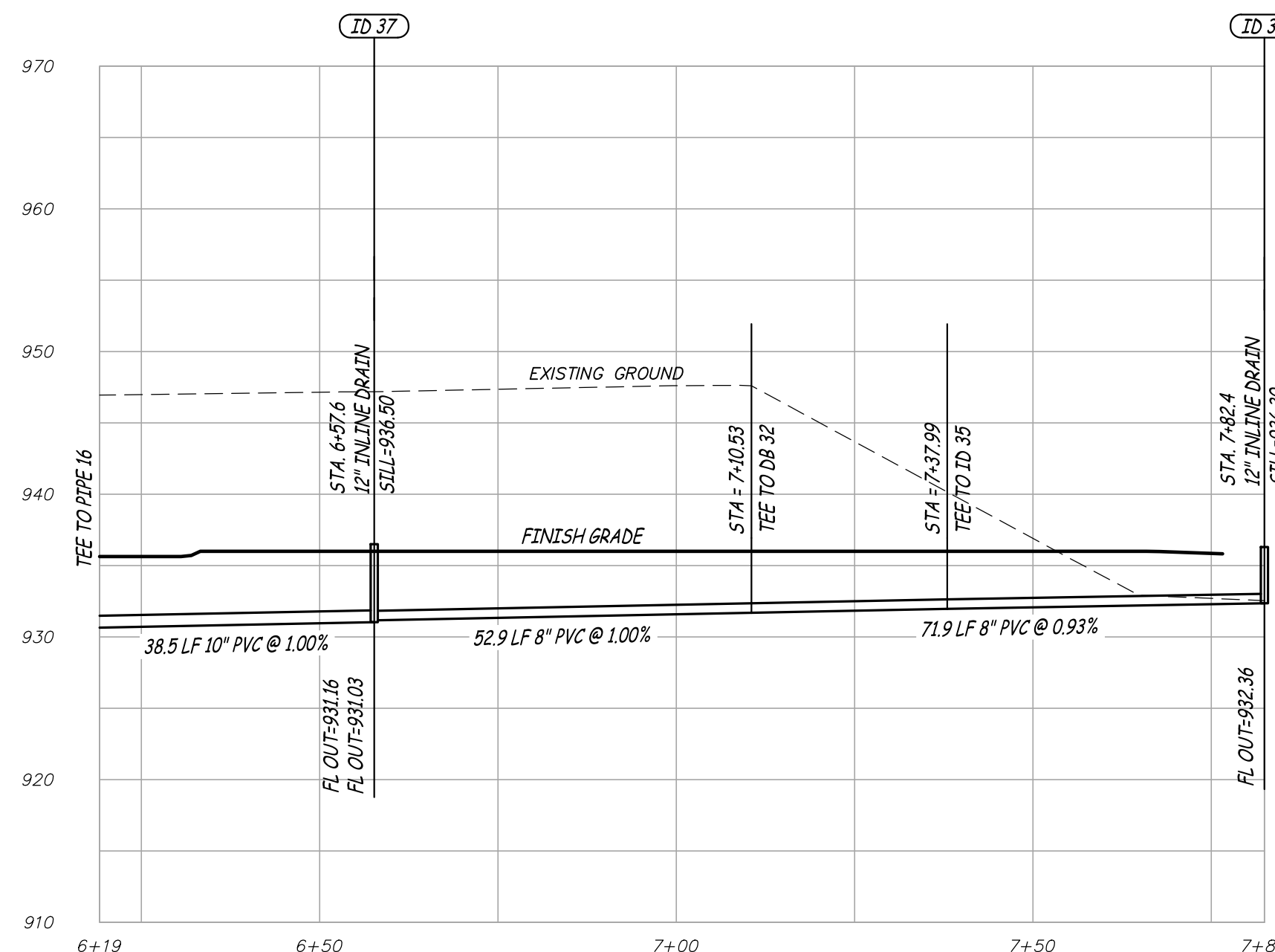
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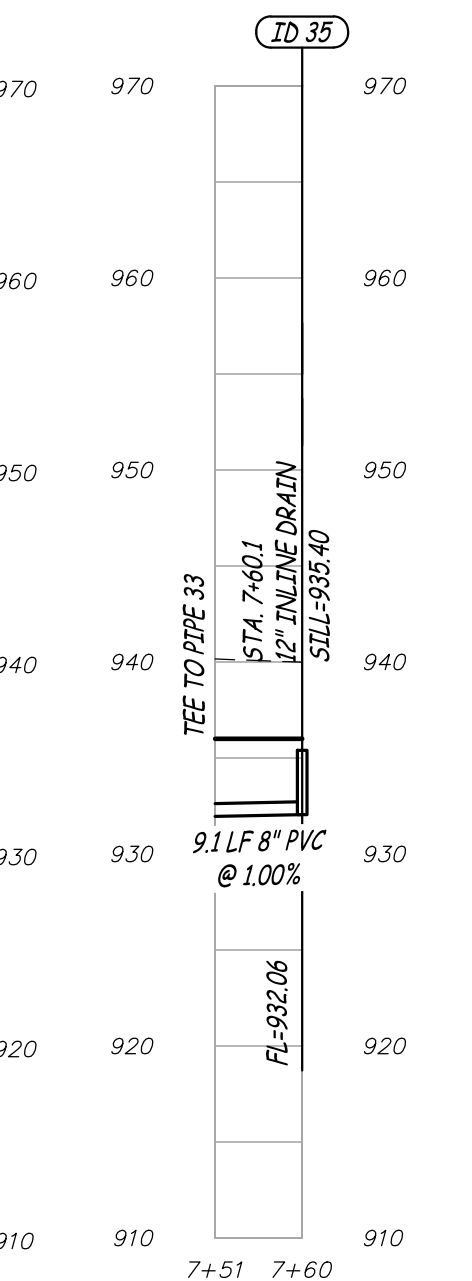
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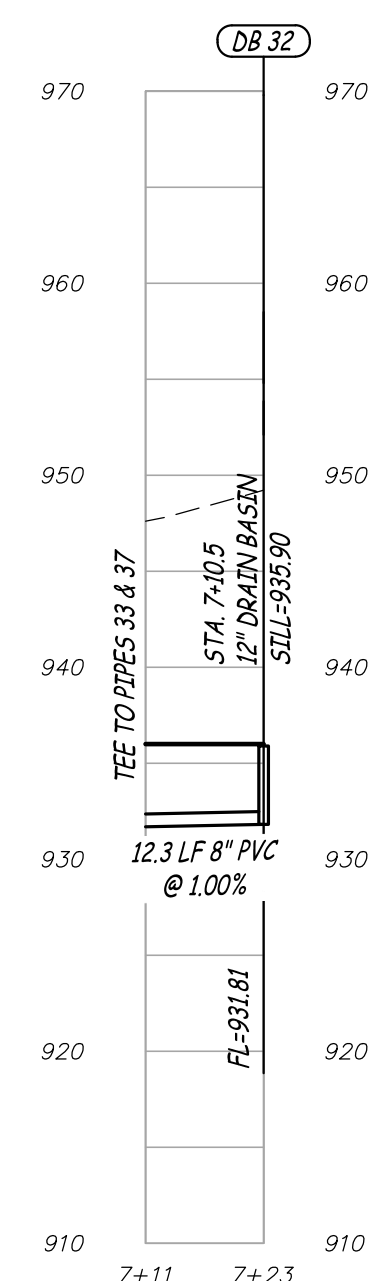
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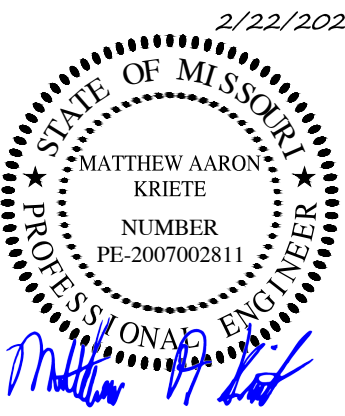


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VERT. 1" = 10'



DB 32 THRU TEE 33-37
SCALE - HORIZ. 1" = 20'
VERT. 1" = 10'

WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



MATTHEW A. KRIETE
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Revised
FEBRUARY 22, 2024

Design: ST Drawn: MJS

STORM SEWER PROFILES

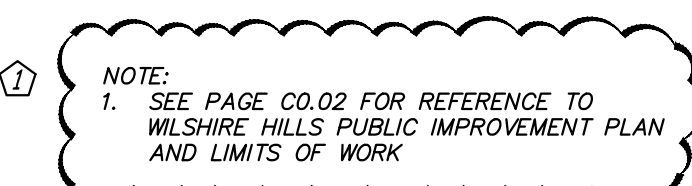
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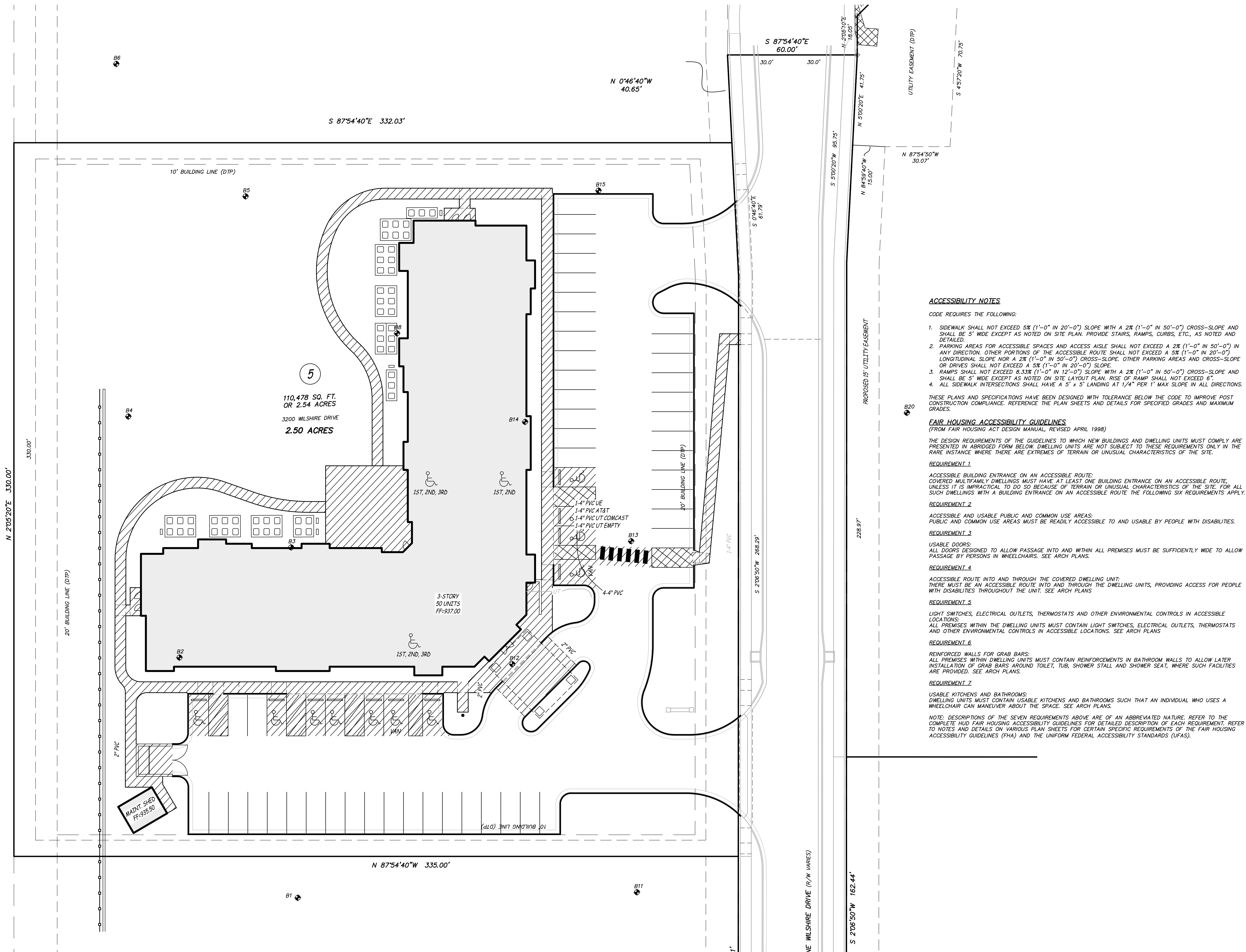
ES&S PROJECT NO. 15925

CONSTRUCTION DOCUMENTS

CONSTRUCTION DOCUMENTS



P:\GENERAL PROJECTS\15925E-WES-WILSHIRE-HILLS-3-ENG\CAD\15925 SITE PLANNING 2/26/2024



ACCESSIBILITY NOTES

CODE REQUIRES THE FOLLOWING:

1. SIDEWALK SHALL NOT EXCEED 5% (1'-0" IN 20'-0") SLOPE WITH A 2% (1'-0" IN 50'-0") CROSS-SLOPE AND SHALL BE 5' WIDE EXCEPT AS NOTED ON SITE PLAN. PROVIDE STAIRS, RAMPS, CURBS, ETC., AS NOTED AND DETAILED.
2. PARKING AREAS FOR ACCESSIBLE SPACES AND ACCESS AISLE SHALL NOT EXCEED A 2% (1'-0" IN 50'-0") IN ANY DIRECTION. OTHER PORTIONS OF THE ACCESSIBLE ROUTE SHALL NOT EXCEED A 5% (1'-0" IN 20'-0") LONGITUDINAL SLOPE NOR A 2% (1'-0" IN 50'-0") CROSS-SLOPE. OTHER PARKING AREAS AND CROSS-SLOPE OR DRIVES SHALL NOT EXCEED A 5% (1'-0" IN 20'-0") SLOPE.
3. RAMPS SHALL NOT EXCEED 8.33% (1'-0" IN 12'-0") SLOPE WITH A 2% (1'-0" IN 50'-0") CROSS-SLOPE AND SHALL BE 5' WIDE EXCEPT AS NOTED ON SITE LAYOUT PLAN. RISE OF RAMP SHALL NOT EXCEED 6".
4. ALL SIDEWALK INTERSECTIONS SHALL HAVE A 5' x 5' LANDING AT 1/4" PER 1' MAX SLOPE IN ALL DIRECTIONS.

THESE PLANS AND SPECIFICATIONS HAVE BEEN DESIGNED WITH TOLERANCE BELOW THE CODE TO IMPROVE POST CONSTRUCTION COMPLIANCE. REFERENCE THE PLAN SHEETS AND DETAILS FOR SPECIFIED GRADES AND MAXIMUM GRADES.

FAIR HOUSING ACCESSIBILITY GUIDELINES

(FROM FAIR HOUSING ACT DESIGN MANUAL, REVISED APRIL 1998)

THE DESIGN REQUIREMENTS OF THE GUIDELINES TO WHICH NEW BUILDINGS AND DWELLING UNITS MUST COMPLY ARE PRESENTED IN ABRIDGED FORM BELOW. DWELLING UNITS ARE NOT SUBJECT TO THESE REQUIREMENTS ONLY IN THE RARE INSTANCE WHERE THERE ARE EXTREMES OF TERRAIN OR UNUSUAL CHARACTERISTICS OF THE SITE.

REQUIREMENT 1

ACCESSIBLE BUILDING ENTRANCE ON AN ACCESSIBLE ROUTE:
COVERED MULTIFAMILY DWELLINGS MUST HAVE AT LEAST ONE BUILDING ENTRANCE ON AN ACCESSIBLE ROUTE, UNLESS IT IS IMPRACTICAL TO DO SO BECAUSE OF TERRAIN OR UNUSUAL CHARACTERISTICS OF THE SITE. FOR ALL SUCH DWELLINGS WITH A BUILDING ENTRANCE ON AN ACCESSIBLE ROUTE THE FOLLOWING SIX REQUIREMENTS APPLY.

REQUIREMENT 2

ACCESSIBLE AND USABLE PUBLIC AND COMMON USE AREAS:
PUBLIC AND COMMON USE AREAS MUST BE READILY ACCESSIBLE TO AND USABLE BY PEOPLE WITH DISABILITIES.

REQUIREMENT 3

USABLE DOORS:
ALL DOORS DESIGNED TO ALLOW PASSAGE INTO AND WITHIN ALL PREMISES MUST BE SUFFICIENTLY WIDE TO ALLOW PASSAGE BY PERSONS IN WHEELCHAIRS. SEE ARCH PLANS.

REQUIREMENT 4

ACCESSIBLE ROUTE INTO AND THROUGH THE COVERED DWELLING UNIT:
THERE MUST BE AN ACCESSIBLE ROUTE INTO AND THROUGH THE DWELLING UNITS, PROVIDING ACCESS FOR PEOPLE WITH DISABILITIES THROUGHOUT THE UNIT. SEE ARCH PLANS

REQUIREMENT 5

LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS AND OTHER ENVIRONMENTAL CONTROLS IN ACCESSIBLE LOCATIONS:
ALL PREMISES WITHIN THE DWELLING UNITS MUST CONTAIN LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS AND OTHER ENVIRONMENTAL CONTROLS IN ACCESSIBLE LOCATIONS. SEE ARCH PLANS

REQUIREMENT 6

REINFORCED WALLS FOR GRAB BARS:
ALL PREMISES WITHIN DWELLING UNITS MUST CONTAIN REINFORCEMENTS IN BATHROOM WALLS TO ALLOW LATER INSTALLATION OF GRAB BARS AROUND TOILET, TUB, SHOWER STALL AND SHOWER SEAT, WHERE SUCH FACILITIES ARE PROVIDED. SEE ARCH PLANS.

REQUIREMENT 7

USABLE KITCHENS AND BATHROOMS:
DWELLING UNITS MUST CONTAIN USABLE KITCHENS AND BATHROOMS SUCH THAT AN INDIVIDUAL WHO USES A WHEELCHAIR CAN MANEUVER ABOUT THE SPACE. SEE ARCH PLANS.

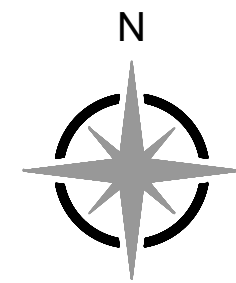
NOTE: DESCRIPTIONS OF THE SEVEN REQUIREMENTS ABOVE ARE OF AN ABBREVIATED NATURE. REFER TO THE COMPLETE HUD FAIR HOUSING ACCESSIBILITY GUIDELINES FOR DETAILED DESCRIPTION OF EACH REQUIREMENT. REFER TO NOTES AND DETAILS ON VARIOUS PLAN SHEETS FOR CERTAIN SPECIFIC REQUIREMENTS OF THE FAIR HOUSING ACCESSIBILITY GUIDELINES (FHA) AND THE UNIFORM FEDERAL ACCESSIBILITY STANDARDS (UFAS).



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0 1"
SCALE: 1" = 20'

WILSHIRE HILLS PHASE III

3200 NE WILSHIRE DR
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



MATTHEW A. KRIETE
PROFESSIONAL ENGINEER
PE-2007002811

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Revised
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Design: ST Drawn: MJS

ACCESSIBILITY PLAN

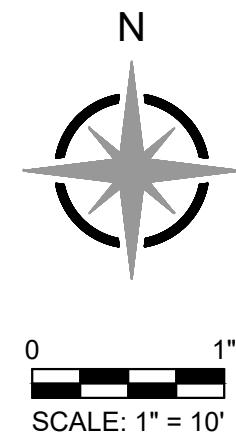
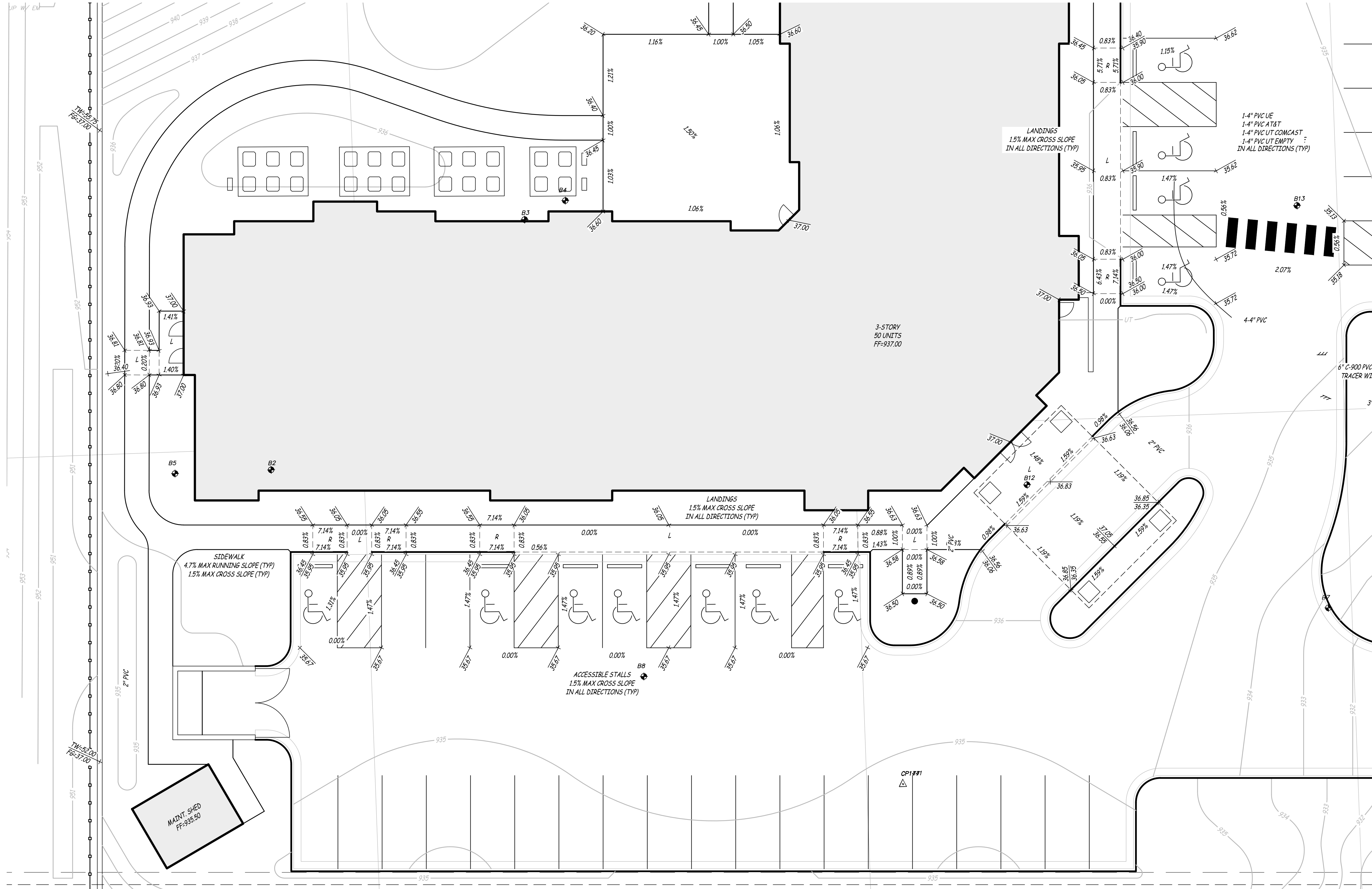
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C8.01

ES&S PROJECT NO. 15925

CONSTRUCTION DOCUMENTS

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WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



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ACCESSIBILITY PLAN

Sheet
C8.02

ES&S PROJECT NO. 15925

CONSTRUCTION DOCUMENTS

2/22/2024

Matthew A Kriete

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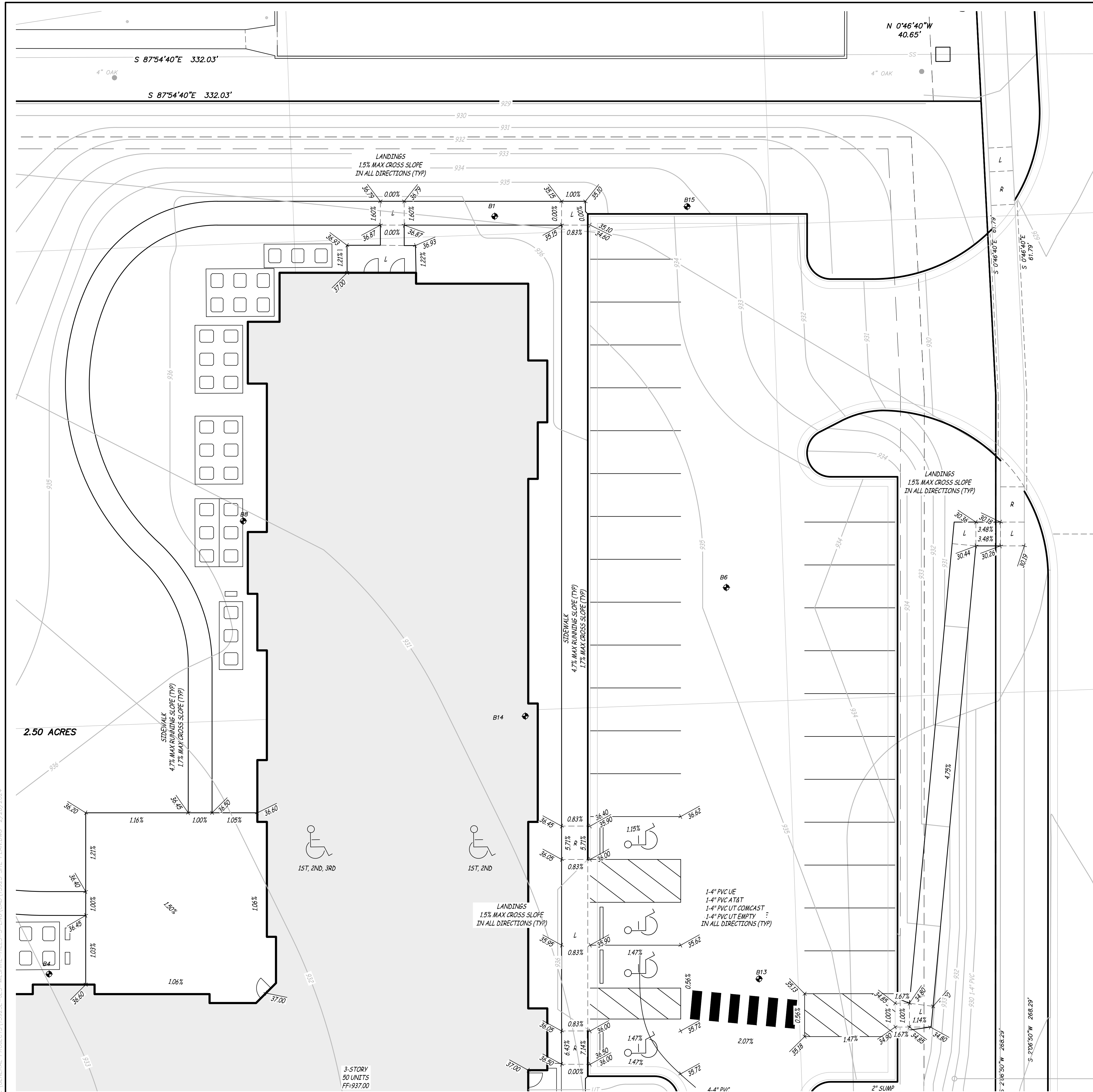
ACCESSIBILITY PLAN

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C8 03

EC22 PROJECT NO. 150

CONSTRUCTION DOCUMENTS



6/30/2023

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CONSTRUCTION DOCUMENTS

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Revised

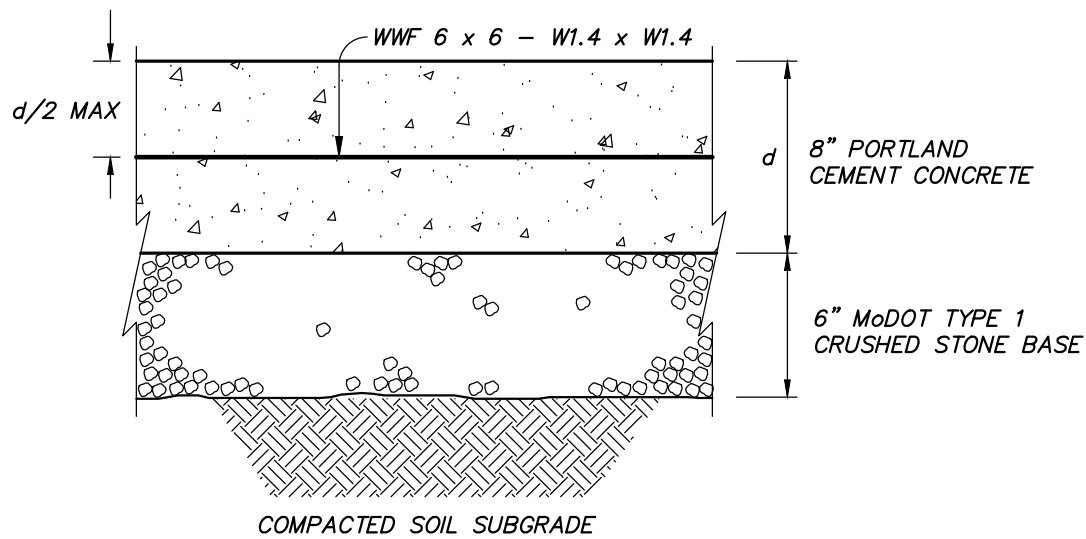
Design: ST Drawn: MJS

FINAL EROSION
CONTROL PLAN

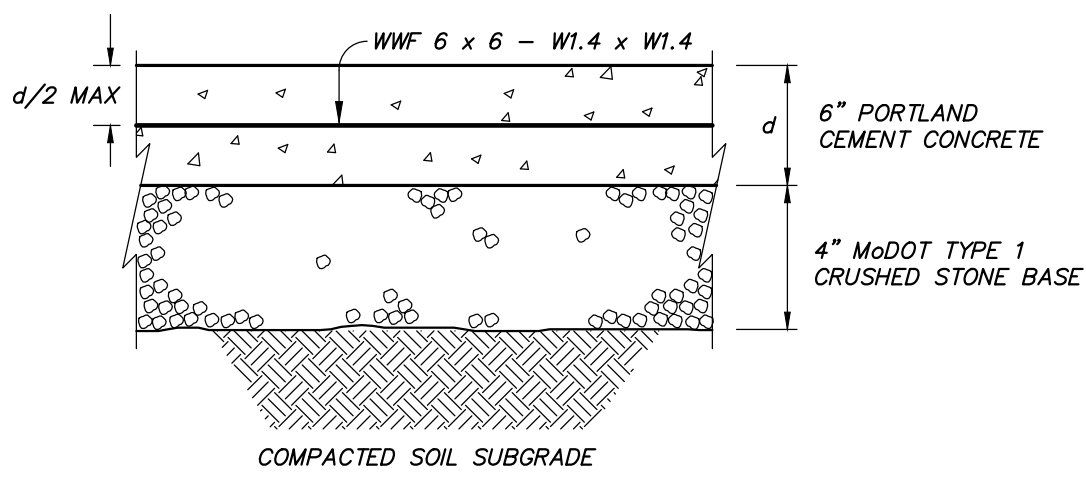
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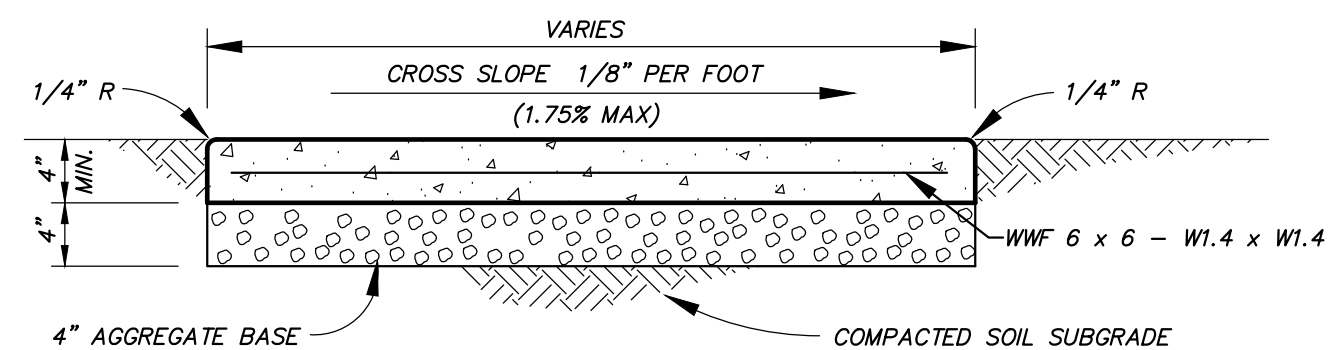
ES&S PROJECT NO. 15925



NOTE: TOP OF REINFORCEMENT SHALL BE A MINIMUM OF 2" BELOW THE TOP OF PAVEMENT.
HEAVY DUTY CONCRETE PAVEMENT
NOT TO SCALE

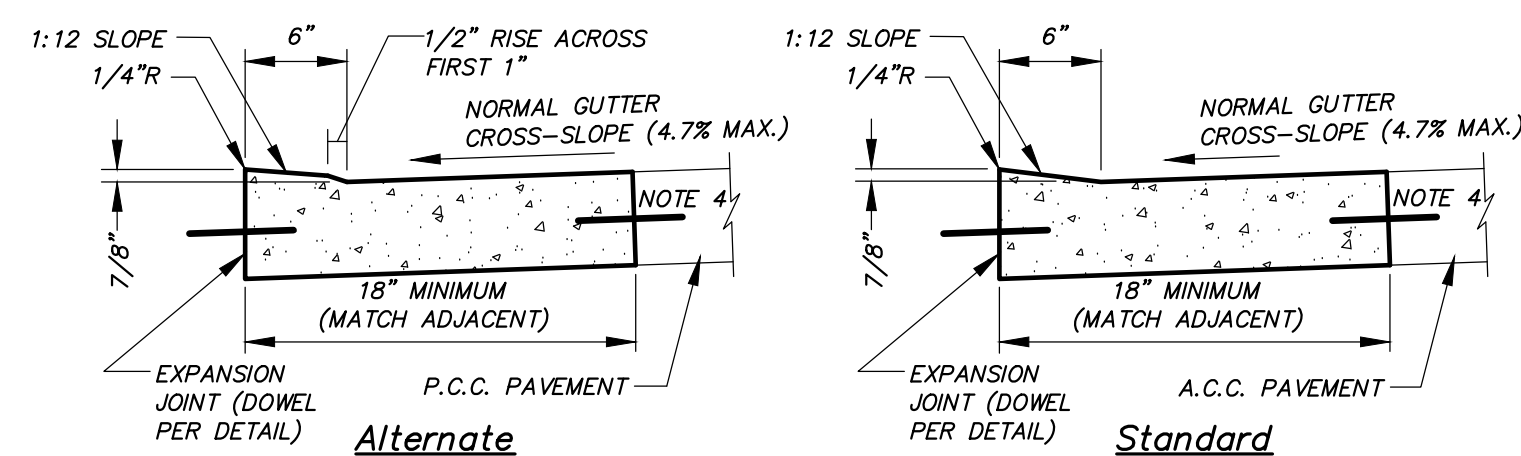


NOTE: TOP OF REINFORCEMENT SHALL BE A MINIMUM OF 2" BELOW THE TOP OF PAVEMENT.
STANDARD DUTY CONCRETE PAVEMENT
NOT TO SCALE



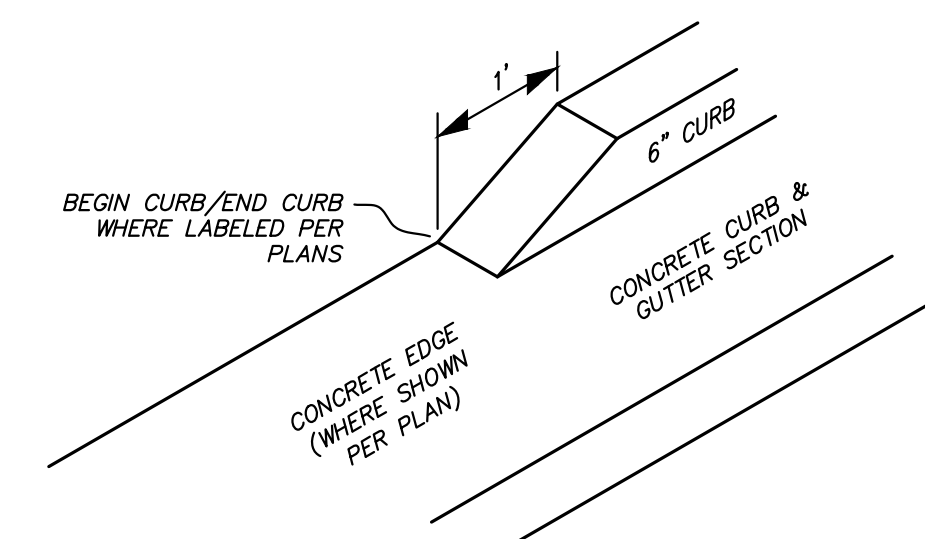
- NOTES:
1. SIDEWALK SHALL BE 5-8% AIR-ENTRAINED, 6 BAG MIX, 4,000 PSI PORTLAND CEMENT CONCRETE.
 2. INSTALL TRANSVERSE EXPANSION JOINTS TO MATCH STREET OR CURB AND GUTTER EXPANSION JOINTS AND AT ALL DRIVEWAY APPROACHES, FIXED STRUCTURES, BUILDINGS, AND SIDEWALK RAMP. SPACING SHALL NOT EXCEED 50'.
 3. FOR SIDEWALKS UP TO 6 FT. WIDE, INSTALL TRANSVERSE SAW-CUT JOINTS AT SPACING EQUAL TO SIDEWALK WIDTH.
 4. FOR SIDEWALKS WIDER THAN 6 FT., INSTALL LONGITUDINAL SAW JOINT AT CENTERLINE OR AT A SPACING NOT TO EXCEED 5 FT. TRANSVERSE SAW-CUT JOINT SPACING EQUAL TO HALF SIDEWALK WIDTH.
 5. IF SIDEWALK IS REINFORCED, NO STEEL SHALL BE PLACED THROUGH AN EXPANSION JOINT.
 6. SEE SEPARATE DETAIL FOR ADDITIONAL CONCRETE JOINT REQUIREMENTS.

CONCRETE SIDEWALK
NOT TO SCALE

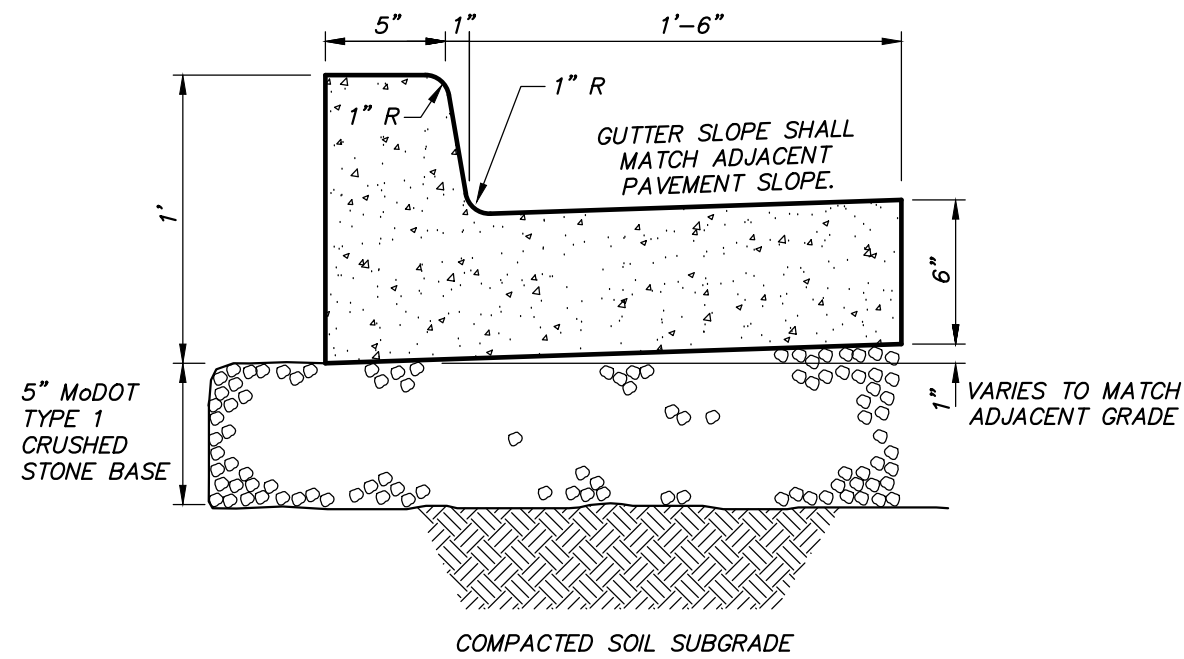


- NOTES:
1. CONCRETE THICKNESS AND BASE SHALL MATCH ADJACENT CONCRETE PAVEMENT OR ADJACENT CURB AND GUTTER.
 2. EXPANSION JOINTS AND CONTRACTION JOINTS SHALL BE PLACED AT LOCATIONS SIMILAR TO THE ADJACENT PAVEMENT AND CURB & GUTTER.
 3. CURB EDGE SHALL BE TOOLED WITH 1/4" RADIUS.
 4. WHERE PAVEMENT IS P.C.C. DOWEL USING 12" LONG #4 BARS AT 24" CTRS.

SIDEWALK RAMP CURB
NOT TO SCALE

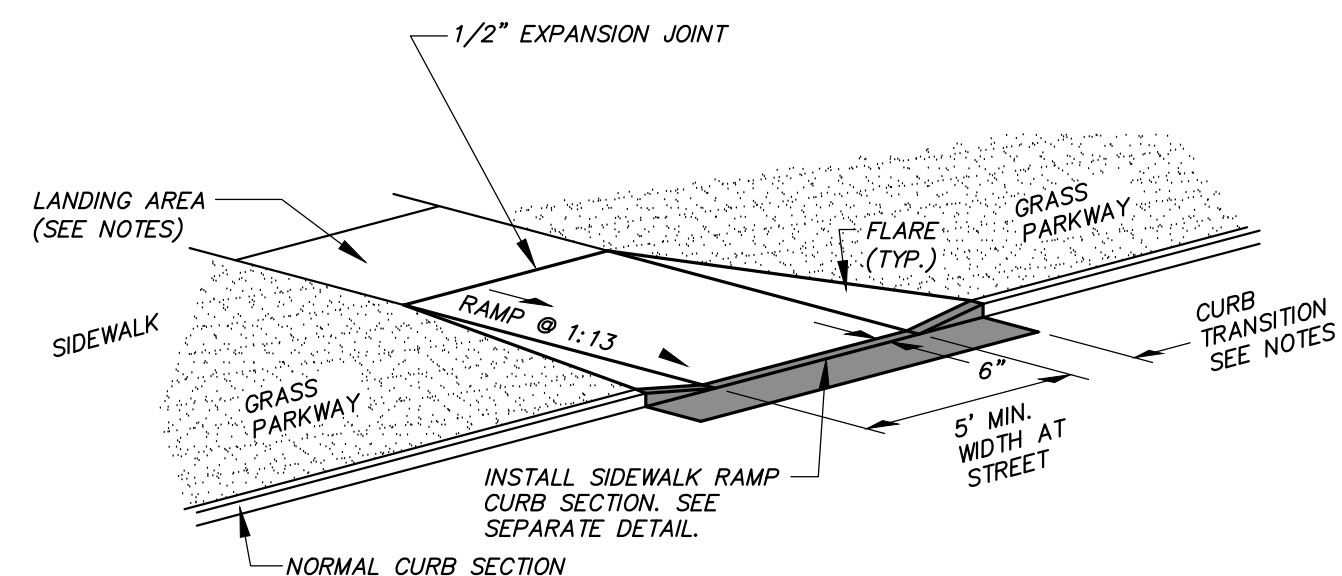


BEGIN CURB / END CURB DETAIL
NOT TO SCALE



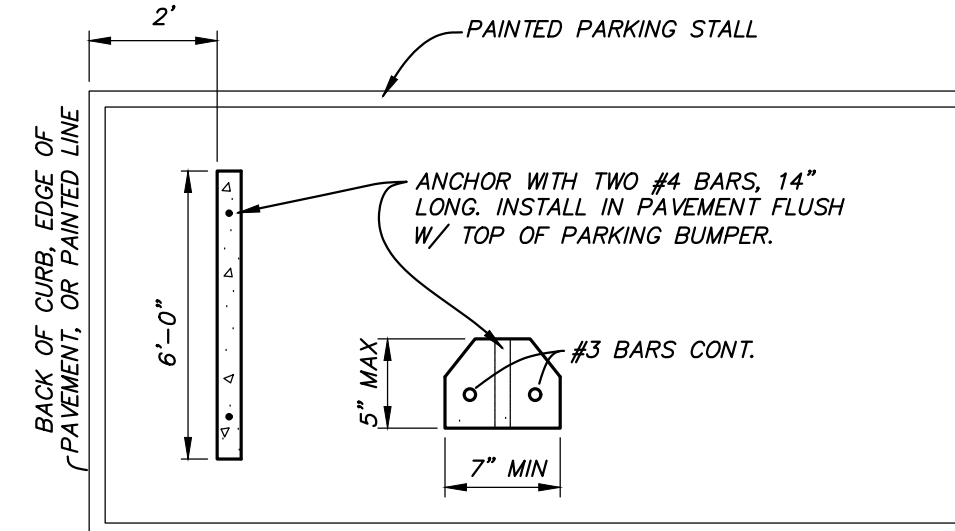
- NOTES:
1. CURB AND GUTTER MAY BE INTEGRAL IF CONCRETE PAVEMENT IS USED.
 2. INSTALL TRANSVERSE EXPANSION JOINTS TO MATCH ADJACENT PAVEMENT, OR AT EVERY 150' MAX.
 3. INSTALL SAW-CUT JOINTS TO MATCH ADJACENT PAVEMENT OR EVERY 10' MAX.
 4. SAW-CUT JOINTS SHALL EXTEND THROUGH THE ENTIRE CURB SECTION FROM THE TOP OF CURB TO A DEPTH OF 2" BELOW THE GUTTER SURFACE.

6" CONCRETE CURB & GUTTER SECTION
NOT TO SCALE



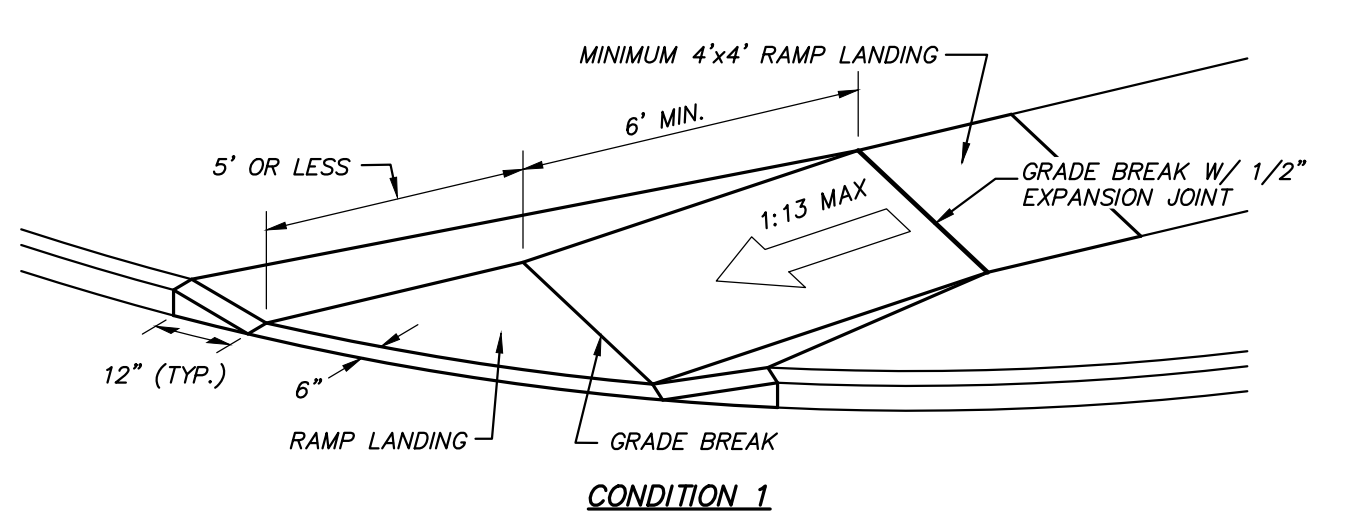
- NOTES:
1. RAMP SHALL BE 4" THICK P.C.C.
 2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
 3. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
 4. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION - SEE SEPARATE DETAIL.
 5. RAMP LENGTH IS DEPENDENT ON 1:13 MAX SLOPE. USE FLATTER WHEN POSSIBLE.
 6. LANDING AREA SHALL BE 4'-0" MIN. WIDTH, CROSS SLOPE OF LANDING SHALL NOT EXCEED 1.7%.
 7. FLARES ARE REQUIRED AT RAMPS TO KEEP GRASS PARKWAY SLOPES IN CONFORMANCE WITH THE TYPICAL CROSS SECTION.
 8. CURB TRANSITION LENGTH IS DEPENDENT ON FLARE SLOPE.
 9. MAXIMUM RAMP CROSS SLOPE IS 1.7% IN ALL DIRECTIONS.

PERPENDICULAR CURB RAMP
NOT TO SCALE

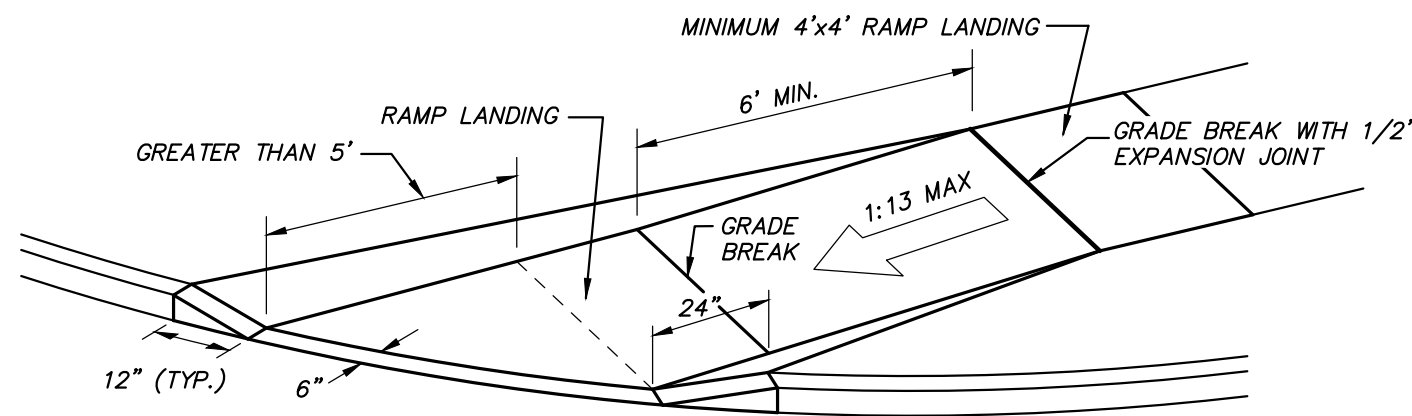


- NOTES:
1. CONCRETE SHALL BE A MINIMUM 5,000 PSI AND AIR-ENTRAINED.
 2. PROVIDE A MINIMUM 2 SLOTS ON THE BOTTOM OF THE BUMPER FOR DRAINAGE.

CONCRETE PARKING BUMPER
NOT TO SCALE



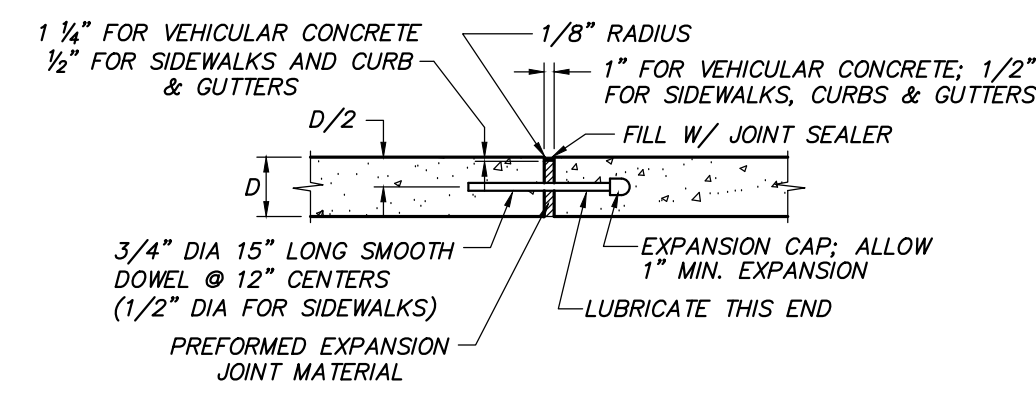
CONDITION 1



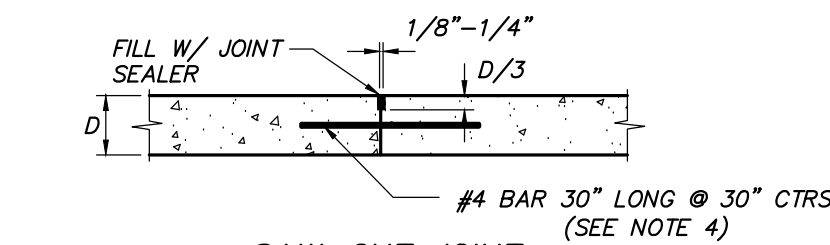
CONDITION 2

- NOTES:
1. RAMP SHALL BE 4" THICK PORTLAND CEMENT CONCRETE - SEE SPECS.
 2. EXPANSION JOINTS SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
 3. MAXIMUM RAMP CROSS SLOPE IS 1.7%.
 4. MAXIMUM RAMP LONGITUDINAL SLOPE IS 1:13. USE A FLATTER RAMP SLOPE WHEN POSSIBLE.
 5. RAMP LANDING SLOPE SHALL NOT EXCEED 1.7% IN ALL DIRECTIONS.

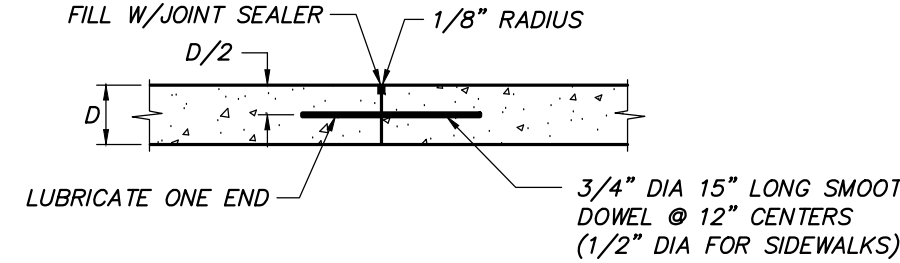
SKREW / RADIAL CURB RAMPS
NOT TO SCALE



EXPANSION JOINT



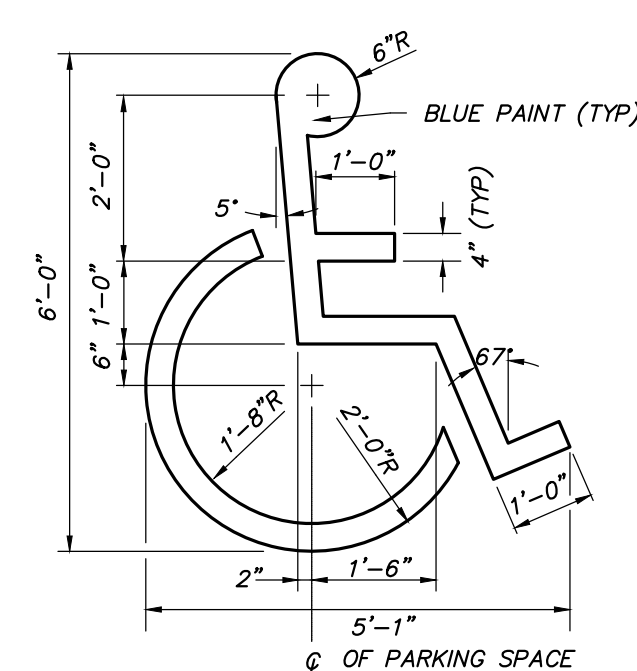
SAW-CUT JOINT



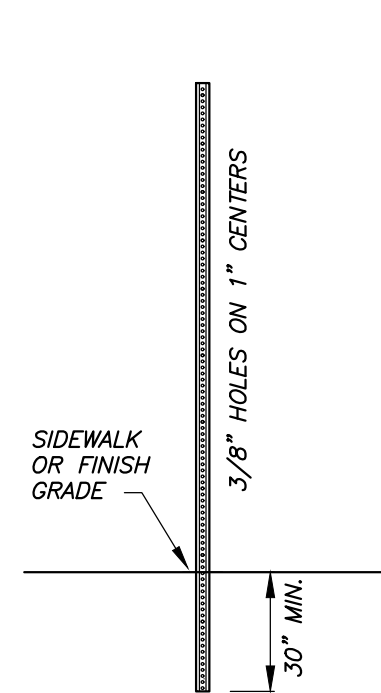
CONSTRUCTION JOINT

- NOTES:
1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL SUBMIT A PAVEMENT JOINT PLAN OF ALL CONCRETE PAVEMENT FOR APPROVAL.
 2. CONCRETE PAVEMENT SHALL HAVE SAW-CUT OR CONSTRUCTION JOINTS EVERY 10 FEET FOR 4 INCH THICK PAVEMENT, 12 FEET FOR 6 INCH THICK PAVEMENT, AND 15 FEET FOR 8 INCH THICK PAVEMENT OR GREATER. PANELS SHALL BE CUT SUCH THAT PANELS ARE NEARLY SQUARE AND DO NOT EXCEED 100 SQUARE FEET IN AREA OR 1.4 LENGTH TO WIDTH RATIO. EXPANSION JOINTS SHALL BE PROVIDED AT ALL FIXED STRUCTURES, SUCH AS: LIGHT STANDARD FOUNDATIONS, SEWER STRUCTURES, BUILDINGS, WALLS, BOTTOM OF STAIRS, ROOF DRAINS, ETC., AND EVERY 100 FEET MAXIMUM. DOWEL BARS SHALL BE PROVIDED AT TRANSVERSE JOINTS IN ALL HEAVY DUTY PAVEMENT DRIVE AISLES.
 3. THIS DETAIL APPLIES TO ALL CONCRETE PAVEMENT FOR PARKING LOTS, DRIVE/ACCESS AISLES, CURBS & GUTTERS, AND SIDEWALKS.
 4. INCLUDE BAR WITH TRANSVERSE SAW-CUT JOINTS FOR HEAVY DUTY PAVEMENT. OMIT BAR WITH SAW-CUT JOINTS FOR STANDARD DUTY PAVEMENT AND SIDEWALKS.
 5. PROVIDE CONSTRUCTION JOINT AT END OF DAYS WORK OR IF CONCRETE PLACEMENT IS SUSPENDED FOR MORE THAN 30 MINUTES.
 6. SAW-CUT JOINTS SHALL BE CUT WITHIN 12 HOURS OF INITIAL SET OF CONCRETE. RAVELED JOINTS WILL NOT BE ACCEPTED.
 7. ELASTOMERIC POLYURETHANE OR SILICONE JOINT SEALANT IS REQUIRED FOR ALL JOINTS AND SHALL BE LIGHT GRAY IN COLOR.
 8. OMIT DOWEL BARS FOR EXPANSION JOINTS AT BUILDINGS, LIGHT STANDARDS, AND ROOF DRAINS.

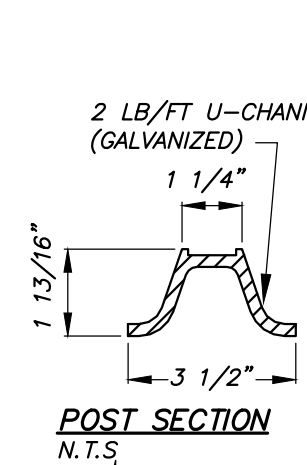
CONCRETE PAVEMENT JOINTS
NOT TO SCALE



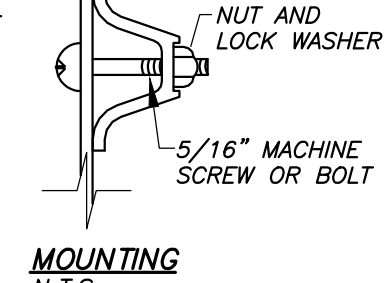
ACCESSIBLE SYMBOL FOR PARKING SPACES
NO SCALE



POST
N.T.S.



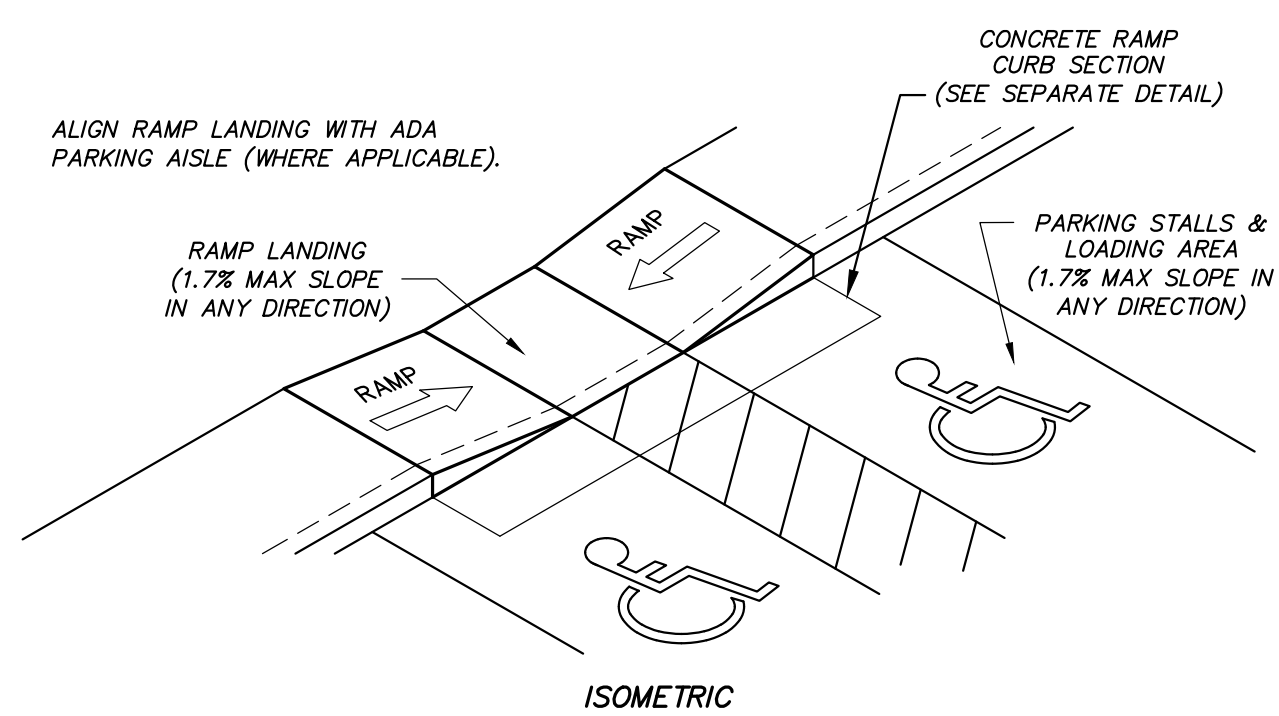
POST SECTION
N.T.S.



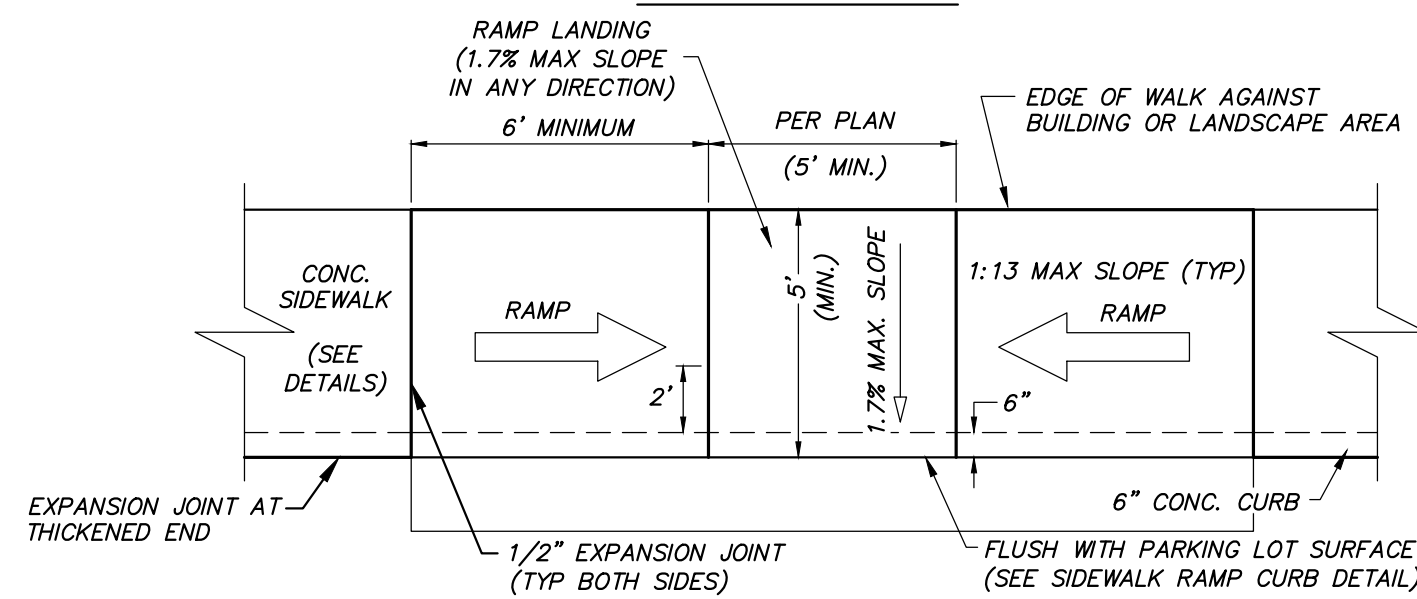
MOUNTING
N.T.S.

- NOTES:
1. SEE SITE PLAN SHEET(S) FOR SIGN LOCATIONS.
 2. ALL SIGNS SHALL BE 0.80 ENGINEER GRADE REFLECTIVE ALUMINUM.

ACCESSIBLE PARKING STALL SIGNAGE
NOT TO SCALE



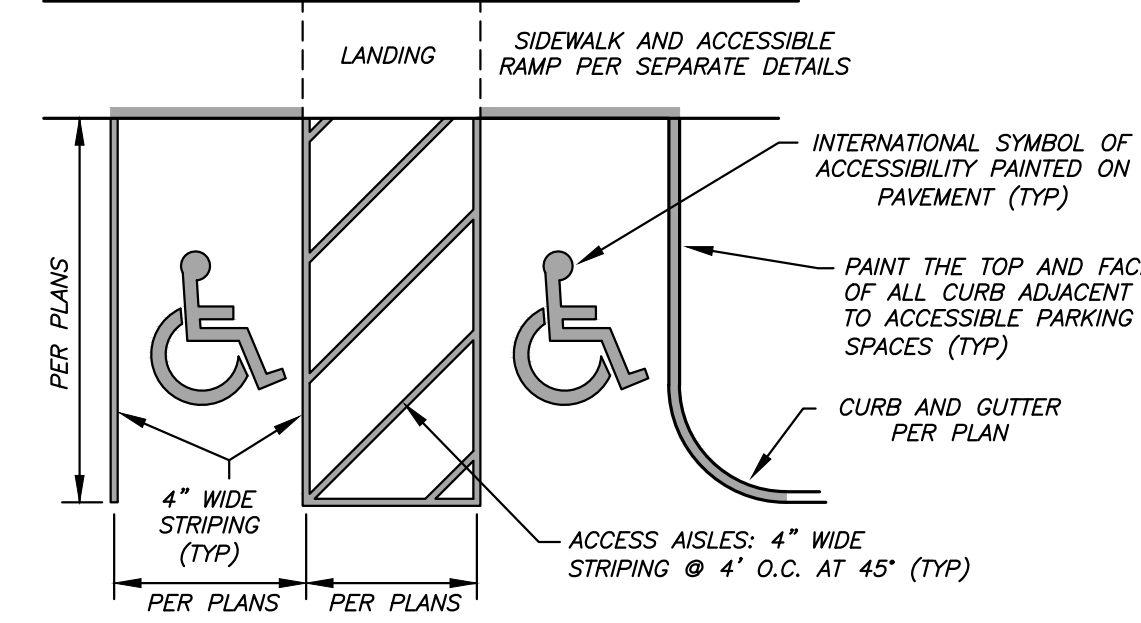
ISOMETRIC



- NOTES:
1. RAMP SHALL BE 4" THICK PORTLAND CEMENT CONCRETE - SEE SPECS.
 2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
 3. MAXIMUM RAMP CROSS SLOPE IS 1.7%.
 4. MAXIMUM RAMP LONGITUDINAL SLOPE IS 1:13. USE A FLATTER RAMP SLOPE WHEN POSSIBLE.
 5. RAMP LANDING SLOPE SHALL NOT EXCEED 1.7% IN ALL DIRECTIONS.

PARALLEL CURB RAMP
NOT TO SCALE

ACCESSIBLE PARKING SIGNS PER SEPARATE DETAIL



- NOTES:
1. ALL ACCESSIBLE STRIPING SHALL BE BLUE RETROREFLECTIVE.
 2. ALL PAVEMENT WITHIN ACCESSIBLE PARKING AREAS SHALL BE AT 1.7% OR LESS SLOPE IN ALL DIRECTIONS.

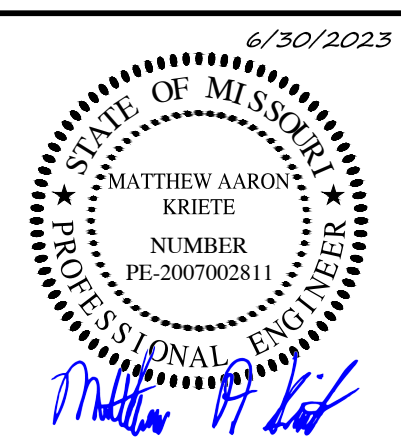
ACCESSIBLE PARKING STALL STRIPING (MISSOURI)
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www.ess-inc.com
MO Engineering Corp. # 2004005018

WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



MATTHEW A. KRIETE
PROFESSIONAL ENGINEER
PE-2007002811

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Date
JUNE 30, 2023

Revised

Design: ST Drawn: MJS

SITE DETAILS

Sheet

C10.02

ES&S PROJECT NO. 15925

CONSTRUCTION DOCUMENTS

LEE'S SUMMIT
MISSOURI

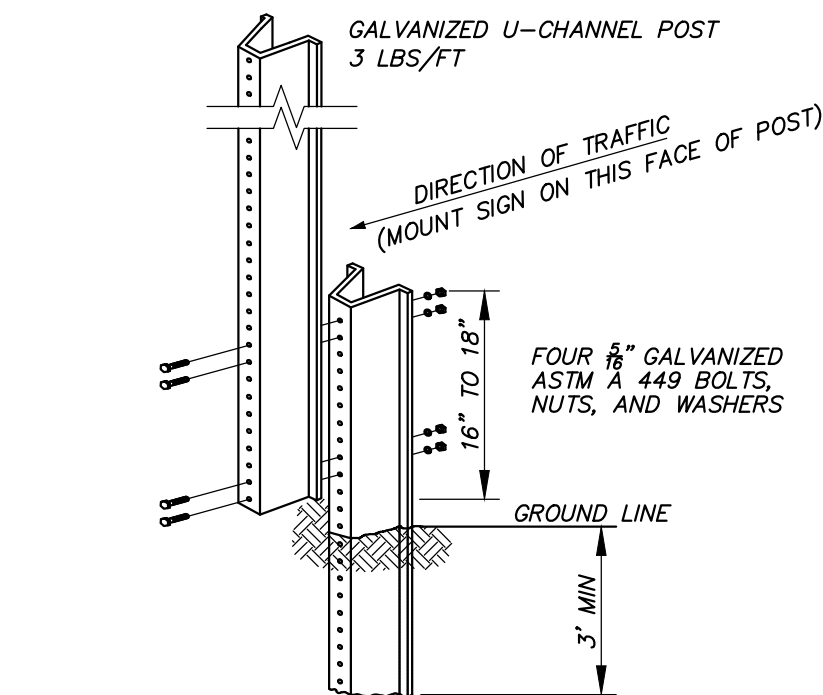
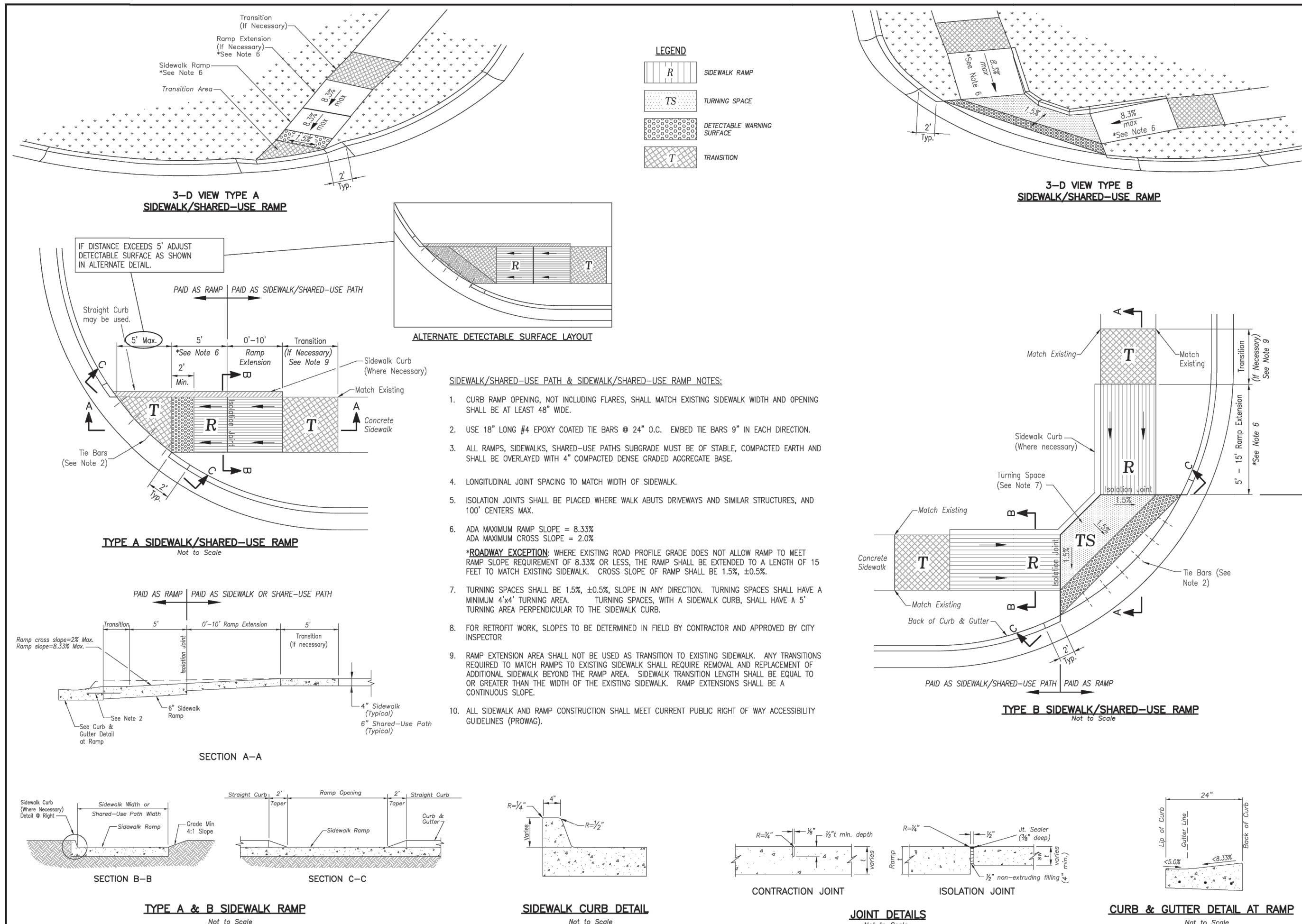
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
GEN-3A

Drawn By: MJS
Checked By: DL
Date: 05/2021
Proj. #: 15925

LEE'S SUMMIT
MISSOURI

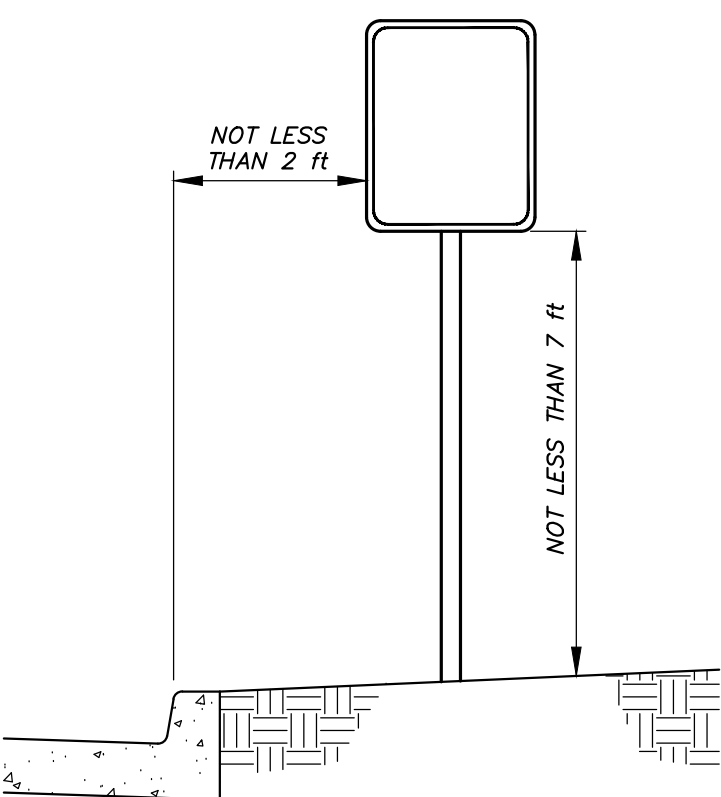
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
GEN-1

Drawn By: MJS
Checked By: DL
Date: 05/2021
Proj. #: 15925

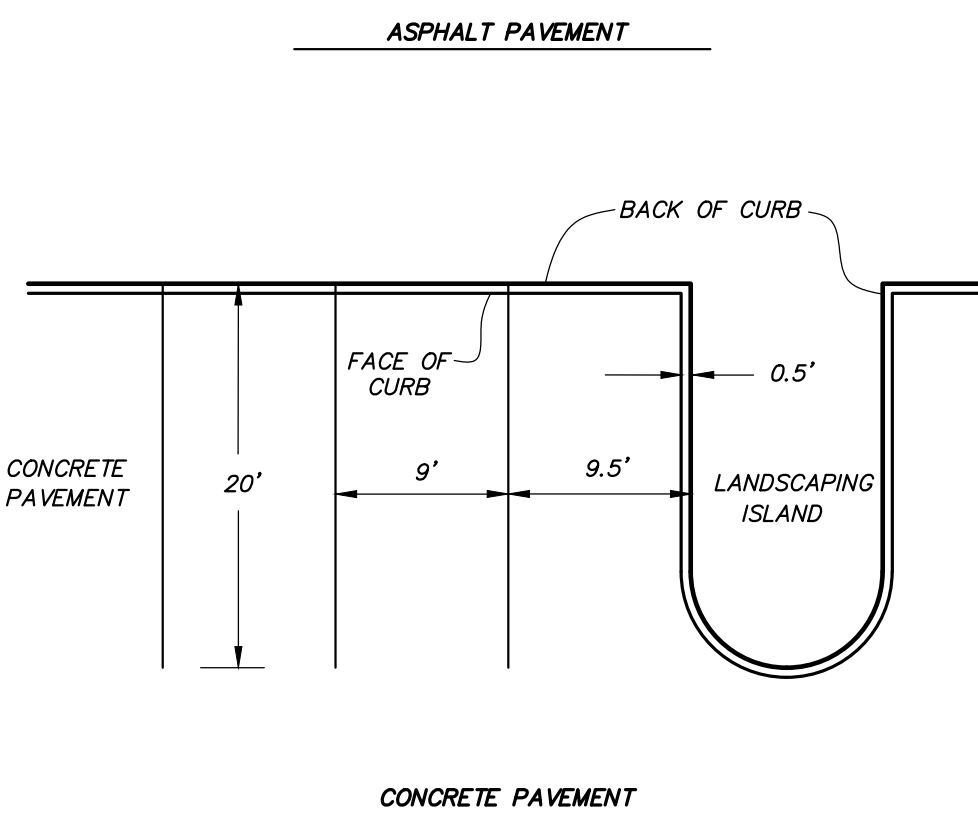
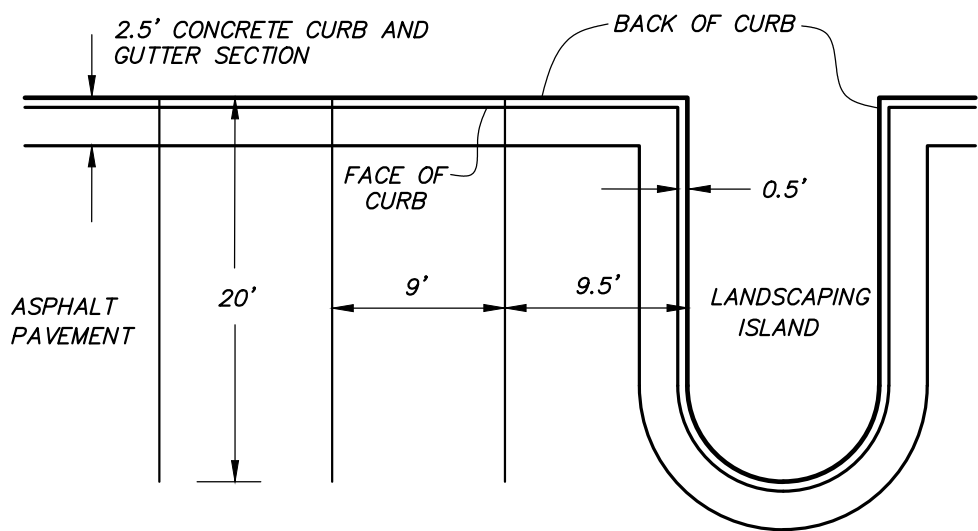


- NOTES:
1. STUB HEIGHT AND SPLICE LAP SHALL BE 16" TO 18".
 2. SPLICE SHALL NOT EXTEND BELOW THE GROUND.
 3. ONLY ONE SPLICE WILL BE ALLOWED PER POST.
 4. USE OF SPLICE IS OPTIONAL.
 5. SIGNS SHALL BE 7" MIN. FROM FINISH GRADE TO BOTTOM OF LOWEST MOUNTED SIGN.

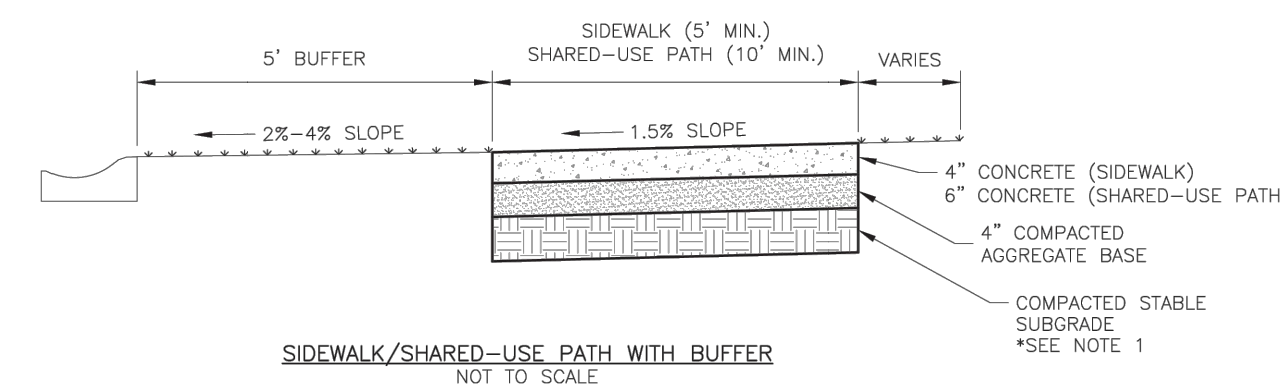
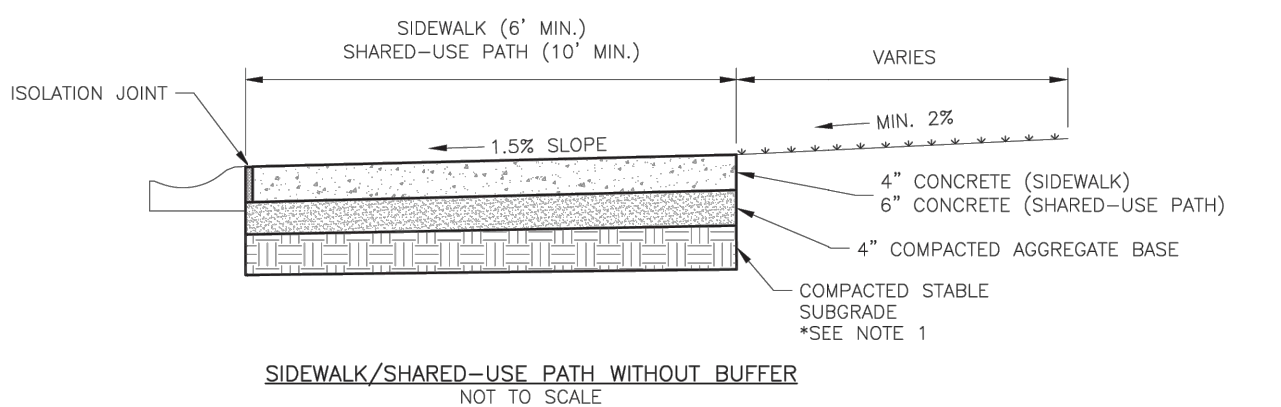
SIGN POST DETAIL
NOT TO SCALE



URBAN ROADSIDE SIGN LOCATION
NOT TO SCALE

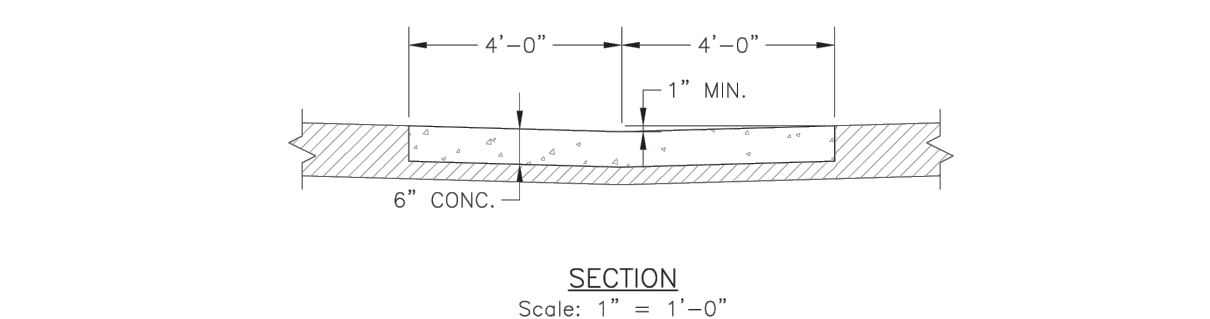
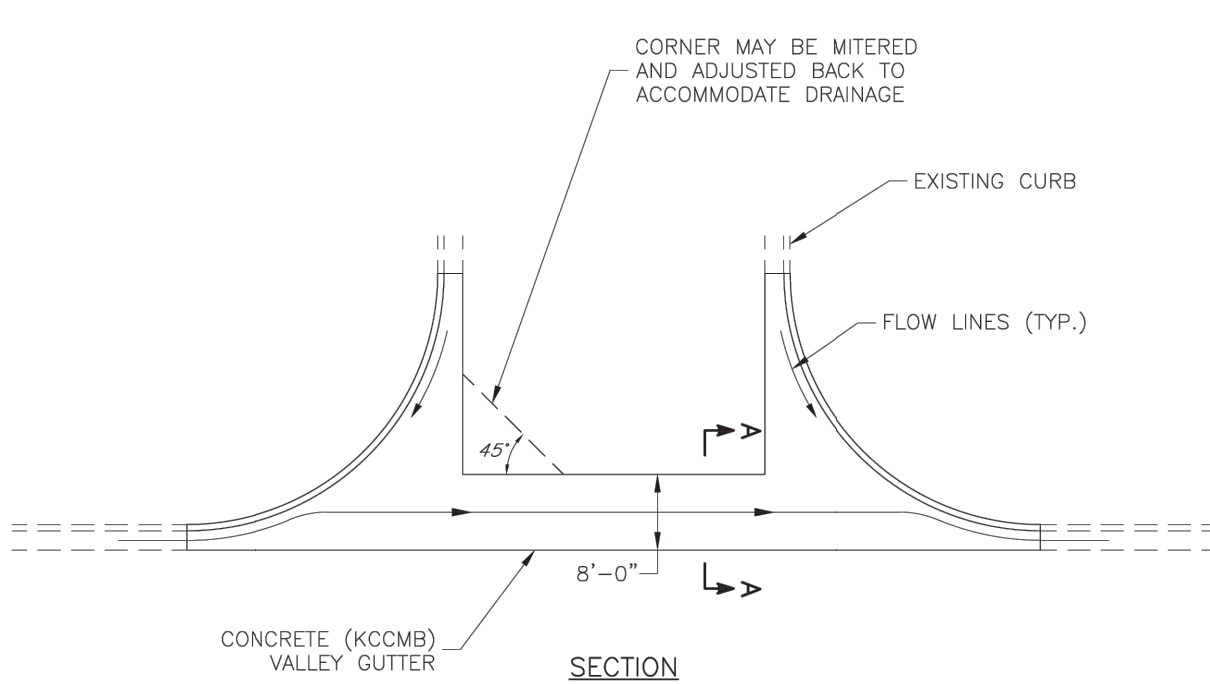


TYPICAL PARKING STALL DETAIL
NOT TO SCALE



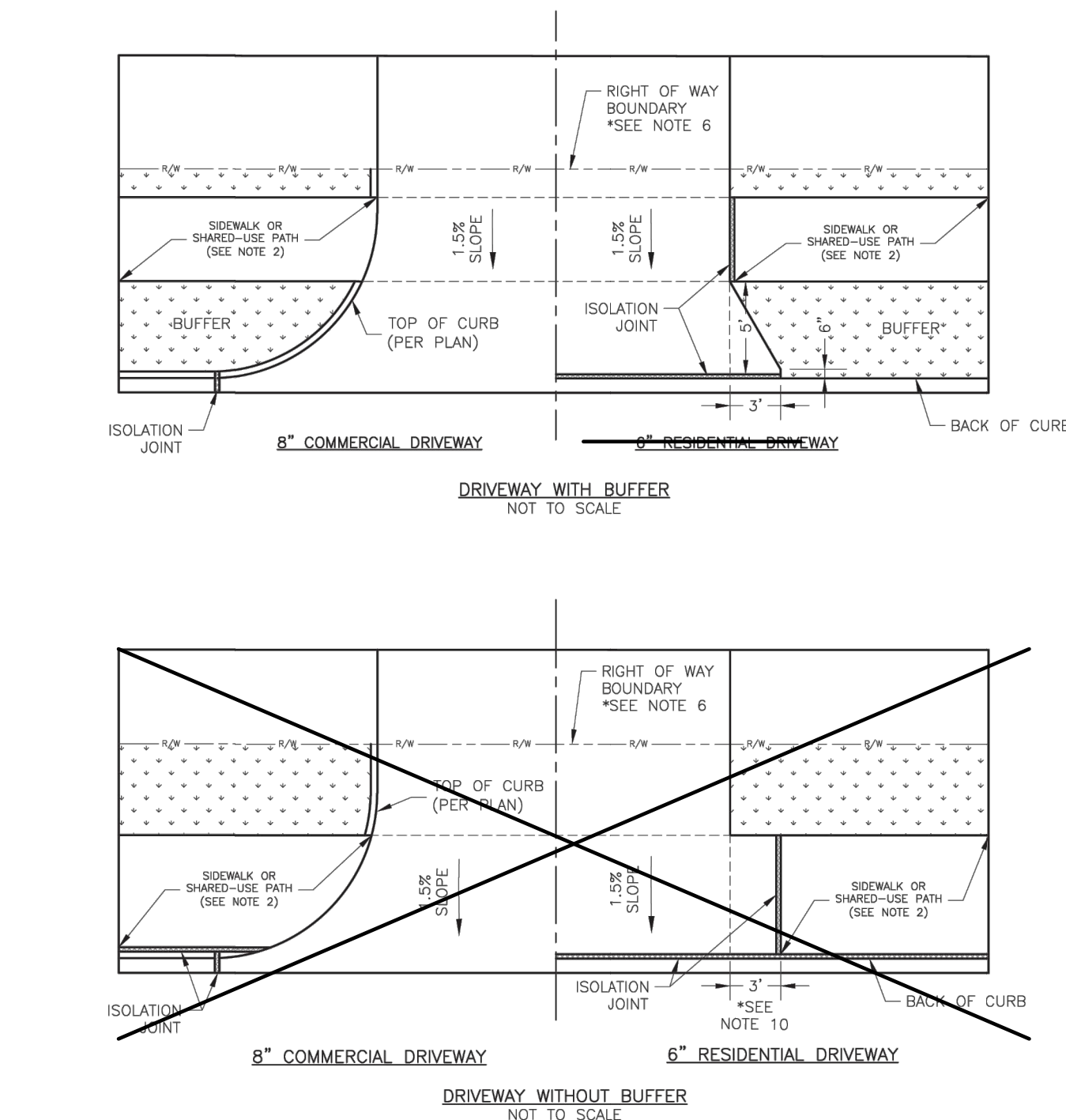
- GENERAL NOTES:
1. SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
 2. 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
 3. KCMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS/SHARED-USE PATHS.
 4. ALL SIDEWALK/SHARED-USE PATHS 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 | 120 SE GREEN STREET | LEE'S SUMMIT, MO 64063
SIDEWALK/SHARED-USE PATH DETAIL
GEN-2



VALLEY GUTTER DETAIL
Intersection of Two Public Streets

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 120 SE GREEN STREET | LEE'S SUMMIT, MO 64063
VALLEY GUTTER DETAIL
GEN-7

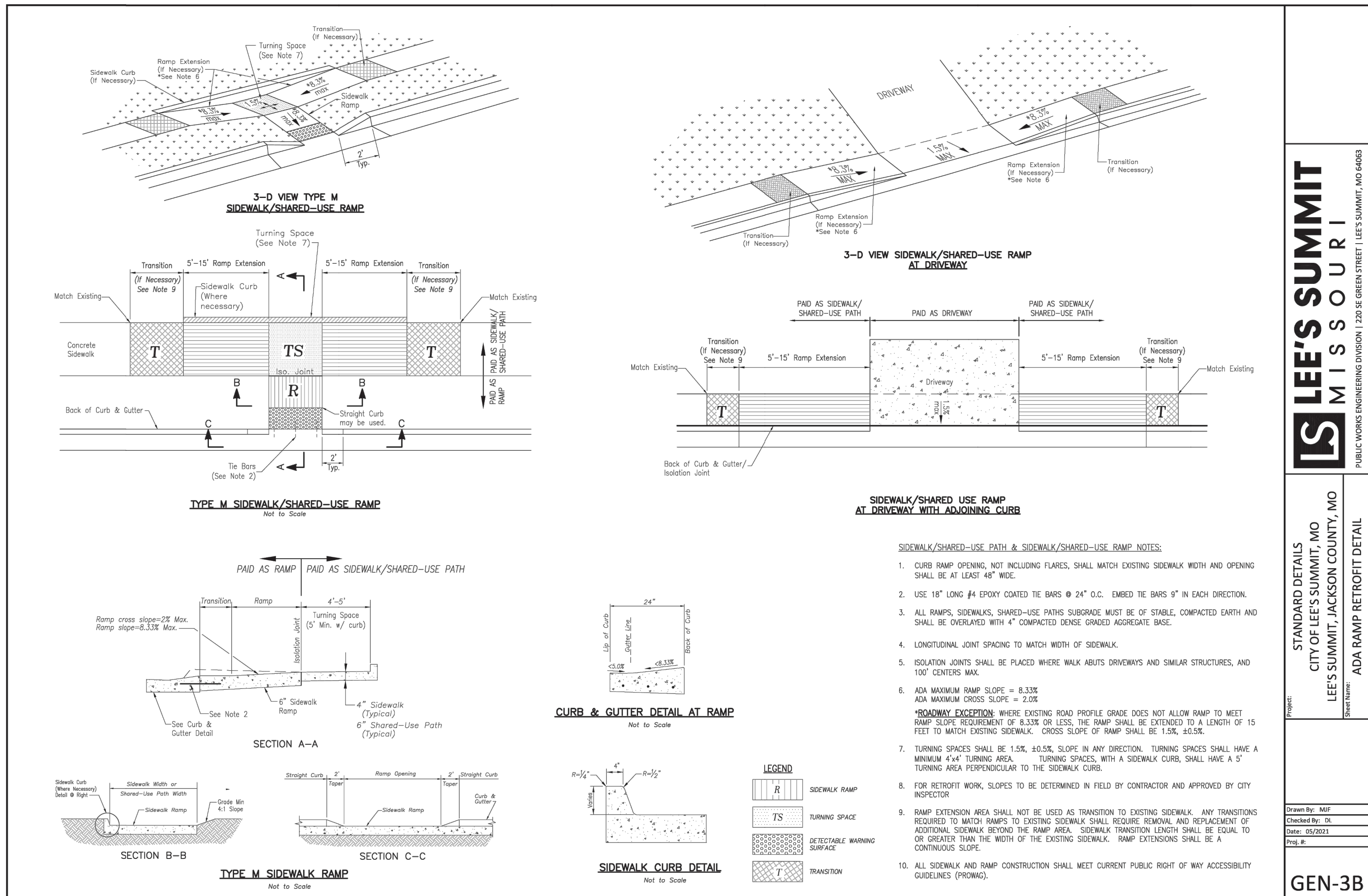
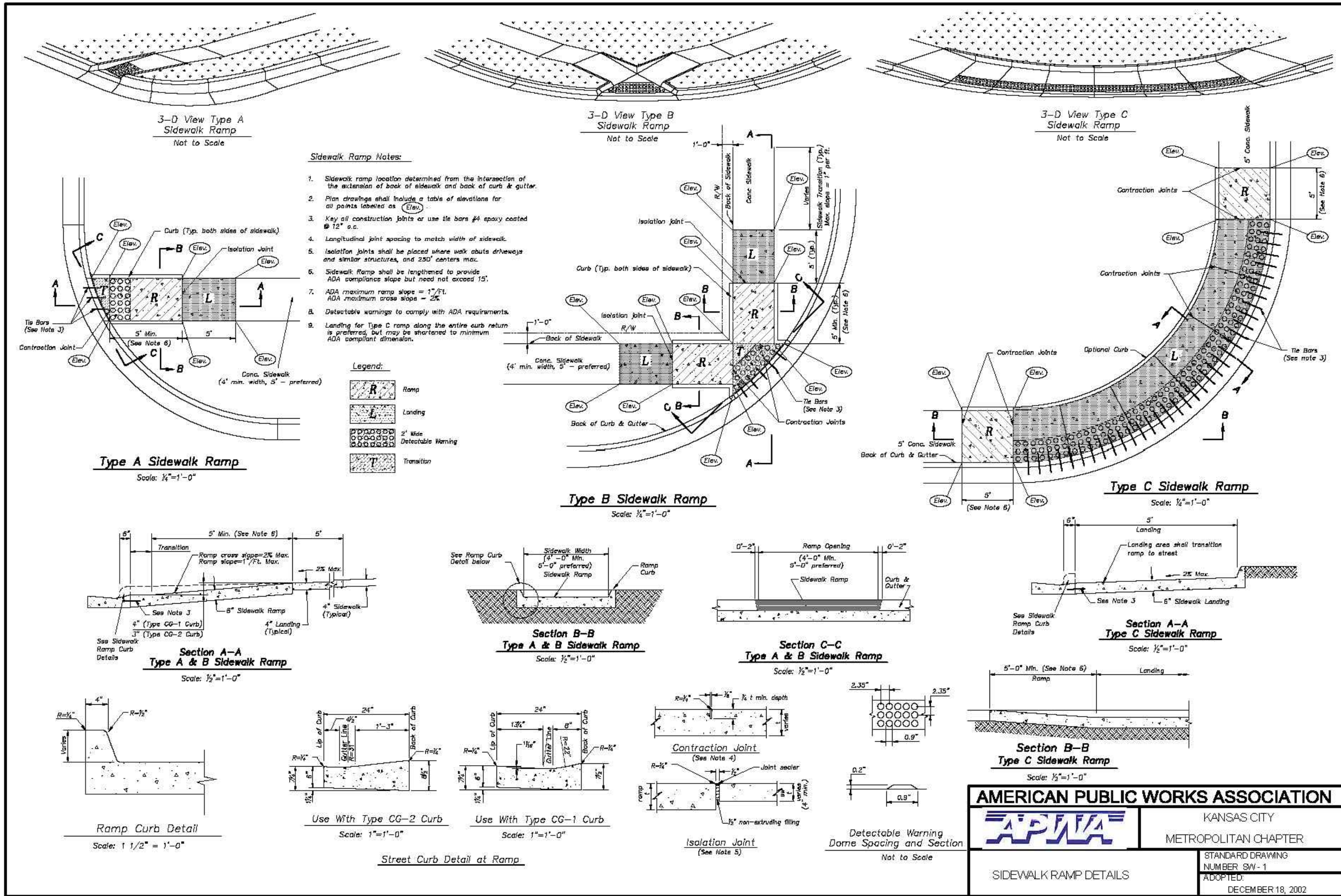


- GENERAL NOTES:
1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
 2. ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT 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. KCMB 4K CONCRETE MIX IS REQUIRED FOR ALL CURBS.
 5. COMMERCIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMB 4K CONCRETE MIX.
 6. RESIDENTIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, KCMB 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. 3/4" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE C0-1 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.

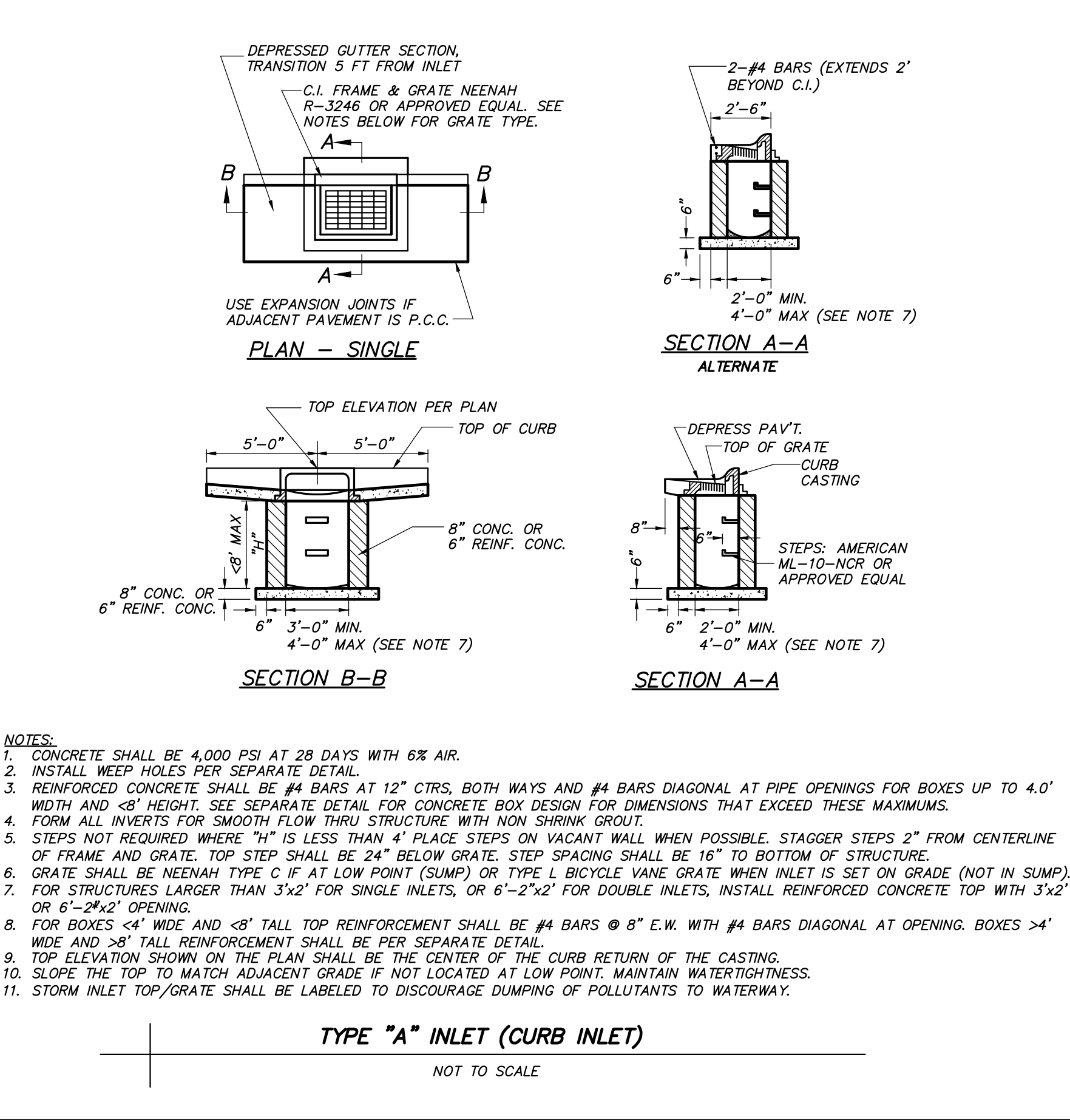
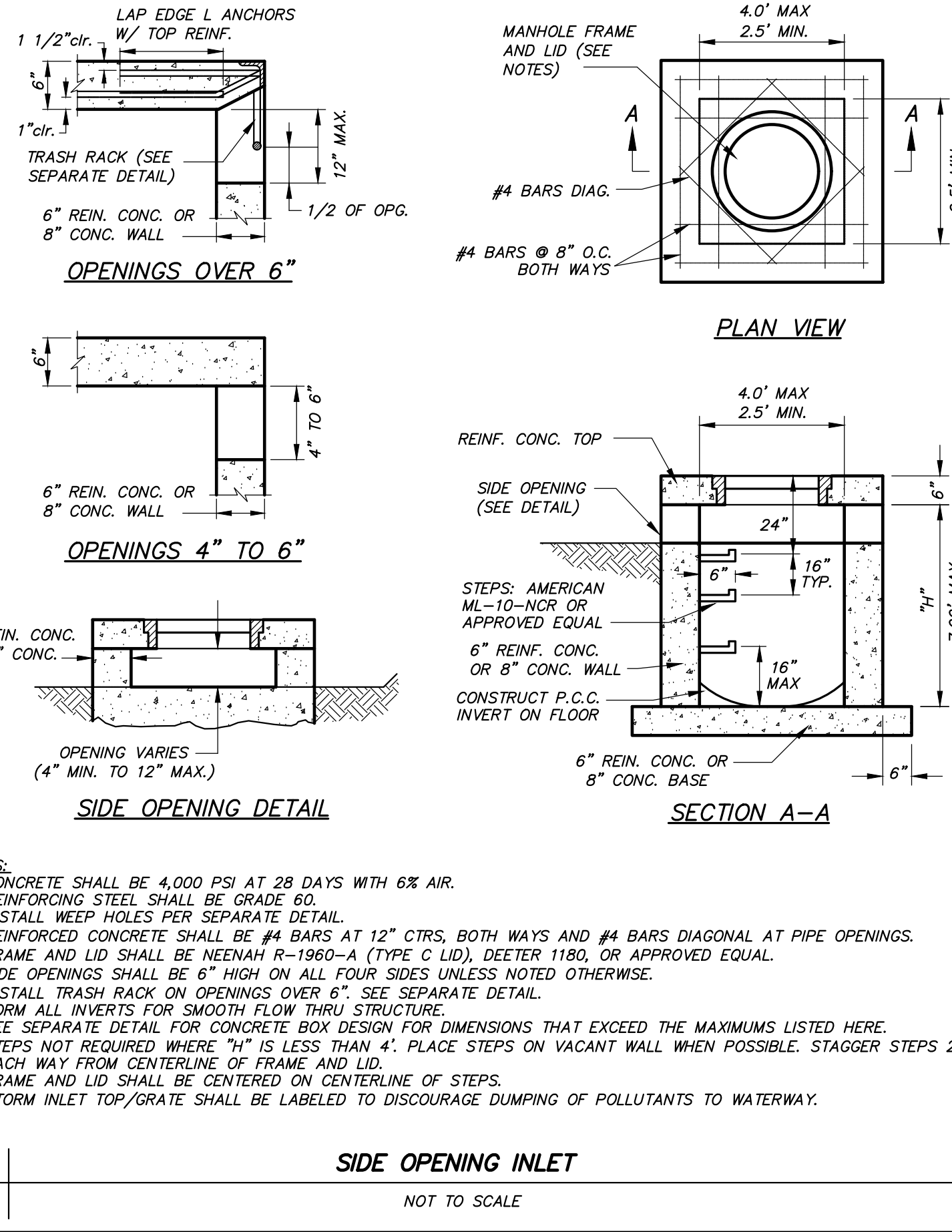
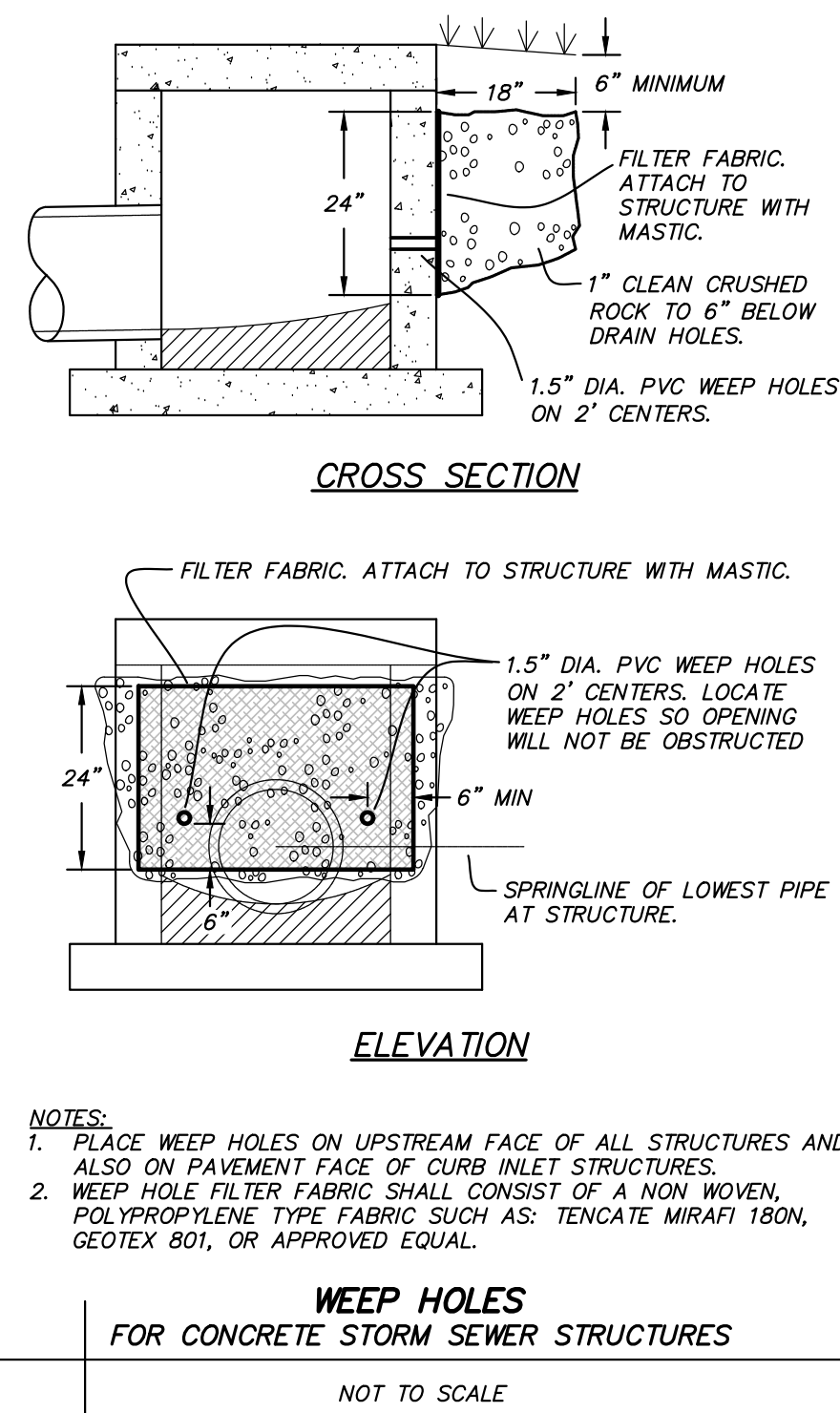
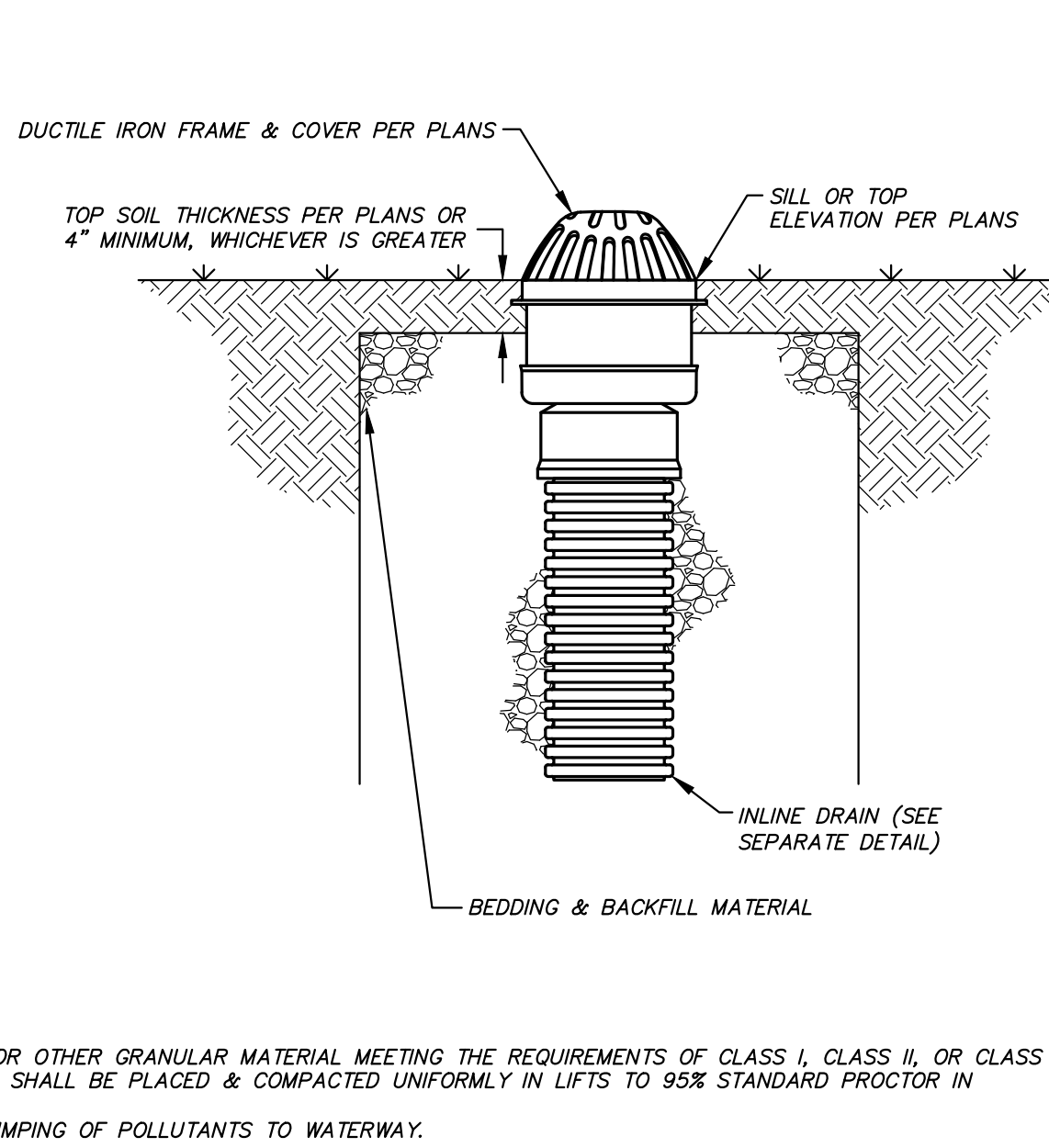
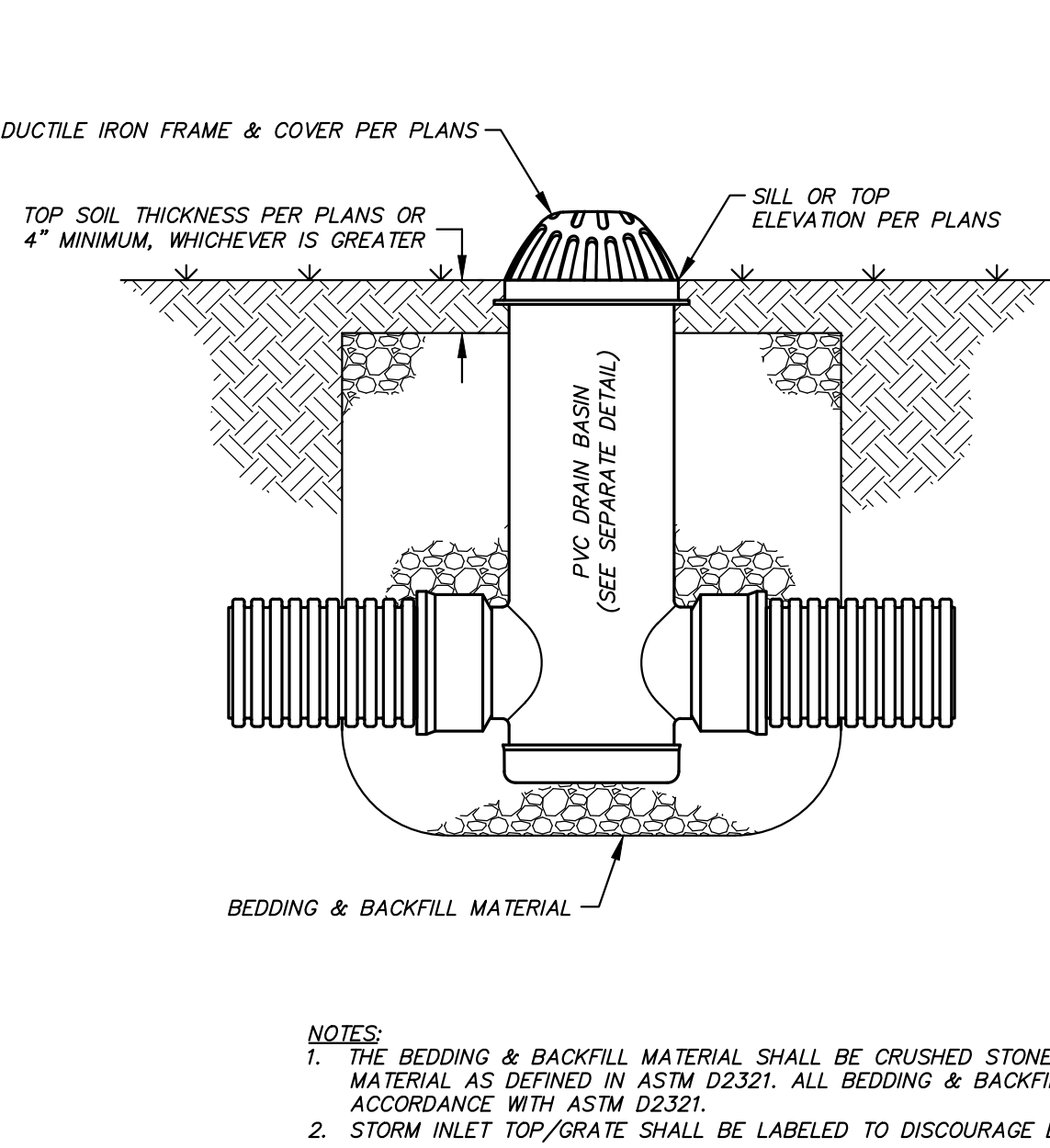
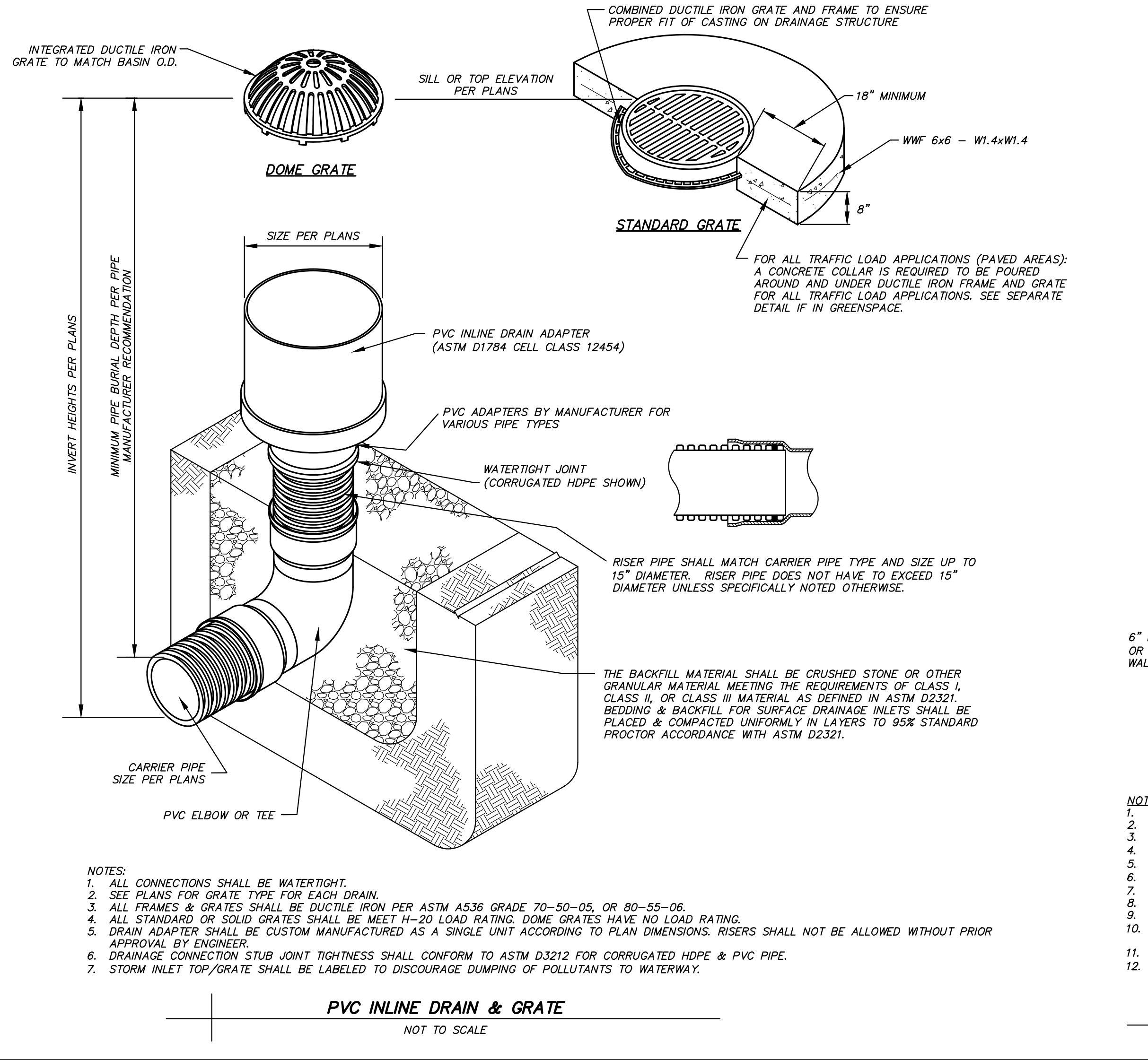
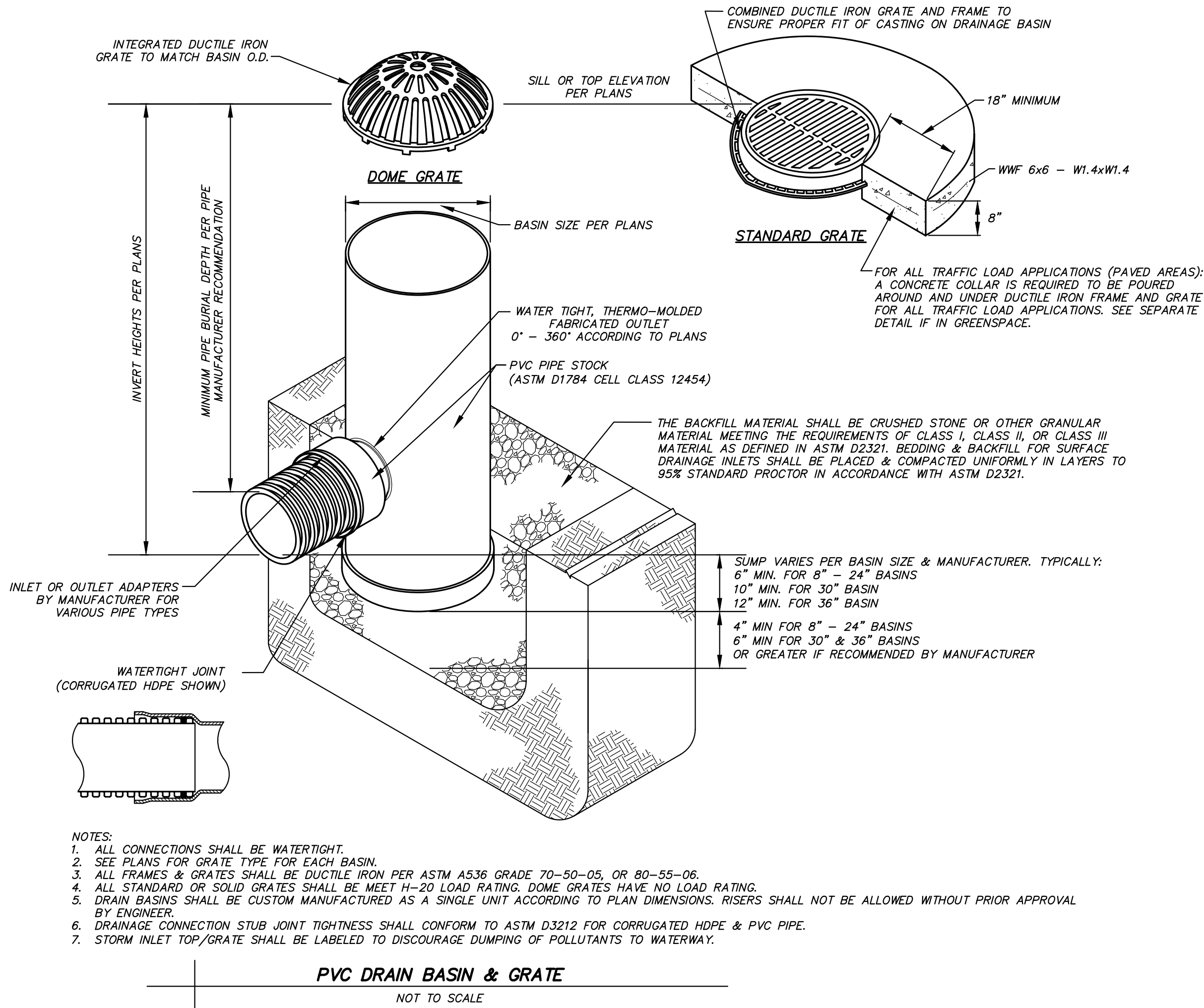
LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 120 SE GREEN STREET | LEE'S SUMMIT, MO 64063
VALLEY GUTTER DETAIL
GEN-7

P:\GENERAL PROJECTS\15925-ES-WILSHIRE-HILLS-3-ENV\CAD\15925 COVER & DETAILS.DWG 6/30/2023

P:\GENERAL PROJECTS\15925E-KS-WILSHIRE-HILLS-3-ENG\CAD\15925 COVER & DETAILS.DWG 6/30/2023



P:\GENERAL PROJECTS\15925E-45-WILSHIRE-HILLS-3-ENVD\AD\15925 COVER & DETAILS.DWG 6/30/2023





BACKFILL NOTES:

1. ~~BEDDING, HAUNCH, AND STRUCTURAL BACKFILL SHALL BE IN CONFORMANCE WITH ASTM M145 AT OR A-3 COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DEFINED BY ASTM D698.~~
2. ~~ALL PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ASTM D2321 LATEST ADDITION.~~
3. ~~HAUNCH, STRUCTURAL, AND ADDITIONAL BACKFILL SHALL BE PLACED IN LIFTS NOT TO EXCEED 8 INCHES AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DEFINED BY ASTM D698.~~

* TABLE ASSUMES STANDARD PROCTOR DENSITY OF 95%
 * MAXIMUM OVERTILL MEASURED FROM THE TOP OF PIPE TO SURFACE
 * CLASS 1 - CRUSHED ROCK, ANGULAR, AASHTO M3 - 5, 6, 56, 57, 67
 * CLASS 2 - CLEAN, COURSE GRAINED SOILS TO BORDERLINE CLEAN FINES; AASHTO M43 - 5, 6, 56, 57, 67; AASHTO M145 - A1, A3
 * CLASS 3 - COURSE GRAINED SOILS WITH FINES AND INORGANIC FINE-GRAINED SOILS; AASHTO M43 - GRAVEL AND SAND WITH <10% FINES
 * REFER TO M145 OR A-2 WITH >30% RETAINED ON #200 SIEVE
 * REFER TO CURRENT AAS INC. DRAINAGE HANDBOOK FOR A COMPLETE LISTING OF SUITABLE MATERIALS
 * PER ASTM D-3034 FOR PIPE UP TO 15" AND ASTM F679 OVER 15"

EMBEDMENT OF PLASTIC STORM SEWER PIPE

NOT TO SCALE

THE CONTRACTOR SHALL PROVIDE MINIMUM COVER PLUS ANY ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. IN UNPAVED SITUATIONS, THE SURFACE MUST BE MAINTAINED TO A LEVEL AND NON-RUTTED CONDITION.

LEGEND

I.D. = NORMAL INSIDE DIAMETER OF PIPE.
O.D. = OUTSIDE DIAMETER OF PIPE.
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
MAX = MAXIMUM
 = UNDISTURBED SOIL

CONSTRUCTION SEQUENCE:

1. PLACE BEDDING MATERIAL TO GRADE.
2. COMPACT BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
3. INSTALL PIPE TO GRADE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE SPRINGLINE.
5. COMPLETE BACKFILL ACCORDING TO SPECIFICATIONS.



NOT TO SCALE

REINFORCEMENT SCHEDULE, TOP		
DIMENSIONS	STEEL	SPECIAL PATTERN
W1 = 7" OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W2 = 7" OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W1 = 7" OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W2 = GREATER THAN 7"	#4's @ 6" E.W.	DIAGONAL @ COVER
W1 = GREATER THAN 7"	#4's @ 6" E.W.	DIAGONAL @ COVER
W2 = GREATER THAN 7"	#4's @ 6" E.W.	DIAGONAL @ COVER

REINFORCEMENT SCHEDULE, WALLS			
SECTION	WIDTH ("W")	HOR.	VERT.
"A"	4'-1"	#4's @ 9"	#4's @ 10"
	BETWEEN 4' & 7'	#6's @ 9"	#4's @ 10"
	GREATER THAN 7'	#5's @ 4 1/2"	#4's @ 10"
"B"	4'-1"	#4's @ 6"	#4's @ 10"
	BETWEEN 4' & 7'	#6's @ 6"	#4's @ 10"

REINFORCEMENT SCHEDULE, BASE	
SECTION	
"A" ONLY	#4's @ 6" E.W.
"A" & "B"	#6's @ 6" E.W.

NOTES

1. SEE PLANS FOR CURB INLET, JUNCTION BOX, CATCH BASIN, ETC. DESIGNATION. SEE CORRESPONDING DETAILS FOR ACCESS FRAME AND GRATE/LID REQUIREMENTS.
2. ALL EXPOSED CORNERS SHALL HAVE 3/4" CHAMFERS.
3. ALL #4 & #5 REINFORCING BARS SHALL HAVE 1-1/2" MINIMUM COVER. LARGER BAR SIZES SHALL HAVE 2" MINIMUM COVER.
4. PIPES SHALL CONNECT TO THE FLAT FACES OF THE STRUCTURE. CONNECTIONS SHALL NOT BE MADE AT CORNERS OF STRUCTURE.
5. ALL REINFORCING BARS SHALL BE GRADE 60.
6. INSTALL WEEP HOLES AND STEPS PER SEPARATE DETAILS.



GUTTER DOWNSPOUT CONNECTION

NOT TO SCALE



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MO Engineering Corp. # 2004005018

WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

6/30/2023



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PROFESSIONAL ENGINEER
PE-2007002811

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Date _____

JUNE 30, 2023

Reviser

Design: ST Drawn: MJ

STORM SEWER DETAILS

She

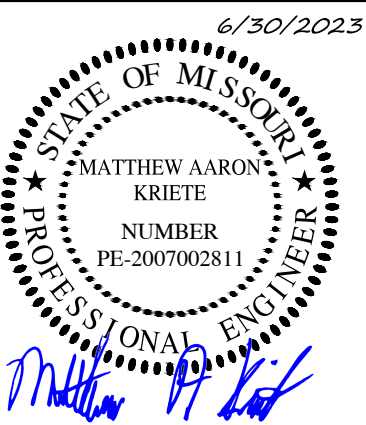
C11.02

ES&S PROJECT NO. 15925

CONSTRUCTION DOCUMENTS

WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



MATTHEW A. KRIETE
PROFESSIONAL ENGINEER
PE-2007002811

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Date _____

JUNE 30, 2023

Revised

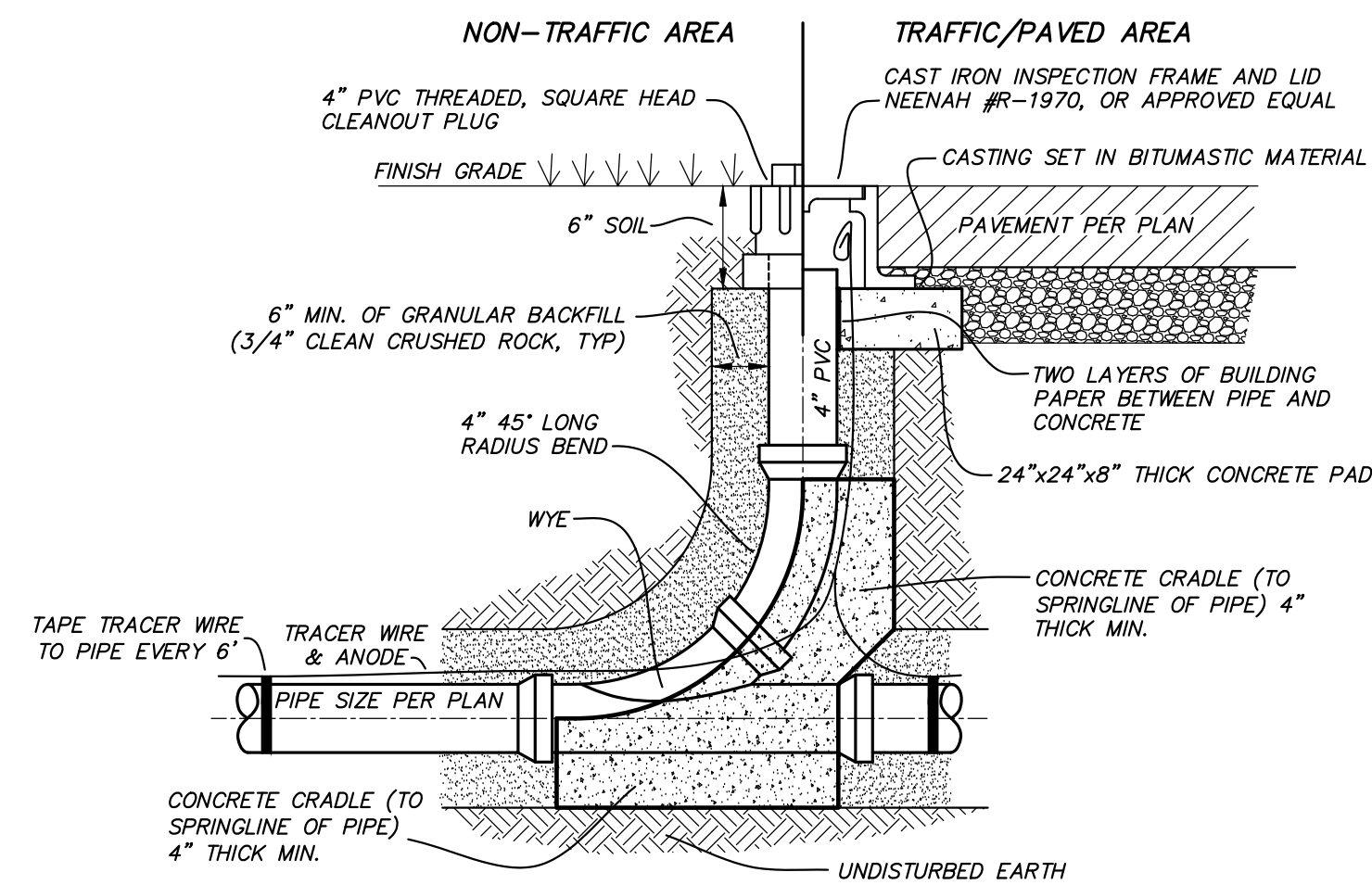
Design: ST Drawn: MJS

ANITARY SEWER DETAILS

Sheet

C12.01

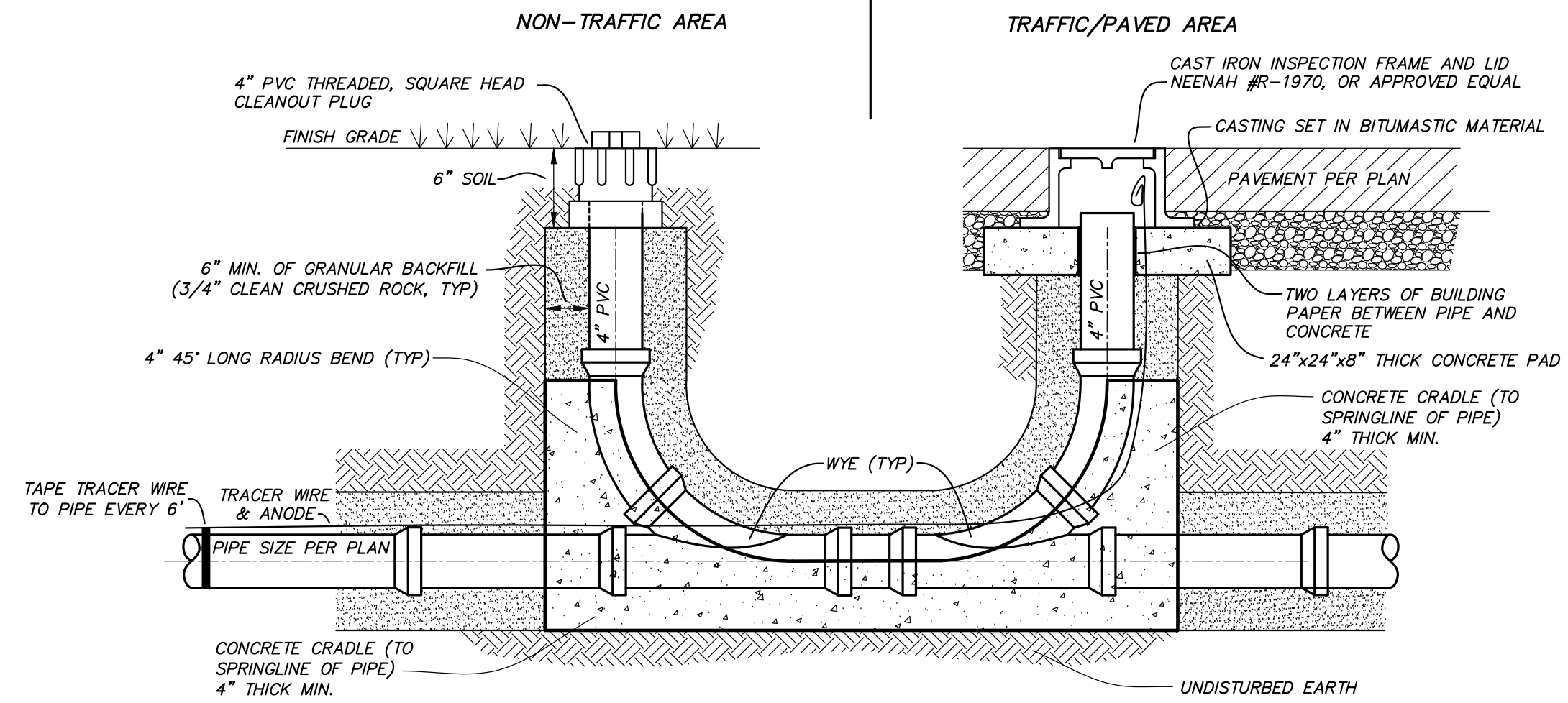
ES&S PROJECT NO. 15925



- NOTES:
1. ALL PIPE & FITTINGS SHALL BE WATER TIGHT, GASKETED, SDR35 PVC.
 2. INSTALL ALL PIPING PER SEPARATE DETAIL OR MANUFACTURER'S WRITTEN INSTRUCTIONS.
 3. THIS DETAIL IS FOR GENERAL LAYOUT PURPOSES ONLY. ADDITIONAL COUPLERS, GASKETS, FITTINGS, ETC. MAY BE NECESSARY PER MANUFACTURER'S REQUIREMENTS.
 4. TOP SHALL BE SET FLUSH WITH FINISH GRADE.
 5. INSTALL IN THE DIRECTION OF FLOW AS SHOWN UNLESS OTHERWISE INDICATED IN PLANS.

IN-LINE SANITARY SEWER CLEANOUT W/ TRACER WIRE

NOT TO SCALE

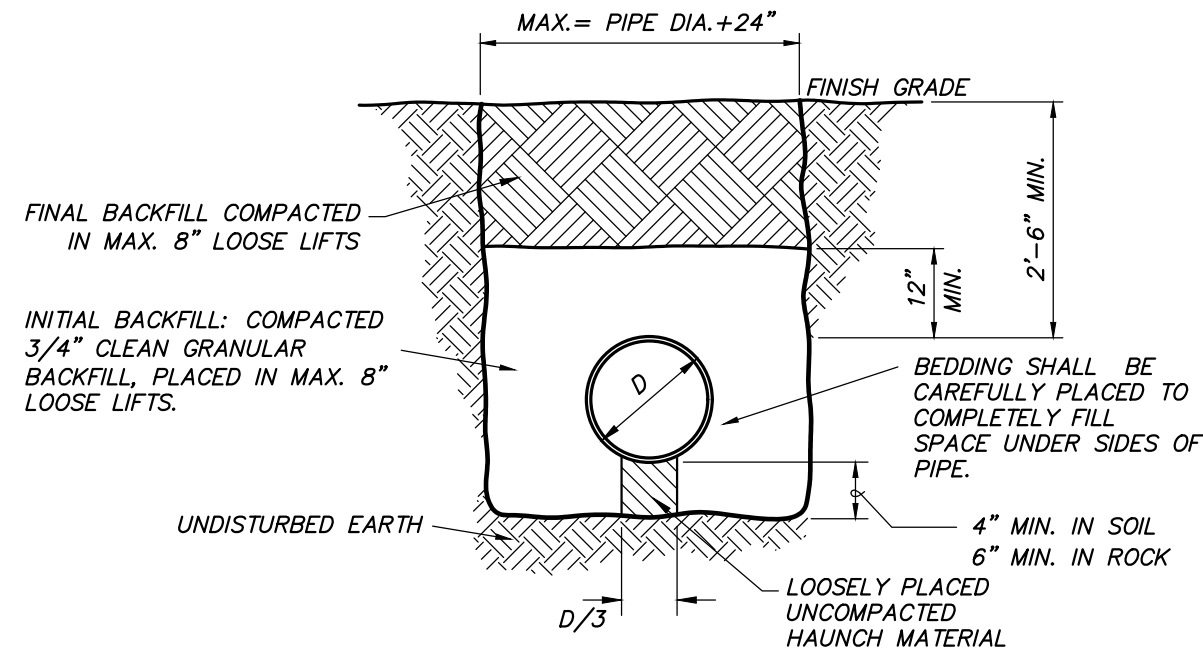


- NOTES:
1. ALL PIPE & FITTINGS SHALL BE WATER TIGHT, GASKETED, SDR35 PVC.
 2. INSTALL ALL PIPING PER SEPARATE DETAIL OR MANUFACTURER'S WRITTEN INSTRUCTIONS.
 3. THIS DETAIL IS FOR GENERAL LAYOUT PURPOSES ONLY. ADDITIONAL COUPLERS, CLOSURES, FITTINGS, ETC. MAY BE NECESSARY PER MANUFACTURER'S REQUIREMENTS.
 4. TOP SHALL BE SET FLUSH WITH FINISH GRADE.
 5. INSTALL IN THE DIRECTION OF FLOW AS SHOWN UNLESS OTHERWISE INDICATED IN PLANS.

TWO WAY SANITARY CLEANOUT W/ TRACER WIRE

NOT TO SCALE

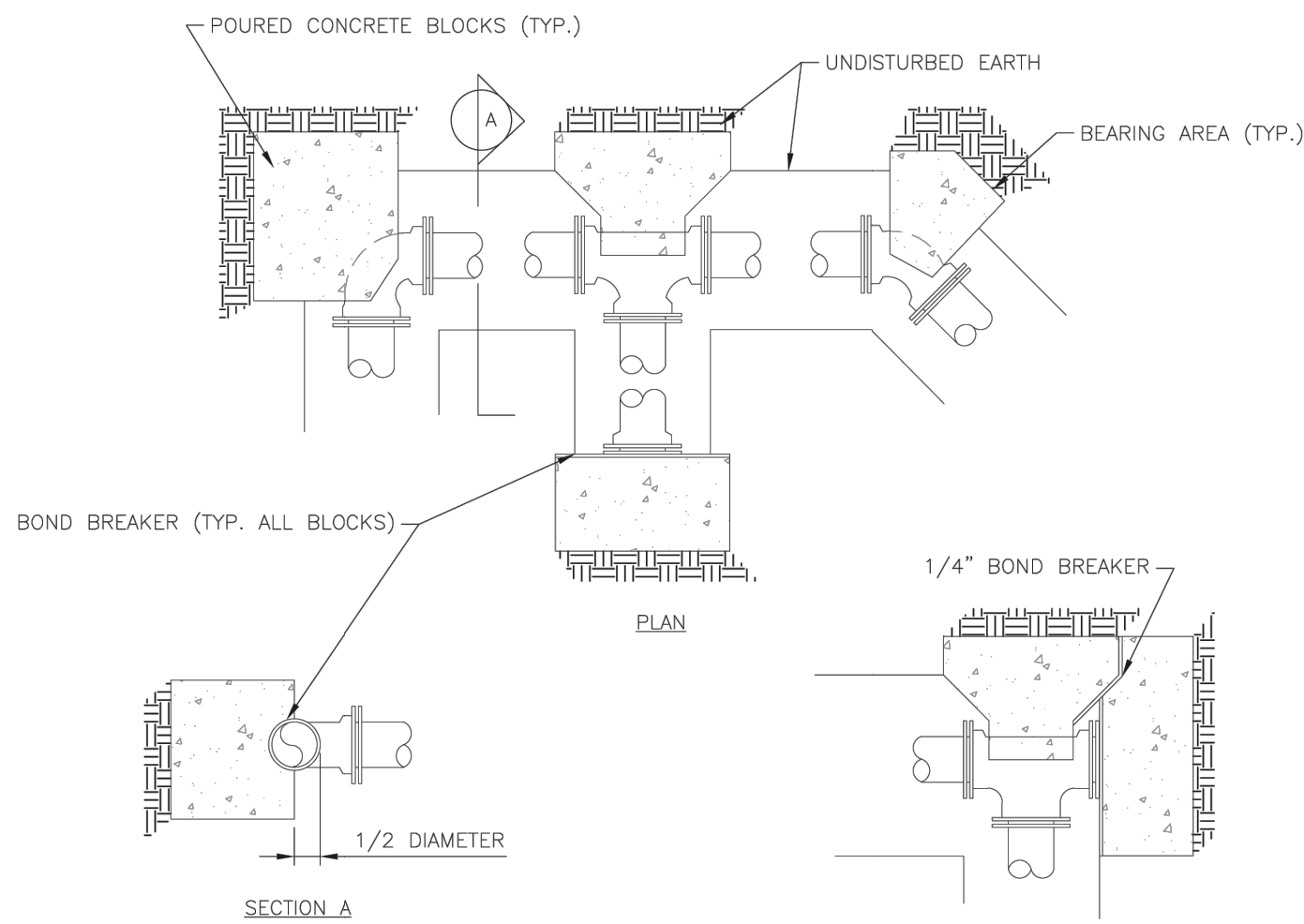
PIPE DIA.	MIN. TRENCH WIDTH
≤ 6"	PIPE DIA. + 18"
8"-10"	PIPE DIA. + 10"
12"-36"	PIPE DIA. + 12"



EMBEDMENT OF PVC SANITARY SEWER PIPE

NOT TO SCALE

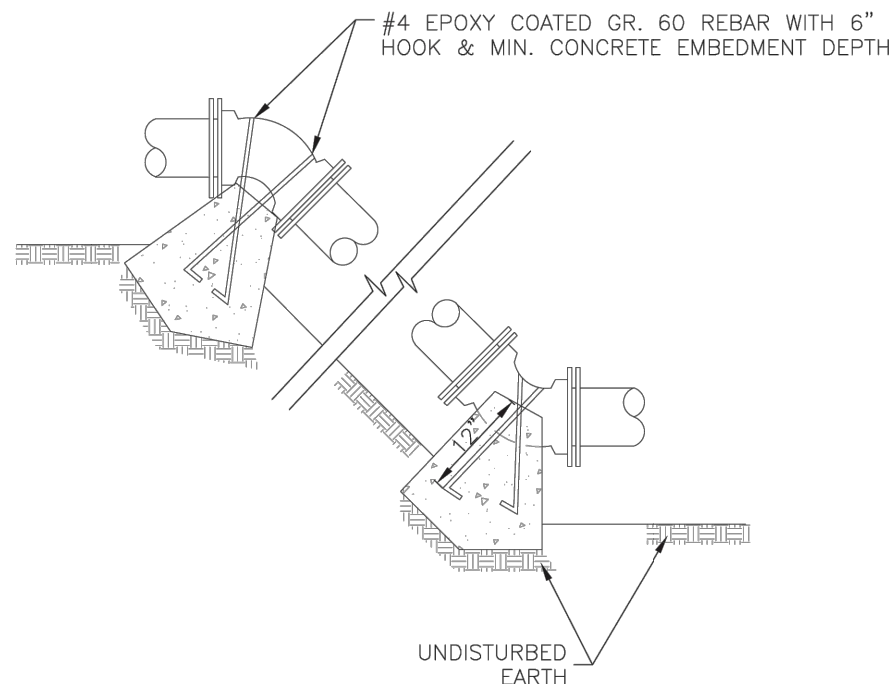
REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)					
NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	6.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.8	26.7	14.4	7.4	4.0
14	25.7	36.3	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	REST. JT.	32.5	16.5	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.

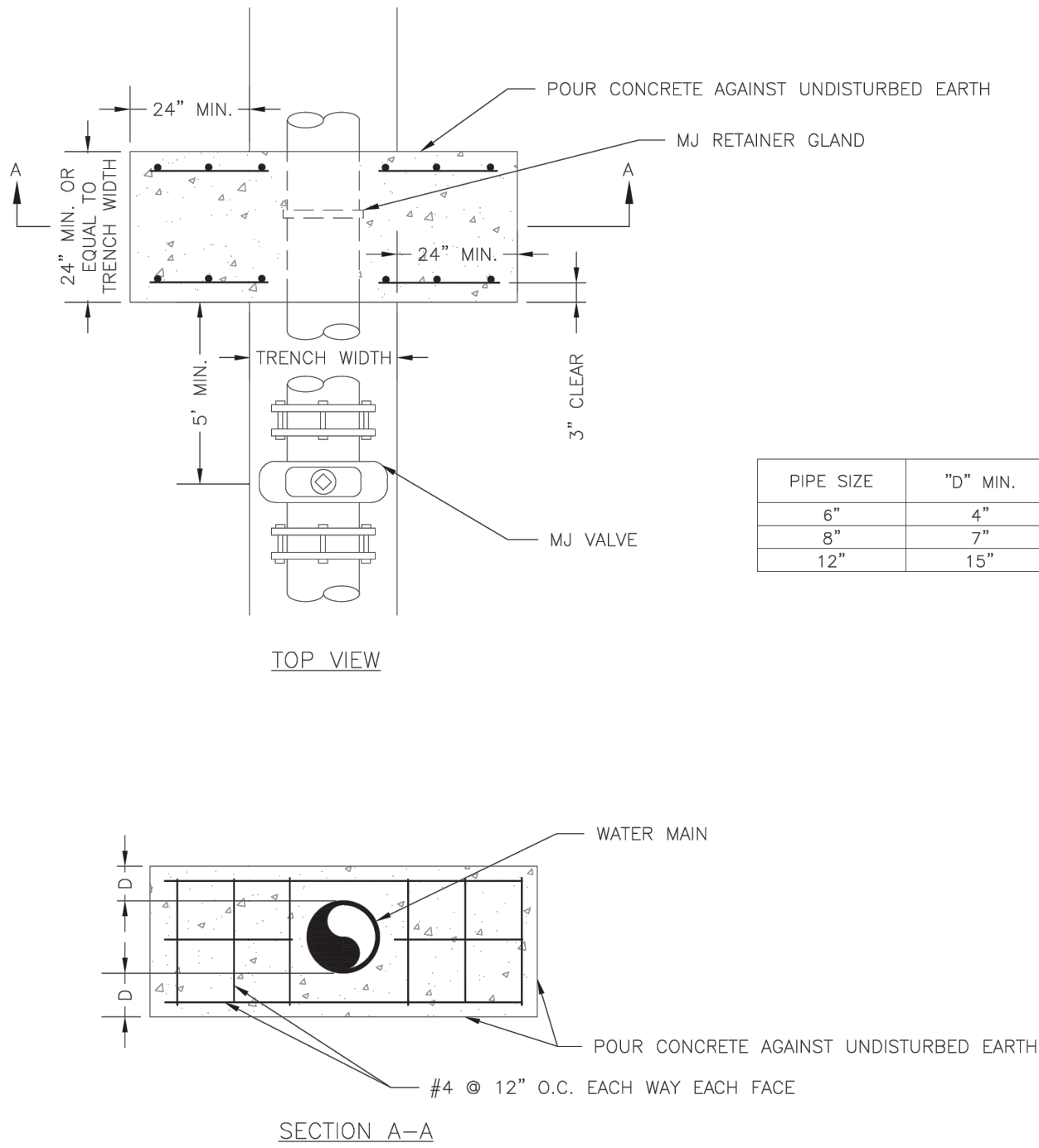
LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 01/2016 Drawn By: JN Checked By: DL
	HORIZONTAL THRUST BLOCK	WAT-1

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



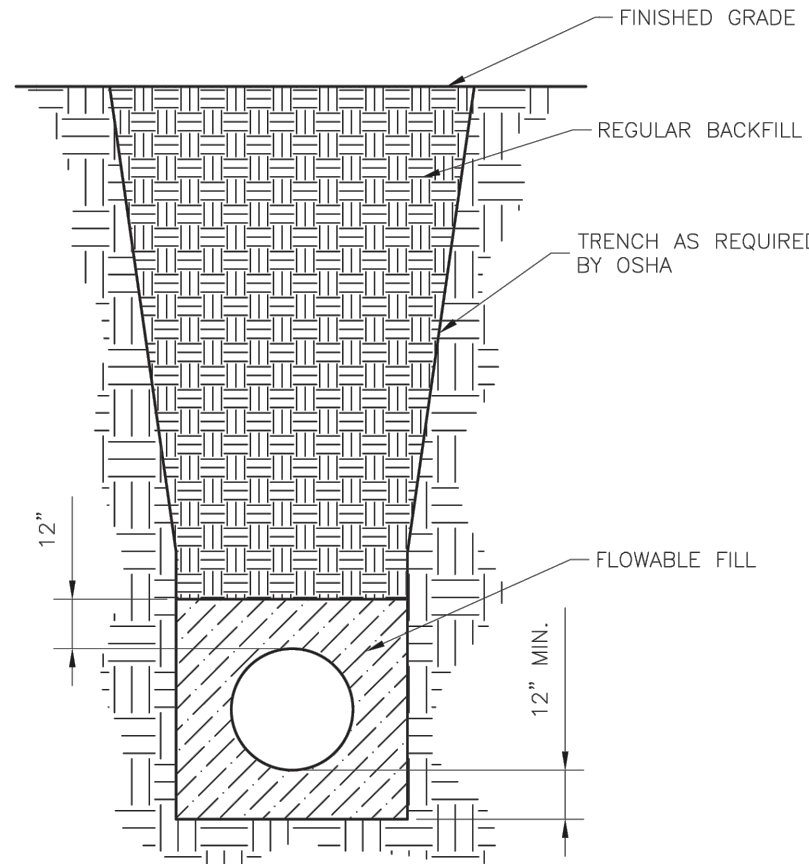
- NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
 2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
 3. BEARING MUST BE AGAINST UNDISTURBED SOIL.
 4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: WAT-2 Drawn By: JN Checked By: DL
	VERTICAL THRUST BLOCK	WAT-2



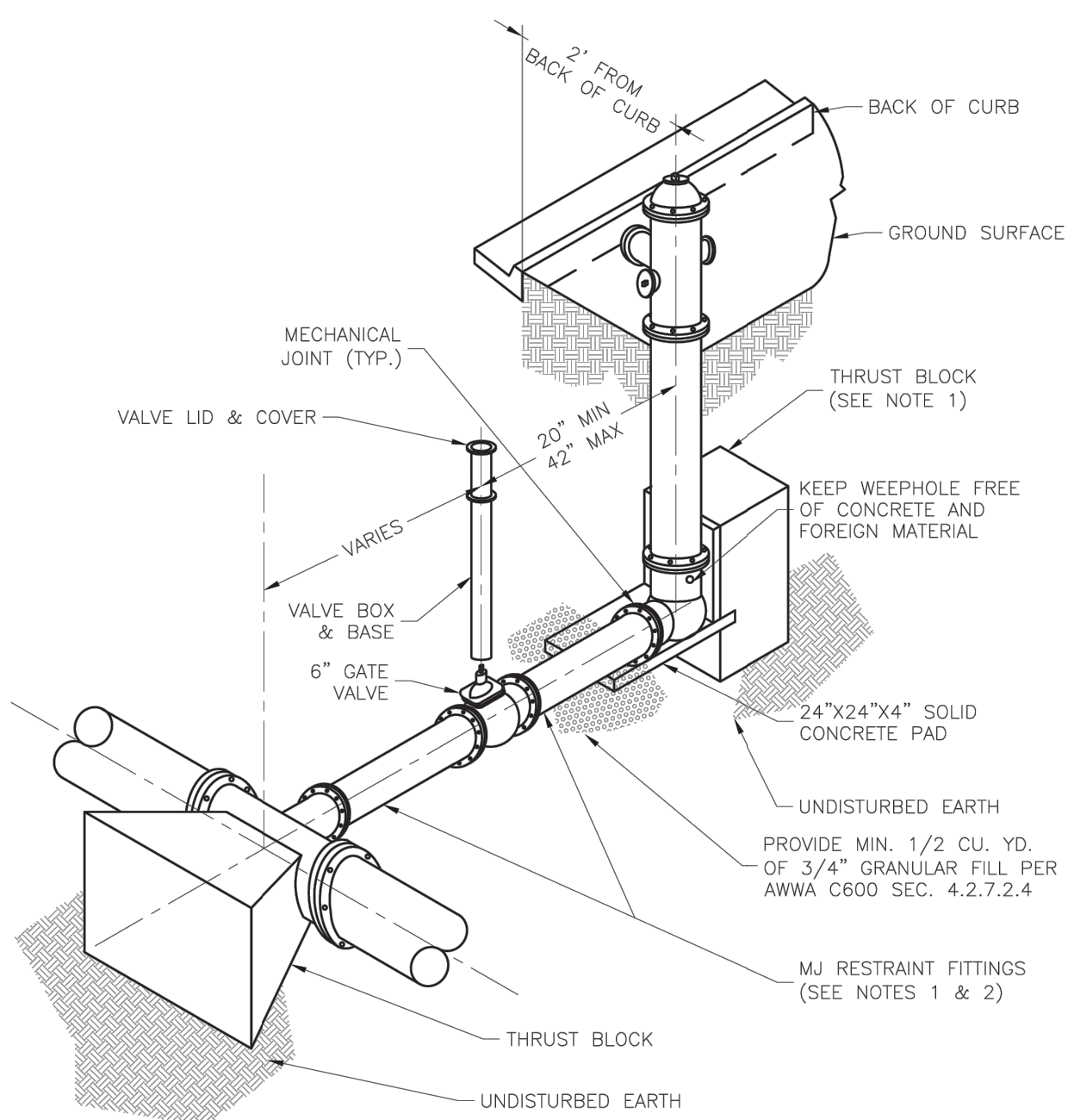
NOTE:
THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"

LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 01/2016 Drawn By: JN Checked By: DL
	STRADDLE BLOCK	WAT-3



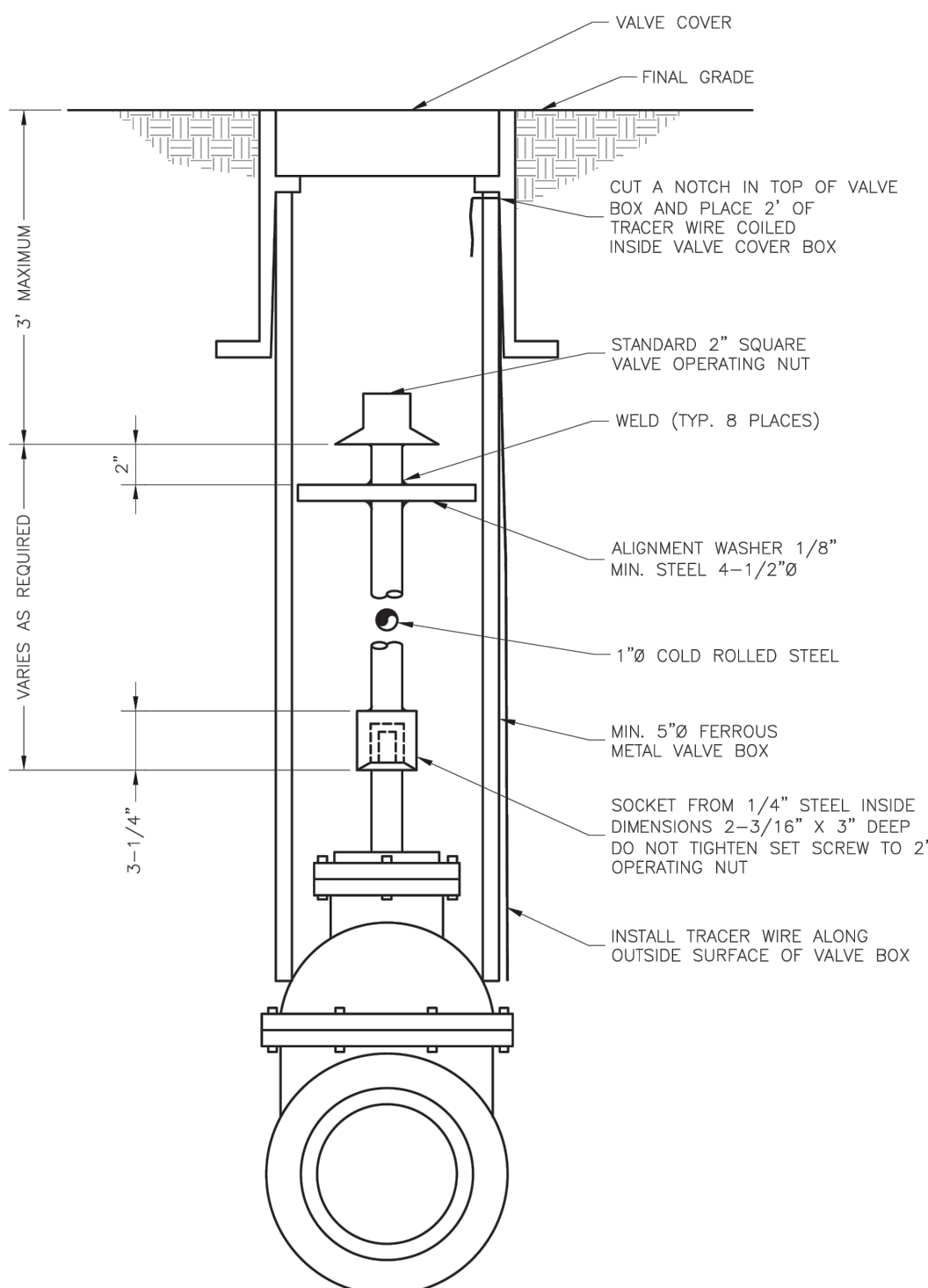
- NOTES:
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
 2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
 3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.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

LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 01/2016 Drawn By: JN Checked By: DL
	WATER TRENCH CHECK DETAIL	WAT-6

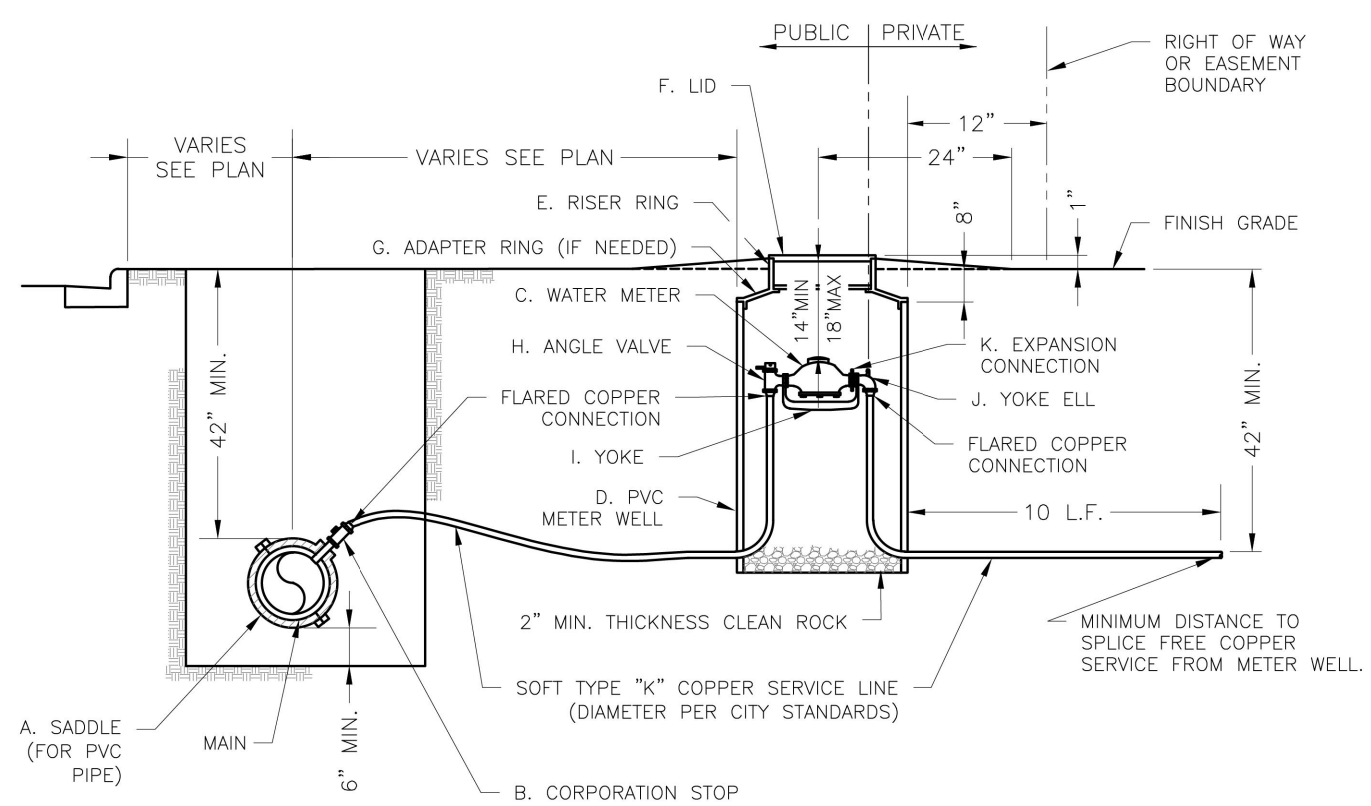


- NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
 2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
 3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
 4. BOTTOM 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.

LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 01/2016 Drawn By: JN Checked By: DL
	HYDRANT - STRAIGHT SET	WAT-7

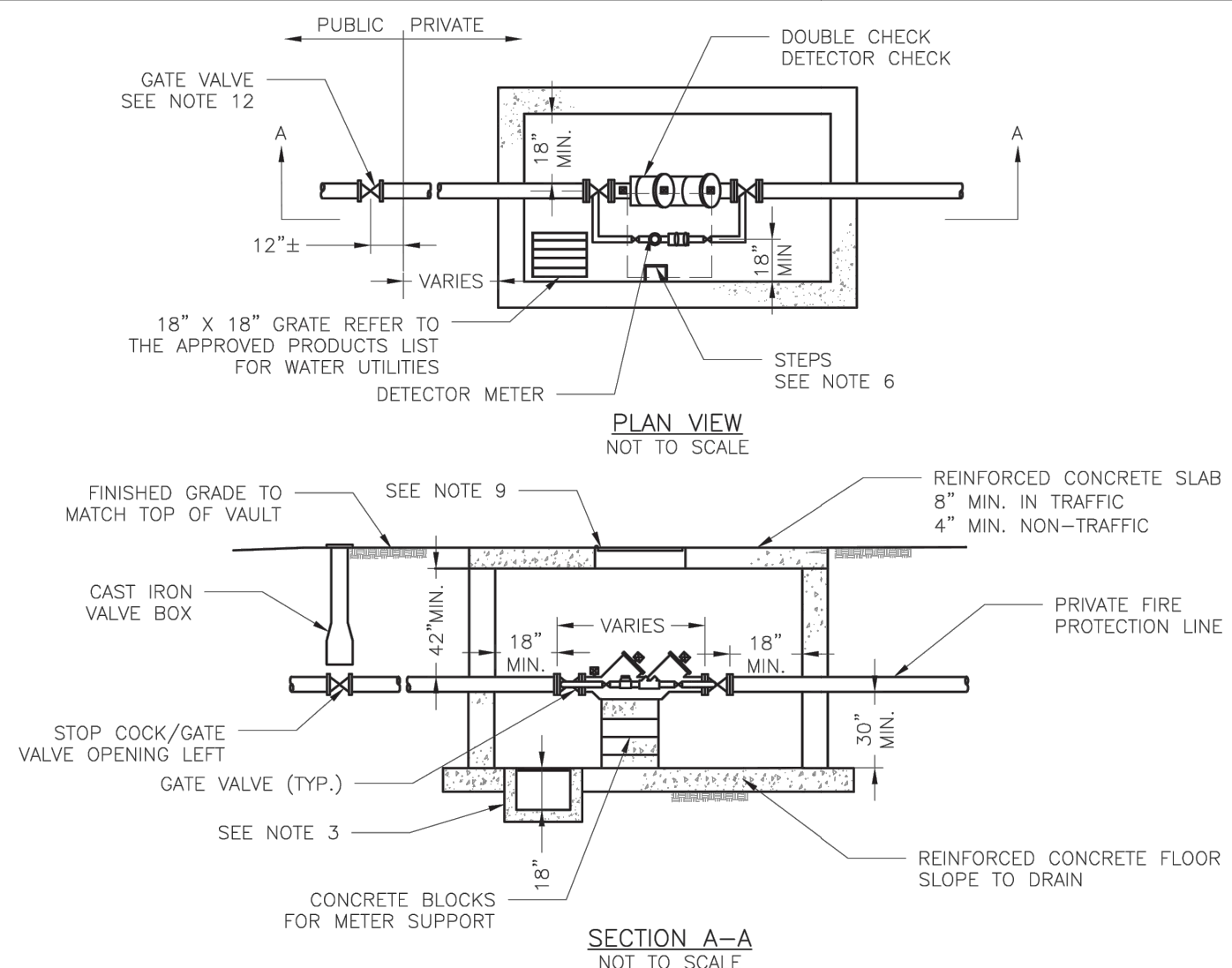


LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 01/2016 Drawn By: JN Checked By: DL
	VALVE STEM EXTENSION AND VALVE BOX	WAT-9



- 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"

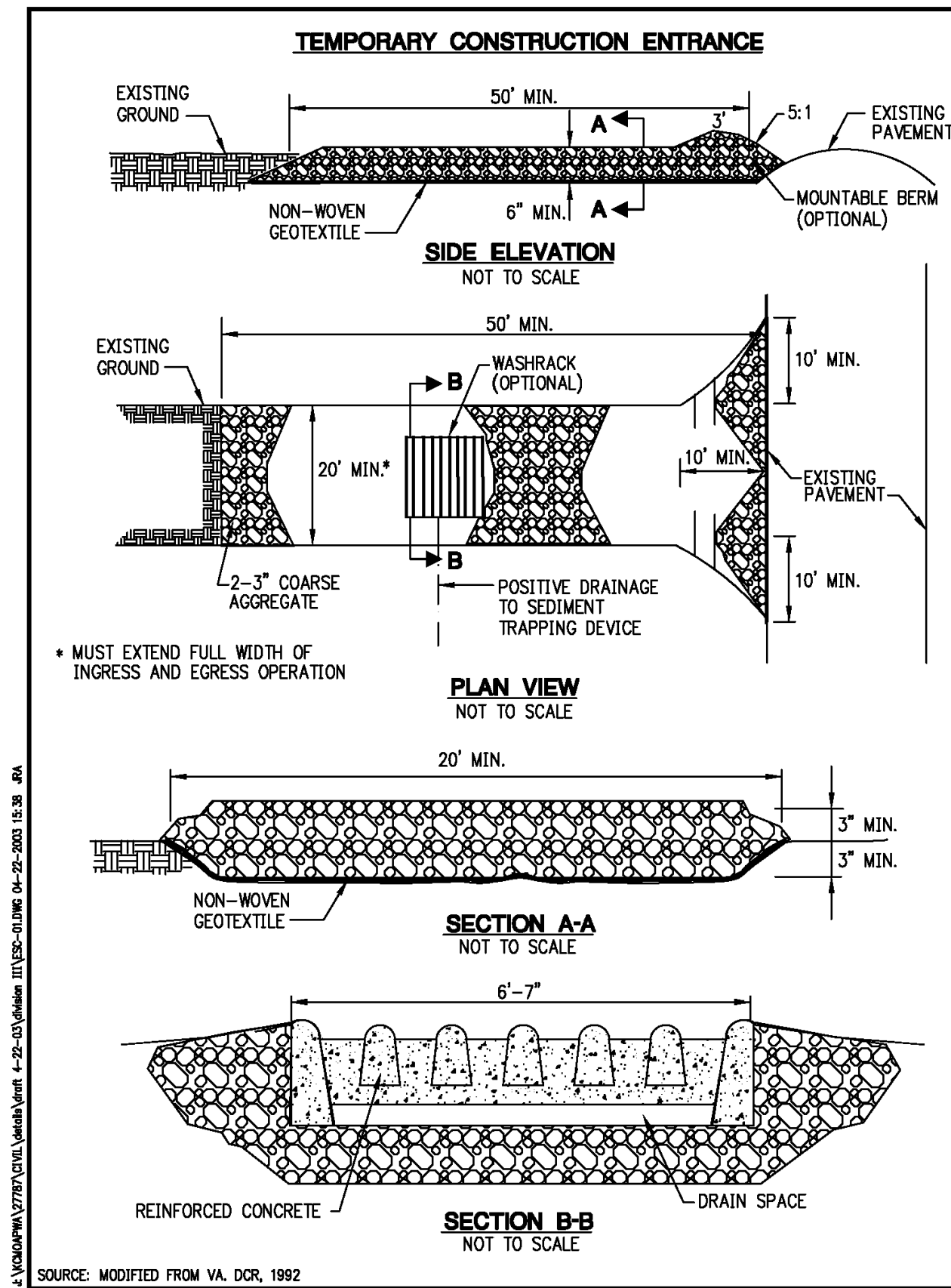
LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 08/2023 Drawn By: MIF Checked By: KLY
	SERVICE CONNECTION WITH METER WELL	WAT-11



- 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.

LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 02/2016 Drawn By: JN Checked By: DL
	VAULT FOR DOUBLE CHECK DETECTOR CHECK	WAT-12

P:\GENERAL PROJECTS\15925E-KS-WILSHIRE-HILLS-3-ENV\CAO\15925 COVER & DETAILS.DWG 6/20/2023



TEMPORARY CONSTRUCTION ENTRANCE PAD NOTES:

A) INSTALLATION:

1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS. IF POSSIBLE, LOCATE WHERE PERMANENT ROADS WILL EVENTUALLY BE CONSTRUCTED.
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 AWAY 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 SMOOTH AND SLOPED FOR DRAINAGE.
6. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE.
7. IF WET CONDITIONS ARE ANTICIPATED, PLACE GEOTEXTILE FABRIC ON THE GRADED FOUNDATION TO IMPROVE STABILITY.

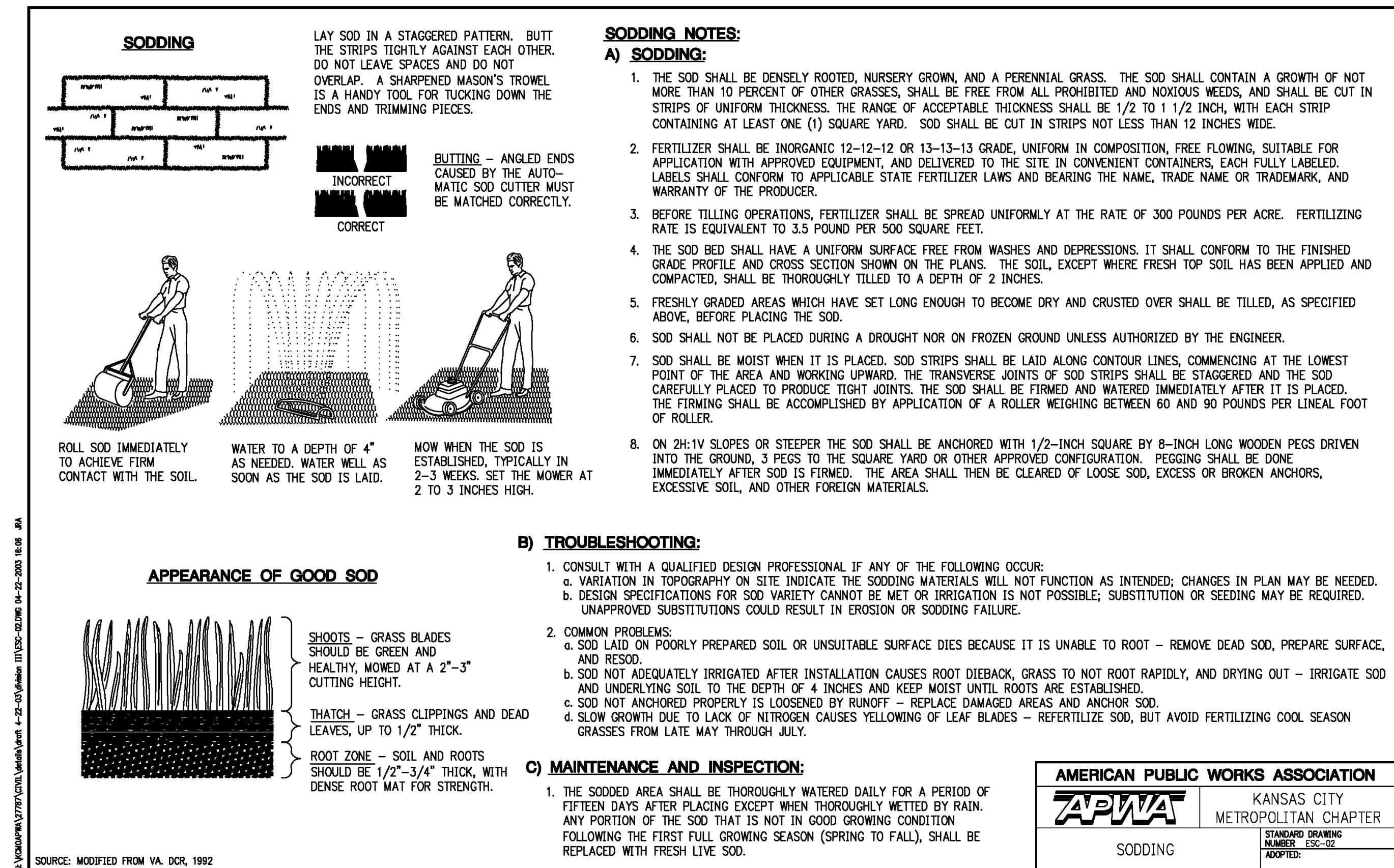
B) TROUBLESHOOTING:

1. CONSULT WITH A QUALIFIED DESIGN PROFESSIONAL IF ANY OF THE FOLLOWING OCCUR:
 - a. INADEQUATE RUNOFF CONTROL TO THE EXTENT THAT SEDIMENT WASHES ONTO PUBLIC ROAD - INSTALL DIVERSIONS OR OTHER RUNOFF CONTROL MEASURES.
 - b. SMALL STONE, THIN PAD, OR ABSENCE OF GEOTEXTILE FABRIC RESULTS IN RUTS AND MUDDY CONDITIONS AS STONE IS PRESSED INTO SOIL - INCREASE STONE SIZE OR PAD THICKNESS OR ADD GEOTEXTILE FABRIC.
 - c. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC - EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.

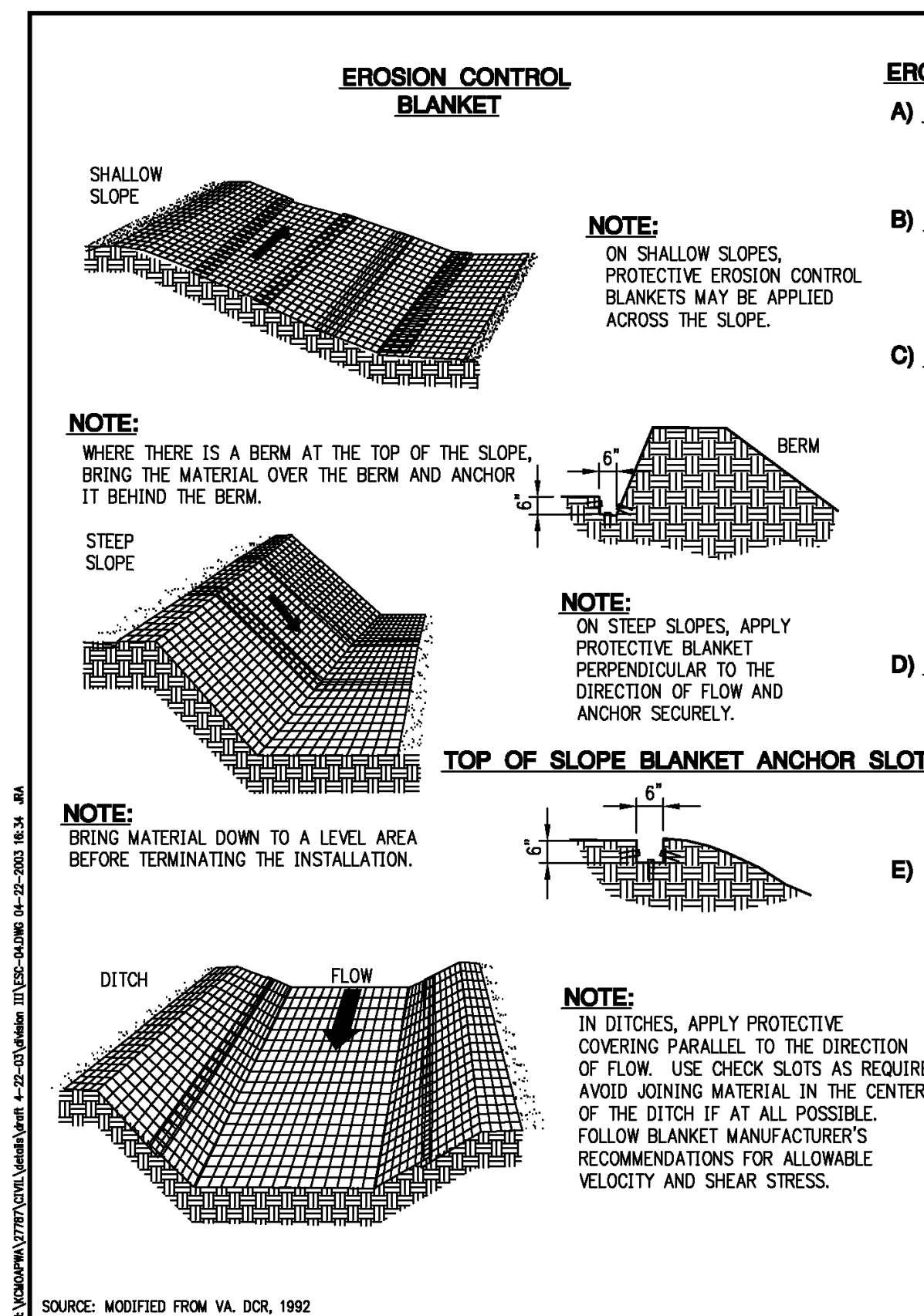
C) INSPECTION AND MAINTENANCE:

1. INSPECT STONE PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER 1/2-INCH OR GREATER STORM EVENTS.
2. RESHAPE PAD AS NEEDED FOR PROPER DRAINAGE AND RUNOFF CONTROL.
3. TOPDRESS WITH CLEAN 2-AND 3-INCH STONE AS NEEDED.
4. IMMEDIATELY REMOVE MUD OR SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROAD. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY.
5. REMOVE ALL TEMPORARY ROAD MATERIALS FROM AREAS WHERE PERMANENT VEGETATION WILL BE ESTABLISHED.

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
TEMPORARY CONSTRUCTION ENTRANCE	STANDARD DRAWING NUMBER ESC-01 ADOPTED



AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
SODDING	STANDARD DRAWING NUMBER ESC-02 ADOPTED



EROSION CONTROL BLANKET NOTES (1 OF 2):

A) SITE PREPARATION:

AFTER SITE HAS BEEN SHAPED AND GRADED, PREPARE A FRIABLE SEEDBED RELATIVELY FREE FROM CLODS AND ROCKS MORE THAN 1 1/2 INCHES IN DIAMETER AND ANY FOREIGN MATERIAL THAT WILL PREVENT UNIFORM CONTACT OF THE PROTECTIVE COVERING WITH THE SOIL SURFACE.

B) PLANTING:

LIME, FERTILIZE, AND SEED IN ACCORDANCE WITH SEEDING OR PLANTING PLAN. WHEN USING JUTE MESH ON A SEEDBED, APPLY APPROXIMATELY ONE HALF THE SEED AFTER LAYING THE MAT. THE PROTECTIVE COVERING CAN BE LAID OVER SPRIGGED AREAS WHERE SMALL GRASS PLANTS HAVE BEEN INSERTED INTO THE SOIL. WHERE GROUND COVERS ARE TO BE PLANTED, LAY THE PROTECTIVE COVERING FIRST AND THEN PLANT THROUGH THE MATERIAL AS PER PLANTING PLAN.

C) LAYING AND STAPLING:

IF INSTRUCTIONS HAVE BEEN FOLLOWED, ALL NEEDED CHECK SLOTS WILL HAVE BEEN INSTALLED, AND THE PROTECTIVE COVERING WILL BE LAID ON A FRIABLE SEEDBED FREE FROM CLODS, ROCKS, ROOTS, ETC. THAT MIGHT IMPEDE GOOD CONTACT.

1. START LAYING THE PROTECTIVE COVERING FROM THE TOP OF THE CHANNEL OR SLOPE AND UNROLL DOWN-GRADE. ALLOW TO LAY LOOSELY ON SOIL; DO NOT STRETCH.
2. UPSLOPE ENDS OF THE BLANKET SHOULD BE BURIED IN AN ANCHOR SLOT NO LESS THAN 6-INCHES DEEP. TAMP EARTH FIRMLY OVER THE MATERIAL. WHEN TOP IS RELATIVELY FLAT, EXTEND BLANKET ABOUT 40 INCHES AWAY FROM SLOPE. STAPLE THE MATERIAL AT A MINIMUM OF EVERY 12 INCHES ACROSS THE TOP END.
3. EDGES OF THE MATERIAL SHALL BE STAPLED EVERY 3 FEET. WHERE MULTIPLE WIDTHS ARE LAID SIDE BY SIDE, THE ADJACENT EDGES SHALL BE OVERLAPPED A MINIMUM OF 6 INCHES AND STAPLED TOGETHER.
5. STAPLES SHALL BE PLACED DOWN THE CENTER, STAGGERED WITH THE EDGES AT 3-FOOT INTERVALS.

D) TROUBLESHOOTING:

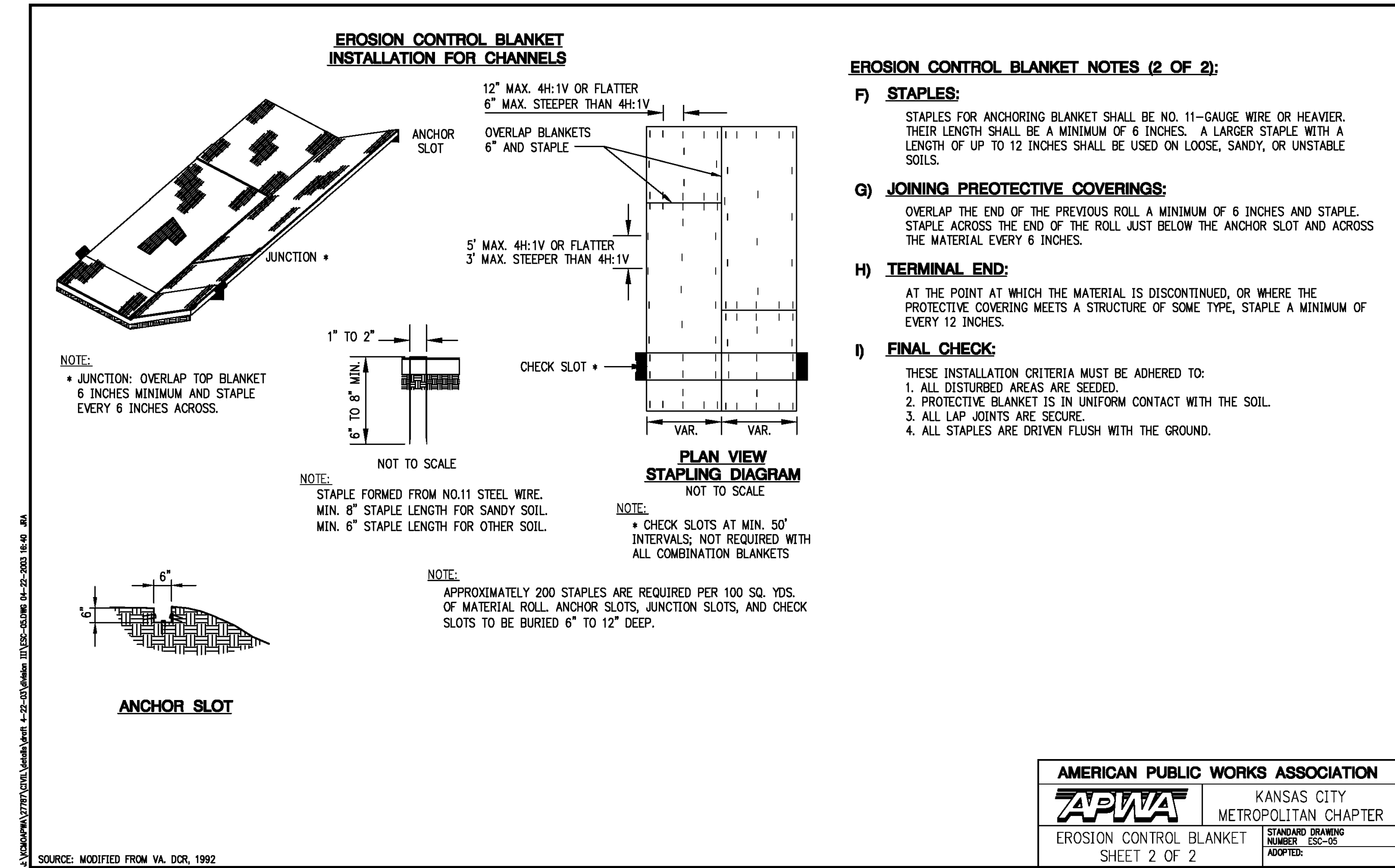
CONSULT WITH A QUALIFIED DESIGN PROFESSIONAL, IF ANY OF THE FOLLOWING OCCUR:

1. MOVEMENT OF THE BLANKET OR EROSION UNDER THE BLANKET IS OBSERVED.
2. VARIATIONS IN TOPOGRAPHY ON SITE INDICATE EROSION CONTROL MAT WILL NOT FUNCTION AS INTENDED; CHANGES IN PLAN MAY BE NEEDED, OR A BLANKET WITH A SHORTER OR LONGER LIFE MAY BE NEEDED.
3. DESIGN SPECIFICATIONS FOR SEED VARIETY, SEEDING DATES, OR EROSION CONTROL MATERIALS CANNOT BE MET; SUBSTITUTION MAY BE REQUIRED. UNAPPROVED SUBSTITUTIONS COULD RESULT IN FAILURE TO ESTABLISH VEGETATION.

E) MAINTENANCE & INSPECTION

INSPECT CONTROLS AFTER EACH RAIN EVENT OF 1/2 INCH OR GREATER, AND EVERY 7 DAYS UNTIL VEGETATION IS ESTABLISHED, FOR EROSION OR UNDERMINING BENEATH THE NETTING, BLANKETS, OR MATS. IF ANY AREA SHOWS EROSION, PULL BACK THAT PORTION OF THE MATERIAL, ADD SOIL, TAMP DOWN, AND RESEED; RESECURE THE MATERIAL IN PLACE. IF NETTING, BLANKETS OR MATS BECOME DISLOCATED OR DAMAGED, REPAIR OR REPLACE AND RESECURE IMMEDIATELY.

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
EROSION CONTROL BLANKET SHEET 1 OF 2	STANDARD DRAWING NUMBER ESC-04 ADOPTED



EROSION CONTROL BLANKET NOTES (2 OF 2):

F) STAPLES:

STAPLES FOR ANCHORING BLANKET SHALL BE NO. 11-GAUGE WIRE OR HEAVIER. THEIR LENGTH SHALL BE A MINIMUM OF 6 INCHES. A LARGER STAPLE WITH A LENGTH OF UP TO 12 INCHES SHALL BE USED ON LOOSE, SANDY, OR UNSTABLE SOILS.

G) JOINING PROTECTIVE COVERINGS:

OVERLAP THE END OF THE PREVIOUS ROLL A MINIMUM OF 6 INCHES AND STAPLE. STAPLE ACROSS THE END OF THE ROLL JUST BELOW THE ANCHOR SLOT AND ACROSS THE MATERIAL EVERY 6 INCHES.

H) TERMINAL END:

AT THE POINT AT WHICH THE MATERIAL IS DISCONTINUED, OR WHERE THE PROTECTIVE COVERING MEETS A STRUCTURE OF SOME TYPE, STAPLE A MINIMUM OF EVERY 12 INCHES.

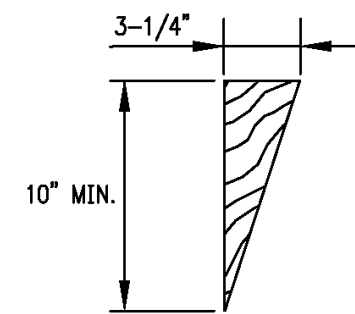
I) FINAL CHECK:

THESE INSTALLATION CRITERIA MUST BE ADHERED TO:

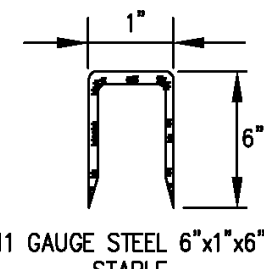
1. ALL DISTURBED AREAS ARE SEED.
2. PROTECTIVE BLANKET IS IN UNIFORM CONTACT WITH THE SOIL.
3. ALL LAP JOINTS ARE SECURE.
4. ALL STAPLES ARE DRIVEN FLUSH WITH THE GROUND.

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
EROSION CONTROL BLANKET SHEET 2 OF 2	STANDARD DRAWING NUMBER ESC-05 ADOPTED

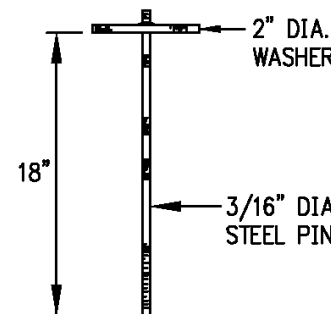
STAKES, STAPLES, AND PINS



1. STAKE
SEE NOTE 1



2. STAPLE
SEE NOTE 2



3. PIN
SEE NOTE 3

STAKES, STAPLES, AND PINS FOR INSTALLATION OF ROLLED EROSION CONTROL PRODUCTS

NOT TO SCALE

STAKES, STAPLES, AND PINS NOTES:

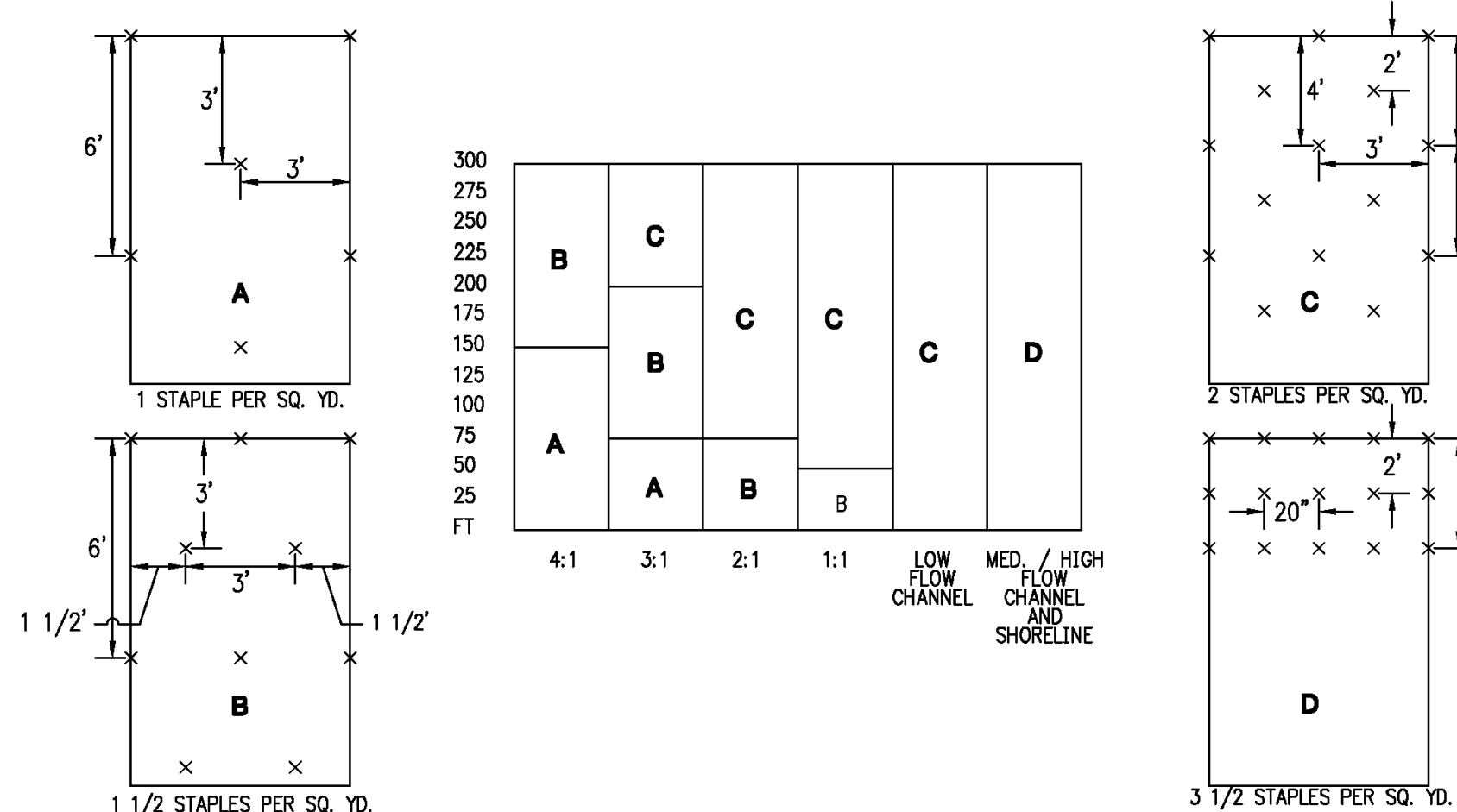
GENERAL NOTES:

- STAKES SHALL BE 1x4 TRIANGULAR SURVEY STAKES A MINIMUM OF 10" IN LONG.
- STAPLES SHALL BE 11 GAUGE STEEL A MINIMUM OF 1" WIDE BY 6" IN LONG. A 2"x6" STAPLE MAY BE REQUIRED IN CERTAIN SOIL CONDITIONS.
- STEEL PINS SHALL BE 3/16 DIAMETER BY 18" IN LONG WITH A 2" DIAMETER WASHER ON TOP. (SEE ILLUSTRATION.)
- ANCHORING METHODS AND RECOMMENDATIONS VARY BY MANUFACTURERS. THE EXPECTATION OF HIGH VELOCITIES SHOULD DICTATE THE USE OF MORE SUBSTANTIAL ANCHORING.

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
STAKES, STAPLES, AND PINS	STANDARD DRAWING NUMBER: ESC-09 ADOPTED:

SOURCE: MODIFIED FROM VA, DCR, 1992

STAPLE PATTERNS FOR ROLLED EROSION CONTROL PRODUCTS



GENERAL STAPLE PATTERN GUIDE AND RECOMMENDATIONS FOR ROLLED EROSION CONTROL PRODUCTS

NOT TO SCALE

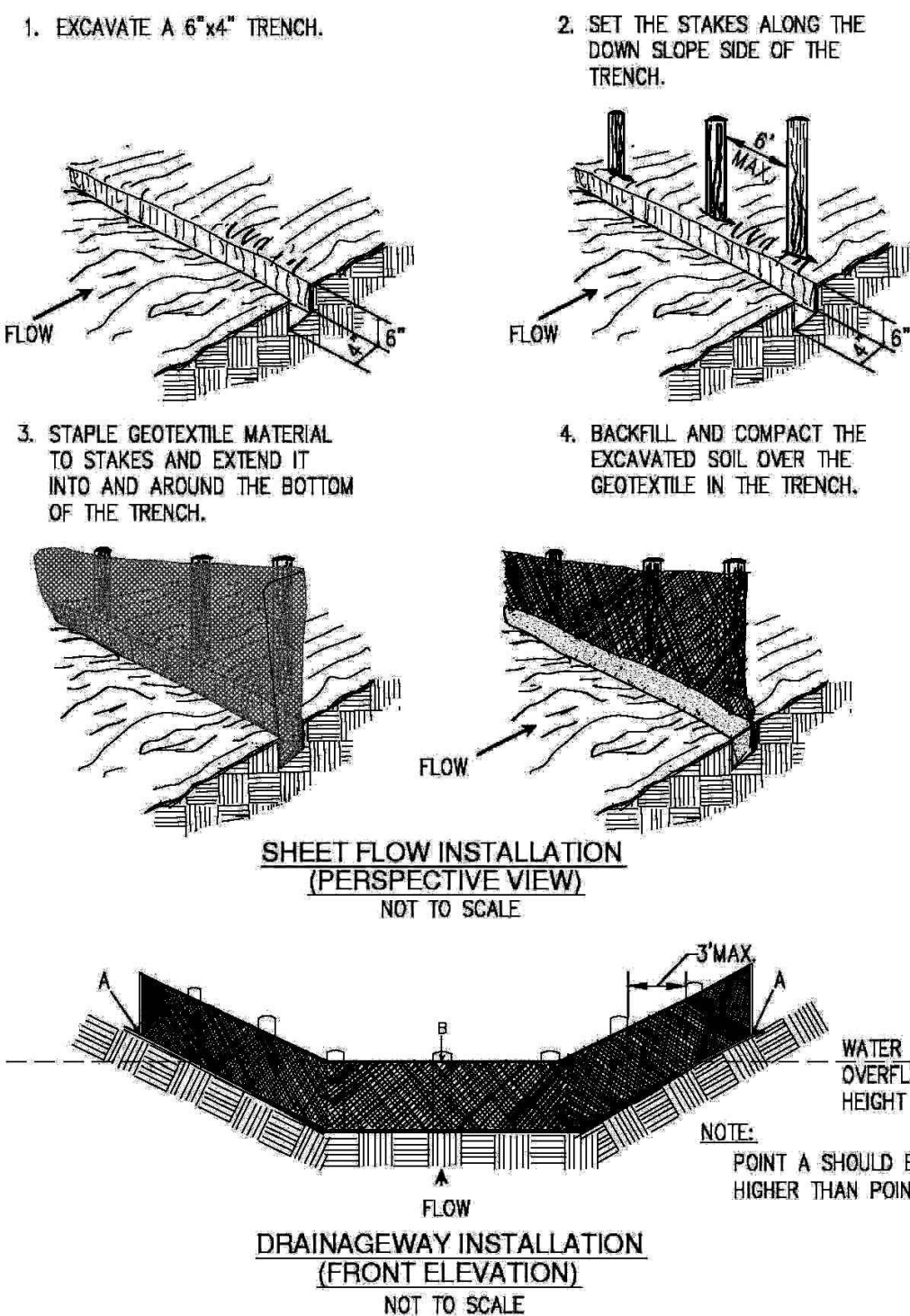
NOTE:

FOR OPTIMUM RESULTS, THESE RECOMMENDED STAPLE PATTERN GUIDES MUST BE FOLLOWED UNLESS OTHERWISE DICTATED BY THE MANUFACTURER. SUGGESTED ANCHORING METHODS VARY BY MANUFACTURER. THIS CHART SHOWS HOW SLOPE LENGTHS AND GRADIENTS AFFECT STAPLING PATTERNS.

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
STAPLE PATTERNS FOR ROLLED EROSION CONTROL PRODUCTS	STANDARD DRAWING NUMBER: ESC-09 ADOPTED:

SOURCE: MODIFIED FROM VA, DCR, 1992

SEDIMENT FENCE



SEDIMENT FENCE NOTES:

A) INSTALLATION:

- THE HEIGHT OF SEDIMENT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE AND SHALL NOT EXCEED 34 INCHES ABOVE THE GROUND SURFACE.
- THE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE UNAVOIDABLE, FILTER CLOTH SHALL BE SECURELY SPLICED TOGETHER ONLY AT SUPPORT POSTS, WITH A MAX 6-INCH OVERLAP.
- DIG A TRENCH AT LEAST 6 INCHES DEEP AND 4 INCHES WIDE ALONG THE FENCE ALIGNMENT.
- DRIVE POSTS AT LEAST 24 INCHES INTO THE GROUND ON THE DOWNSLOPE SIDE OF THE TRENCH. SPACE POSTS A MAXIMUM OF 6 FEET APART.
- EXTRA-STRENGTH SEDIMENT FENCE FABRIC SHALL BE USED. POSTS FOR THIS TYPE OF FABRIC SHALL BE PLACED A MAXIMUM OF 6 FEET APART. THE SEDIMENT FABRIC SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING A MINIMUM OF ONE INCH LONG, HEAVY-DUTY WIRE STAPLES OR TIE-WIRES, AND EIGHT INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
- PLACE THE BOTTOM 1 FOOT OF FABRIC IN THE MINIMUM-OF-6-INCH DEEP TRENCH, LAPPING TOWARD THE UPSLOPE SIDE. BACKFILL WITH COMPACTED EARTH OR GRAVEL.
- IF A SEDIMENT FENCE IS TO BE CONSTRUCTED ACROSS A DITCH LINE OR SWALE, IT MUST BE OF SUFFICIENT LENGTH TO ELIMINATE ENDFLOW, AND THE PLAN CONFIGURATION SHALL RESEMBLE AN ARC OR HORSESHOE, PLACED ON A CONTOUR, WITH THE ENDS ORIENTED UPSLOPE. EXTRA-STRENGTH SEDIMENT FABRIC SHALL BE USED WITH A MAXIMUM 3-FOOT SPACING OF POSTS.
- TO REDUCE MAINTENANCE, EXCAVATE A SHALLOW SEDIMENT STORAGE AREA IN THE UPSLOPE SIDE OF THE FENCE. PROVIDE GOOD ACCESS IN AREAS OF HEAVY SEDIMENTATION FOR CLEAN OUT AND MAINTENANCE.
- SEDIMENT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

B) TROUBLESHOOTING:

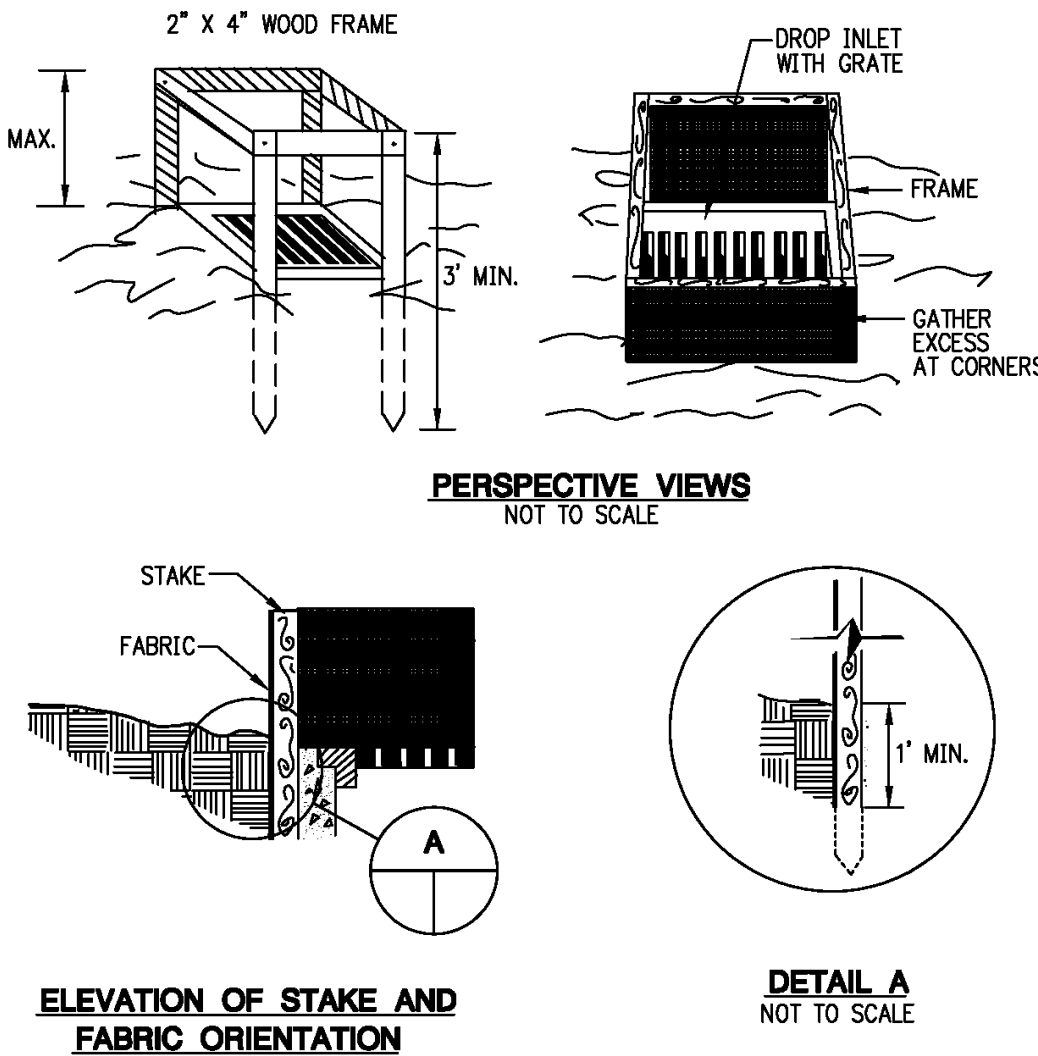
- DETERMINE THE EXACT LOCATION OF UNDERGROUND UTILITIES, BEFORE FENCE INSTALLATION SO UTILITIES ARE NOT DISTURBED.
- GRADE ALIGNMENT OF FENCE AS NEEDED TO PROVIDE A BROAD, NEARLY LEVEL AREA UPSTREAM OF FENCE TO ALLOW SEDIMENT COLLECTION AREA.
- INSPECTION MAINTENANCE:

1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. AVOID DAMAGING OR UNDERMINING THE FENCE DURING CLEANOUT. SEDIMENT ACCUMULATION SHOULD NOT EXCEED 1/2 THE HEIGHT OF THE FENCE.
4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY AND COMPLETELY STABILIZED.

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
SEDIMENT FENCE	STANDARD DRAWING NUMBER: ESC-10 ADOPTED:

SOURCE: MODIFIED FROM VA, DCR, 1992

SEDIMENT FENCE DROP INLET PROTECTION



SEDIMENT FENCE DROP INLET PROTECTION NOTES:

A) CONSTRUCTION SPECIFICATIONS:

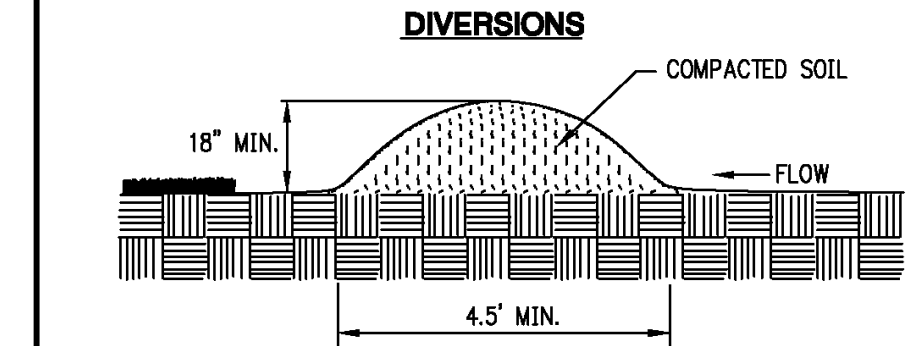
- SEDIMENT FENCE SHALL CONFORM TO THE CONSTRUCTION SPECIFICATIONS FOR EXTRA STRENGTH FOUND IN THE TABLE BELOW AND SHALL BE CUT FROM A CONTINUOUS ROLL TO AVOID JOINTS.
- | PHYSICAL PROPERTY | TEST | REQUIREMENTS |
|--|--------------------------------|--|
| FILTERING EFFICIENCY | ASTM 5141 | 75% |
| TENSILE STRENGTH AT 20% (MAX.) ELONGATION* | ASTM 4632
AASHTO
M288-96 | EXTRA STRENGTH --
50 LBS./LINEAR INCH |
| FLOW RATE | ASTM 5141 | 0.2 GAL./SQ.FT./
MINUTE** |
| ULTRAVIOLET RADIATION STABILITY % | ASTM D 4355 | 90% |
- * REQUIREMENTS REDUCED BY 50% AFTER SIX MONTHS OF INSTALLATION.
** HIGH POROSITY FABRIC MADE BY BETTER SUITED FOR THIS DEVICE.
- FOR STAKES, USE 2X4 WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3 FEET.
 - SPACE STAKES EVENLY AROUND THE PERIMETER OF THE INLET A MAXIMUM OF 3 FEET APART, AND SECURELY DRIVE THEM INTO THE GROUND, APPROXIMATELY 18 INCHES DEEP.
 - TO PROVIDE NEEDED STABILITY TO THE INSTALLATION, FRAME WITH 2X4 WOOD STRIPS AROUND THE CREST OF THE OVERFLOW AREA AT A MAXIMUM OF 1.5 FEET ABOVE THE DROP INLET CREST.
 - PLACE THE BOTTOM 12 INCHES OF THE FABRIC IN A TRENCH AND BACKFILL THE TRENCH WITH 12-INCHES OF COMPACTED SOIL.
 - FASTEN FABRIC SECURELY BY STAPLES, OR WIRE IT TO THE STAKES AND FRAME. JOINTS MUST BE OVERLAPPED TO THE NEXT STAKE.
 - IT MAY BE NECESSARY TO BUILD A TEMPORARY DIKE ON THE DOWNSLOPE SIDE OF THE STRUCTURE TO PREVENT BYPASS FLOW.

B) INSPECTION AND MAINTENANCE:

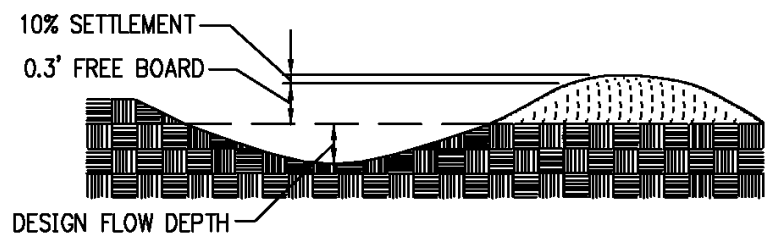
- THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN EVENT OF 1/2 INCH OR GREATER AND REPAIRS MADE AS NEEDED.
- SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
- STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

AMERICAN PUBLIC WORKS ASSOCIATION	
APWA	KANSAS CITY METROPOLITAN CHAPTER
SEDIMENT FENCE DROP INLET PROTECTION	STANDARD DRAWING NUMBER: ESC-11 ADOPTED:

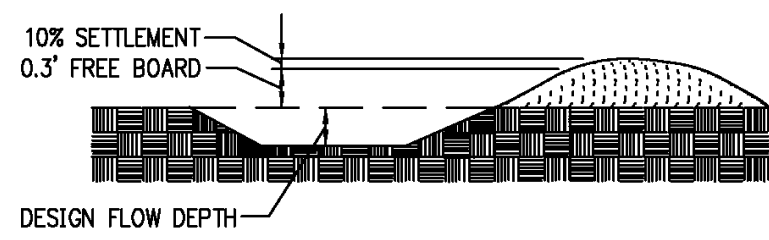
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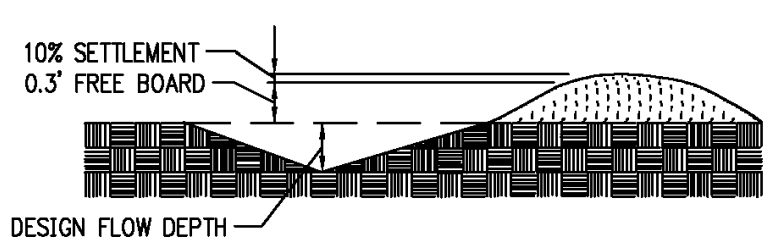
TEMPORARY DIVERSION DIKE
NOT TO SCALE



TYPICAL PARABOLIC DIVERSION

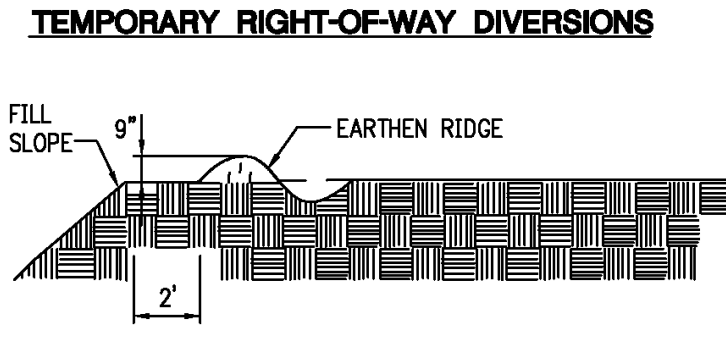


TYPICAL TRAPEZOIDAL DIVERSION

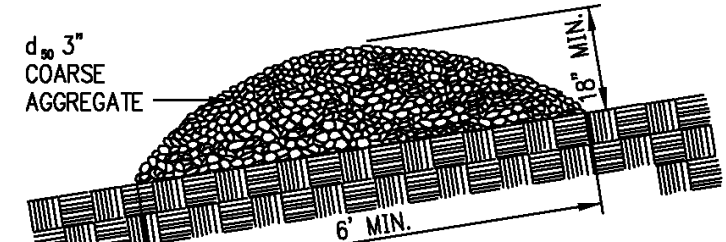


TYPICAL VEE-SHAPED DIVERSION

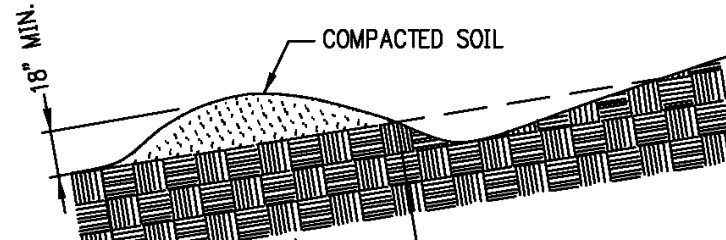
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TEMPORARY RIGHT-OF-WAY DIVERSIONS
NOT TO SCALE



TYPICAL GRAVEL STRUCTURE



TYPICAL EARTHEN STRUCTURE

TEMPORARY DIVERSION DIKE NOTES:

- TEMPORARY DIVERSION DIKES MUST BE INSTALLED AS A FIRST STEP IN THE LAND-DISTURBING ACTIVITY AND MUST BE FUNCTIONAL PRIOR TO UPSLOPE LAND DISTURBANCE.
- THE DIKE SHOULD BE ADEQUATELY COMPACTED TO PREVENT FAILURE.
- TEMPORARY OR PERMANENT SEEDING AND MULCH SHALL BE APPLIED TO THE DIKE IMMEDIATELY FOLLOWING ITS CONSTRUCTION.
- THE DIKE SHOULD BE LOCATED TO MINIMIZE DAMAGES BY CONSTRUCTION OPERATIONS AND TRAFFIC.

TEMPORARY FILL DIVERSION NOTES:

- THE DIVERSION SHALL BE CONSTRUCTED AT THE TOP OF THE FILL AT THE END OF EACH WORK DAY AS NEEDED.
- THE DIVERSION SHALL BE LOCATED AT LEAST 2 FEET INSIDE THE TOP EDGE OF THE FILL.
- THE SUPPORTING RIDGE SHALL BE CONSTRUCTED WITH A UNIFORM HEIGHT ALONG ITS ENTIRE LENGTH. WITHOUT UNIFORM HEIGHT, THE FILL DIVERSION MAY BE SUSCEPTIBLE TO BREACHING.

RIGHT-OF-WAY DIVERSION DETAIL NOTES:

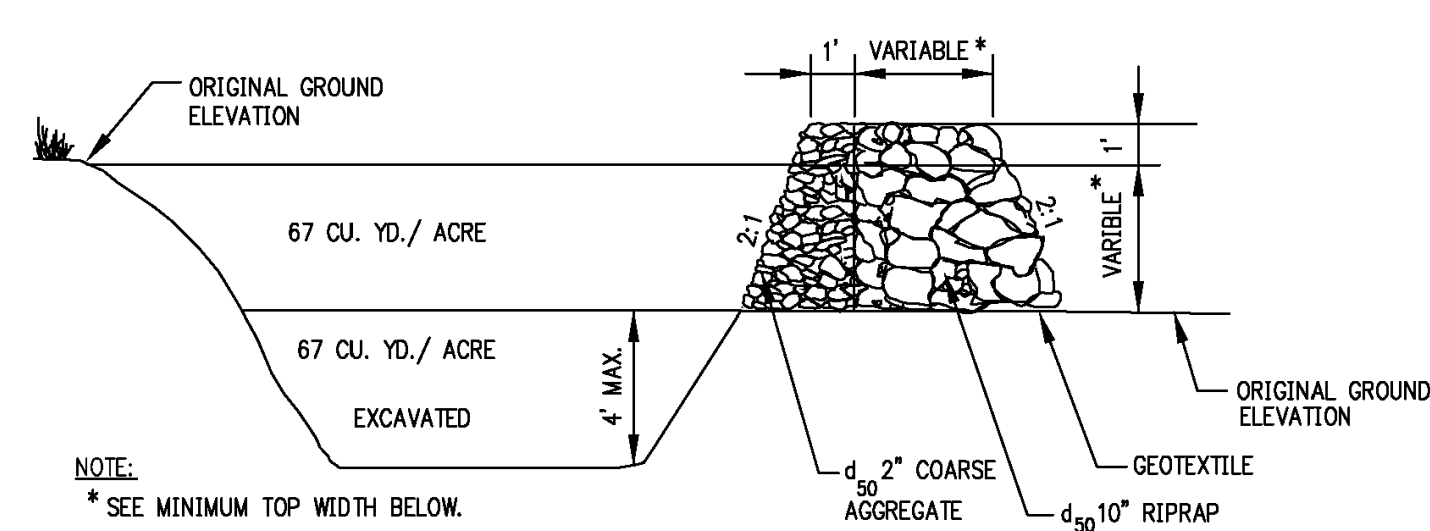
- THE DIVERSION SHALL BE INSTALLED AS SOON AS THE RIGHT-OF-WAY HAS BEEN CLEARED AND/OR GRADED.
- ALL EARTHEN DIVERSIONS SHALL BE MACHINE- OR HAND-COMPACTED IN 8-INCH LIFTS.
- THE OUTLET OF THE DIVERSION SHALL BE LOCATED IN AN UNDISTURBED AND STABILIZED AREA WHEN AT ALL POSSIBLE. THE FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED OUTLET.
- EARTHENED DIVERSIONS WHICH WILL NOT BE SUBJECT TO CONSTRUCTION TRAFFIC SHOULD BE STABILIZED IN ACCORDANCE WITH TEMPORARY SEEDING.

DIVERSION DETAIL NOTES:

- ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION.
- THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS-SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, FREE OF IRREGULARITIES WHICH WILL IMPEDE FLOW.
- FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETED DIVERSION. FILL SHALL BE COMPOSED OF SOIL WHICH IS FREE FROM EXCESSIVE ORGANIC DEBRIS, ROCKS, OR OTHER OBJECTIONABLE MATERIALS.
- ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIVERSION.
- PERMANENT STABILIZATION OF DISTURBED AREAS SHALL BE DONE IN ACCORDANCE WITH SECTION 2151.

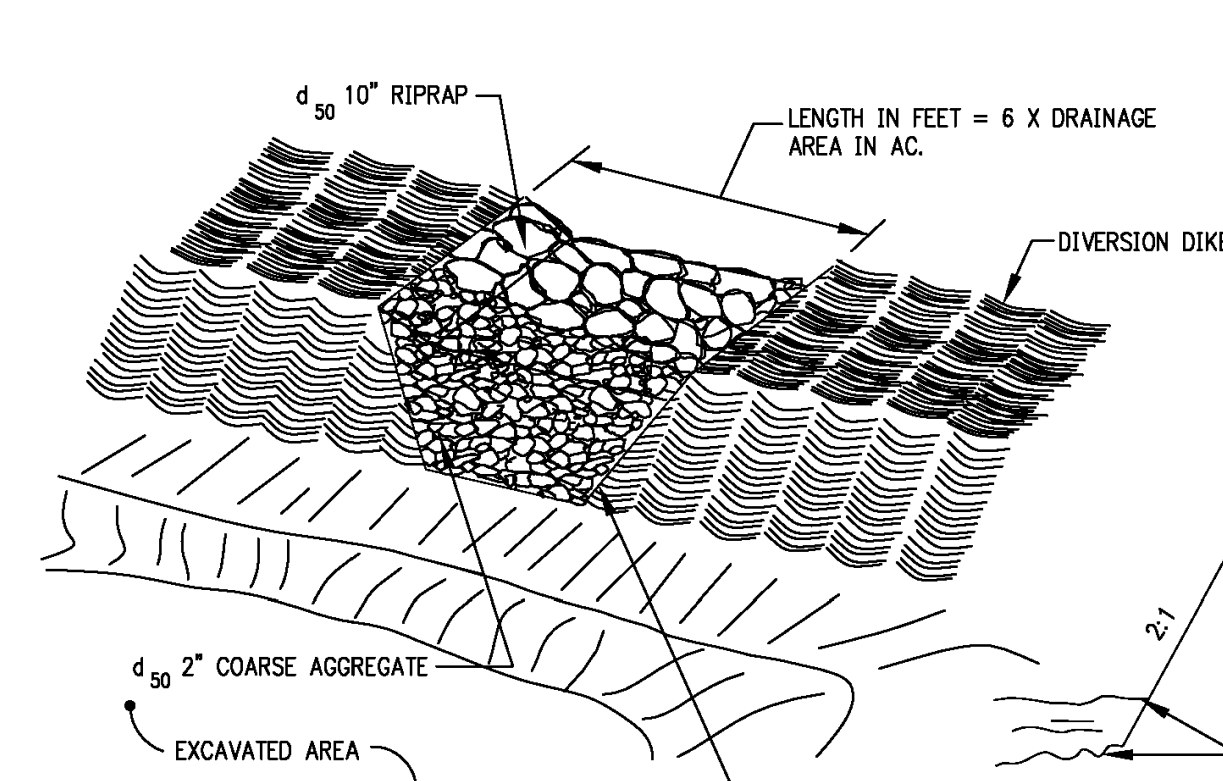
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APWA	KANSAS CITY METROPOLITAN CHAPTER
DIVERSIONS	STANDARD DRAWING NUMBER ESC-33 ADOPTED:

TEMPORARY SEDIMENT TRAP



NOTE:
* SEE MINIMUM TOP WIDTH BELOW.

CROSS SECTION OF OUTLET



OUTLET (PERSPECTIVE VIEW)

SOURCE: MODIFIED FROM VA. DCR, 1992

TEMPORARY SEDIMENT TRAP NOTES:

A) CONSTRUCTION SPECIFICATIONS:

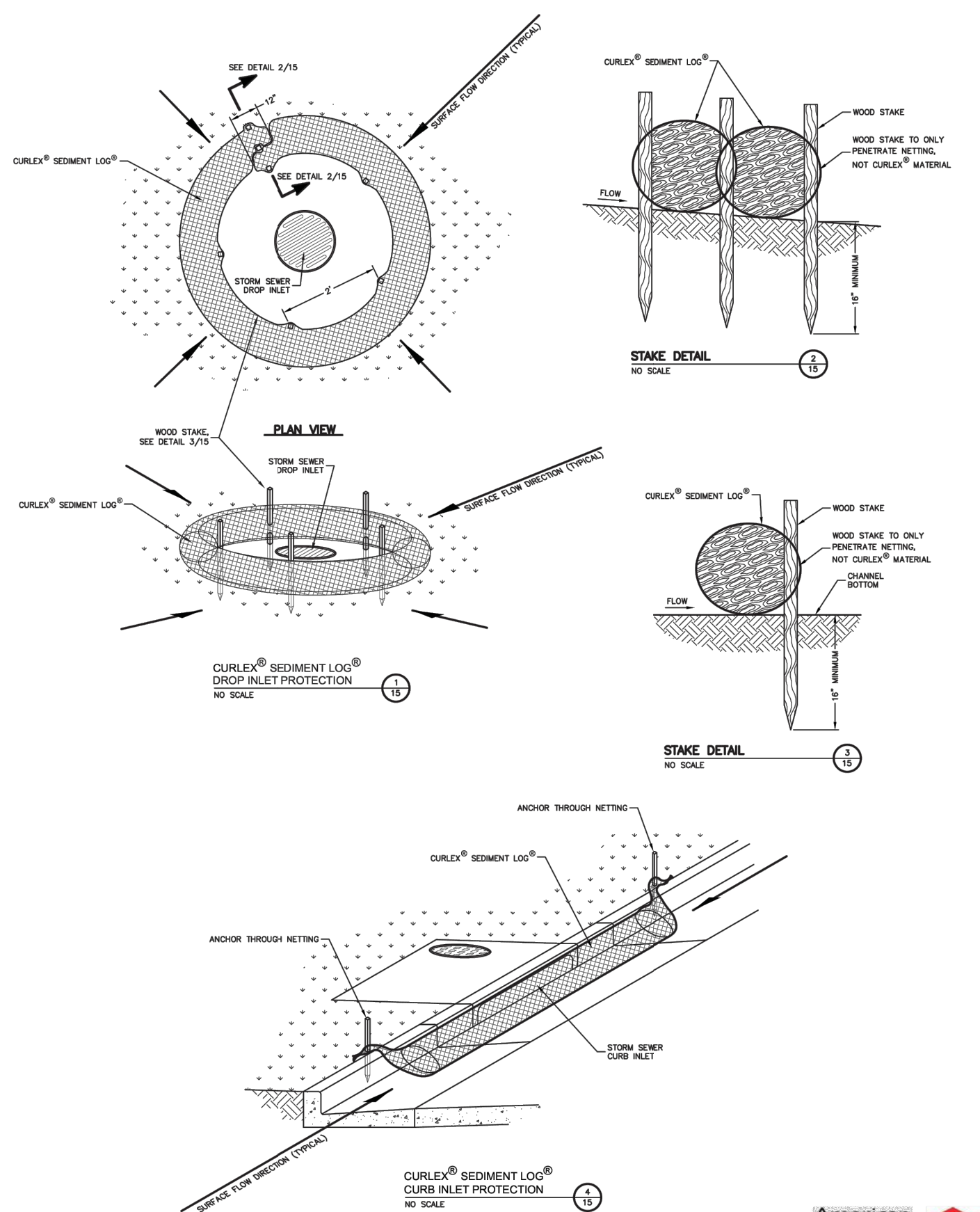
- THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT.
- FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHOULD BE COMPACTED IN 6-INCH LAYERS BY TRAVERSING WITH CONSTRUCTION EQUIPMENT.
- THE EARTHEN EMBANKMENT SHALL BE SEED WITH TEMPORARY OR PERMANENT VEGETATION IMMEDIATELY AFTER INSTALLATION.
- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT TO MINIMIZE EROSION AND WATER POLLUTION.
- THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE UPSLOPE DRAINAGE AREA HAS BEEN STABILIZED.
- ALL CUT AND FILL SLOPES SHALL BE 2H:1V OR FLATTER EXCEPT FOR EXCAVATED, WET STORAGE AREAS WHICH MAY BE AT A MAXIMUM 1H:1V GRADE.

B) INSPECTION AND MAINTENANCE:

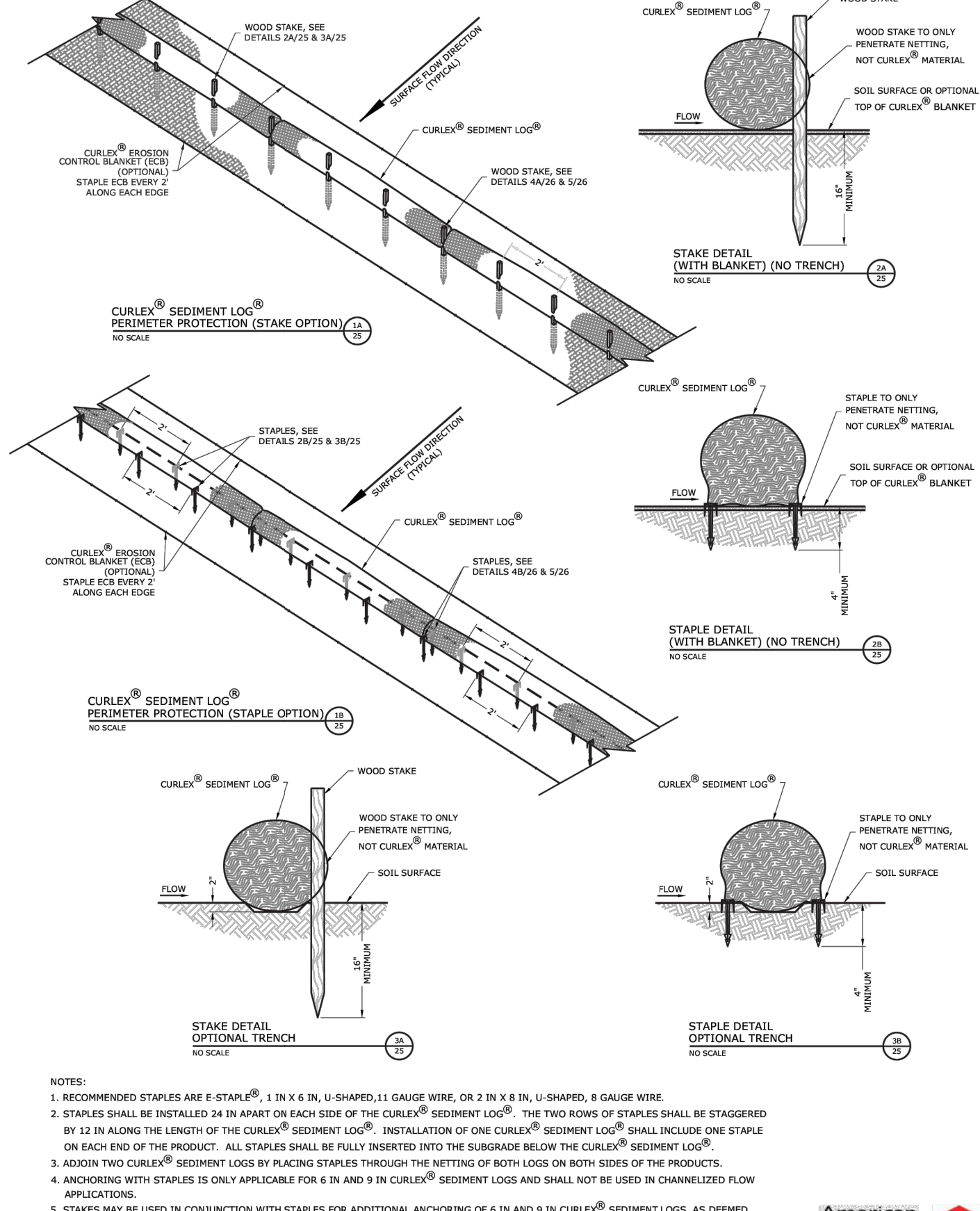
- INSPECT THE TEMPORARY SEDIMENT TRAP AFTER EACH STORM EVENT OF 1/2-INCH OR GREATER.
- REMOVE AND PROPERLY DISPOSE OF SEDIMENT WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN VOLUME AS INDICATED BY THE CLEAN-OUT STAKE.
- PERIODICALLY CHECK THE EMBANKMENT, SPILLWAY, AND OUTLET APRON FOR EROSION DAMAGE, SETTLING SEEPAGE, OR SLUMPING ALONG THE TOE AND REPAIR IMMEDIATELY.
- REPLACE THE SPILLWAY GRAVEL FACING IF IT BECOMES CLOGGED.
- INSPECT VEGETATION AND RESEED IF NECESSARY.
- REPLACE ANY DISPLACED RIPRAP SO THAT NO REPLACEMENT ROCK IS ABOVE THE DESIGN GRADE.
- REMOVE THE TEMPORARY SEDIMENT TRAP AFTER THE DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, INSPECTED, AND APPROVED. DO SO BY DRAINING ANY WATER, REMOVING THE SEDIMENT TO A DESIGNATED DISPOSAL AREA, AND GRADING THE SITE TO BLEND WITH THE SURROUNDING AREA; THEN STABILIZE.

H	H ₀	W
1.5	0.5	2.0
2.0	1.0	2.0
2.5	1.5	2.5
3.0	2.0	2.5
3.5	2.5	3.0
4.0	3.0	3.0
4.5	3.5	4.0
5.0	4.0	4.5

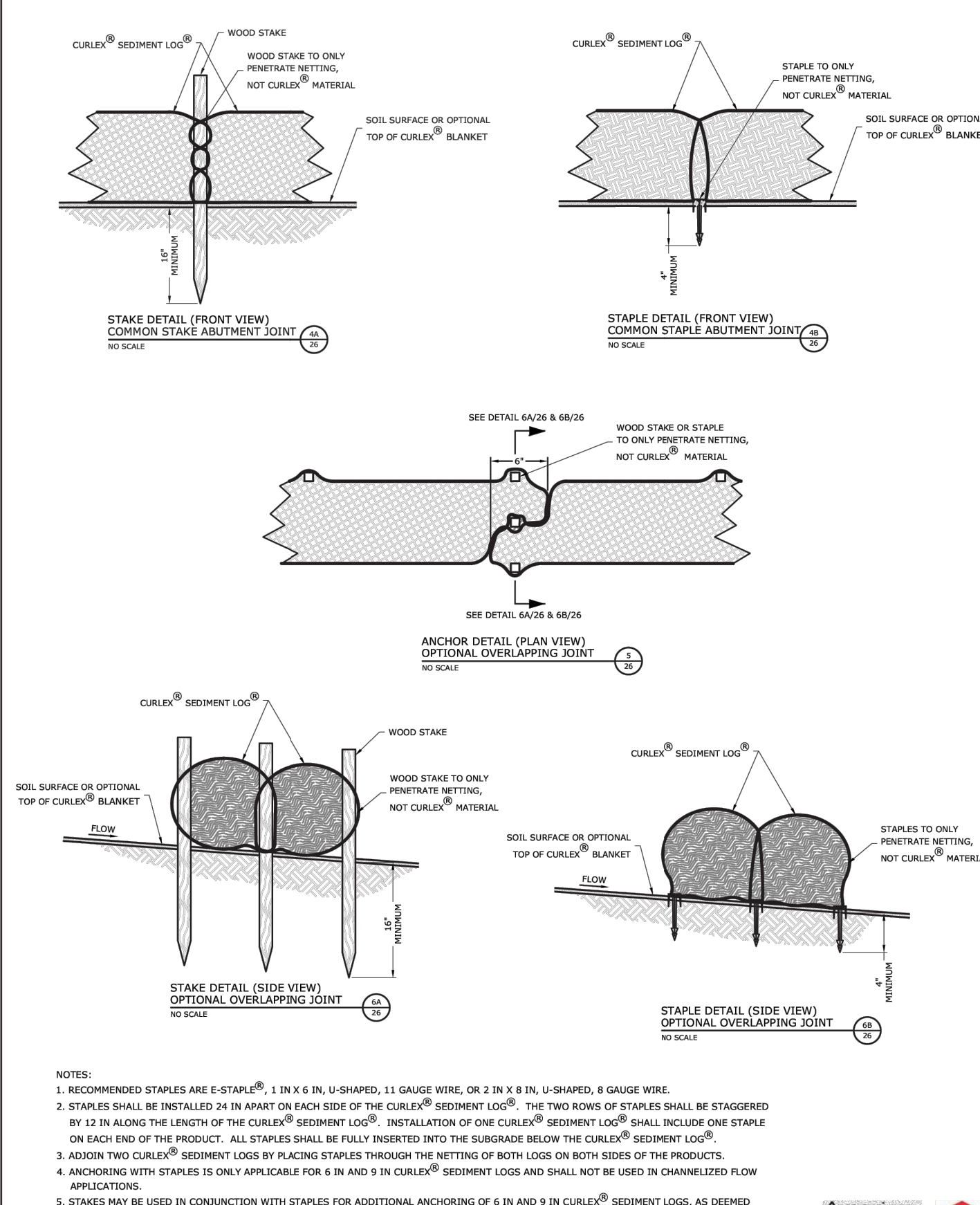
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APWA	KANSAS CITY METROPOLITAN CHAPTER
TEMPORARY SEDIMENT TRAP	STANDARD DRAWING NUMBER ESC-33 ADOPTED:



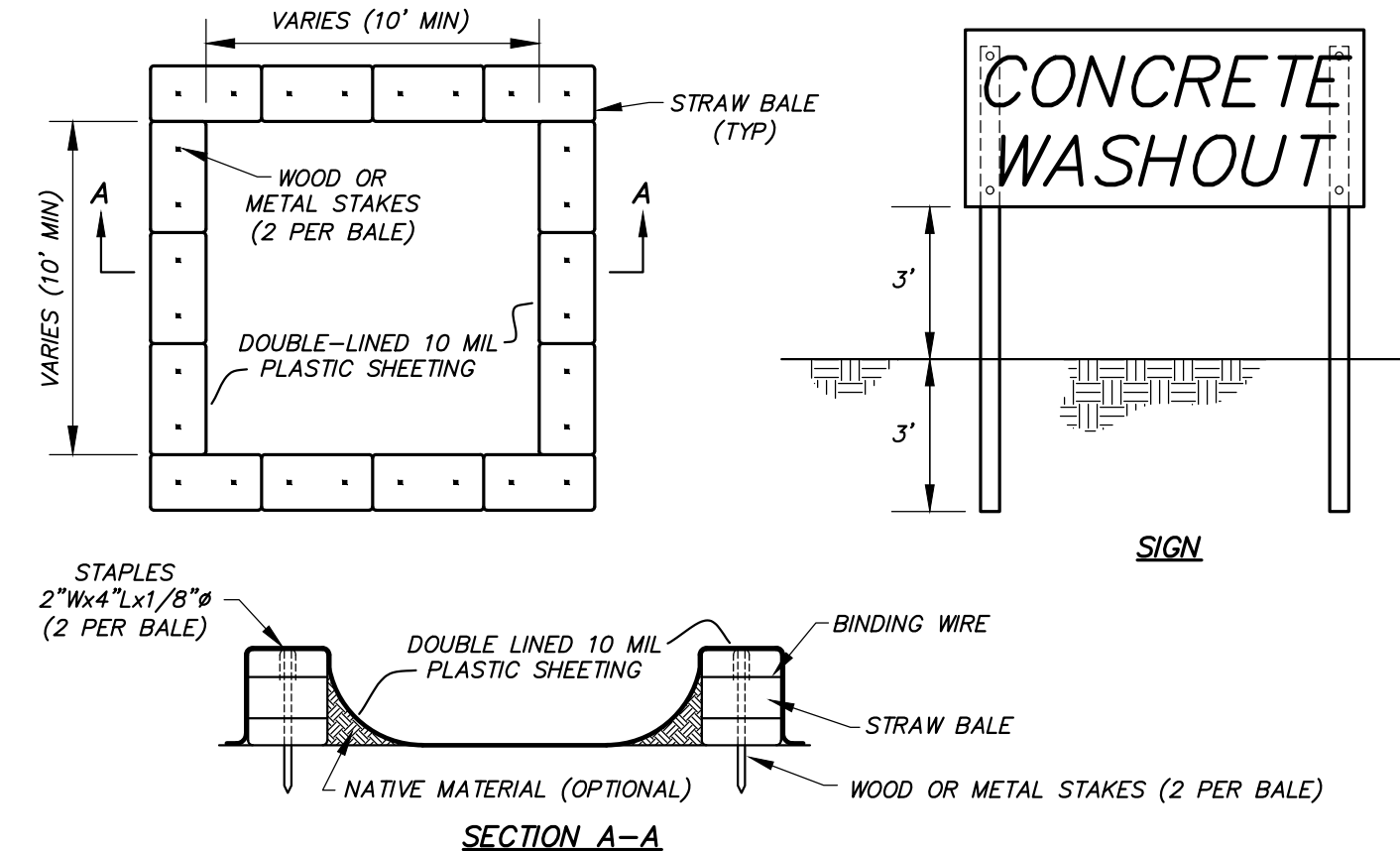
AMERICAN EXCELSIOR COMPANY	
ARLINGTON, TEXAS	SHEET DESCRIPTION CURLEX® SEDIMENT LOG® INLET PROTECTION DETAILS
DATE 3/27/17	SCALE NONE
PROJECT NO. 15	SHEET NO. 15



AMERICAN EXCELSIOR COMPANY	
ARLINGTON, TEXAS	SHEET DESCRIPTION CURLEX® SEDIMENT LOG® PERIMETER CONTROL DETAILS
DATE 5/15/17	SCALE NONE
PROJECT NO. 25	SHEET NO. 25



AMERICAN EXCELSIOR COMPANY	
ARLINGTON, TEXAS	SHEET DESCRIPTION CURLEX® SEDIMENT LOG® PERIMETER CONTROL DETAILS
DATE 5/8/17	SCALE NONE
PROJECT NO. 1	SHEET NO. 26

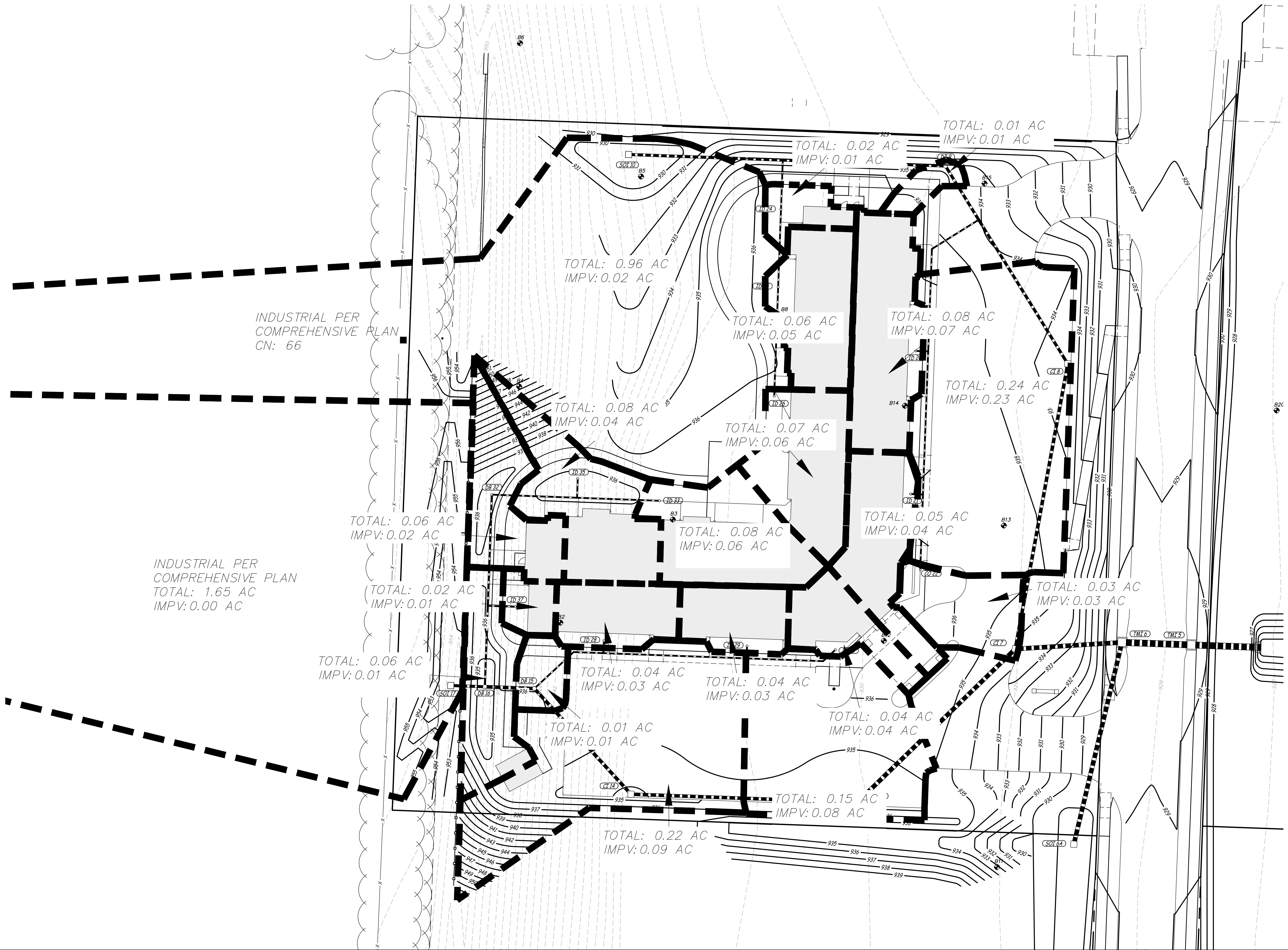


- NOTES:
- ALL CONCRETE WASTE MATERIAL, INCLUDING WASHOUT WATER, SHALL BE TOTALLY CONTAINED.
 - SEE SWPPP FOR MORE DETAILS.
 - UPON PROJECT COMPLETION CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL CONCRETE WASTE FROM THE OWNER'S PROPERTY PER ALL APPLICABLE SOLID WASTE REGULATIONS.
 - CONSTRUCT SIGN OF WEATHER PROOF MATERIALS OF A SIZE EASILY READABLE BY CONCRETE TRUCK DRIVERS. PLACE SIGN WITHIN 10' OF WASHOUT.
 - CONTRACTOR SHALL CONTAIN WASHOUT WATERS AT ALL TIMES.

CONCRETE WASHOUT AREA

NOT TO SCALE

P:\GENERAL PROJECTS\15925E-ES-WILSHIRE-HILLS-3-ENG\CAD\15925 DAW (6-14-2023).DWG 6/30/2023



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N

0 1"
SCALE: 1" = 20'

WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT JACKSON COUNTY, MISSOURI

6/30/2023

MATTHEW A. KRIETE
PROFESSIONAL ENGINEER
PE-2007002811

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Date
JUNE 30, 2023

Revised

Design: ST Drawn: ST

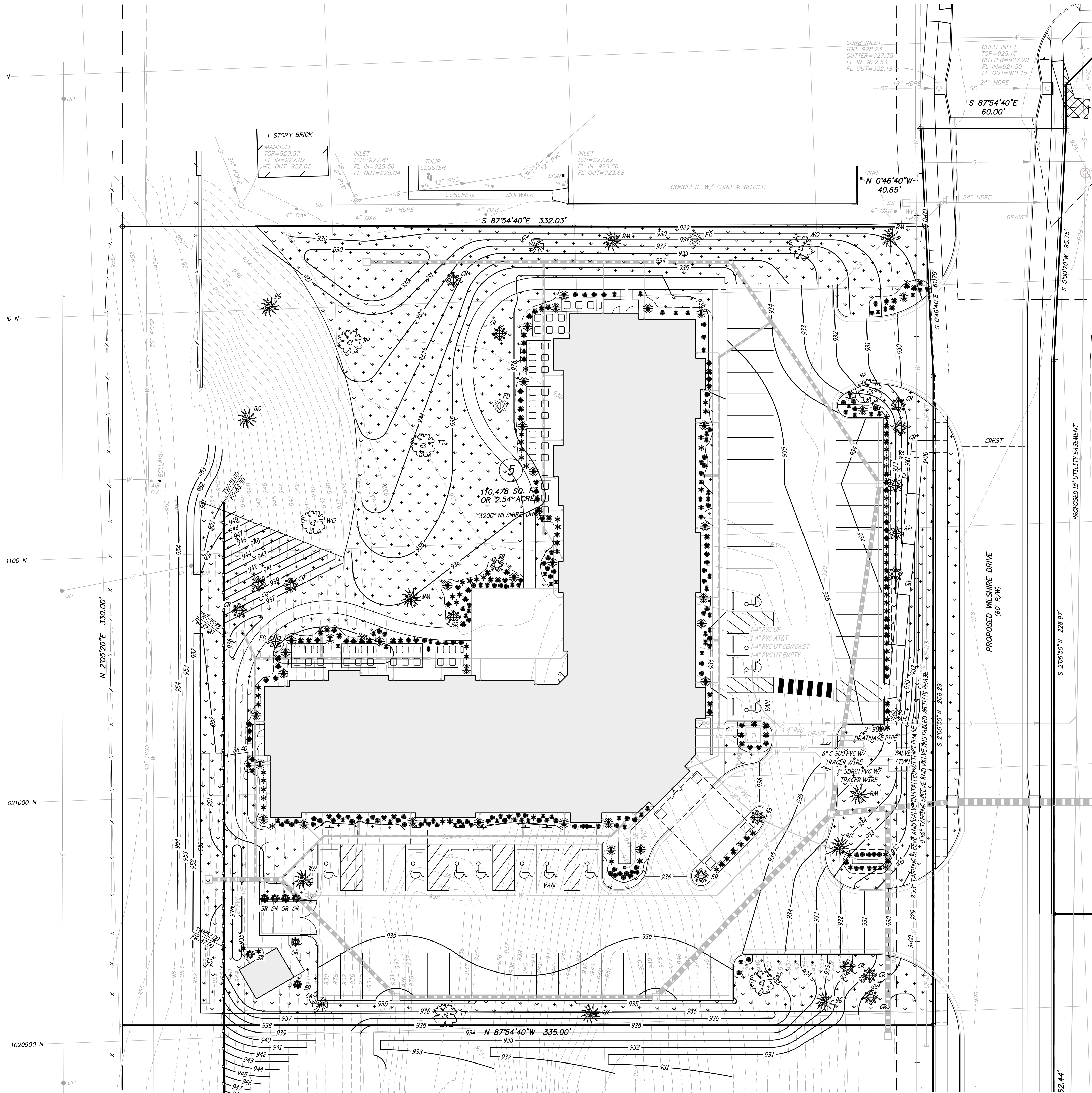
STORM SEWER
DRAINAGE AREA MAP

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ES&S PROJECT NO. 15925

CONSTRUCTION DOCUMENTS

P:\GENERAL PROJECTS\15925E-KES-WILSHIRE-HILLS-3-ENG\CAD\15925 LANDSCAPE PLAN.DWG 2/26/2024



LANDSCAPING REQUIREMENTS	
REQUIRED	PROVIDED
PARKING LOT	
1. AT LEAST 5% OF ENTIRE AREA LANDSCAPED	1. 7%
2. ONE END ISLAND OF EVERY PARKING PLANTED WITH TREES	2. YES
3. NO TREE LOCATED LESS THAN 4 FEET FROM BACK OF CURB	3. YES
4. SCREENING AT HEIGHT OF 2.5 FEET ALONG EDGE OF LOT, MINIMUM 12 SHRUBS PER 40 LINEAR FEET. SHRUBS AT LEAST 18 INCHES TALL AT TIME OF PLANTING.	4. YES
STREET FRONTAGE	
1. ONE TREE FOR EACH 30 FEET OF STREET FRONTAGE	1. 13 TREES
2. MINIMUM 20-FOOT LANDSCAPE STRIP ALONG LENGTH	2. YES
3. ONE SHRUB EVERY 20 FEET OF STREET FRONTAGE	3. 42 SHRUBS
4. 3:0FT / 2:0FT = 16.5 SHRUBS	
OPEN YARD AREAS	
1. MINIMUM TWO SHRUBS PER 5,000 SQUARE FEET TOTAL AREA	1. 139 SHRUBS
2. ALL OPEN AREAS NOT PAVED SHALL BE SOD.	2. YES
3. ONE TREE FOR EVERY 5,000 SQUARE FEET OF LOT AREA	3. 41 TREES
4. DETAILED TRASH STORAGE WITH SCREENING METHODS.	4. YES

IRRIGATION NOTES

- CONTRACTOR SHALL PROVIDE IRRIGATION OF ALL PLANTING BEDS AND SODDED LAWN AREAS.
- ALL SLOPES SHALL BE TEMPORARILY IRRIGATED UNTIL VEGETATION IS FULLY ESTABLISHED.
- IRRIGATION SYSTEM SHALL BE DESIGN BUILD. THE SYSTEM SHALL BE DESIGNED TO PREVENT OVER WATERING AND INCLUDE RAIN SHUT-OFF DEVICES.
- IRRIGATION SHALL BE ZONED. ALL PLANTING BEDS AND TURF SHALL BE SEPARATELY ZONED.
- CONTRACTOR SHALL SUBMIT IRRIGATION PLANS TO THE OWNER A MINIMUM OF 30 DAYS PRIOR TO PROPOSED INSTALLATION FOR APPROVAL.
- ALL SLOPES SHALL BE TEMPORARILY IRRIGATED UNTIL VEGETATION IS FULLY ESTABLISHED.
- IRRIGATION SYSTEM SHALL BE DESIGN BUILD. THE SYSTEM SHALL BE DESIGNED TO PREVENT OVER WATERING AND INCLUDE RAIN SHUT-OFF DEVICES.
- IRRIGATION SYSTEM SHALL BE ZONED FOR SPECIFIC WATER NEEDS IN EACH PLANTING AREA.
- IRRIGATION OPERATION AND MAINTENANCE MANUAL TO BE SUPPLIED BY CONTRACTOR.
- IRRIGATION SYSTEM SHALL INCLUDE FLOW SENSOR THAT DETECTS & REPORTS HIGH FLOW CONDITIONS DUE TO BROKEN PIPES OR POPPED SPRINKLER HEADS.
- IRRIGATION SYSTEM SHALL INCLUDE PRESSURE REGULATOR & MASTER SHUT-OFF VALVE.

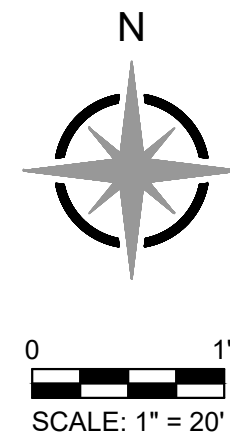
LANDSCAPING NOTE

- ALL PLANT MATERIAL SHALL BE:
 - FREE OF DISEASE AND INSECTS.
 - CONFORMING TO AMERICAN STANDARD FOR NURSERY STOCK OF THE AMERICAN ASSOCIATION OF NURSERYMEN.
- SPREAD TOPSOIL AMONG ALL LANDSCAPED AREAS. FOCUS ON PLANTING BEDS BEFORE DISTRIBUTING TO LAWN AREAS.
- PLANTING MATERIALS SHALL BE OF THE FOLLOWING MINIMUM SIZE:
 - LARGE DECIDUOUS SHADE TREES (MATURE HEIGHT >45') = 3" DHB
 - MEDIUM DECIDUOUS SHADE TREES (MATURE HEIGHT 30'-45') = 3" DHB
 - SMALL DECIDUOUS SHADE TREES (MATURE HEIGHT 20'-30') = 2" DHB
 - ORNAMENTAL TREE (MATURE HEIGHT <20') = 2" DHB
 - EVERGREEN TREES: MINIMUM HEIGHT OF 8 FEET AT PLANTING.
 - MEDIUM SHRUBS = 18-24 INCH BALLED AND BURLAPPED OR 2-GAL CONTAINER
 - MEDIUM SHRUBS = 24-30 INCH BALLED AND BURLAPPED OR 5-GAL CONTAINER
 - GRASS, SEED, SOD = >80% PURE LIVE SEED, 99% WEED FREE
- LIVING LANDSCAPING SHALL BE USED TO COVER ALL OPEN GROUND SUPPLEMENTED WITH HARD WOOD MULCH.
- ALL TRANSFORMERS, A/C UNITS, AND OTHER VISIBLE UTILITIES TO BE SCREENED WITH PLANTS.
- LANDSCAPING SHALL BE PLANTED SUCH THAT THE MATURE SPREAD OF THE PLANT IS TO REMAIN 2' FROM THE BUILDING.
- OWNER/TENANT/AGENT SHALL BE JOINTLY RESPONSIBLE FOR THE MAINTENANCE IN GOOD CONDITION OF PLANT MATERIAL.

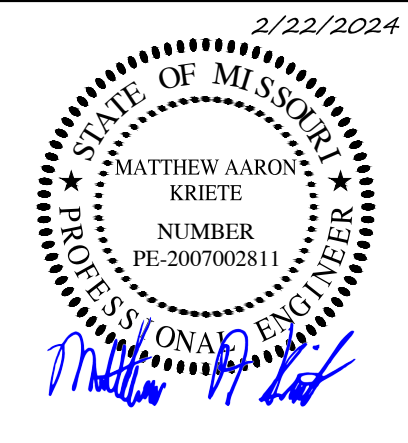
SEEDING / SODDING SPECIFICATIONS

- FINISH GRADE SHOWN ON PLAN INCLUDES 6" OF TOPSOIL RESPEAD FROM STOCKPILES.
- ALL DISTURBED AREAS SHALL BE SEEDDED OR SODDED PER SPECIFICATIONS.
- ALL LAWN AREAS TO BE SOD.
- IMMEDIATELY UPON COMPLETION OF FINISH GRADING IN EACH AREA, ALL LANDSCAPED AREAS SHALL BE SEEDDED AND MULCHED.

SOD



WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT JACKSON COUNTY, MO



MATTHEW A. KRIETE
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Date
SEPTEMBER 28, 2023

Revised
1 FEBRUARY 22, 2024

Design: ST Drawn: MJS

LANDSCAPE PLAN

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ES&S PROJECT NO. 15925

2/22/2024

MATTHEW AARON
KRIETE
NUMBER
PE-2007002811

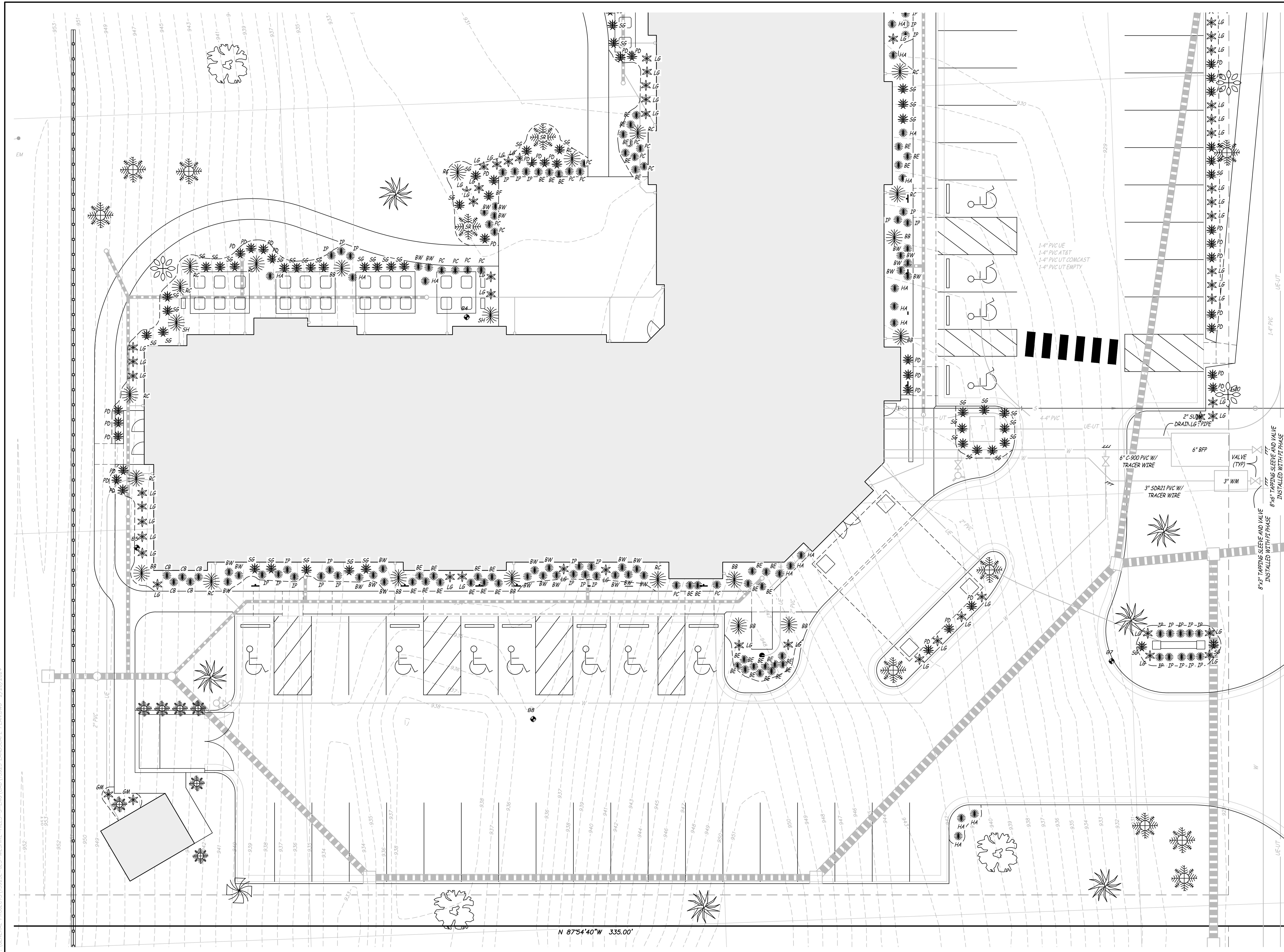
Matthew A. Kriete

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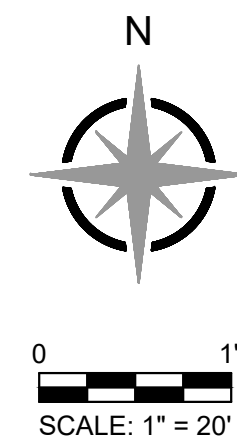
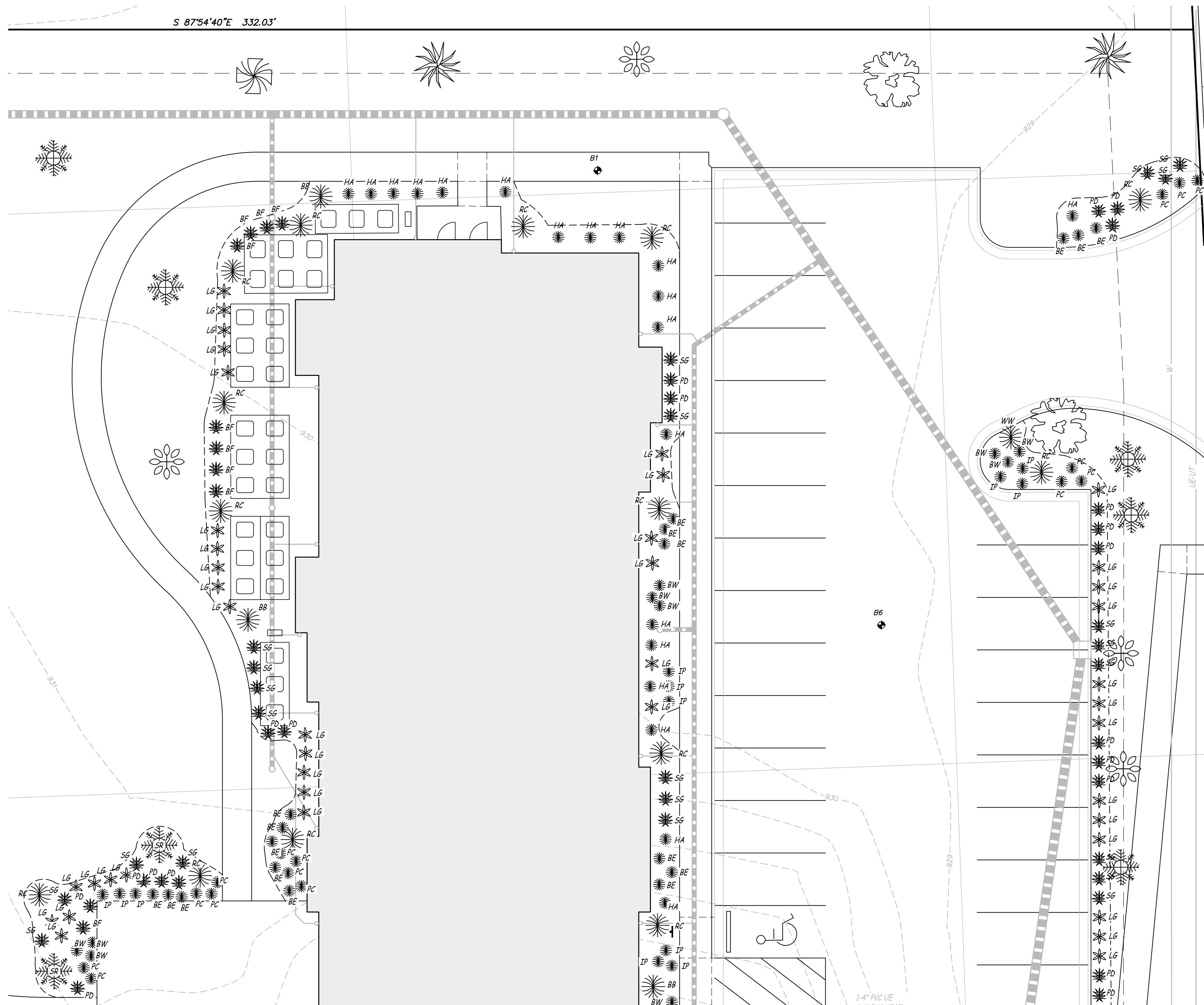
Revised
FEBRUARY 22, 2024

LANDSCAPE PLAN

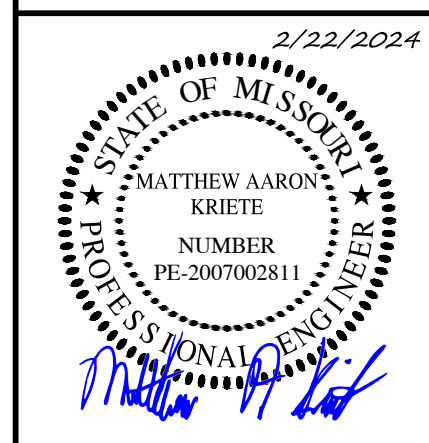
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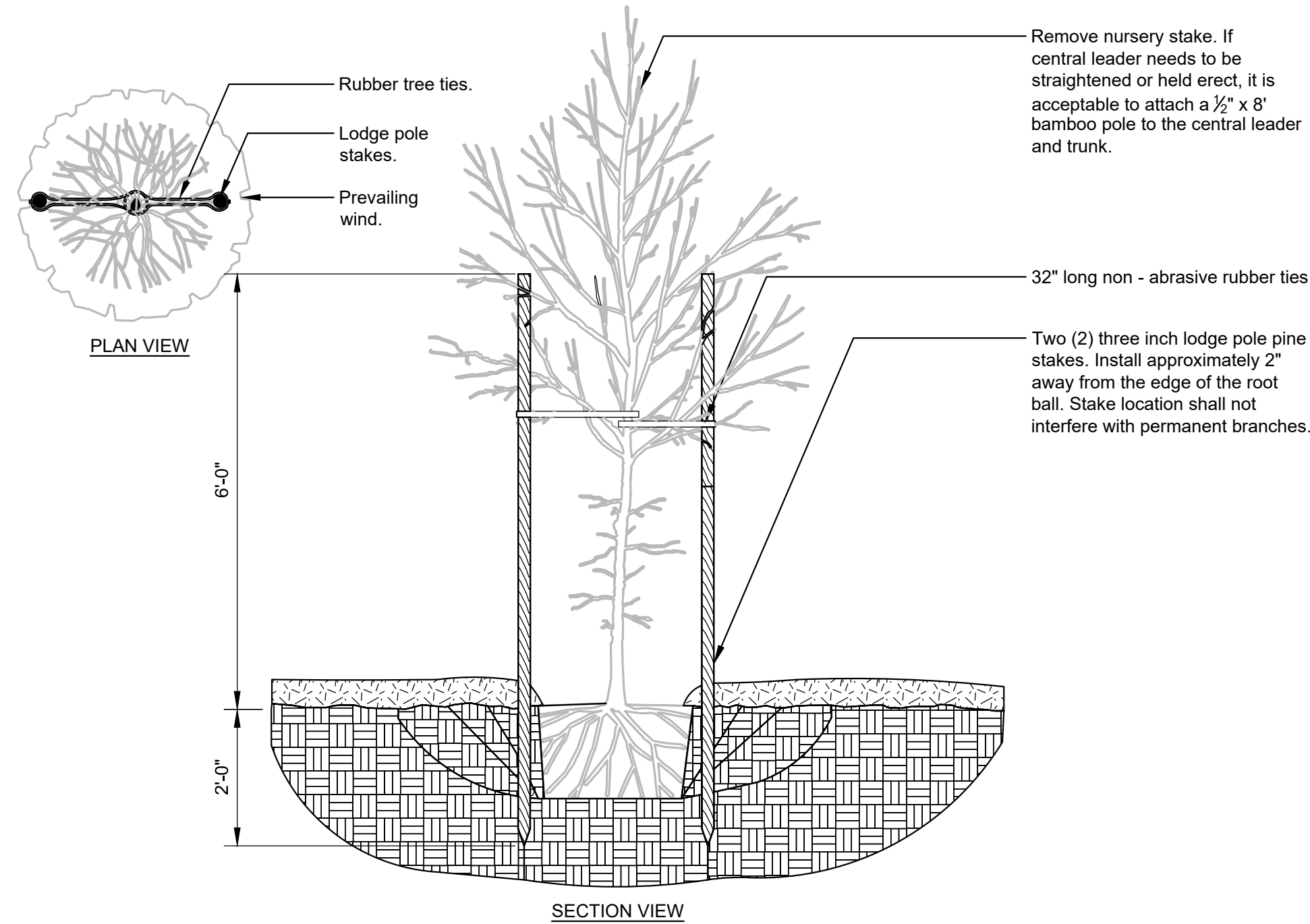
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LANDSCAPE PLAN

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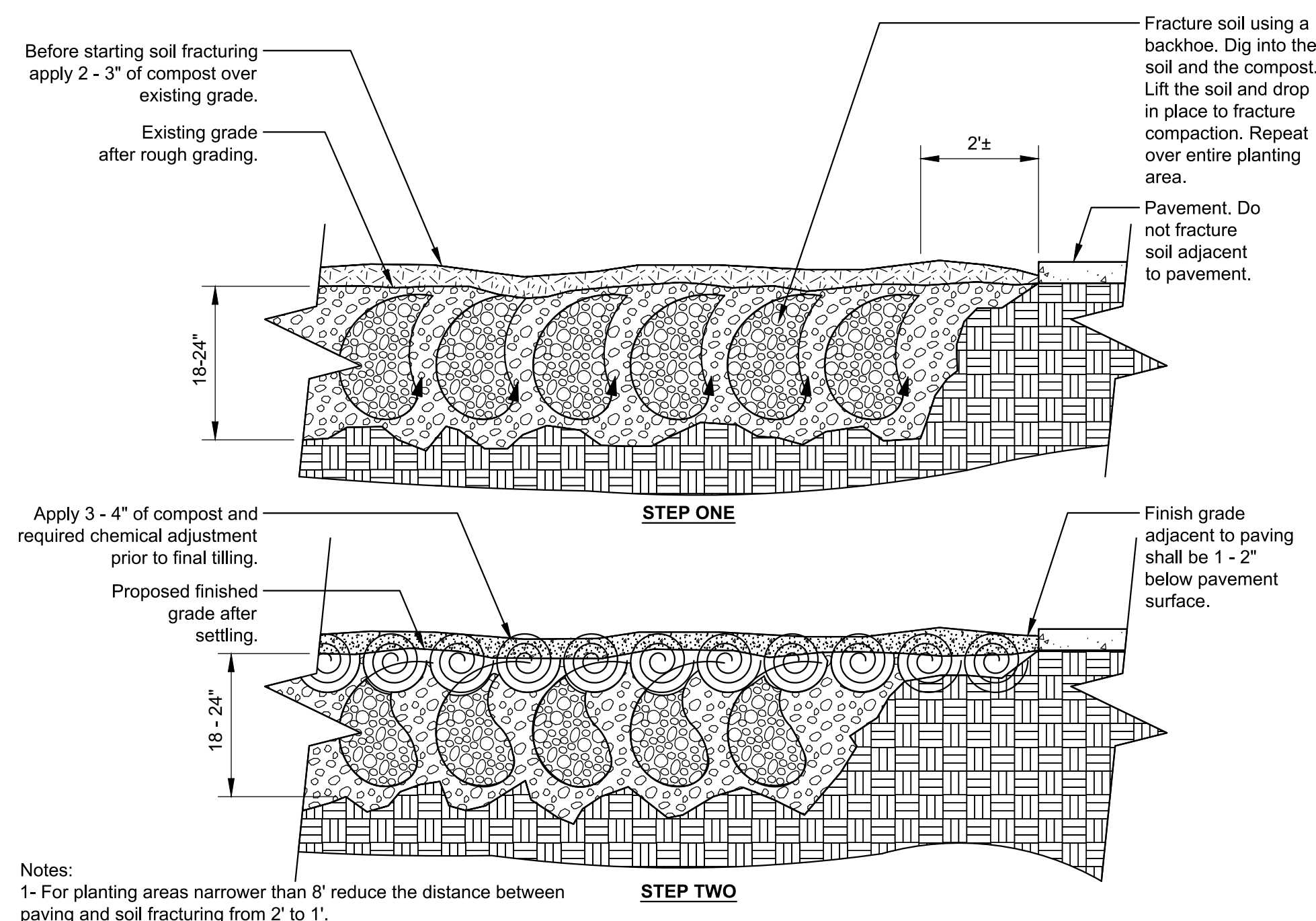
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TREE STAKING - LODGE POLES (2)

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MODIFIED EXISTING SOIL - COMPACTED SUB SOIL (FRACTURING)

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PLANT SCHEDULE									
SYMBOL	LARGE DECIDUOUS SHADE TREES								
LABEL	QTY	COMMON NAME	BOTANICAL NAME	MATURE HEIGHT (FT)	MATURE SPREAD (FT)	SHADE/SUN	ZONE	FLOWERING	NATIVE REGION
TT	2	TULIP TREE	LIRIODENDRON TULIPIFERA	60-90	30-50	FULL SUN	4-9	YES, MAY-JUNE	EASTERN U.S.
WO	2	WHITE OAK	QUERCUS ALBA	50-80	50-80	FULL SUN	3-9	NA	EASTERN U.S.
RP	3	RED MAPLE	ACER RUBRUM	40-70	30-50	FULL SUN-PART SHADE	3-9	YES, MARCH-APRIL	CENTRAL & EASTERN U.S.

MEDIUM DECIDUOUS SHADE TREES									
LABEL	QTY	COMMON NAME	BOTANICAL NAME	MATURE HEIGHT (FT)	MATURE SPREAD (FT)	SHADE/SUN	ZONE	FLOWERING	NATIVE REGION
RM	7	RED SUNSET RED MAPLE	ACER RUBRUM 'RED SUNSET'	40-50	30-40	FULL SUN-PART SHADE	3-9	YES, MARCH	CENTRAL & EASTERN U.S.
BG	3	BLACK GUM	NYSSA SYLVATICA 'WILDFIRE'	30-50	20-30	FULL SUN-PART SHADE	3-9	NA	CENTRAL & EASTERN U.S.

SMALL DECIDUOUS SHADE TREES									
LABEL	QTY	COMMON NAME	BOTANICAL NAME	MATURE HEIGHT (FT)	MATURE SPREAD (FT)	SHADE/SUN	ZONE	FLOWERING	NATIVE REGION
AH	2	AMERICAN HORNBEAM	CARPINUS CAROLINIANA	20-35	20-35	PART SHADE-FULL SUN	3-9	NA	CENTRAL & EASTERN U.S.
FD	4	FLOWERING DOGWOOD	CORNUS FLORIDA	15-30	15-30	FULL SUN-PART SHADE	5-9	YES, APRIL-MAY	CENTRAL & EASTERN U.S.

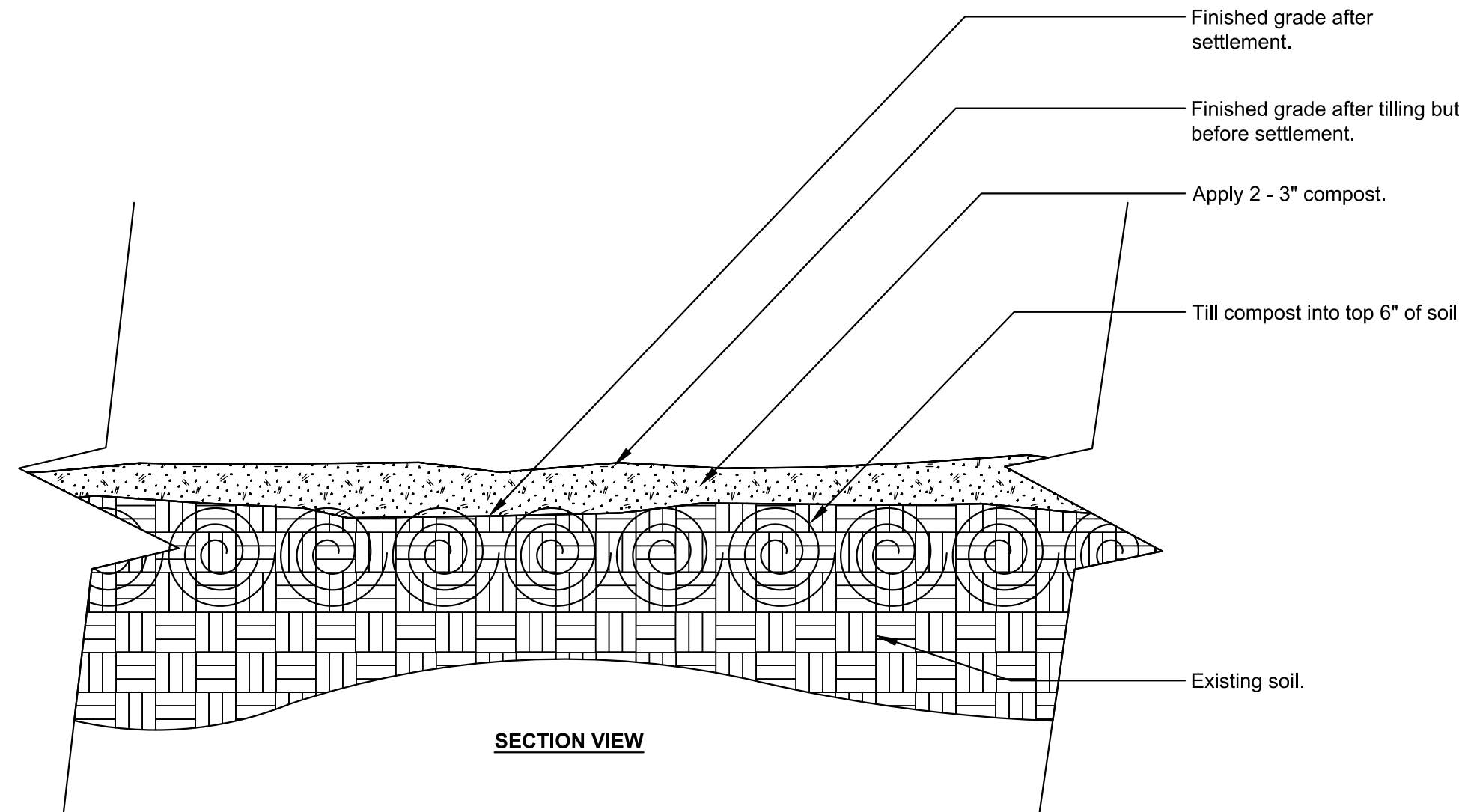
ORNAMENTAL DECIDUOUS SHADE TREES									
LABEL	QTY	COMMON NAME	BOTANICAL NAME	MATURE HEIGHT (FT)	MATURE SPREAD (FT)	SHADE/SUN	ZONE	FLOWERING	NATIVE REGION
CA	2	PRAIRIFIRE CRABAPPLE	MALUS 'PRAIRIFIRE'	15-20	15-20	FULL SUN	4-8	YES, APRIL-MAY	U.S.

CONIFERS OR EVERGREEN TREES									
LABEL	QTY	COMMON NAME	BOTANICAL NAME	MATURE HEIGHT (FT)	MATURE SPREAD (FT)	SHADE/SUN	ZONE	FLOWERING	NATIVE REGION
SR	11	JUNIPER 'SKYROCKET'	JUNIPERUS SCOPULORUM 'SKYROCKET'	15-20	2-3	FULL SUN	4-9	NA	WESTERN U.S.
CR	12	CANAERTH RED CEDAR	JUNIPERUS VIRGINIANA 'CANAERTH'	20-35	8-15	FULL SUN	3-9	NA	CENTRAL & EASTERN U.S.

EVERGREEN SHRUBS									
LABEL	QTY	COMMON NAME	BOTANICAL NAME	MATURE HEIGHT (FT)	MATURE SPREAD (FT)	SHADE/SUN	ZONE	FLOWERING	NATIVE REGION
LG	74	LITTLE GIANT DWARF ARBORVITAE'	THUJA OCCIDENTALS LITTLE GIANT	3-4	3-4	FULL SUN- PART SHADE	3-8	NA	EASTERN U.S.

DECIDUOUS SHRUBS									
LABEL	QTY	COMMON NAME	BOTANICAL NAME	MATURE HEIGHT (FT)	MATURE SPREAD (FT)	SHADE/SUN	ZONE	FLOWERING	NATIVE REGION
RC	21	RED CHOKEBERRY	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	6-8	3-4	FULL SUN-PART SHADE	4-9	YES, APRIL	CENTRAL & EASTERN U.S.
HA	33	SMOOTH HYDRANGEA	HYDRANGEA ARBORESCENS 'ANNABELLE'	3-5	4-6	PART SHADE	3-9	YES, JUNE-SEPTEMBER	CENTRAL & EASTERN U.S.
BB	11	BUTTON BUSH 'SUGAR SHACK'	CEPHALANTHUS OCCIDENTALIS 'SMCOSS' SUGAR SHACK	3-4	3-4	FULL SUN-PART SHADE	4-10	YES, JUNE-JULY	CENTRAL & EASTERN U.S.
IP	37	INDIAN PAINTBRUSH	CASTILLEJA COCCINEA	1-2	1-1.5	FULL SUN-PART SHADE	4-8	YES, SPRING-SUMMER	EASTERN U.S.
BW	33	BUTTERFLY WEED	ASCLEPIAS TUBEROSA	1-2.5	1-2	FULL SUN	3-9	YES, JUNE-AUGUST	U.S.
BE	43	BLACK-EYED SUSANS "GOLDSTURMM"	RUDBECKIA FULGIDA	2-3	1.5-2	FULL SUN-PART SHADE	3-9	YES, JUNE-AUGUST	U.S.
PC	21	PURPLE CONEFLOWER	ECHINACEA PURPUREA	2-5	1-2	FULL SUN-PART SHADE	3-8	YES, JUNE-AUGUST	U.S.

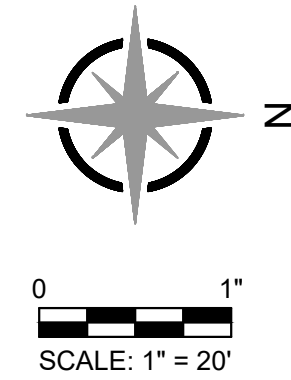
ORNAMENTAL GRASSES									
LABEL	QTY	COMMON NAME	BOTANICAL NAME	MATURE HEIGHT (FT)	MATURE SPREAD (FT)	SHADE/SUN	ZONE	FLOWERING	NATIVE REGION
SG	46	SWITCH GRASS	PANICUM VIRGATUM	3-6	2-3	FULL SUN	3-9	YES, AUGUST-SEPTEMBER	U.S. AND CANADA
PD	41	PRAIRIE DROPSOED	SPOROBOLUS HETEROLEPIS	2-3	2-3	FULL SUN	3-9	YES, AUGUST-OCTOBER	U.S.



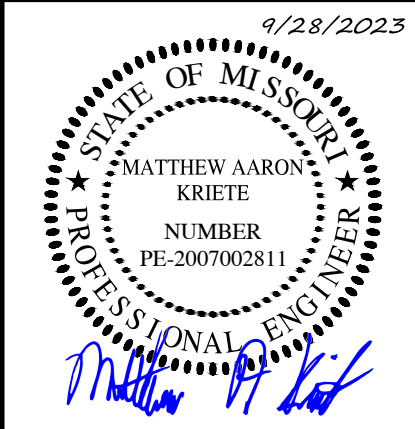
Notes:
1- See planting soil specifications for additional requirements.

MODIFIED EXISTING SOIL - COMPACTED SURFACE SOIL

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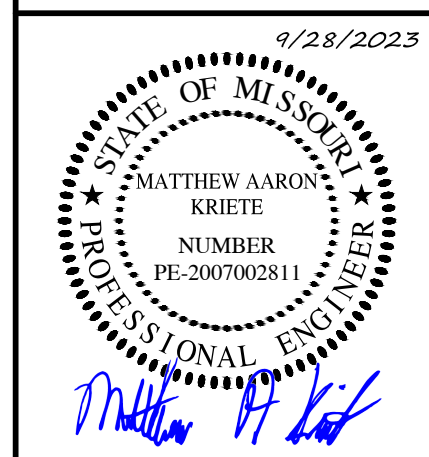
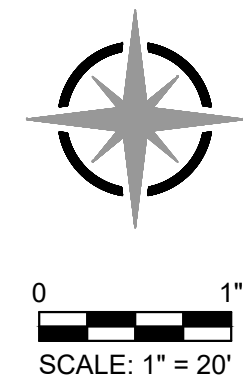
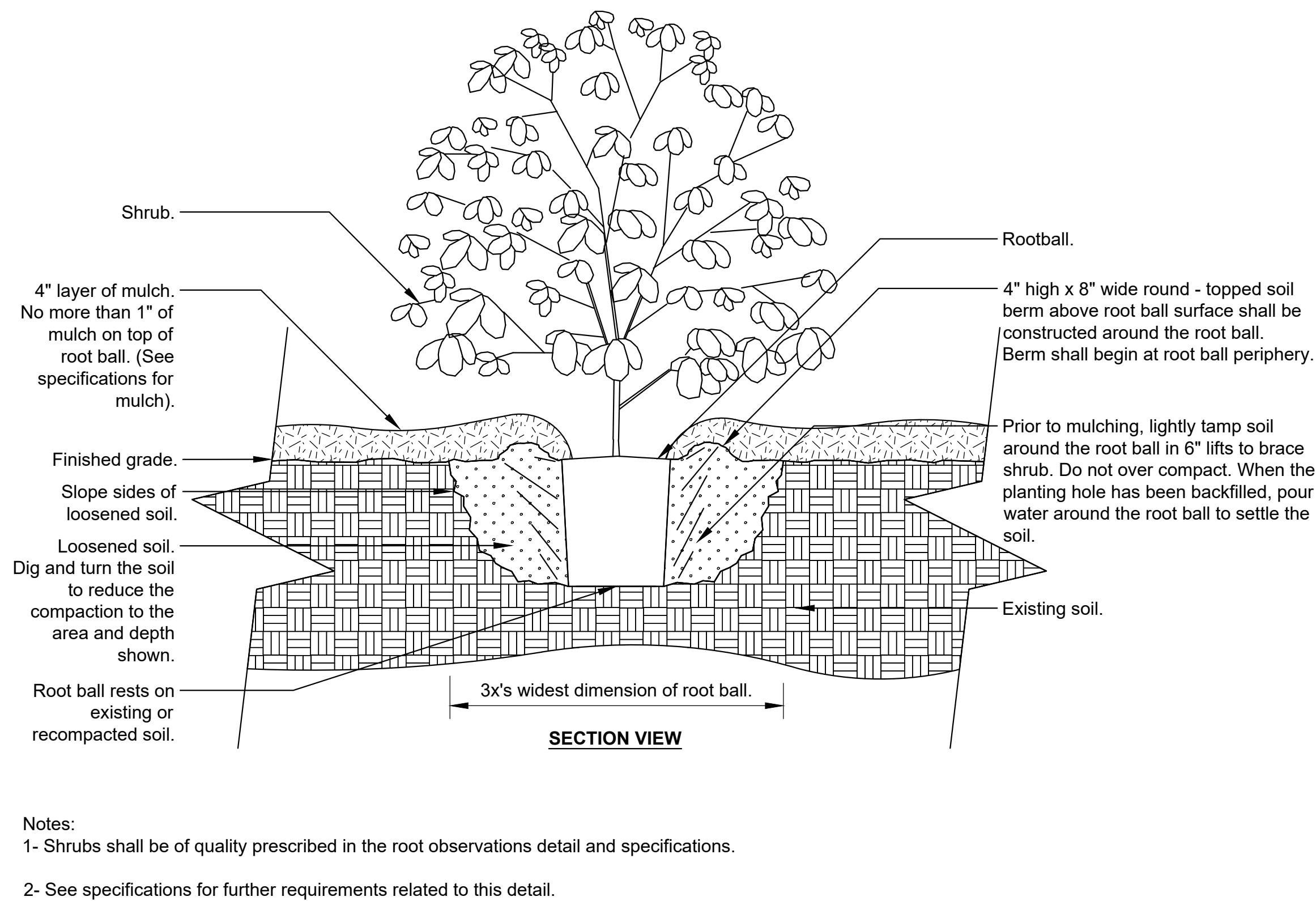
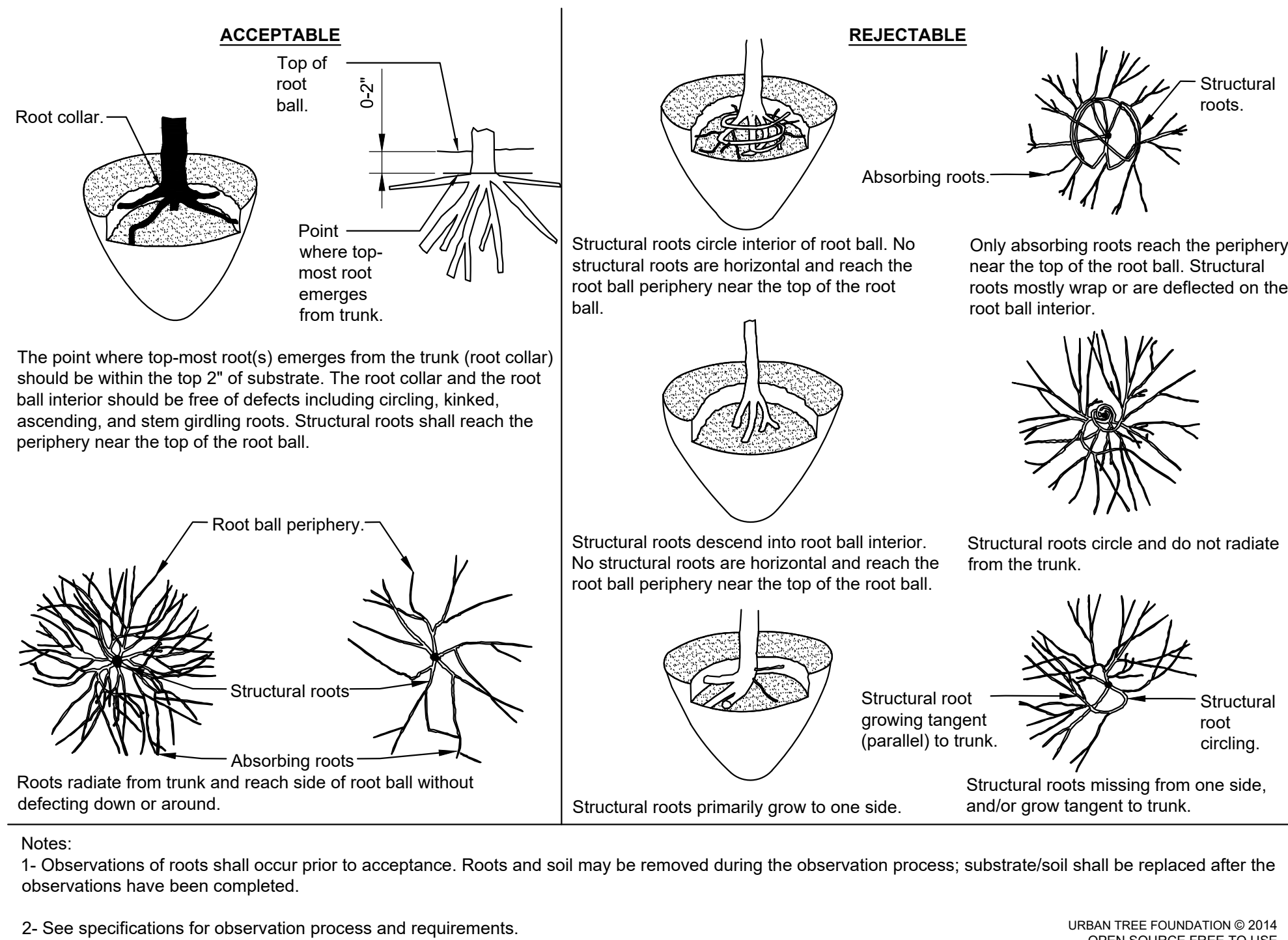
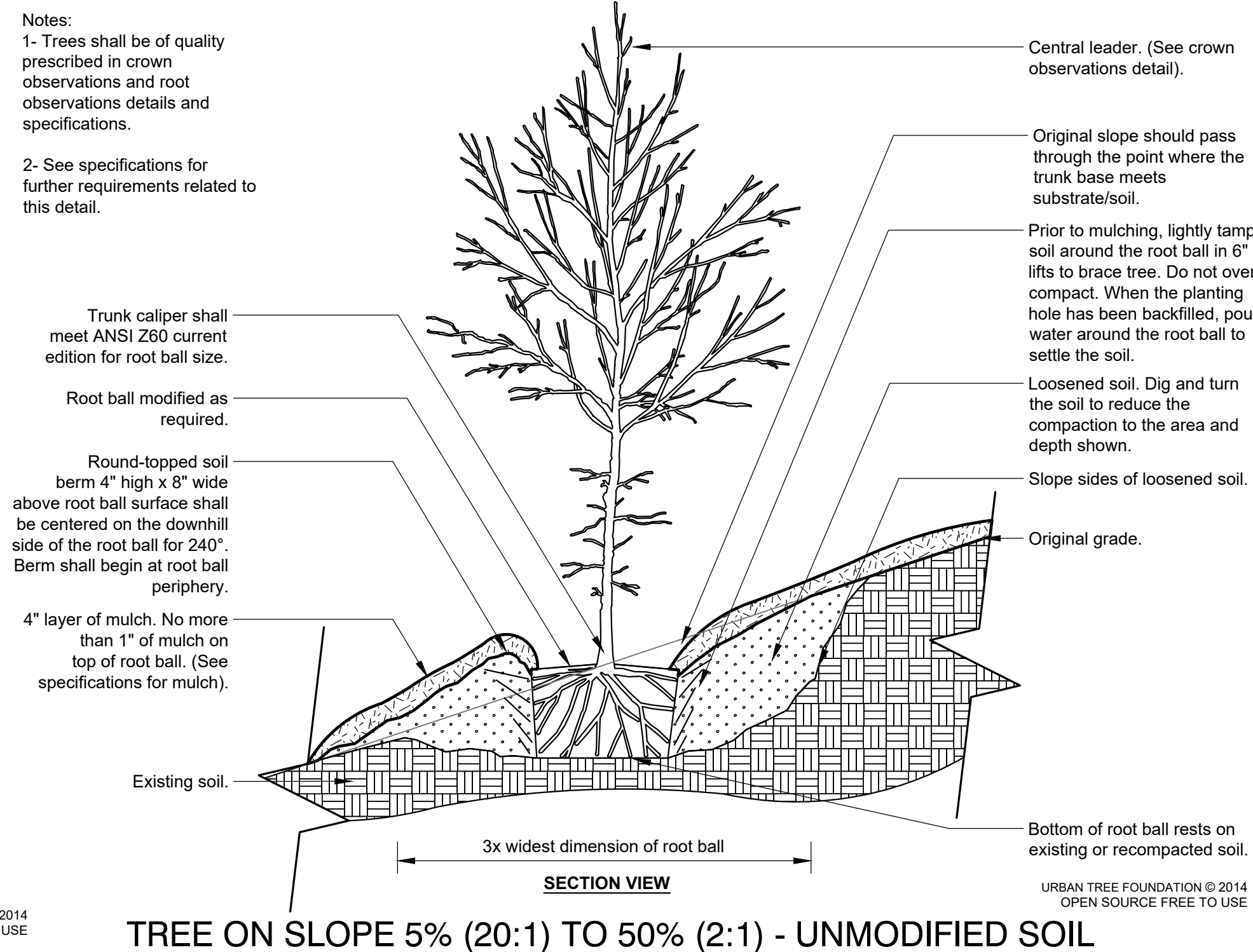
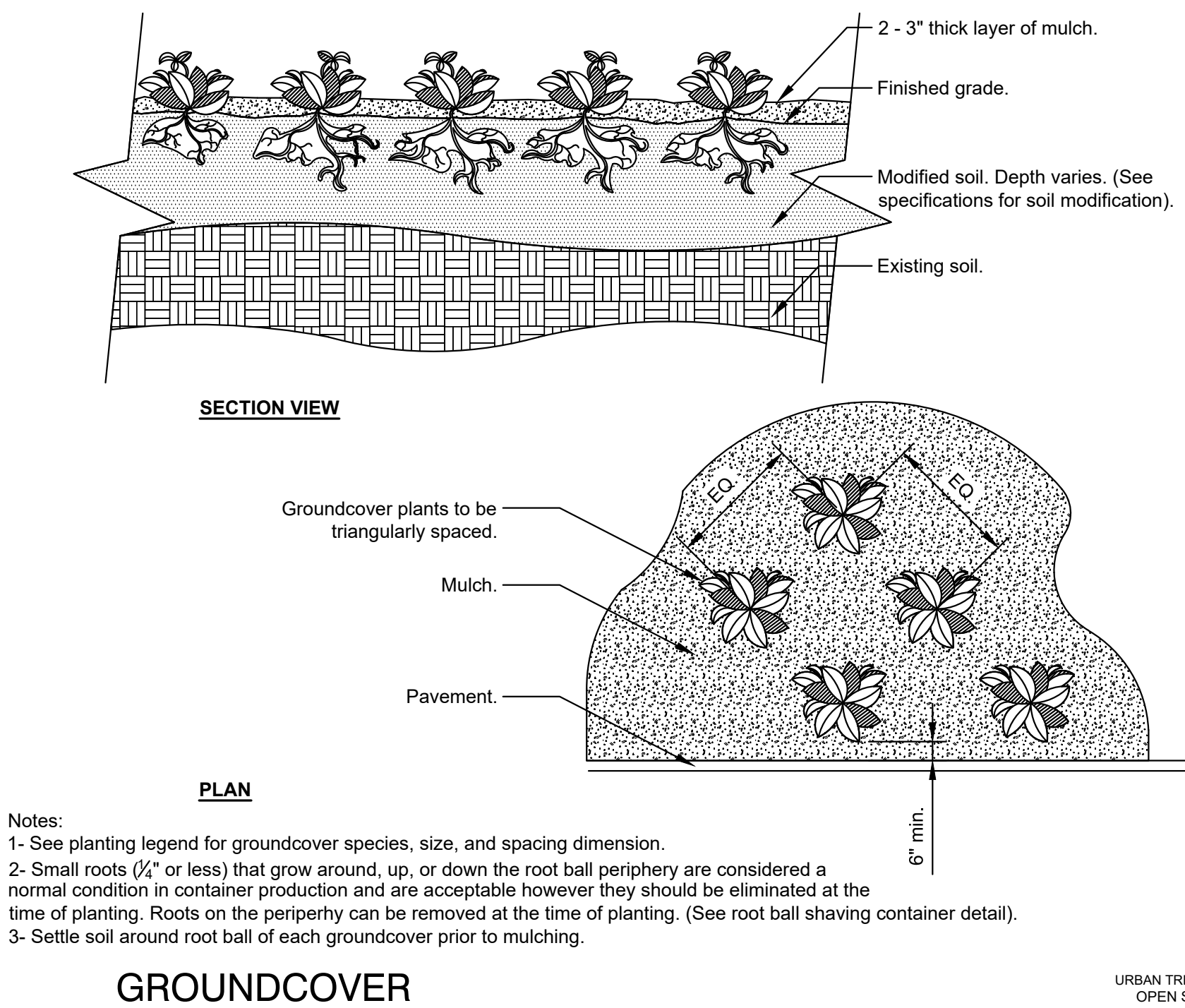
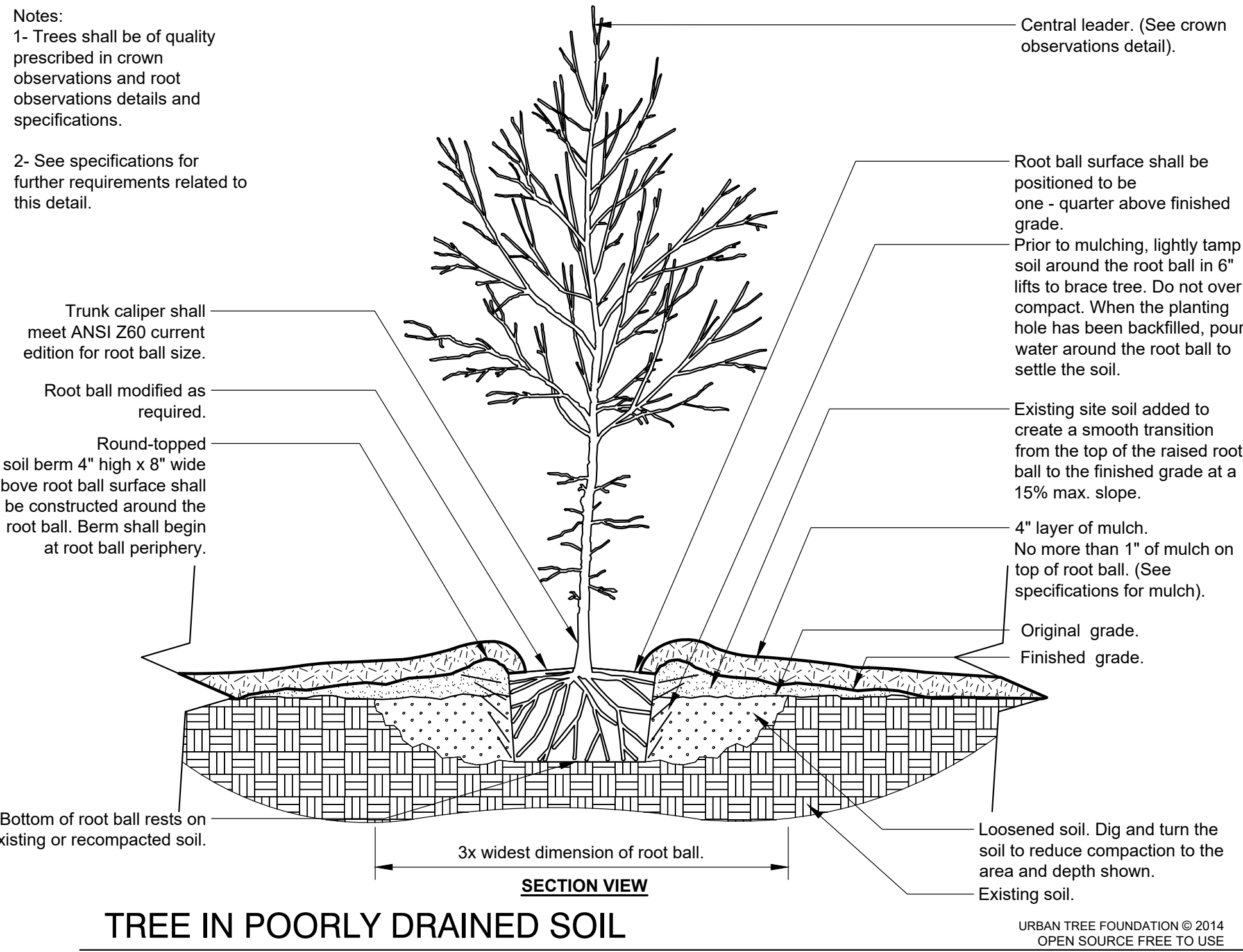
Design: ST Drawn: MJS

LANDSCAPE PLAN

Sheet
L1.04

ES&S PROJECT NO. 15925

P:\GENERAL PROJECTS\15925E-WES-WILSHIRE-HILLS-3-ENV\CAD\15925 LANDSCAPE PLANNING 10/26/2023



MATTHEW A. KRIETE
PROFESSIONAL ENGINEER
PE-2007002811

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Date

SEPTEMBER 28, 2023

Revised

Design: ST Drawn: MJS

LANDSCAPE PLAN

Sheet

L1.05

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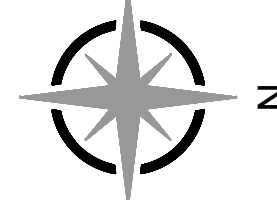
873-636-3303

1775 West Main Street, Sedalia, MO 65301

660-826-8618

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0 1"
SCALE: 1" = 10'

WILSHIRE HILLS PHASE III
3200 NE WILSHIRE DR
LEE'S SUMMIT JACKSON COUNTY, MISSOURI



JOSHUA D. LEHMAN
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PE-2012000779

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Date

JULY 13, 2023

Revised

1 FEBRUARY 22, 2024

Design: JLS Drawn: MJS

RETAINING WALL PLAN

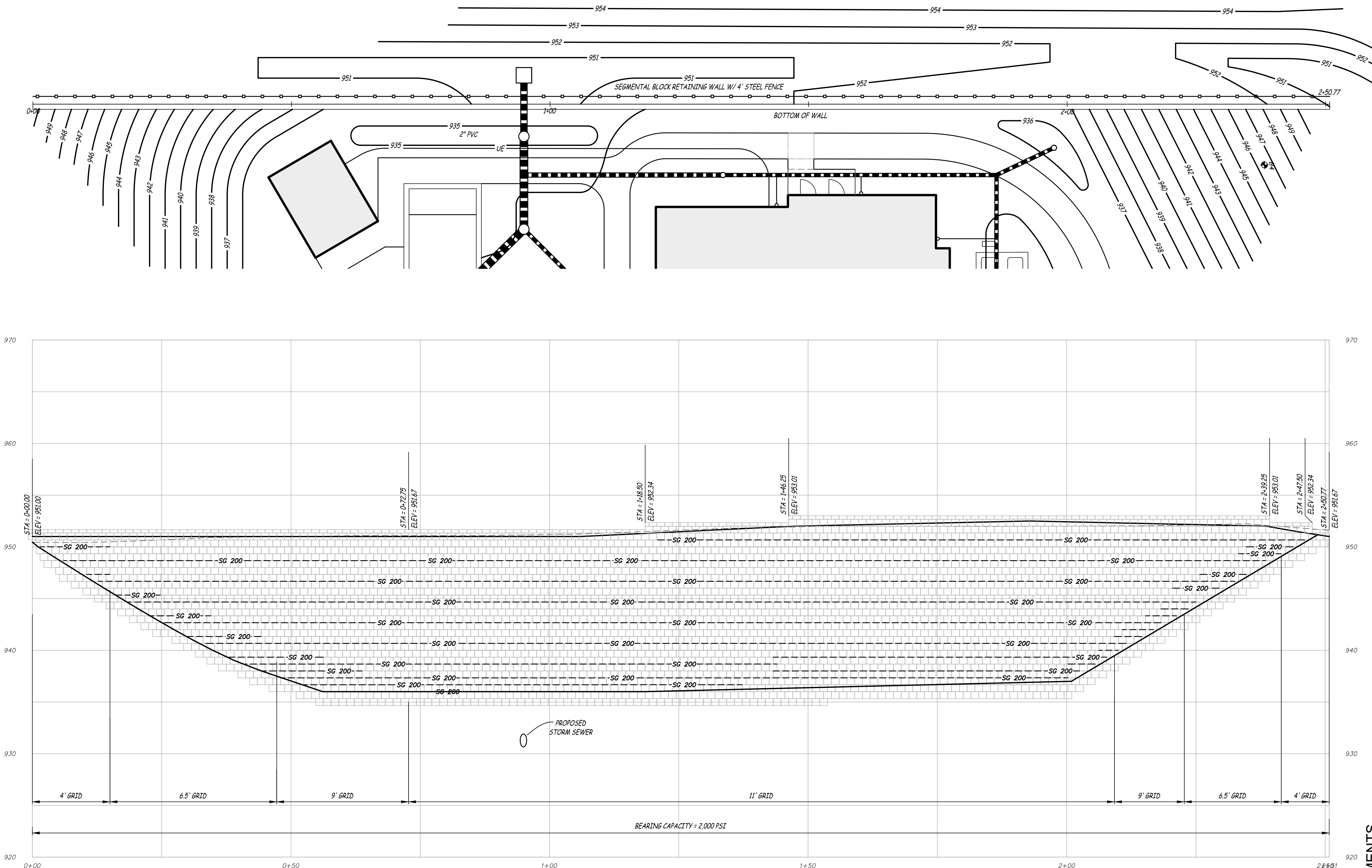
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RW1.01

ES&S PROJECT NO. 15925

RETAINING WALL NOTES

- RETAINING WALL DESIGN:
 - STRUCTURAL DESIGN HEREIN REPRESENTS A FINISHED STRUCTURE. THE GENERAL CONTRACTOR/OWNER SHALL PROVIDE ALL INTERIM BRACING, SHORING, INTERIM DRAINAGE PROVISIONS, DRAINAGE DIVERSION AND EROSION PROTECTION REQUIRED UNTIL FINAL CAPPING, PAVING, CURBING, AND COMPLETION OF FINAL STORM DRAIN SYSTEM IS COMPLETE.
 - THE WALL IS NOT CONSIDERED COMPLETE UNTIL ALL FINAL GRADING AND STORMWATER CONVEYANCE IS COMPLETE.
 - IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL FINAL GRADES DRAIN AWAY FROM THE TOP OF THE RETAINING WALL.
- ENGINEERING SURVEYS & SERVICE SHALL BE NOTIFIED IF ANY SETTLEMENT IS OBSERVED DURING CONSTRUCTION.
- MATERIAL PROPERTIES:
 - SEGMENTAL BLOCK UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C1372 HAVING A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI AND A MAXIMUM MOISTURE ABSORPTION OF 2%. ALL UNITS SHALL BE SOUND AND FREE OF CRACKS OR OTHER DEFECTS THAT WOULD INTERFERE WITH THE PROPER PLACING OF THE UNIT OR SIGNIFICANTLY IMPAIR THE STRENGTH OR PERFORMANCE OF THE CONSTRUCTION.
 - COMPACTED REINFORCED BACKFILL AND DRAINAGE SHALL BE FREE OF ORGANIC MATERIAL. THE ROCK SHALL BE A WELL GRADED GRAVEL OR LIMESTONE WITH A MAXIMUM PARTICLE SIZE OF 2" AND A MAXIMUM OF 20% PASSING A NO. 200 SIEVE. LIMESTONE SCREENINGS ARE NOT ACCEPTABLE FOR STRUCTURE WALL BACKFILL. MATERIAL SHALL BE MDOT TYPE 1/5 OR APPROVED EQUAL.
 - THE GEOGRID SHALL BE A HIGH DENSITY POLYETHYLENE EXPANDED SHEET OR POLYESTER WOVEN FIBER MATERIAL, SPECIFICALLY FABRICATED FOR USE AS SOIL REINFORCEMENT. ACCEPTABLE GEOGRID TYPES AND MANUFACTURER
 - TYPE I: SG 200 BY STRATA OR APPROVED EQUAL
 - DRAINAGE PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM F 405 OR ASTM F 758.
 - CONSTRUCTION ADHESIVE SHALL BE EXTERIOR GRADE ADHESIVE AS
- RECOMMENDED BY THE SEGMENTAL CONCRETE WALL UNIT MANUFACTURER. EXCAVATION: IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXCAVATE TO THE GRADES ON THE PLAN. EXCAVATION MEANS AND METHOD ARE ALSO THE CONTRACTOR'S RESPONSIBILITY INCLUDING: BENCHING, SHORING, STABILITY OF ALL RESPECTIVE EXCAVATIONS, AND THE EFFECTS ON ADJACENT PROPERTIES AND
- STRUCTURES.
 - FOUNDATION SOIL PREPARATION:
 - FOLLOWING EXCAVATION FOR THE LEVELING PAD AND THE REINFORCED SOIL ZONE, FOUNDATION SOIL SHALL BE EXAMINED BY THE OWNER'S GEOTECHNICAL ENGINEER TO ASSURE THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE ASSUMED DESIGN BEARING STRENGTH. SOIL NOT MEETING THE REQUIRED STRENGTH SHALL BE REMOVED AND REPLACED WITH SOIL MEETING THE DESIGN CRITERIA, AS DIRECTED BY THE OWNER'S GEOTECHNICAL ENGINEER.
 - FOUNDATION SOIL IS DEFINED AS THE SOIL UNDER THE SEGMENTAL RETAINING WALL VOLUME, EXTENDING FROM THE TOE OF THE LEVELING PAD TO THE BACK OF THE REINFORCED MASS.
- BASE LEVELING PAD SHALL BE COMPACTED WITH A VIBRATORY PLATE OR ROLLER AND COMPACTION TESTING TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY (ASTM D 698) AT A MOISTURE CONTENT OF -2% TO +4% OF OPTIMUM MOISTURE CONTENT.
- PLACE DRAINAGE AGGREGATE A MINIMUM OF 12" DIRECTLY BEHIND AND BETWEEN THE UNITS AND LEVEL WITH THE TOP OF THE UNIT. PLACE REINFORCED BACKFILL DIRECTLY AGAINST DRAINAGE FILL. COMPACT DRAINAGE AGGREGATE WITH 3 PASSES OF A VIBRATORY COMPACTOR. COMPACTION TESTING OF DRAINAGE AGGREGATE IS NOT REQUIRED. EXCESS MATERIAL SHALL BE REMOVED FROM TOP OF UNITS PRIOR TO INSTALLATION OF NEXT COURSE.
- GEOGRID INSTALLATION:
 - GEOGRID SHALL BE LAID AT THE PROPER ELEVATION AND ORIENTATION AS SHOWN ON THE DRAWINGS.
 - THE GEOGRID REINFORCEMENT SHALL BE LAID HORIZONTALLY ON LEVEL, COMPACTED BACKFILL, AND EMBEDDED IN THE BLOCK.
 - THE GEOGRID SHALL BE PULLED TIGHT AFTER THE NEXT ROW OF BLOCK AND DRAINAGE AGGREGATE HAS BEEN PLACED.
 - THE GEOGRID SHALL BE PLACED WITH THE AXIAL STRENGTH PERPENDICULAR TO THE WALL FACE ALL LOCATIONS.
- REINFORCED BACKFILL.
 - MATERIAL SHALL BE PLACED IN 8" MAXIMUM LIFTS AND COMPACTED TO A MINIMUM 95% OF STANDARD PROCTOR DENSITY (ASTM D 698) AT A MOISTURE CONTENT OF -2% TO +4% OF OPTIMUM MOISTURE CONTENT.
 - REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED FROM THE BACK OF THE WALL REARWARD INTO THE EMBANKMENT TO ENSURE THAT THE GEOGRID REMAINS TIGHT.
 - TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID. A MINIMUM BACKFILL THICKNESS OF 6" SHALL BE MAINTAINED TO OPERATE TRACKED VEHICLES OVER THE GEOGRID. TURNING OF TRACKED CONSTRUCTION EQUIPMENT SHALL BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOGRID.
- FIELD QUALITY CONTROL:
 - THE OWNER OR OWNER'S REPRESENTATIVE IS RESPONSIBLE FOR ENGAGING THE SERVICES OF AN INDEPENDENT THIRD PARTY INSPECTOR TO OBSERVE AND VERIFY ALL SOIL PROPERTIES AS WELL AS VERIFY CORRECT INSTALLATION OF ALL SYSTEM COMPONENTS TO MEET THE REQUIREMENTS OF THESE GENERAL NOTES AND DRAWINGS.
 - EACH LIFT OF REINFORCED BACKFILL MATERIAL AND BASE LEVELING PAD SHOULD BE COMPACTION TESTED AT A FREQUENCY OF ONE TEST PER 2,500 SQUARE FEET OR A MINIMUM OF 2 TESTS PER LIFT.



RETAINING WALL
SCALE - HORIZ. 1" = 10'
VERT. 1" = 5'

BLOCK PROPERTIES

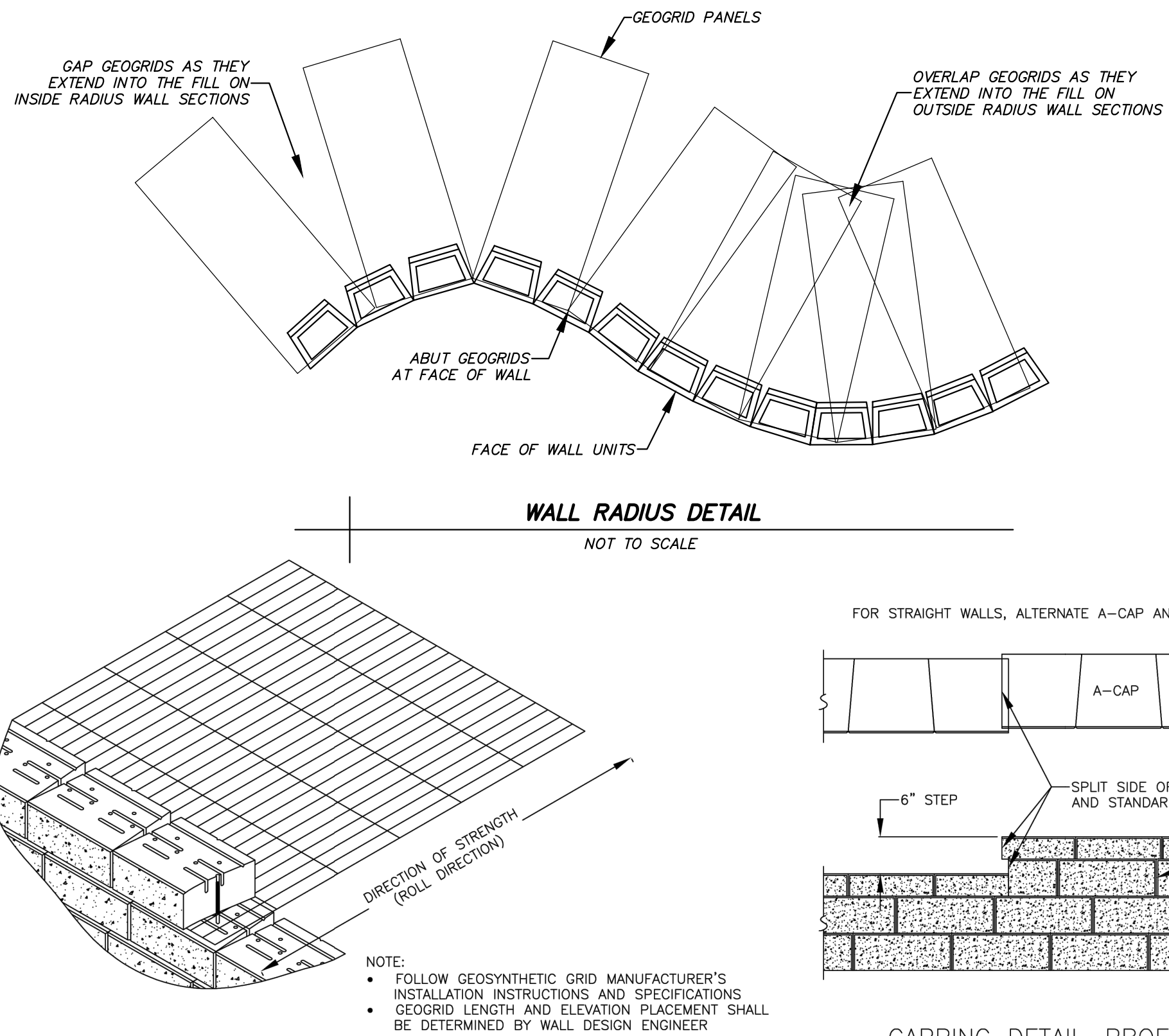
BLOCK TYPE	VERSA-LOK
BLOCK STYLE	SQUARE FOOT

WALL PROPERTIES

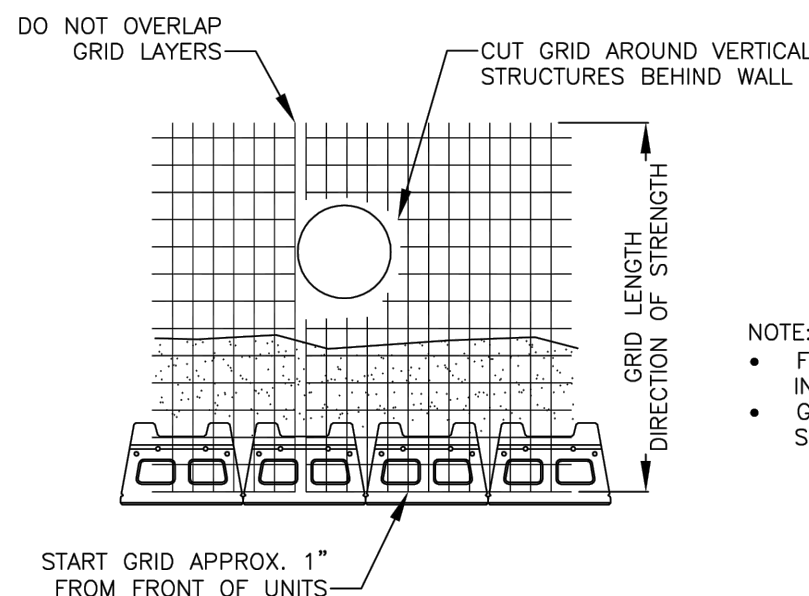
BACKSLOPE	6:1	9.46	H:V	DEGREES
TOESLOPE	3:1	18.43	H:V	DEGREES
BATTER	5.36			DEGREES
SETBACK	1"			INCHES
SURCHARGE				
DEAD LOAD	0			PSF
LIVE LOAD	100			PSF

ASSUMED DESIGN SOIL PARAMETERS

	DESCRIPTION	φ (DEGREES)	γ (PCF)
FOUNDATION SOIL	CRUSHED LIMESTONE	38	130
RETAINED SOIL	CLAY SOIL	19	106
REINFORCED BACKFILL	CRUSHED LIMESTONE	38	130

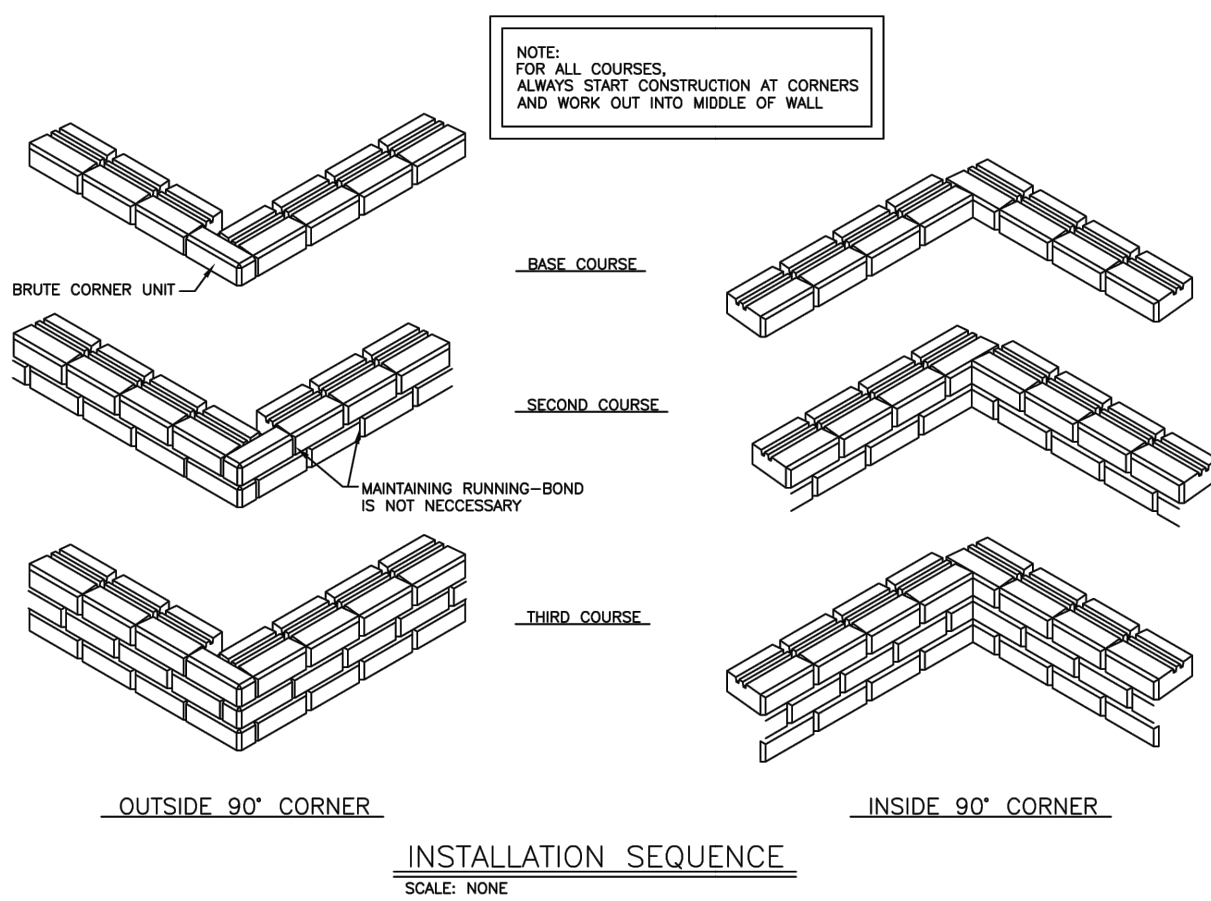


GEOSYNTHETIC INSTALLATION DETAIL
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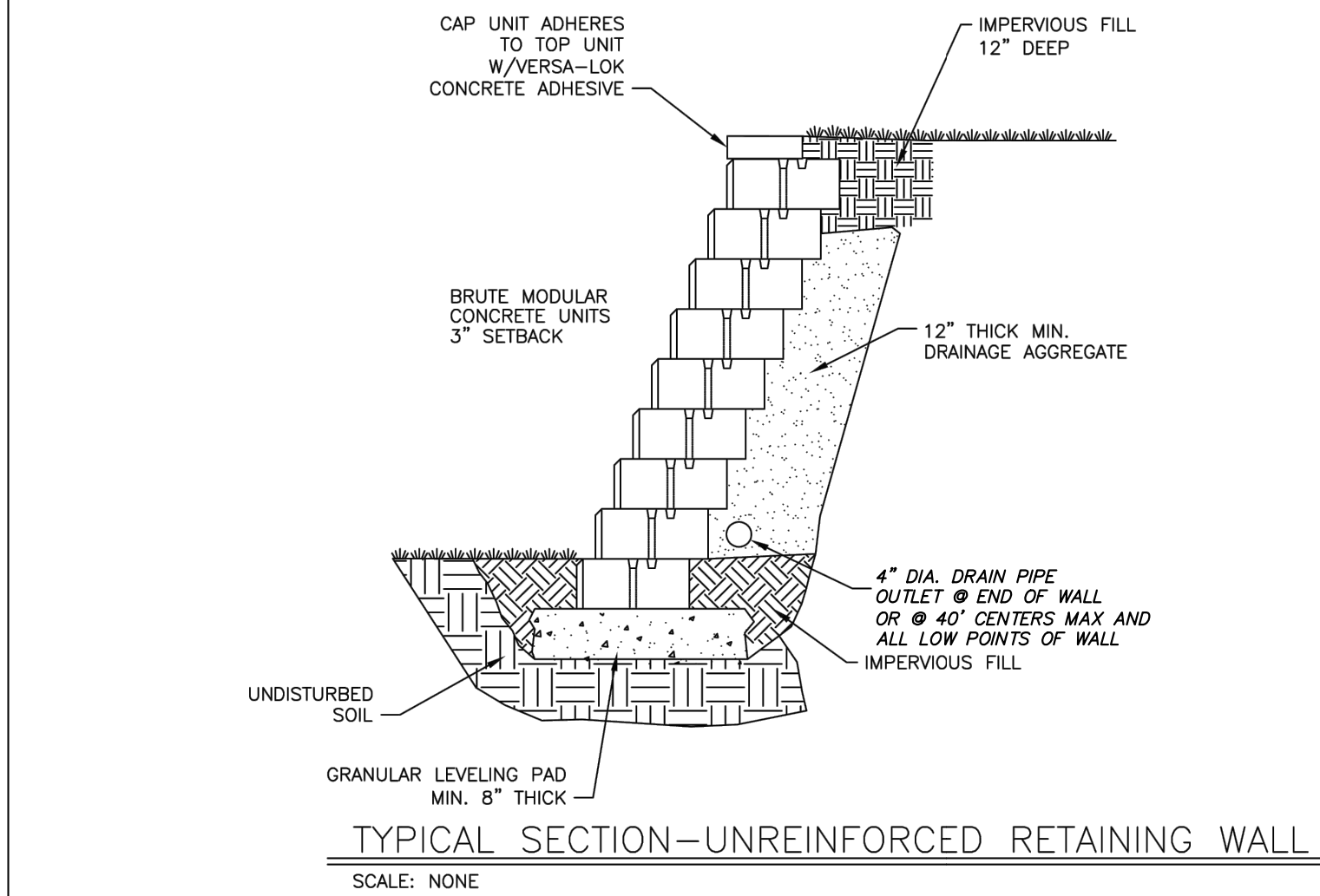


GEOSYNTHETIC AT STRUCTURES BEHIND WALL
SQUARE FOOT UNIT
SCALE: NONE

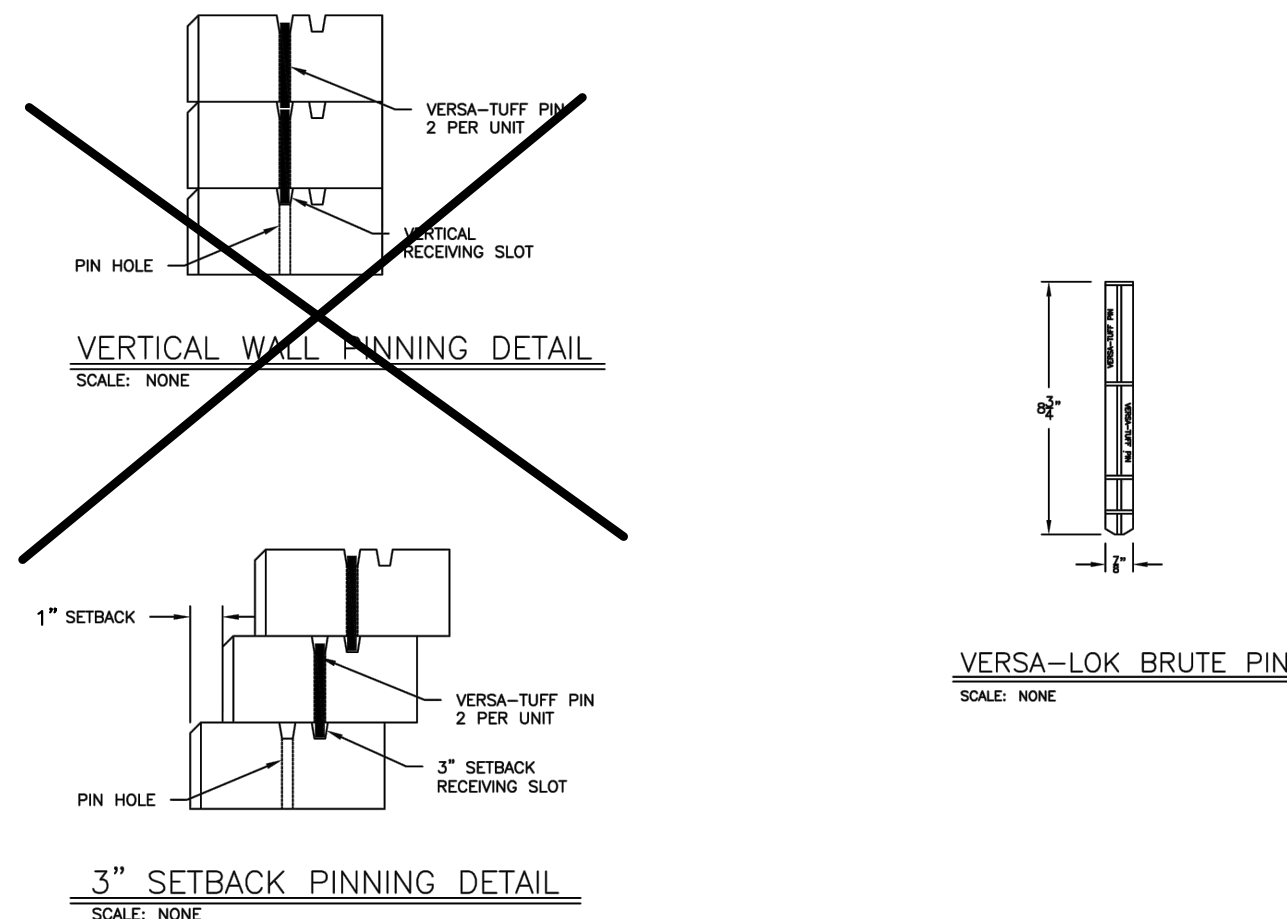
THESE PRELIMINARY DETAILS ARE INTENDED AS AN AID IN DESIGNING ATTRACTIVE, DURABLE RETAINING WALLS WITH VERSA-LOK UNITS. FINAL DETERMINATION OF THE SUITABILITY OF ANY INFORMATION OR MATERIAL FOR THE USE CONTEMPLATED, AND ITS MANNER OF USE, IS THE SOLE RESPONSIBILITY OF THE USER. A FINAL PROJECT SPECIFIC DESIGN SHOULD BE PREPARED BY A QUALIFIED, LICENSED, PROFESSIONAL ENGINEER.	VERSA-LOK® Retaining Wall Systems Solid Solutions™	VERSA-LOK SQUARE FOOT DETAILS	SCALE: 1/2"=1'
		GEOSYNTHETIC INSTALLATION	DATE: 10/2007
			BY: [Signature]



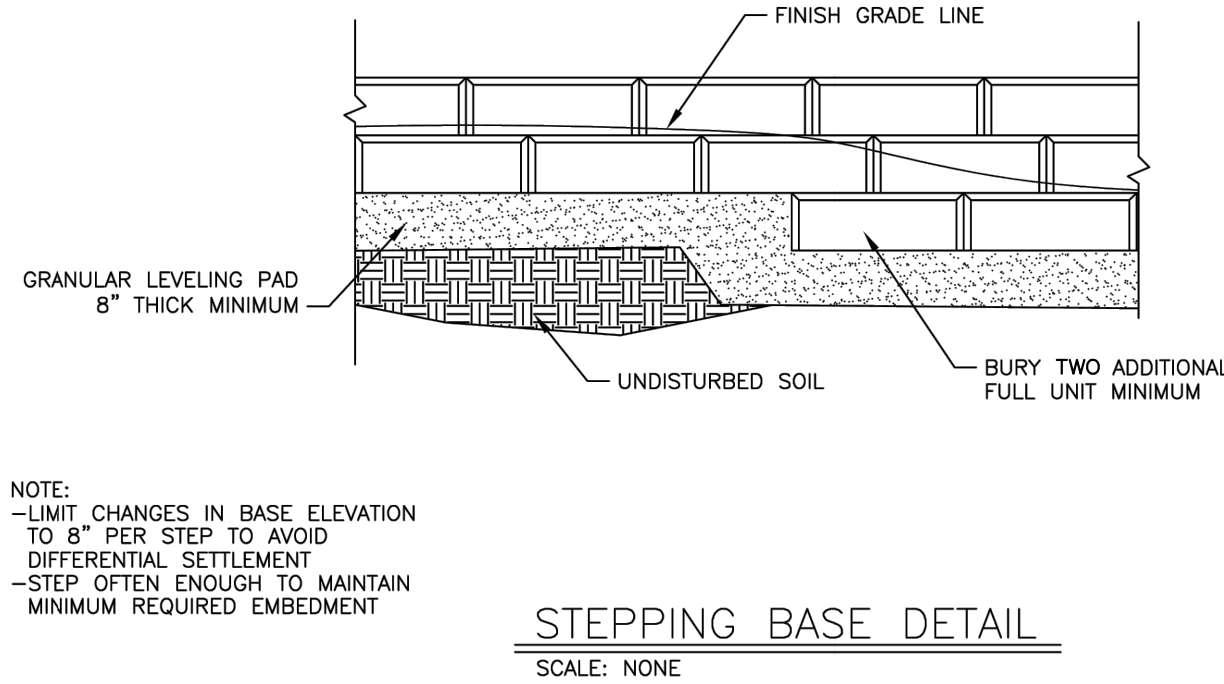
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		CORNER DETAILS	DATE: 10/24
			BY: [Signature]



THESE PRELIMINARY DETAILS ARE INTENDED AS AN AID IN DESIGNING ATTRACTIVE, DURABLE RETAINING WALLS WITH VERSA-LOK STANDARD UNITS. FINAL DETERMINATION OF THE SUITABILITY OF ANY INFORMATION OR MATERIAL FOR THE USE CONTEMPLATED, AND ITS MANNER OF USE, IS THE SOLE RESPONSIBILITY OF THE USER. A FINAL PROJECT SPECIFIC DESIGN SHOULD BE PREPARED BY A QUALIFIED, LICENSED, PROFESSIONAL ENGINEER.	VERSA-LOK® Retaining Wall Systems Solid Solutions™	BRUTE DETAILS	SCALE: AS NOTED
		UNREINFORCED RETAINING WALL	DATE: 10/24
			BY: [Signature]

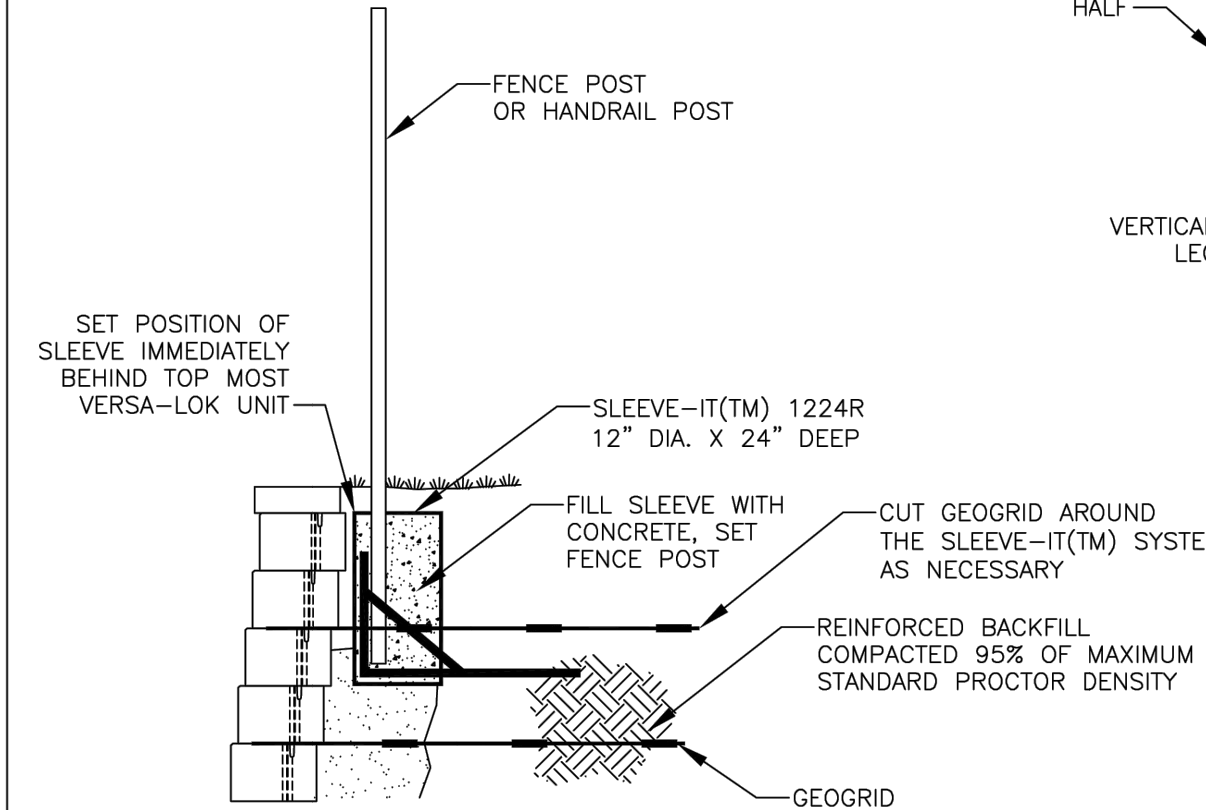


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		PINNING	DATE: 10/24
			BY: [Signature]

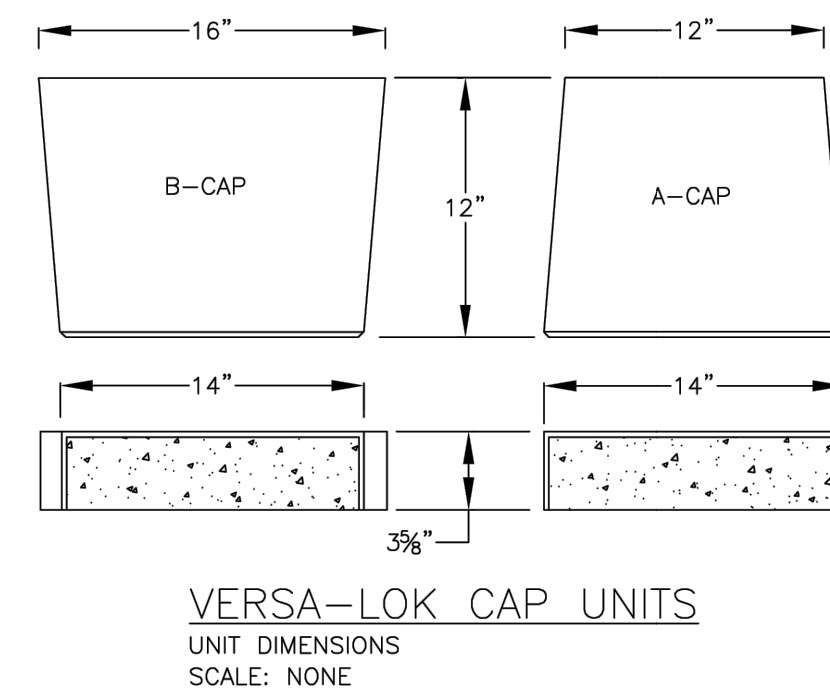


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		BASE STEPPING	DATE: 10/24
			BY: [Signature]

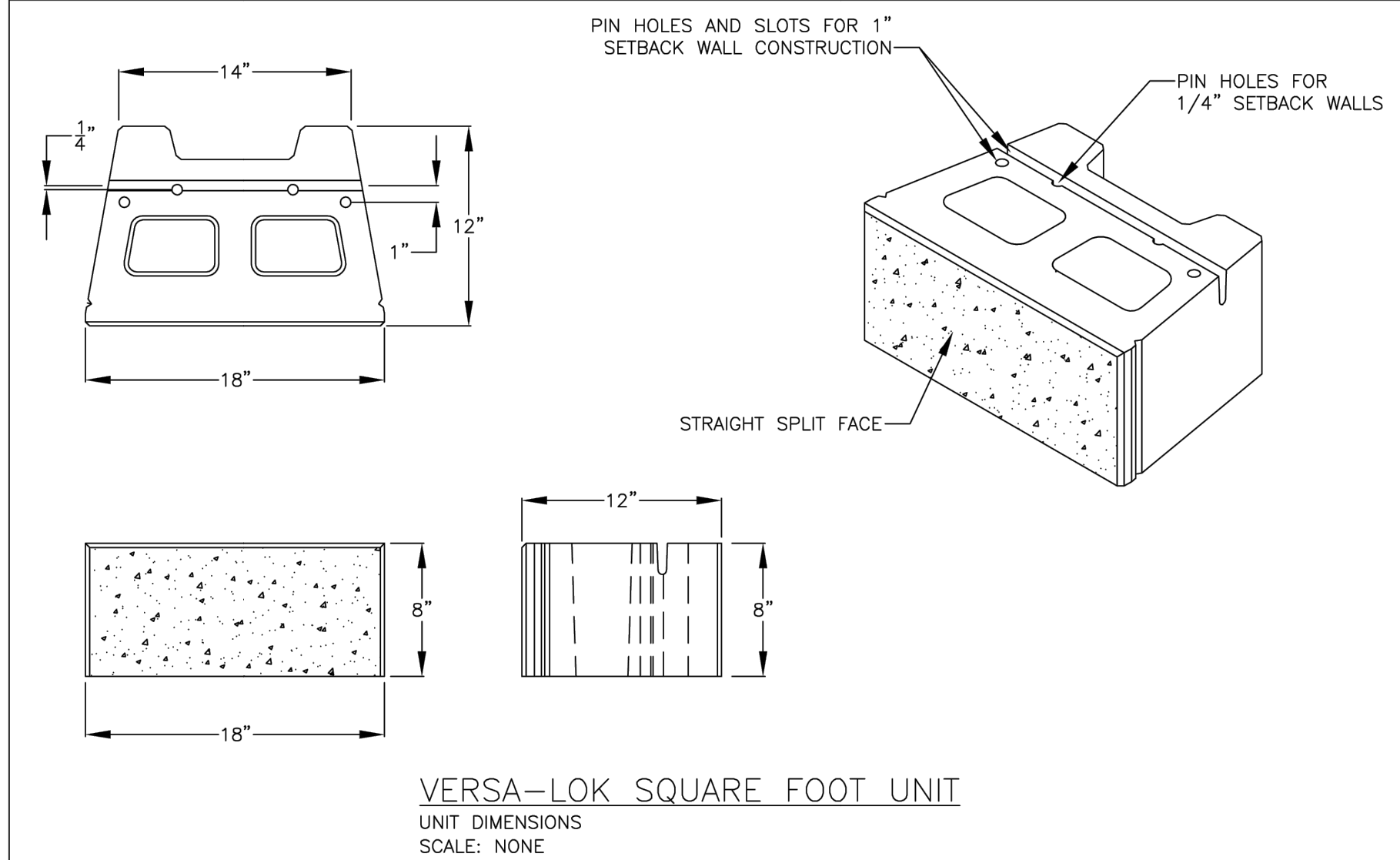
*FENCING SYSTEMS APPROVED FOR USE WITH SLEEVE-IT(TM) 1224R ARE LIMITED TO THE FOLLOWING HEIGHTS: CHAIN LINK-UP TO 8-FT, PRIVACY-UP TO 6-FT (WOODEN, PVC, METAL). POST SIZE 4"x4" MAX.



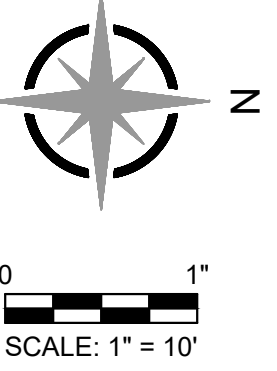
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		FENCEPOST WITH SLEEVE IT	DATE: 10/2007
			BY: [Signature]



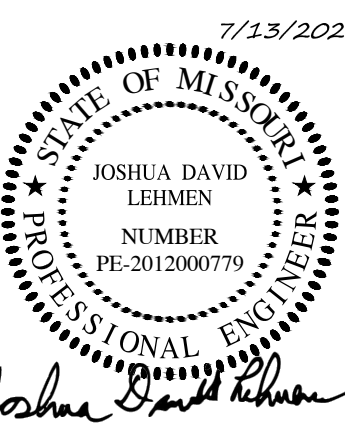
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		CAP UNITS	DATE: 10/2007
			BY: [Signature]



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		SQUARE FOOT UNIT	DATE: 10/2007
			BY: [Signature]



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JOSHUA D. LEHMAN
PROFESSIONAL ENGINEER
PE-2012000779

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Date
JULY 13, 2023

Revised
FEBRUARY 23, 2024

Design: J.L. Drawn: MJS

RETAINING WALL DETAILS

Sheet

RW2.01

ES&S PROJECT NO. 15925