CONSTRUCTION PLANS
FOR
TRINITY LAKES RAIL STATION
PARKING LOTS

DEVELOPER:

TRINITY METRO
801 GROVE STREET
FORT WORTH, TX 76102
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CONTACT: RICHEY THOMPSON, P.E.

OWNER:

TRINITY LAKES PARTNERS, LLC
PO BOX 185104
FORT WORTH, TX 76181
PHONE: (817) 589-9001
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CIVIL ENGINEER:

DCG ENGINEERING, INC.
1668 KELLER PARKWAY., SUITE 100
KELLER, TEXAS 76248
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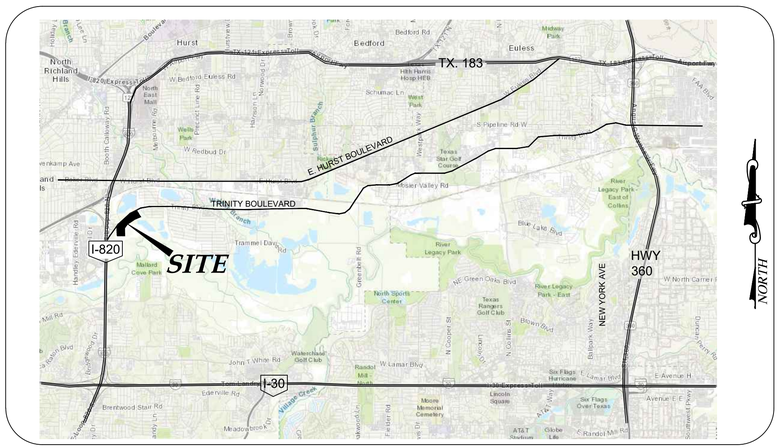

VICINITY MAP
NOT TO SCALE

TRINITY LAKES RAIL STATION
& PARKING LOTS

//DCG ENGINEERING
ENGINEERING FIRM REGISTRATION NUMBER – F–21947

STATE OF TEXAS
DAVID C. GREGORY
89296
LICENSED PROFESSIONAL ENGINEER
11-1-22

January 2022

PROJECT NO. 1001–04 TRINITY LAKES–RAIL STATION & PARKING LOTS

LEGEND

	EXISTING	PROPOSED	FUTURE
PROPERTY LINE			N/A
BUILDING			
FINISH FLOOR ELEVATION	FFE=650.00	FFE=650.00	N/A
SPOT ELEVATION	x 650.50	x 650.50	N/A
CURB			
ASPHALT PAVEMENT			N/A
RIDGE LINE	N/A	RL	N/A
SWALE or VALLEY GUTTER			N/A
CONTOUR LINE	675	675	674
STORM DRAIN	21"SD	21"SD	
STORM DRAIN MANHOLE			
CURB INLET	CI		
RECESSED CURB INLET	CI		
GRATE INLET	GI		N/A
WATER LINE	8"W	8"W	8"W
FIRE HYDRANT			N/A
WATER VALVE			N/A
WATER METER BOX		W	N/A
IRRIGATION METER	N/A	I	N/A
SANITARY SEWER LINE	8"SS	8"SS	8"SS
SANITARY SEWER MANHOLE	SSMH		
CLEANOUT	CO		
LIGHT POLE			N/A
POWER POLE	PP		N/A
DOWN GUY			N/A
SIGN			N/A
ACCESSIBLE PARKING			N/A
RETAINING WALL			N/A
WOOD FENCE			N/A
SCREEN WALL FENCE			N/A
CHAIN LINK FENCE			N/A
WIRE FENCE			N/A
TREE		N/A	N/A
OVERHEAD WIRES	OHW	N/A	N/A
OVERHEAD ELECTRIC LINE	OHE	OHE	N/A
OVERHEAD TELEPHONE LINE	OHT	OHT	N/A
UNDERGROUND ELECTRIC LINE	UGE	UGE	N/A
UNDERGROUND TELEPHONE LINE	UGT	UGT	N/A
UNDERGROUND CABLE LINE	CATV	CATV	N/A
ELECTRIC METER	EM	EM	N/A
ELECTRIC TRANSFORMER	T	T	N/A
GAS METER	GM	GM	N/A
GAS LINE	G	G	N/A
AIR CONDITIONING UNIT			N/A

ABBREVIATIONS

APPROX	APPROXIMATELY
ASPH	ASPHALT
BC	BACK OF CURB
B–B	BACK TO BACK OF CURB
BM	BENCHMARK
BW	BOTTOM OF WALL
CATV	CABLE TV
CFS	CUBIC FEET PER SECOND
CI	CURB INLET
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
CONST	CONSTRUCT
CL	CENTER LINE
DCO	DOUBLE CLEANOUT
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	DOMESTIC WATER
EL	ELEVATION
EMH	ELECTRIC MANHOLE
EP	EDGE OF PAVEMENT
EX	EXISTING
FC	FACE OF CURB
F–F	FACE TO FACE OF CURB
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FM	FORCE MAIN
FO	FIBER OPTICS
FP	FINISHED PAD
FPS	FEET PER SECOND
FL	FLOW LINE
FW	FIRE WATER
G	GAS
GI	GRATE INLET
GM	GAS METER
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HDWL	HEADWALL
HMAC	HOT MIX ASPHALTIC CONCRETE
HORIZ	HORIZONTAL
HP	HIGH POINT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
IRR	IRRIGATION
JB	JUNCTION BOX
JT	JOINT
LF	LINEAR FEET
LP	LOW POINT
LT	LEFT
MH	MANHOLE
N/A	NOT APPLICABLE
NG	NATURAL GROUND (EXISTING)
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PIV	POST INDICATOR VALVE
PL	PROPERTY LINE
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PROP	PROPOSED
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE
PVMT	PAVEMENT
OCEW	ON CENTER EACH WAY
OHE	OVERHEAD ELECTRIC
R	RADIUS
RCB	REINFORCED CONCRETE BOX
RCI	RECESSED CURB INLET
RCP	REINFORCED CONCRETE PIPE
RCCP	REINFORCED CONCRETE CYLINDRICAL PIPE
REINF	REINFORCED
RL	RIDGE LINE
ROW	RIGHT OF WAY
RT	RIGHT
SF	SQUARE FEET
SD	STORM DRAIN
SQ	SQUARE
SS	SANITARY SEWER
STA	STATION
SY	SQUARE YARD
T	TELEPHONE
TC	TOP OF CURB
TG	TOP OF GROUND
TMH	TELEPHONE MANHOLE
TOB	TOP OF BANK
TOS	TOE OF SLOPE
TP	TOP OF PAVEMENT
TPIPE	TOP OF PIPE
TW	TOP OF WALL
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
VCP	VITRIFIED CLAY PIPE
W	WATER
WV	WATER VALVE

GENERAL CONSTRUCTION NOTES

1. STANDARDS AND SPECIFICATIONS: ALL MATERIALS, CONSTRUCTION METHODS, WORKMANSHIP, EQUIPMENT, SERVICES AND TESTING FOR ALL PUBLIC IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE GOVERNING AUTHORITIES' ORDINANCES, REGULATIONS, REQUIREMENTS, STATUTES, SPECIFICATIONS AND DETAILS, LATEST PRINTING AND AMENDMENTS THERETO. THE GOVERNING AUTHORITIES' PUBLIC WORKS AND WATER DEPARTMENT REQUIREMENTS, PLUMBING CODES, AND FIRE DEPARTMENT REGULATIONS SHALL TAKE PRECEDENT FOR ALL PRIVATE IMPROVEMENTS WHERE APPLICABLE. ALL OTHER PRIVATE CONSTRUCTION, NOT REGULATED BY THE GOVERNING AUTHORITY, SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS – NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, LATEST PRINTING AND AMENDMENTS THERETO, EXCEPT AS MODIFIED OR AMENDED BY THE PROJECT CONTRACT DOCUMENTS.

2. EXAMINATION OF SITE: THE CONTRACTOR ACKNOWLEDGES THAT HE HAS INVESTIGATED AND SATISFIED HIMSELF AS TO THE CONDITIONS AFFECTING THE WORK, INCLUDING BUT NOT RESTRICTED TO THOSE BEARING UPON TRANSPORTATION, DISPOSAL, HANDLING AND STORAGE OF MATERIALS, AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, ROADS AND UNCERTAINTIES OF WEATHER, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE, CONDITIONS OF THE GROUND, THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING PERFORMANCE OF THE WORK. THE CONTRACTOR ACKNOWLEDGES THAT HE HAS INSPECTED THE SITE OF THE WORK AND IS FAMILIAR WITH THE SOIL CONDITIONS TO BE ENCOUNTERED. ANY FAILURE BY THE CONTRACTOR TO ACQUAINT HIMSELF WITH THE AVAILABLE INFORMATION WILL NOT RELIEVE HIM FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY OR COST OF SUCCESSFULLY PERFORMING THE WORK. THE DEVELOPER ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR ON THE BASIS OF THE INFORMATION MADE AVAILABLE BY THE DEVELOPER.

3. SUBSURFACE INVESTIGATION: SUBSURFACE EXPLORATION TO ASCERTAIN THE NATURE OF SOILS, INCLUDING THE AMOUNT OF ROCK, IF ANY, IS THE RESPONSIBILITY OF THE CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE SUCH SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO DETERMINE THE NATURE OF THE MATERIAL TO BE ENCOUNTERED. SOME SUBSURFACE EXPLORATION HAS BEEN PERFORMED BY THE GEOTECHNICAL ENGINEER OF RECORD ON THE PROJECT AND IS PROVIDED FOR INFORMATIONAL PURPOSES. THE DEVELOPER AND ENGINEER DISCLAIM ANY RESPONSIBILITY FOR THE ACCURACY, TRUE LOCATION AND EXTENT OF THE SOILS INFORMATION THAT HAS BEEN PREPARED BY OTHERS. THEY FURTHER DISCLAIM RESPONSIBILITY FOR INTERPRETATION OF THAT DATA BY THE CONTRACTOR, AS IN PROJECTING SOIL BEARING VALUES, ROCK PROFILES, SOILS STABILITY AND THE PRESENCE, LEVEL AND EXTENT OF UNDERGROUND WATER.

4. TOPOGRAPHIC SURVEY: TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THE PLANS IS PROVIDED FOR INFORMATIONAL PURPOSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE INFORMATION SHOWN IS CORRECT, AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY ERRORS, DISCREPANCIES OR OMISSIONS TO THE SURVEY INFORMATION PROVIDED. ANY COSTS INCURRED AS THE RESULT OF NOT CONFIRMING THE ACTUAL SURVEY SHALL BE BORNE BY THE CONTRACTOR.

5. COMPLIANCE WITH LAWS: THE CONTRACTOR SHALL FULLY COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS, INCLUDING ALL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS CONTRACT AND THE WORK TO BE DONE THEREUNDER, WHICH EXIST OR MAY BE ENACTED LATER BY GOVERNMENTAL BODIES HAVING JURISDICTION OR AUTHORITY FOR SUCH ENACTMENT. ALL WORK REQUIRED UNDER THIS CONTRACT SHALL COMPLY WITH ALL REQUIREMENTS OF LAW, REGULATION, PERMIT OR LICENSE. IF THE CONTRACTOR FINDS THAT THERE IS A VARIANCE, HE SHALL IMMEDIATELY REPORT THIS TO THE DEVELOPER FOR RESOLUTION.

6. PUBLIC CONVENIENCE AND SAFETY: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

MATERIALS STORED ON THE WORK SITE SHALL BE SO PLACED, AND THE WORK SHALL AT ALL TIMES BE SO CONDUCTED, AS TO CAUSE NO GREATER OBSTRUCTION TO THE TRAVELING PUBLIC THAN IS CONSIDERED ACCEPTABLE BY THE GOVERNING AUTHORITIES AND THE DEVELOPER. THE MATERIALS EXCAVATED SHALL BE PLACED SO AS NOT TO ENDANGER THE WORK OR PREVENT FREE ACCESS TO ALL FIRE HYDRANTS, WATER VALVES, GAS VALVES, MANHOLES, AND FIRE ALARM OR POLICE CALL BOXES IN THE VICINITY.

THE DEVELOPER RESERVES THE RIGHT TO REMEDY ANY NEGLECT ON THE PART OF THE CONTRACTOR WITH REGARDS TO THE PUBLIC CONVENIENCE AND SAFETY WHICH MAY COME TO THE DEVELOPER'S ATTENTION, AFTER 24 HOURS NOTICE IN WRITING TO THE CONTRACTOR, SAVE IN CASES OF EMERGENCY, WHEN THE DEVELOPER SHALL HAVE THE RIGHT TO REMEDY ANY NEGLECT WITHOUT NOTICE; AND, IN EITHER CASE, THE COST OF SUCH WORK DONE BY THE DEVELOPER SHALL BE DEDUCTED FROM THE MONIES DUE OR TO BECOME DUE THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE DEVELOPER AND THE GOVERNING AUTHORITIES WHEN ANY STREET IS TO BE CLOSED OR OBSTRUCTED; SUCH NOTICE SHALL IN THE CASE OF MAJOR THOROUGHFARES OR STREETS UPON WHICH TRANSIT BY THE DEVELOPER OR THE GOVERNING AUTHORITIES, KEEP ANY STREET OR STREETS IN CONDITION FOR UNOBSTRUCTED USE BY EMERGENCY SERVICES. WHERE THE CONTRACTOR IS REQUIRED TO CONSTRUCT TEMPORARY BRIDGES OR TO MAKE OTHER ARRANGEMENTS FOR CROSSING OVER DITCHES OR STREAMS, HIS RESPONSIBILITY FOR ACCIDENTS SHALL INCLUDE THE ROADWAY APPROACHES AS WELL AS THE STRUCTURES OF SUCH CROSSINGS.

7. STORM WATER POLLUTION PREVENTION PLAN (SWP3): THE CONTRACTOR SHALL COMPLY WITH THE CONDITIONS OF THE SWP3 WHILE CONDUCTING HIS ACTIVITIES ON THE PROJECT. IN ADDITION TO CONSTRUCTING THOSE ITEMS INDICATED ON THE PLAN SHEETS, COMPLIANCE WITH THE SWP3 INCLUDES CONFORMANCE TO CERTAIN PRACTICES AND PROCEDURES (IDENTIFIED IN THE SWP3) DURING PROJECT CONSTRUCTION.

8. PERMITS AND LICENSES: THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND LICENSES NECESSARY FOR THE EXECUTION OF THE WORK AND SHALL FULLY COMPLY WITH ALL THEIR TERMS AND CONDITIONS. WHENEVER THE WORK UNDER THIS CONTRACT REQUIRES THE OBTAINING OF PERMITS FROM THE GOVERNING AUTHORITIES, THE CONTRACTOR SHALL FURNISH DUPLICATE COPIES OF SUCH PERMITS TO THE DEVELOPER BEFORE THE WORK COVERED THEREBY IS STARTED. NO WORK WILL BE ALLOWED TO PROCEED BEFORE SUCH PERMITS ARE OBTAINED.

9. IMPACT FEES: THE DEVELOPER WILL PAY ALL IMPACT FEES APPLICABLE TO THE PROJECT.

10. BONDS: PERFORMANCE, PAYMENT AND MAINTENANCE BONDS WILL BE REQUIRED FROM THE CONTRACTOR FOR ALL WORK CONSIDERED TO BE "PUBLIC" IMPROVEMENTS. BONDS SHALL BE IN THE FORM AND IN THE AMOUNTS AS REQUIRED BY THE GOVERNING AUTHORITIES.

11. VENDOR'S CERTIFICATION: ALL MATERIALS USED IN CONSTRUCTION SHALL HAVE A VENDOR'S CERTIFIED TEST REPORT. TEST REPORTS SHALL BE DELIVERED TO THE ENGINEER BEFORE PERMISSION WILL BE GRANTED FOR USE OF THE MATERIAL. ALL VENDOR'S TEST REPORTS SHALL BE SUBJECT TO REVIEW BY THE ENGINEER, AND SHALL BE SUBJECT TO VERIFICATION BY TESTING OF SAMPLES OF MATERIALS AS RECEIVED FOR USE ON THE PROJECT. IN THE EVENT ADDITIONAL TESTS ARE REQUIRED, THEY SHALL BE PERFORMED BY AN APPROVED INDEPENDENT TESTING LABORATORY AND SHALL BE PAID FOR BY THE CONTRACTOR.

12. TESTING: THE TESTING AND CONTROL OF ALL MATERIALS USED IN THE WORK SHALL BE DONE BY AN INDEPENDENT TESTING LABORATORY, EMPLOYED AND PAID DIRECTLY BY THE DEVELOPER. IN THE EVENT THE RESULTS OF INITIAL TESTING DO NOT COMPLY WITH THE PLANS AND SPECIFICATIONS, SUBSEQUENT TESTS NECESSARY TO DETERMINE THE ACCEPTABILITY OF MATERIALS OR CONSTRUCTION SHALL BE FURNISHED AND PAID BY THE CONTRACTOR AS DIRECTED BY THE DEVELOPER. PAYMENT WILL BE MADE BY DEDUCTION FROM PAYMENT DUE THE CONTRACTOR.

13. INSPECTION: INSPECTION OF THE PROPOSED CONSTRUCTION WILL BE PROVIDED BY THE GOVERNING AUTHORITIES AND/OR THE DEVELOPER. COSTS FOR INSPECTION SERVICES WILL BE PAID BY THE DEVELOPER. THE CONTRACTOR SHALL PROVIDE ASSISTANCE BY PROVIDING EXCAVATION, TRENCH SAFETY, OR OTHER WORK NECESSARY TO FACILITATE INSPECTION ACTIVITIES, AND SHALL GIVE SUFFICIENT NOTICE WELL IN ADVANCE OF PENDING CONSTRUCTION ACTIVITIES TO THE GOVERNING AUTHORITIES AND/OR DEVELOPER FOR SCHEDULING OF INSPECTION SERVICES.

14. SHOP DRAWINGS: THE CONTRACTOR SHALL PROVIDE, REVIEW, APPROVE AND SUBMIT ALL SHOP DRAWINGS, PRODUCT DATA AND SAMPLES REQUIRED BY THE GOVERNING AUTHORITIES AND THE PROJECT CONTRACT DOCUMENTS IN ACCORDANCE WITH ITEM 1.28 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS – NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS.

15. SURVEYING: ALL SURVEYING REQUIRED FOR CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE DEVELOPER SHALL PROVIDE THE PROPERTY CORNERS AND TWO BENCHMARKS FOR USE AS HORIZONTAL AND VERTICAL DATUM. THE CONTRACTOR SHALL EMPLOY A REGISTERED PROFESSIONAL LAND SURVEYOR TO PERFORM ALL ADDITIONAL SURVEY, LAYOUT AND MEASUREMENT WORK NECESSARY FOR THE COMPLETION OF THE PROJECT.

16. PROTECTION OF PROPERTY CORNERS AND BENCHMARKS: THE CONTRACTOR SHALL PROTECT ALL PROPERTY CORNER MARKERS AND BENCHMARKS, AND WHEN ANY SUCH MARKERS OR MONUMENTS ARE IN DANGER OF BEING DISTURBED, THEY SHALL BE PROPERLY REFERENCED AND IF DISTURBED SHALL BE RESET BY A REGISTERED PUBLIC SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.

17. EXISTING STRUCTURES: THE PLANS SHOW THE LOCATION OF ALL KNOWN SURFACE AND SUBSURFACE STRUCTURES, HOWEVER, THE DEVELOPER AND ENGINEER ASSUME NO RESPONSIBILITY FOR FAILURE TO SHOW ANY OR ALL OF THESE STRUCTURES ON THE PLANS, OR TO SHOW THEM IN THEIR EXACT LOCATION. SUCH FAILURE SHALL NOT BE CONSIDERED SUFFICIENT BASIS FOR CLAIMS FOR ADDITIONAL COMPENSATION FOR EXTRA WORK OR FOR INCREASING THE PAY QUANTITIES IN ANY MANNER WHATSOEVER, UNLESS THE OBSTRUCTION ENCOUNTERED IS SUCH AS TO REQUIRE CHANGES IN THE LINES OR GRADES, OR REQUIRE THE CONSTRUCTION OF SPECIAL WORK, FOR WHICH PROVISIONS ARE NOT MADE IN THE PLANS.

18. PROTECTION OF EXISTING UTILITIES: AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT", TEXAS ONE CALL SYSTEM MUST BE CONTACTED (800–245–4545) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS BEING PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS ONE CALL SYSTEM.

THE LOCATION AND DIMENSIONS SHOWN ON THE PLANS RELATIVE TO EXISTING UTILITIES ARE BASED ON THE BEST RECORDS AND/OR FIELD INFORMATION AVAILABLE AND ARE NOT GUARANTEED BY THE DEVELOPER OR ENGINEER TO BE ACCURATE AS TO LOCATION AND DEPTH. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF ADJACENT AND/OR CONFLICTING UTILITIES SUFFICIENTLY IN ADVANCE OF HIS ACTIVITIES IN ORDER THAT HE MAY NEGOTIATE SUCH LOCAL ADJUSTMENTS AS NECESSARY IN THE CONSTRUCTION PROCESS TO PROVIDE ADEQUATE CLEARANCES.

THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL EXISTING UTILITIES, SERVICES AND STRUCTURES ENCOUNTERED, WHETHER OR NOT THEY ARE INDICATED ON THE PLANS. ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT HIS EXPENSE. TO AVOID UNNECESSARY INTERFERENCES OR DELAYS, THE CONTRACTOR SHALL COORDINATE ALL UTILITY REMOVALS, REPLACEMENTS AND CONSTRUCTION WITH THE APPROPRIATE GOVERNING AUTHORITIES, THEN REQUEST WRITTEN AUTHORIZATION FROM THE ENGINEER. THE DEVELOPER WILL NOT BE LIABLE FOR DAMAGES DUE TO DELAY AS A RESULT OF THE ABOVE.

19. DAMAGE TO EXISTING FACILITIES: ALL UTILITIES, PAVEMENT, SIDEWALKS, WALLS, FENCES, ETC. NOT DESIGNATED TO BE REMOVED BUT THAT ARE DAMAGED DURING CONSTRUCTION ACTIVITIES SHALL BE REPLACED TO A CONDITION AS GOOD AS OR BETTER THAN THE CONDITIONS PRIOR TO STARTING THE WORK, SOLELY AT THE EXPENSE OF THE CONTRACTOR.

20. FIRE AND LIFE SAFETY SYSTEMS: CONTRACTOR SHALL NOT REMOVE, DISABLE OR DISRUPT EXISTING FIRE OR LIFE SAFETY SYSTEMS WITHOUT WRITTEN PERMISSION FROM THE GOVERNING AUTHORITY.

21. TRENCH SAFETY: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AND MAINTAIN A VIABLE TRENCH SAFETY SYSTEM AT ALL TIMES DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS DIRECTED TO BECOME KNOWLEDGEABLE AND FAMILIAR WITH THE STANDARDS AS SET BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE STATE OF TEXAS LAW CONCERNING TRENCHING AND SHORING. THE CONTRACTOR SHALL PROVIDE TRENCH SAFETY SYSTEM PLANS, PREPARED AND SEALED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF TEXAS, FOR THE IMPLEMENTATION OF SAFETY CONTROL MEASURES, MEETING THE REQUIREMENTS OF THE GOVERNING AUTHORITIES, THAT WILL BE IN EFFECT DURING THE PERIOD OF CONSTRUCTION OF THE PROJECT.

22. SAFETY RESTRICTIONS – WORK NEAR HIGH VOLTAGE LINES: THE FOLLOWING PROCEDURES WILL BE FOLLOWED REGARDING THE SUBJECT ITEM ON THIS CONTRACT:

A. A WARNING SIGN NOT LESS THAN FIVE INCHES BY SEVEN INCHES PAINTED YELLOW WITH BLACK LETTERS THAT ARE LEGIBLE AT 12 FEET SHALL BE PLACED INSIDE AND OUTSIDE VEHICLES SUCH AS CRANES, DERRICKS, POWER SHOVELS, DRILLING RIGS, PILE DRIVER, HOISTING EQUIPMENT OR SIMILAR APPARATUS. THE WARNING SIGN SHALL READ AS FOLLOWS: "WARNING – UNLAWFUL TO OPERATE THIS EQUIPMENT WITHIN SIX FEET OF HIGH VOLTAGE LINES."

B. EQUIPMENT THAT MAY BE OPERATED WITHIN TEN FEET OF HIGH VOLTAGE LINES SHALL HAVE AN INSULATING CAGE–TYPE OF GUARD ABOUT THE BOOM OR ARM, EXCEPT BACKHOES OR DIPPERS, AND INSULATOR LINKS ON THE LIFT HOOK CONNECTIONS.

C. WHEN NECESSARY TO WORK WITHIN SIX FEET OF HIGH VOLTAGE ELECTRIC LINES, NOTIFY THE POWER COMPANY WHO WILL ERECT TEMPORARY MECHANICAL BARRIERS, DE–ENERGIZE THE LINE OR RAISE OR LOWER THE LINE. THE WORK DONE BY THE POWER COMPANY SHALL BE AT THE EXPENSE OF THE CONTRACTOR. THE NOTIFYING DEPARTMENT SHALL MAINTAIN AN ACCURATE LOG OF ALL SUCH CALLS TO THE POWER COMPANY AND SHALL RECORD ACTION TAKEN IN EACH CASE.

D. THE CONTRACTOR IS REQUIRED TO MAKE ARRANGEMENTS WITH THE POWER COMPANY FOR THE TEMPORARY RELOCATION OR RAISING OF HIGH VOLTAGE LINES AT THE CONTRACTOR'S SOLE COST AND EXPENSE.

E. NO PERSON SHALL WORK WITHIN SIX FEET OF A HIGH VOLTAGE LINE WITHOUT PROTECTION HAVING BEEN TAKEN AS OUTLINED IN PARAGRAPH C. ABOVE.

23. TRAFFIC CONTROL: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP AND SUBMIT FOR APPROVAL BY THE GOVERNING AUTHORITIES, A TRAFFIC CONTROL PLAN, PREPARED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS, OUTLINING TRAFFIC MANAGEMENT PROCEDURES TO BE PROVIDED DURING CONSTRUCTION. TRAFFIC CONTROL MEASURES SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING ADDITIONAL REQUIREMENTS:

A. CONSTRUCTION OF SIGNING AND BARRICADES SHALL CONFORM WITH THE "2003 TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED, TEXAS DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION.

B. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH BARRICADES, FLARES, FLAGMEN, ETC., FOR THE PROTECTION OF THE PUBLIC, EMPLOYEES AND THE WORK.

C. THE CONTRACTOR SHALL PERFORM HIS WORK IN SUCH A MANNER AS TO CREATE A MINIMUM OF INTERRUPTION TO TRAFFIC ALONG ADJACENT ROADWAYS. TWO WAY TRAFFIC MUST BE MAINTAINED ON ALL ROADWAYS AT ALL TIMES THROUGHOUT CONSTRUCTION UNLESS WRITTEN PERMISSION IS GRANTED BY THE GOVERNING AUTHORITIES.

D. ALL SIGNAGE, MARKINGS, LIGHTING, BARRICADES, FLAGMEN AND OTHER DEVICES AND PERSONNEL REQUIRED FOR TRAFFIC CONTROL DURING CONSTRUCTION OF THE PROJECT WILL BE INCLUDED IN THE CONTRACT AMOUNT.

E. ALL TRAFFIC CONTROL DEVICES USED DURING NIGHTTIME SHALL BE REFLECTORIZED, ILLUMINATED FROM WITHIN OR EXTERNALLY ILLUMINATED.

F. THE CONTRACTOR SHALL NOT REMOVE ANY REGULATORY SIGN, INSTRUCTIONAL SIGN, WARNING SIGN, STREET NAME SIGN OR ANY SIGNAL, WHICH CURRENTLY EXISTS, WITHOUT THE CONSENT OF THE GOVERNING AUTHORITIES.

G. THE CONTRACTOR SHALL MAINTAIN AND REPLACE WHERE NECESSARY ALL SIGNS, LIGHTS, MARKINGS AND TEMPORARY PAVEMENT THROUGHOUT THE CONSTRUCTION PERIOD.

H. THE CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL MEASURES AT THE END OF CONSTRUCTION AND RESTORE UNIMPROVED PAVEMENT AND OTHER DISTURBED AREAS TO THEIR ORIGINAL CONDITION.

25. ACCESS ROUTES, STAGING AREAS AND STORAGE AREAS: ALL PRIVATE HAUL ROADS AND ACCESS ROUTES AND THE LOCATION OF ALL STAGING AREAS AND STORAGE AREAS SHALL BE SUBJECT TO THE APPROVAL OF THE DEVELOPER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND REPAIRING ALL ROADS AND OTHER FACILITIES USED DURING CONSTRUCTION. UPON COMPLETION OF THE PROJECT, ALL HAUL ROADS, ACCESS ROADS, STAGING AREAS AND STORAGE AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT AT THE TIME THE CONTRACTOR COMMENCES WORK ON THE PROJECT.

26. PARKING OF CONSTRUCTION EQUIPMENT: AT NIGHT AND DURING ALL OTHER PERIODS OF TIME WHEN EQUIPMENT IS NOT BEING ACTIVELY USED FOR THE CONSTRUCTION WORK, THE CONTRACTOR SHALL PARK THE EQUIPMENT AT LOCATIONS, WHICH ARE APPROVED BY THE DEVELOPER. DURING THE CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL COMPLY WITH THE PRESENT ZONING REQUIREMENTS OF THE GOVERNING AUTHORITIES IN THE USE OF VACANT PROPERTY FOR STORAGE PURPOSES. THE CONTRACTOR SHALL ALSO PROVIDE ADEQUATE BARRICADES, MARKERS AND LIGHTS TO PROTECT THE DEVELOPER, THE GOVERNING AUTHORITIES, THE PUBLIC AND THE OTHER WORK. ALL BARRICADES, LIGHTS, AND MARKERS MUST MEET THE REQUIREMENTS OF THE GOVERNING AUTHORITIES' REGULATIONS.

27. WATER FOR CONSTRUCTION: THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR PURCHASING WATER FROM THE GOVERNING AUTHORITY FOR HIS USE ON THE PROJECT SITE. COSTS ASSOCIATED WITH THIS SERVICE SHALL BE INCLUDED IN THE CONTRACT AMOUNT.

28. TEMPORARY ELECTRIC AND COMMUNICATIONS FOR CONSTRUCTION: THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR INSTALLATION AND PURCHASING OF TEMPORARY ELECTRIC AND COMMUNICATIONS SERVICES FROM THE GOVERNING AUTHORITIES FOR HIS USE ON THE PROJECT SITE. COSTS ASSOCIATED WITH THESE SERVICES SHALL BE INCLUDED IN THE CONTRACT AMOUNT.

29. FENCES: ALL FENCES ENCOUNTERED AND REMOVED DURING CONSTRUCTION, EXCEPT THOSE DESIGNATED TO BE REMOVED OR RELOCATED, SHALL BE RESTORED TO THE ORIGINAL OR BETTER THAN CONDITION UPON COMPLETION OF THE PROJECT. WHERE WIRE FENCING, EITHER WIRE MESH OR BARBED WIRE, IS TO BE CROSSED, THE CONTRACTOR SHALL SET CROSS–BRACED POSTS ON EITHER SIDE OF THE CROSSING. TEMPORARY FENCING SHALL BE ERECTED IN PLACE OF THE FENCING REMOVED WHENEVER THE WORK IS NOT IN PROGRESS, AND WHEN THE SITE IS VACATED OVERNIGHT AND/OR AT ALL TIMES TO PREVENT PERSONS AND/OR LIVESTOCK FROM ENTERING THE CONSTRUCTION AREA. THE COST OF FENCE REMOVAL, TEMPORARY CLOSURES AND REPLACEMENT SHALL BE INCLUDED IN THE CONTRACT.

30. DRAINAGE CHANNELS: WHERE EXISTING DRAINAGE CHANNELS ARE TEMPORARILY DISTURBED OR BLOCKED DURING CONSTRUCTION, IT SHALL BE RESTORED TO THE ORIGINAL CONDITION, GRADE AND CROSS SECTION AFTER CONSTRUCTION IS COMPLETED.

31. COORDINATION WITH OTHERS: IN THE EVENT THAT OTHER CONTRACTORS ARE DOING WORK IN THE SAME AREA SIMULTANEOUSLY WITH THE PROJECT, THE CONTRACTOR SHALL COORDINATE HIS PROPOSED CONSTRUCTION WITH THAT OF THE OTHER CONTRACTORS.

32. CONDITION OF SITE DURING CONSTRUCTION: DURING CONSTRUCTION OF THE WORK, THE CONTRACTOR SHALL, AT ALL TIMES, KEEP THE SITE OF THE WORK AND ADJACENT PREMISES AS FREE FROM MATERIAL, DEBRIS AND RUBBISH AS IS PRACTICABLE AND SHALL REMOVE SAME FROM ANY PORTION OF THE SITE IF, IN THE OPINION OF THE DEVELOPER, SUCH MATERIAL, DEBRIS OR RUBBISH CONSTITUTES A NUISANCE OR IS OBJECTIONABLE. IN CASE OF FAILURE ON THE PART OF THE CONTRACTOR UNDER HIS CONTRACT, OR WHERE SUFFICIENT CONTRACT FUNDS ARE UNAVAILABLE FOR THIS PURPOSE, THE CONTRACTOR OR HIS SURETY SHALL REIMBURSE THE DEVELOPER FOR ALL SUCH COSTS.

33. EXISTING ROADWAYS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE CLEANLINESS OF EXISTING PAVED ROADS. ALL COSTS ASSOCIATED WITH MAINTAINING THE CLEANLINESS OF EXISTING ROADS SHALL BE INCLUDED IN THE CONTRACT AMOUNT.

34. DUST CONTROL: THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO CONTROL DUST ON THE PROJECT SITE BY SPRINKLING OF WATER, OR ANY OTHER METHODS APPROVED BY THE GOVERNING AUTHORITIES, AND SHALL PROVIDE ALL EQUIPMENT AND PERSONNEL REQUIRED TO PREVENT DUST FROM BECOMING A NUISANCE TO THE ADJACENT PROPERTIES.

35. CLEAN–UP FOR FINAL ACCEPTANCE: THE CONTRACTOR SHALL MAKE A FINAL CLEAN UP OF ALL PARTS OF THE WORK BEFORE ACCEPTANCE BY THE DEVELOPER. THIS CLEAN UP SHALL INCLUDE REMOVAL OF ALL OBJECTIONABLE MATERIALS AND, IN GENERAL, PREPARING THE SITE OF THE WORK IN AN ORDERLY MANNER OF APPEARANCE.

36. REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK: ALL WORK WHICH HAS BEEN REJECTED OR CONDEMNED SHALL BE REPAIRED, OR IF IT CANNOT BE REPAIRED SATISFACTORILY, IT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. DEFECTIVE MATERIALS SHALL BE IMMEDIATELY REMOVED FROM THE WORK SITE. WORK DONE BEYOND THE LINE OR NOT IN CONFORMITY WITH THE GRADES SHOWN ON THE DRAWINGS OR AS PROVIDED, WORK DONE WITHOUT REQUIRED INSPECTION, OR ANY EXTRA OR UNCLASSIFIED WORK DONE WITHOUT WRITTEN AUTHORITY AND PRIOR AGREEMENT IN WRITING AS TO PRICES, SHALL BE AT THE CONTRACTOR'S RISK, AND WILL BE CONSIDERED UNAUTHORIZED, AND AT THE OPTION OF THE DEVELOPER MAY NOT BE MEASURED AND PAID FOR AND MAY BE ORDERED REMOVED AT THE CONTRACTOR'S EXPENSE. UPON FAILURE OF THE CONTRACTOR TO REPAIR SATISFACTORILY OR TO REMOVE AND REPLACE, IF SO DIRECTED, REJECTED, UNAUTHORIZED OR CONDEMNED WORK OR MATERIALS IMMEDIATELY AFTER RECEIVING NOTICE FROM THE DEVELOPER, THE DEVELOPER WILL, AFTER GIVING WRITTEN NOTICE TO THE CONTRACTOR, HAVE THE AUTHORITY TO CAUSE DEFECTIVE WORK TO BE REMEDIED OR REMOVED AND REPLACED, OR TO CAUSE UNAUTHORIZED WORK TO BE REMOVED AND TO DEDUCT THE COST THEREOF FROM ANY MONIES DUE OR TO BECOME DUE THE CONTRACTOR.

37. DISPOSITION AND DISPOSAL OF EXCESS AND UNSUITABLE MATERIALS: ALL MATERIALS TO BE REMOVED FROM THE SITE INCLUDING BUT NOT LIMITED TO EXCESS MATERIAL AND UNSUITABLE MATERIALS SUCH AS CONCRETE, ASPHALT, LARGE ROCKS, REFUSE, AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE PROJECT AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL ALSO COMPLY WITH ALL APPLICABLE LAWS GOVERNING SPILLAGE OF DEBRIS WHILE TRANSPORTING TO A DISPOSAL SITE.

38. SEEDING: THE CONTRACTOR SHALL PROVIDE SEEDING, WATERING, FERTILIZING AND REQUIRED MAINTENANCE FOR THE GRASSING OF ALL UNPAVED AREAS OF DEDICATED RIGHT–OF–WAY, EASEMENTS, AND ALL OTHER DISTURBED AREAS OF CONSTRUCTION NOT COVERED BY THE LANDSCAPE PLAN FOR THE PROJECT. SEEDING SHALL ALSO BE PROVIDED IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN IN ORDER TO ESTABLISH A GRASS COVER ON DISTURBED AREAS SUBJECTED TO THE EROSION OF THE SOIL SURFACE.

39. RECORD DRAWINGS: THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF THE INSTALLATION OF ALL MATERIALS AND SYSTEMS COVERED BY THE PROJECT CONTRACT DOCUMENTS. THESE RECORD PRINTS WILL BE REVIEWED BY THE DEVELOPER EACH MONTH PRIOR TO THE PRELIMINARY REVIEW OF CONTRACTOR'S REQUEST FOR PAYMENT. IF THE DRAWINGS ARE NOT COMPLETE, ACCURATE AND UP–TO DATE, THE DEVELOPER WILL NOT ACCEPT THE PAYMENT REQUEST. THE COMPLETED SET OF "RECORD" DRAWINGS MUST BE DELIVERED TO THE DEVELOPER BEFORE REQUESTING FINAL PAYMENT.

NO.	REVISION	BY	DATE

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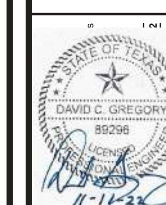
GENERAL CONSTRUCTION NOTES, LEGEND & ABBREVIATIONS

TRINITY METRO RAIL STATION FORT WORTH, TX



Date: 12/30/2019

Scale: N/A

Drawn By: ICE

Reviewed By: ICE

Project: 5010–37

SHEET

C1.1

EROSION CONTROL NOTES

1. SOIL EROSION AND SEDIMENT CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH CITY OF FORT WORTH EROSION REGULATIONS

2. EROSION CONTROL MEASURES MAY ONLY BE IN PLACE IN FRONT OF INLETS, OR IN CHANNELS, DRAINAGE WAYS OR BORROW DITCHES AT RISK OF CONTRACTOR.

3. RESPONSIBILITY FOR INSTALLATION, ROUTINE INSPECTION, AND MAINTENANCE OF EROSION CONTROL SHOULD BE DEFINED AND ASSIGNED TO APPROPRIATE PERSON(S) PRIOR TO COMMENCEMENT OF AY SOIL DISTURBING ACTIVITY.

4. EROSION CONTROL MEASURES MUST BE CONSTRUCTED AND FUNCTIONAL BEFORE ANY GRADING OR LAND DISTURBANCE TAKES PLACE.

5. TEMPORARY OR PERMANENT SOIL STABILIZATION MUST BE APPLIED TO ALL DENUDED AREAS WHEN FINAL GRADE IS REACHED ON ANY PORTION OF SITE. TEMPORARY SOIL STABILIZATION MUST BE APPLIED TO DISTURBED AREAS LEFT DORMANT FOR 14 DAYS.

6. IN THE EVENT THAT MEASURES BEING USED ARE DEEMED TO BE INEFFECTIVE BY CITY INSPECTORS, ADDITIONAL MEASURES OR CHANGES IN THE ORIGINAL PLAN MAY BE REQUIRED BY THE CITY OF FORT WORTH.

7. ALL EROSION CONTROL DEVICES SHALL BE INSPECTED BY THE SITE FOREMAN DAILY. ANY STRUCTURE OR CONTROL DEVICE WHICH IS DAMAGED OR INOPERATIVE WILL BE REPAIRED OR REPLACE IMMEDIATELY.

8. SANITARY FACILITIES SHALL BE PROVIDED ON THE SITE & REGULARLY SERVICED AS RECOMMENDED BY THE SUPPLIER. TRASH & DEBRIS SHALL BE STORED IN COVERED BINS OR ENCLOSURES.

9. REMOVE SILT OR SEDIMENTS FROM STREETS, CURBS, GUTTERS, FLUMES, HANDICAP ACCESS RAMPS, CURB INLETS, STORM DRAINS, AND ANY OTHER PUBLIC DRAINAGE FACILITIES DAILY OR AS ACCUMULATION OCCURS.

10. EROSION CONTROL SHOULD BE EVALUATED TO DETERMINE THE EFFECTIVENESS OF THOSE DEVICES BY THE PERSON ASSIGNED TO INSPECT EROSION CONTROL DEVICES, AND CHANGES MADE IF NECESSARY.

11. SOIL TRACKED ONTO PUBLIC ROADS SHALL BE REMOVED DAILY IF FEASIBLE, OR WHEN VISIBLY ACCUMULATED SEDIMENT HAS BEEN DEPOSITED. DISCHARGED SEDIMENT SHALL BE REMOVED AS SOON AS POSSIBLE.

12. USING WASH WATER TO WASH SEDIMENT FROM STREETS IS PROHIBITED.

13. CONTRACTOR SHALL REMAIN LIABLE FOR ANY DAMAGES CAUSED BY THE MEASURES, INCLUDING FLOODING DAMAGE, WHICH MAY OCCUR DUE TO BLOCKED DRAINAGE.

14. AT THE CONCLUSION OF ANY PROJECT, ALL CHANNELS, DRAINAGE WAYS AND BORROW DITCHES IN THE WORK ZONE SHALL BE DREDGED OF ANY SEDIMENT GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF EROSION CONTROL MEASURES.

15. ALL DISTURBED AREAS WITHIN PUBLIC ROW SHALL BE SEEDED AND WATERED UNTIL 70% VEGETATION COVER IS ATTAINED.

16. SWPPP COMPLIANCE: THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WHILE CONDUCTING HIS ACTIVITIES ON THIS PROJECT. IN ADDITION TO CONSTRUCTING THOSE ITEMS INDICATED ON THE PLAN SHEETS, COMPLIANCE WITH THE SWPPP INCLUDES CONFORMANCE TO CERTAIN PRACTICES AND PROCEDURES (IDENTIFIED IN THE (SWPPP) DURING PROJECT CONSTRUCTION. THE SWPPP PLANS AND DOCUMENTS ARE PROVIDED FOR THE SOLE BENEFIT OF THE CONTRACTOR AS A PLANNING TOOL FOR COMPLYING WITH THE ENVIRONMENTAL REGULATIONS OF THIS PROJECT. THE CONTRACTOR IS EXPECTED TO PROVIDE, EXPAND, SUBMIT AND MONITOR A FULL COMPREHENSIVE SWPPP BEYOND WHAT IS HEREIN PROVIDED.

17. BMP INSTALLATION: PRIOR TO COMMENCING GRADING OPERATIONS, THE CONTRACTOR SHALL INSTALL ALL SWPPP MEASURES AND DEVICES AS INDICATED ON THE EROSION & SEDIMENT CONTROL PLAN. ALL SWPPP MEASURES AND DEVICES SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND DETAILS SHOWN IN THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS CONSTRUCTION "BEST MANAGEMENT PRACTICES" (BMP) MANUAL, OR AS MODIFIED BY THE CONTRACT DOCUMENTS.

18. CLEANING, REPAIR AND MAINTENANCE: THE CONTRACTOR SHALL REFER TO THE SWPPP FOR SEQUENCING OF CONSTRUCTION, INSTALLATION OF NEW EROSION CONTROL DEVICES AND CLEANING, REPAIR AND MAINTENANCE OF EXISTING EROSION CONTROL DEVICES. THE CONTRACTOR SHALL REVISE, RELOCATE AND/OR ADD DEVICES TO REFLECT ACTUAL SITE CONDITIONS AND TO ACCOMMODATE LOCATIONS FOR CONSTRUCTION TRAILER AREAS, STORAGE AREAS, FUELING AREAS, TOILETS, TRASH RECEPTACLES AND WASHOUT AREAS. ANY ACCIDENTAL RELEASE OF SEDIMENT OR POLLUTANTS FROM THE SITE SHALL BE CLEANED BY THE CONTRACTOR.

19. SITE ENTRY/EXIT LOCATIONS: SITE ENTRY AND EXIT LOCATIONS SHALL BE MAINTAINED BY THE CONTRACTOR IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS MUST BE REMOVED IMMEDIATELY. WHEN WASHING OF VEHICLES IS REQUIRED TO REMOVE SEDIMENT PRIOR TO ENTRANCE TO A PUBLIC ROADWAY, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN. ALL FINES IMPOSED FOR TRACKING ONTO PUBLIC ROADS SHALL BE PAID BY THE CONTRACTOR.

20. PROTECTION OF ADJACENT PROPERTY: CONTRACTOR SHALL ASSUME FULL LIABILITY FOR DAMAGE TO ADJACENT PROPERTIES AND/OR PUBLIC RIGHT-OF-WAY RESULTING FROM FAILURE TO FULLY IMPLEMENT AND EXECUTE ALL EROSION CONTROL METHODS AND PROCEDURES SHOWN AND NOTED IN THE PLANS AND SWPPP.

21. RE-VEGETATION: AT THE COMPLETION OF PAVING AND FINAL GRADING OPERATIONS, ALL DISTURBED AREAS SHALL BE VEGETATED IN ACCORDANCE WITH THE LANDSCAPE ARCHITECTS' PLANS. IN AREAS NOT COVERED BY LANDSCAPE PLAN, THE CONTRACTOR SHALL PROVIDE HYDROMULCH SEEDING AND/OR SODDING FOR ALL DISTURBED AREAS (NOT DESIGNATED TO BE PAVED) IN ACCORDANCE WITH ALL GOVERNING AUTHORITIES' SPECIFICATIONS.

22. BMP REMOVAL: THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL SEDIMENT BARRIERS AND INLET PROTECTION AFTER VEGETATION HAS BEEN COMPLETED AND ALL AREAS OF THE SITE HAVE BEEN STABILIZED AND ACCEPTED BY THE GOVERNING AUTHORITIES AND THE DEVELOPER.

NO.	REVISION	BY	DATE

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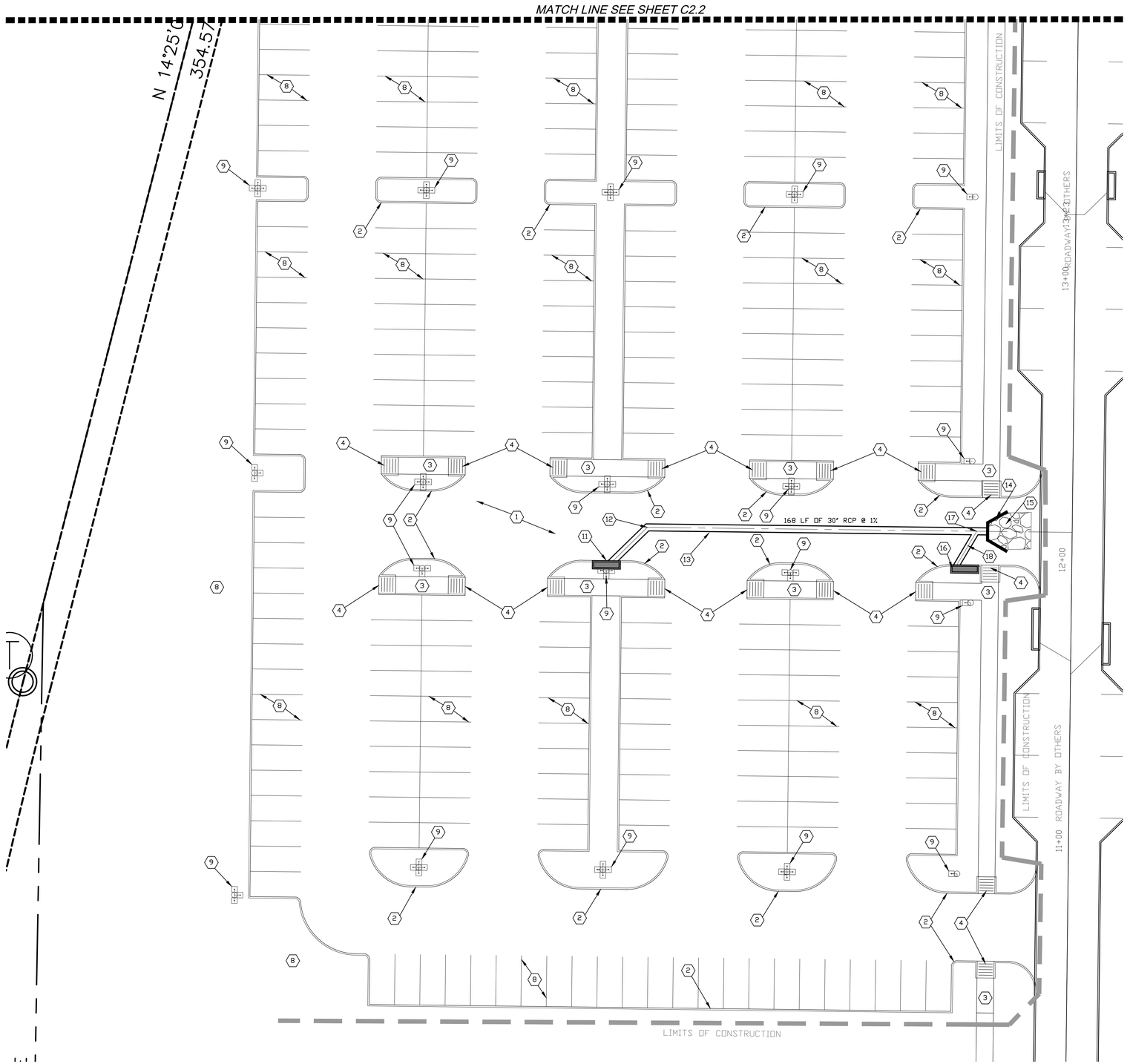
GENERAL CONSTRUCTION NOTES

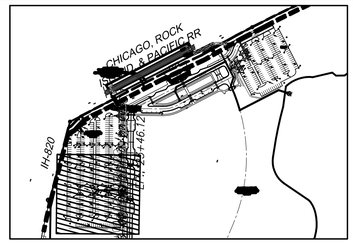
TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
DAVID C. GREGORY
85296
LICENSED PROFESSIONAL ENGINEER
11-14-22

Date: 12/30/2019
Scale: N/A
Drawn By: ICE
Reviewed By: ICE
Project: 5010-37

SHEET
C1.2





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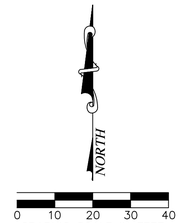

KEYNOTES

1. INSTALL PORTLAND CEMENT CONCRETE PAVING PLAN
2. CONSTRUCT MONOLITHIC CONCRETE CURB
3. CONSTRUCT 4" CONCRETE SIDEWALK PER 14:10.1
4. CONSTRUCT P.C.C. DEPRESSED RAMP
5. INSTALL PRECAST CONCRETE WHEELSTOPS
6. PAINT HANDICAP SYMBOL – WHITE ON BLUE BACKGROUND PER 7:10.1
7. INSTALL HANDICAP SIGN PER DETAIL 1:10.1
8. PAINT 4" WIDE SOLID STRIPE – WHITE
9. SITE LIGHTS (SEE PHOTOMETRICS PLAN)
10. MONUMENT SIGN
11. CONSTRUCT 10' STORM INLET; TOP = 504.61 INLET THROAT – 504.11 FL = 500.11
12. INSTALL 30" – 45° BEND. FL = 499.95
13. CONSTRUCT 168 L.F. OF 30" RCP STORM LINE OR ADS HP STORM PIPE
14. CONSTRUCT 30" TYPE "B" CONCRETE HEADWALL FL – 498.55
15. INSTALL 128 S.F. OF CONCRETE RIP RAP
16. CONSTRUCT 10' STORM INLET; TOP = 503.35 INLET THROAT – 502.85 FL = 498.85
17. INSTALL 30"X24" 60° WYE. FL =498.68
18. CONSTRUCT 17 L.F. OF 24" RCP STORM LINE OR ADS HP STORM PIPE

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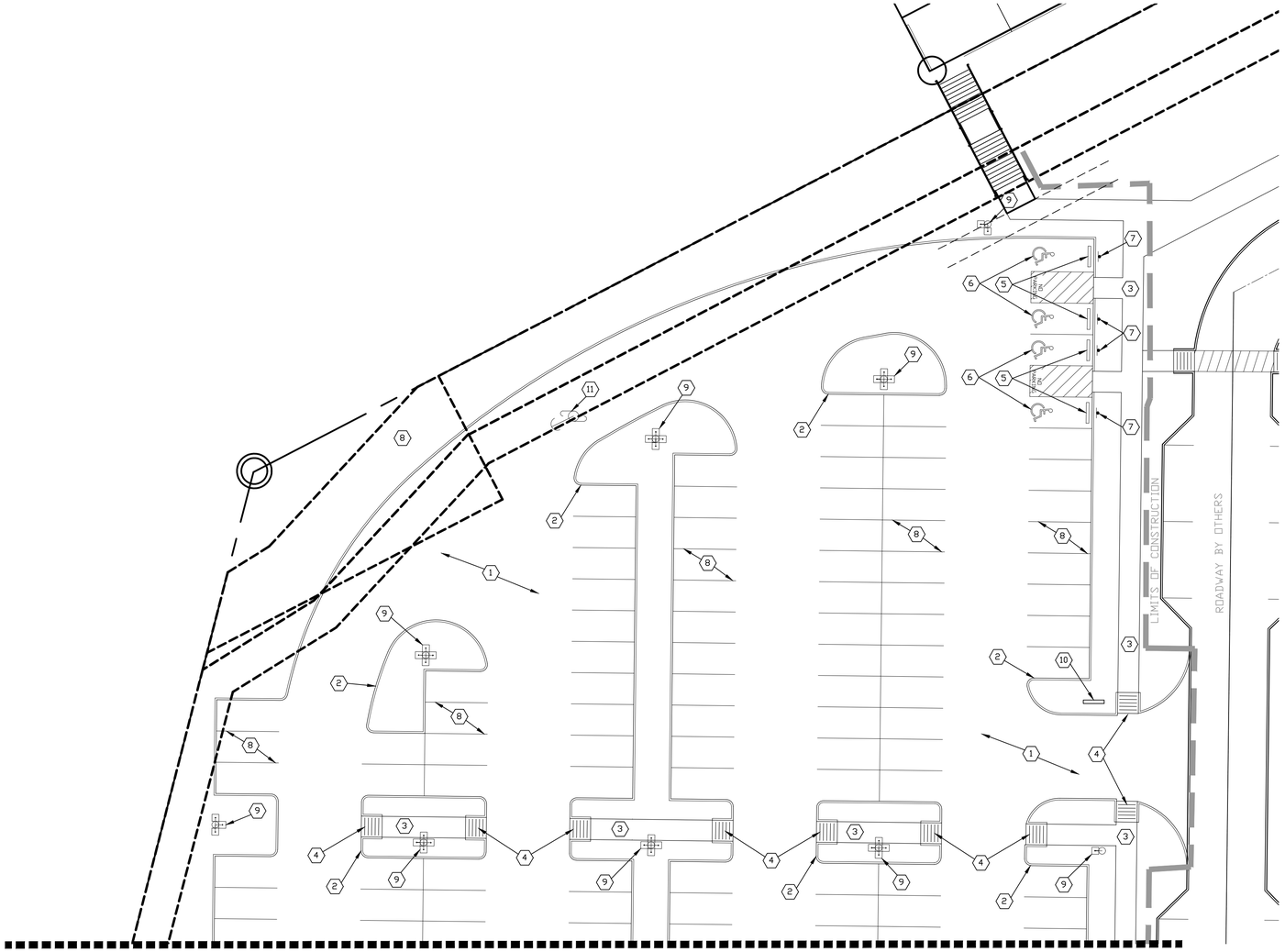
KEY NOTED SITE PLAN
SHEET 1 OF 3

TRINITY METRO
RAIL STATION
FORT WORTH, TX

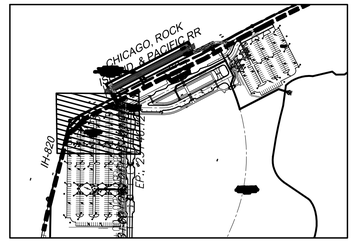
STATE OF TEXAS
DAVID C. GREGORY
89296
LICENSED PROFESSIONAL ENGINEER
11-1-22

Date: 12/30/2019
Scale: 1"=_'
Drawn By: ICE
Reviewed By: ICE
Project: 5010-37

SHEET
C1.1



MATCH LINE SEE SHEET C2.1



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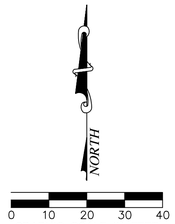

GRAPHIC SCALE IN FEET
SCALE: 1"=20'

KEYNOTES

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6. PAINT HANDICAP SYMBOL – WHITE ON BLUE BACKGROUND PER 7:10.1
7. INSTALL HANDICAP SIGN PER DETAIL 1:10.1
8. PAINT 4" WIDE SOLID STRIPE – WHITE
9. SITE LIGHTS (SEE PHOTOMETRICS PLAN)
10. MONUMENT SIGN
11. POWER POLE TO BE REMOVED BY POWER COMPANY

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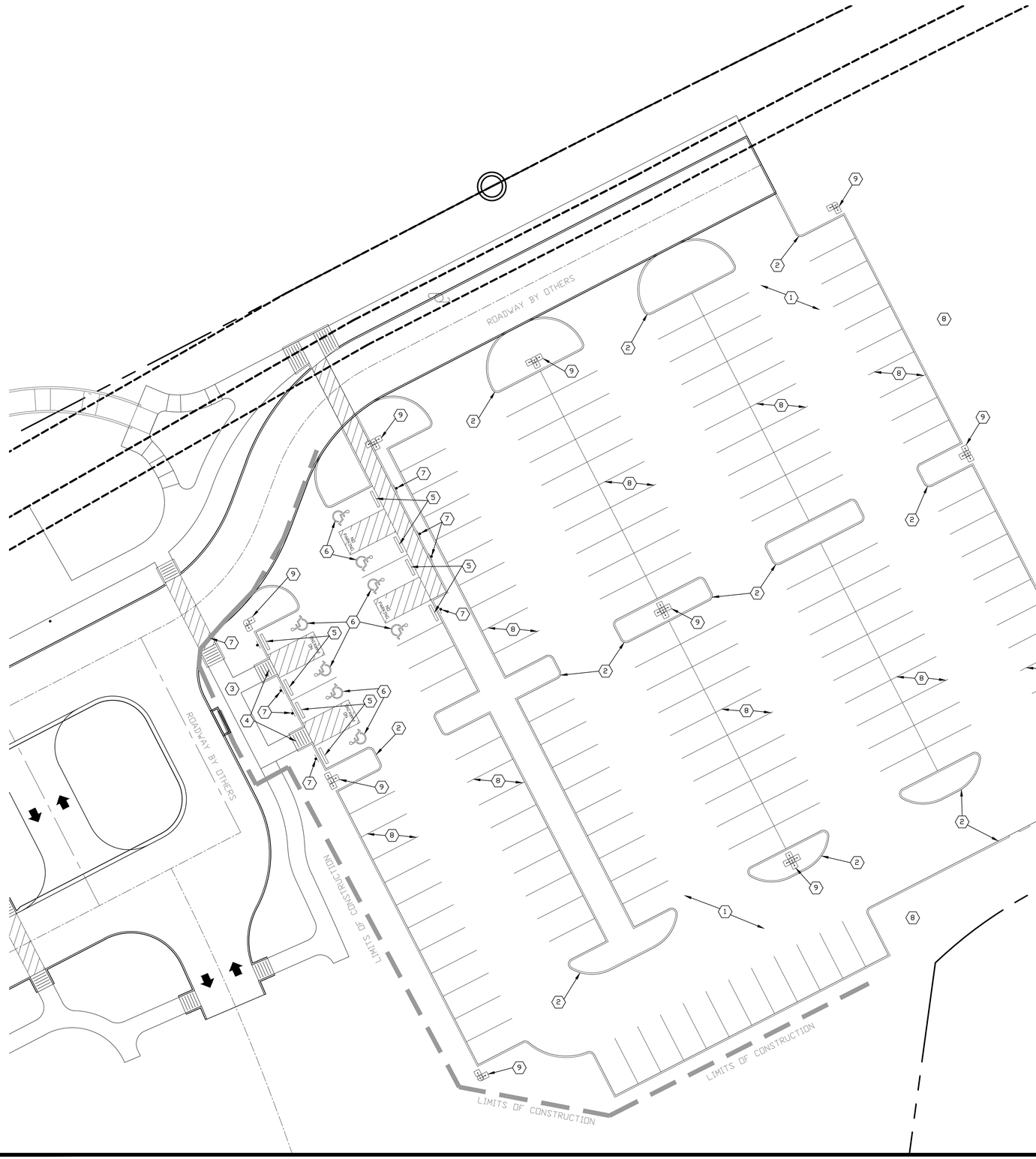
KEY NOTED SITE PLAN
SHEET 2 OF 3

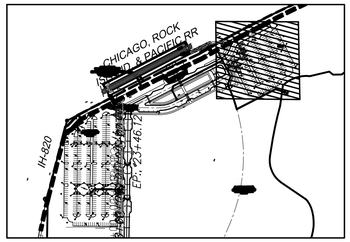
TRINITY METRO RAIL STATION FORT WORTH, TX

STATE OF TEXAS
DAVID C. GREGORY
89296
LICENSED PROFESSIONAL ENGINEER
11-17-22

Date:	12/30/2019
Scale:	1"=_'
Drawn By:	ICE
Reviewed By:	ICE
Project:	5010-37

SHEET
C1.2





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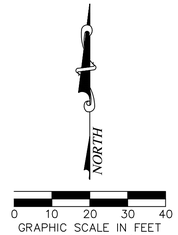

GRAPHIC SCALE IN FEET
SCALE: 1"=20'

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KEY NOTED SITE PLAN
SHEET 3 OF 3

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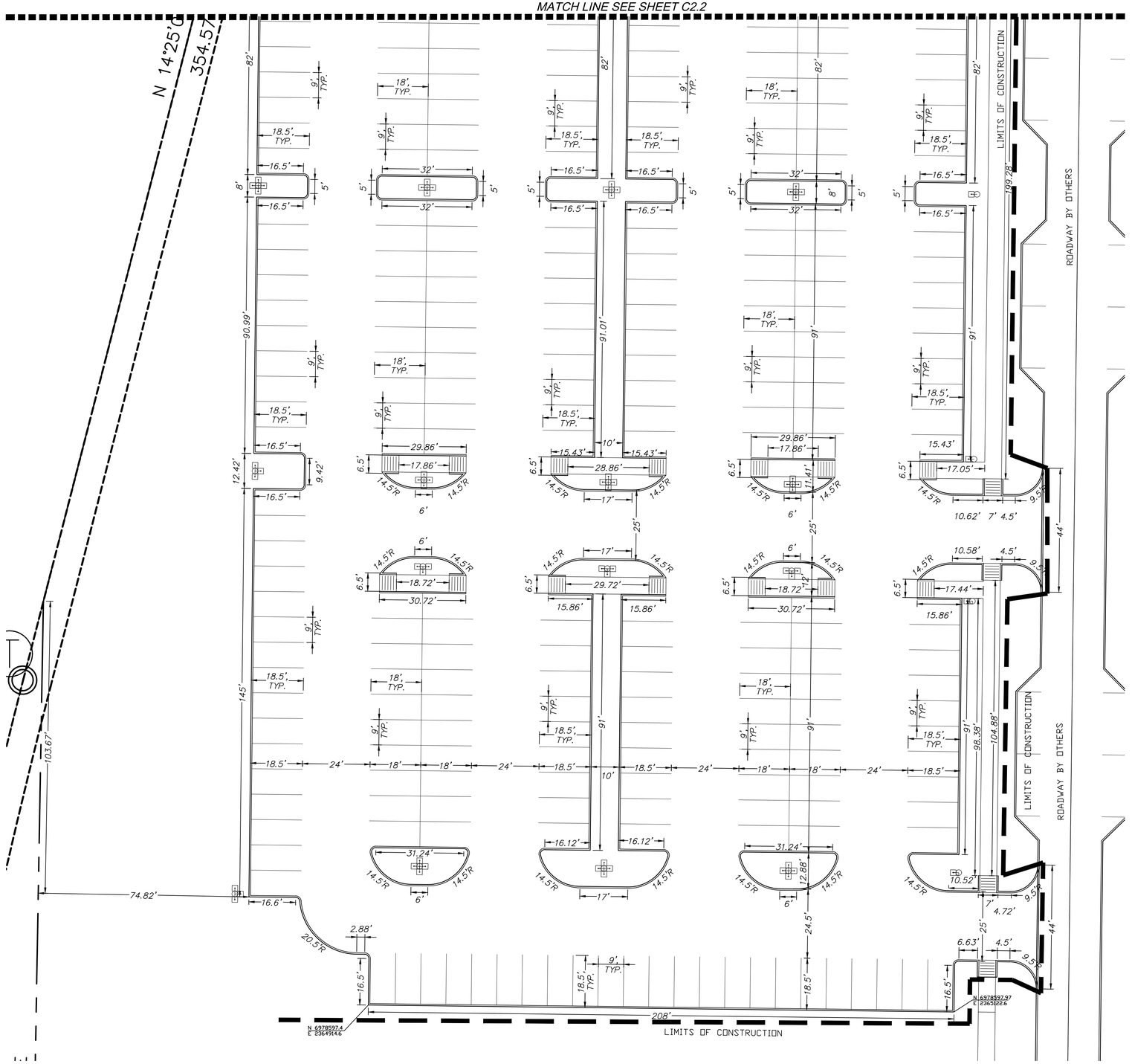
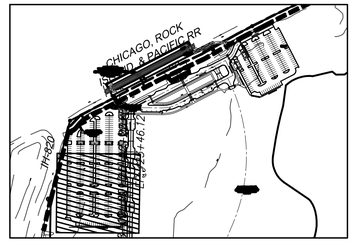
SHEET
C1.3





KEYMAP
N.T.S.

NORTH

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GRAPHIC SCALE IN FEET
SCALE: 1"=20'

LAYOUT & DIMENSIONAL CONTROL NOTES

1. **GENERAL CONSTRUCTION NOTES:** REFER TO SHEET C0.1 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.

2. **SURVEYING:** ALL SURVEYING REQUIRED FOR CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE DEVELOPER SHALL PROVIDE THE PROPERTY CORNERS AND TWO BENCHMARKS FOR USE AS HORIZONTAL AND VERTICAL DATUM. THE CONTRACTOR SHALL EMPLOY A REGISTERED PROFESSIONAL LAND SURVEYOR TO PERFORM ALL ADDITIONAL SURVEY, LAYOUT AND MEASUREMENT WORK NECESSARY FOR THE COMPLETION OF THE PROJECT.

3. **PROTECTION OF PROPERTY CORNERS AND BENCHMARKS:** THE CONTRACTOR SHALL PROTECT ALL PROPERTY CORNER MARKERS AND BENCHMARKS, AND WHEN ANY SUCH MARKERS OR MONUMENTS ARE IN DANGER OF BEING DISTURBED, THEY SHALL BE PROPERLY REFERENCED AND IF DISTURBED, SHALL BE RESET BY A REGISTERED PUBLIC SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.

4. **DIMENSIONAL CONTROL:** ALL PAVING DIMENSIONS AND COORDINATES SHOWN ARE TO BACK OF CURB WHERE APPLICABLE. ALL DIMENSIONS SHOWN AT PI CURB POINTS ARE AT THE INTERSECTION OF THE BACK OF CURB.

5. **CURB RADII:** ALL CURB RADII SHALL BE 1.5' TO BACK OF CURB UNLESS OTHERWISE NOTED.

6. **BUILDING DIMENSIONS:** CONTRACTOR SHALL REFER TO BUILDING PLANS FOR ACTUAL BUILDING DIMENSIONS. THE DIMENSIONS AND CORNERS SHOWN ARE TO FACE OF OUTSIDE WALLS OF BUILDING.

NO.	REVISION	BY	DATE

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DIMENSIONAL CONTROL PLAN
SHEET 1 OF 3

TRINITY METRO RAIL STATION FORT WORTH, TX

STATE OF TEXAS
DAVID C. GREGORY
85296
LICENSED PROFESSIONAL ENGINEER
11-11-22

Date:	12/30/2019
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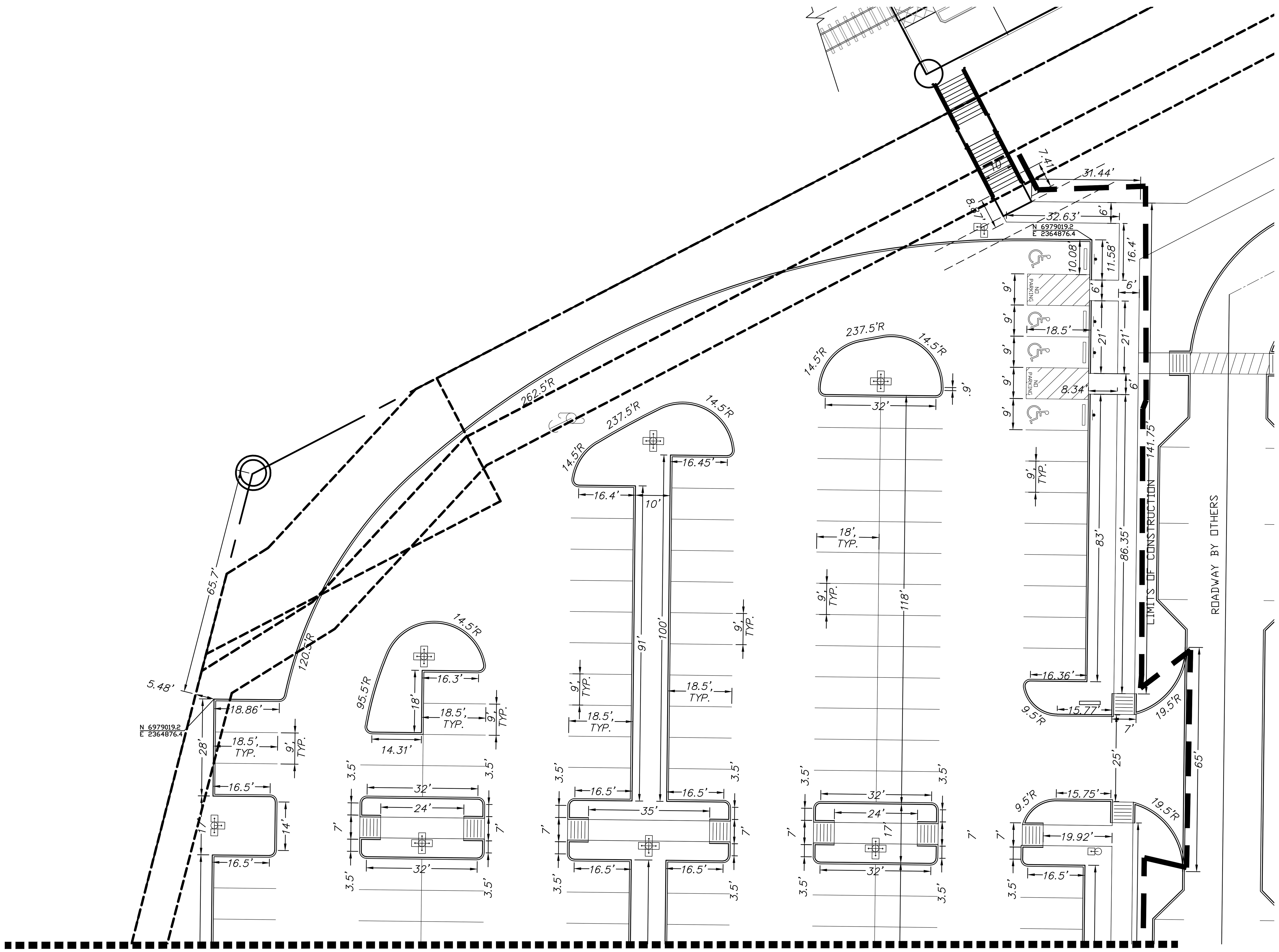
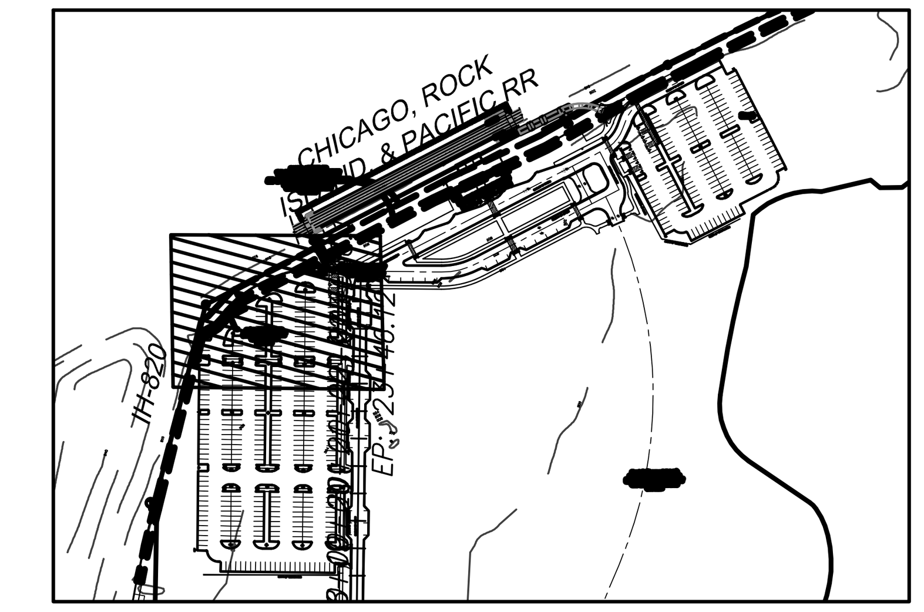
Drawn By:	ICE
Reviewed By:	ICE
Project:	5010-37

SHEET
C2.1





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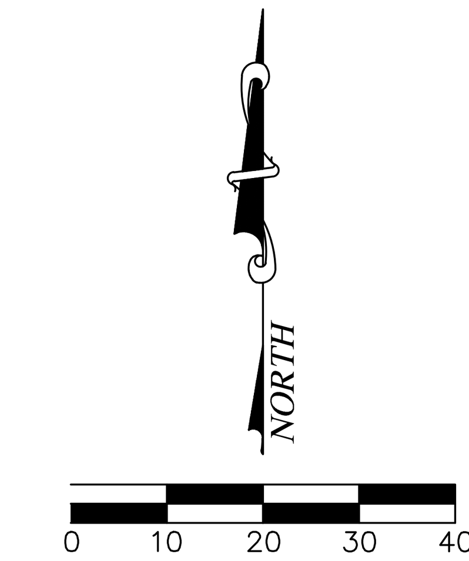

GRAPHIC SCALE IN FEET
SCALE: 1"=20'

LAYOUT & DIMENSIONAL CONTROL NOTES

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2. SURVEYING: ALL SURVEYING REQUIRED FOR CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE DEVELOPER SHALL PROVIDE THE PROPERTY CORNERS AND TWO BENCHMARKS FOR USE AS HORIZONTAL AND VERTICAL DATUM. THE CONTRACTOR SHALL EMPLOY A REGISTERED PROFESSIONAL LAND SURVEYOR TO PERFORM ALL ADDITIONAL SURVEY, LAYOUT AND MEASUREMENT WORK NECESSARY FOR THE COMPLETION OF THE PROJECT.

3. PROTECTION OF PROPERTY CORNERS AND BENCHMARKS: THE CONTRACTOR SHALL PROTECT ALL PROPERTY CORNER MARKERS AND BENCHMARKS, AND WHEN ANY SUCH MARKERS OR MONUMENTS ARE IN DANGER OF BEING DISTURBED, THEY SHALL BE PROPERLY REFERENCED AND IF DISTURBED, SHALL BE RESET BY A REGISTERED PUBLIC SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.

4. DIMENSIONAL CONTROL: ALL PAVING DIMENSIONS AND COORDINATES SHOWN ARE TO BACK OF CURB WHERE APPLICABLE. ALL DIMENSIONS SHOWN AT PI CURB POINTS ARE AT THE INTERSECTION OF THE BACK OF CURB.

5. CURB RADII: ALL CURB RADII SHALL BE 1.5' TO BACK OF CURB UNLESS OTHERWISE NOTED.

6. BUILDING DIMENSIONS: CONTRACTOR SHALL REFER TO BUILDING PLANS FOR ACTUAL BUILDING DIMENSIONS. THE DIMENSIONS AND CORNERS SHOWN ARE TO FACE OF OUTSIDE WALLS OF BUILDING.

NO.	REVISION	BY	DATE

DCG ENGINEERING
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Engineering Firm Registration Number F-21947

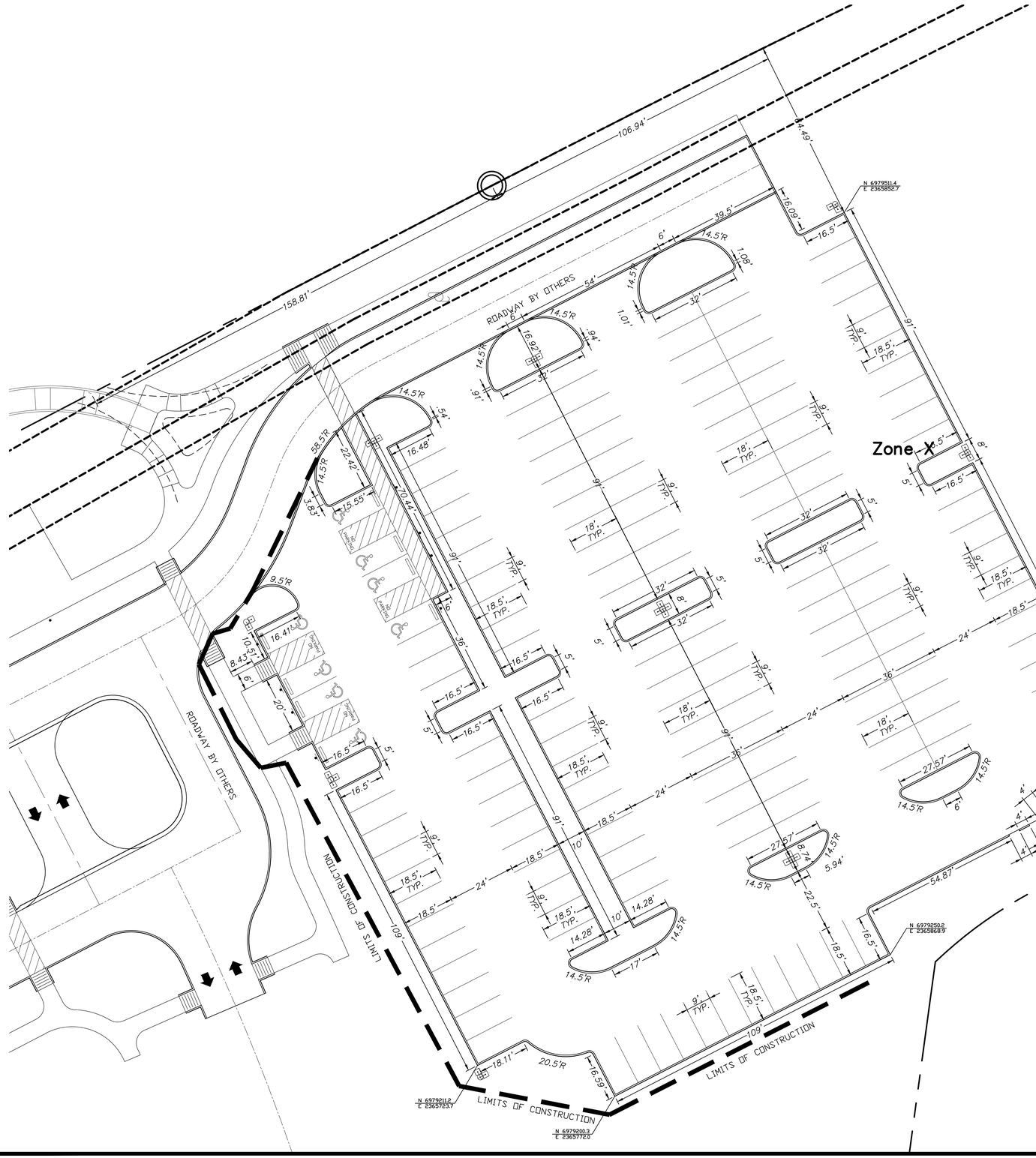
DIMENSIONAL CONTROL PLAN
SHEET 2 OF 3

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
DAVID C. GREGORY
89296
LICENSED
PROFESSIONAL ENGINEER
11-11-22

Date: 12/30/2019
Scale: 1"=_'
Drawn By: ICE
Reviewed By: ICE
Project: 5010–37

SHEET
C2.2



KEYMAP
N.T.S.

LAYOUT & DIMENSIONAL CONTROL NOTES

1. **GENERAL CONSTRUCTION NOTES:** REFER TO SHEET C0.1 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.

2. **SURVEYING:** ALL SURVEYING REQUIRED FOR CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE DEVELOPER SHALL PROVIDE THE PROPERTY CORNERS AND TWO BENCHMARKS FOR USE AS HORIZONTAL AND VERTICAL DATUM. THE CONTRACTOR SHALL EMPLOY A REGISTERED PROFESSIONAL LAND SURVEYOR TO PERFORM ALL ADDITIONAL SURVEY, LAYOUT AND MEASUREMENT WORK NECESSARY FOR THE COMPLETION OF THE PROJECT.

3. **PROTECTION OF PROPERTY CORNERS AND BENCHMARKS:** THE CONTRACTOR SHALL PROTECT ALL PROPERTY CORNER MARKERS AND BENCHMARKS, AND WHEN ANY SUCH MARKERS OR MONUMENTS ARE IN DANGER OF BEING DISTURBED, THEY SHALL BE PROPERLY REFERENCED AND IF DISTURBED, SHALL BE RESET BY A REGISTERED PUBLIC SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.

4. **DIMENSIONAL CONTROL:** ALL PAVING DIMENSIONS AND COORDINATES SHOWN ARE TO BACK OF CURB WHERE APPLICABLE. ALL DIMENSIONS SHOWN AT PI CURB POINTS ARE AT THE INTERSECTION OF THE BACK OF CURB.

5. **CURB RADII:** ALL CURB RADII SHALL BE 1.5' TO BACK OF CURB UNLESS OTHERWISE NOTED.

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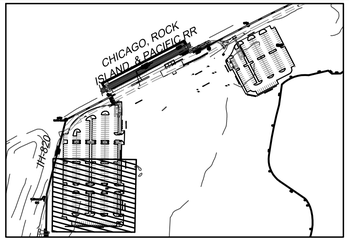
DIMENSIONAL CONTROL PLAN
SHEET 2 OF 3

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
DAVID C. GREGORY
89296
LICENSED PROFESSIONAL ENGINEER
11-14-22

Date: 12/30/2019
Scale: 1"=_'
Drawn By: ICE
Reviewed By: ICE
Project: 5010-37

SHEET
C2.3



KEYMAP
N.T.S.

BM #1 = 526.05
TEXAS STATE HIGHWAY DEPARTMENT MONUMENT DISK LOCATED ON THE SOUTHEAST WALK OF THE WESTBOUND TRINITY BLVD BRIDGE CROSSING OVER EAST LOOP 820 NORTH

BM #2 = 495.68
BOXED X CUT IN THE NORTHWEST CORNER OF AN INLET LOCATED ON THE NORTH SIDE OF TRINITY BLVD ON THE EAST SIDE OF A GRAVEL ENTRY FOR THE POLY C WELL PAD

WARNING

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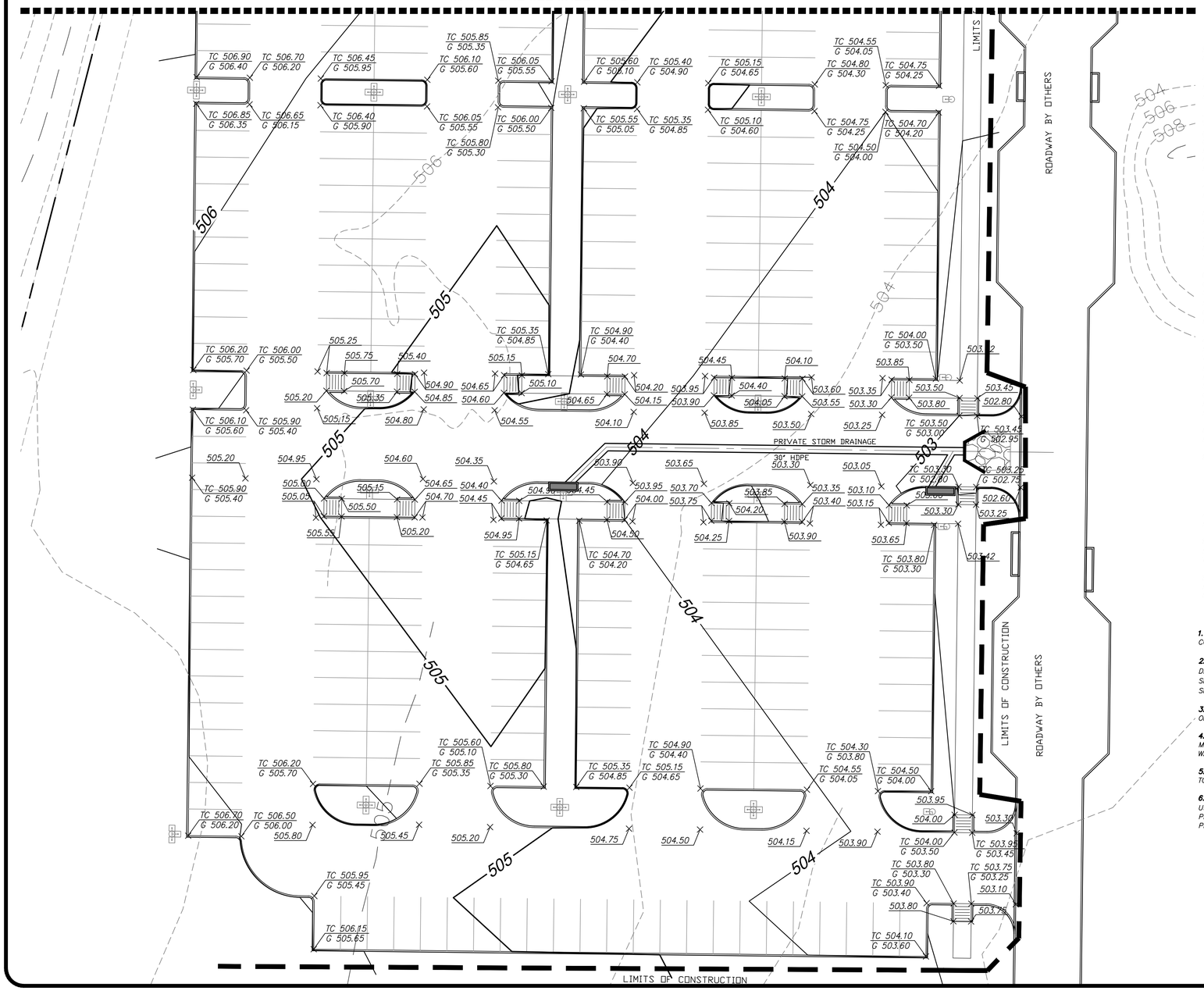
NORTH

0 10 20 30 40
GRAPHIC SCALE IN FEET
SCALE: 1"=20'

MATCH LINE SEE SHEET C3.2



GRADING NOTES

1. GENERAL CONSTRUCTION NOTES: REFER TO SHEET C0.1 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.

2. UNDISTURBED AREAS: PRIOR TO GRADING, BRUSH REMOVAL, OR SITE CONSTRUCTION, THE CONTRACTOR SHALL MEET WITH THE DEVELOPER AND/OR ENGINEER AT THE SITE TO ASCERTAIN THE AREAS OF THE PROJECT SITE THAT ARE TO BE PROTECTED AND PRESERVED. REFER TO THE "GENERAL TREE PROTECTION NOTES" FOR ALL CONSTRUCTION IN THE VICINITY OF EXISTING TREES.

3. STRIPPING AND DEBRIS REMOVAL: THE AREAS TO BE PAVED AND ALL AREAS THAT ARE TO RECEIVE FILL MATERIAL SHALL BE STRIPPED OF VEGETATION, TREES, ROOTS, STUMPS, DEBRIS, AND OTHER ORGANIC MATERIAL. THE DEPTH OF STRIPPING IS ESTIMATED TO BE ON THE ORDER OF SIX (6) INCHES IN ORDER TO REMOVE THE SURFACE SOIL CONTAINING ORGANIC MATERIAL. THE ACTUAL STRIPPING DEPTH SHALL BE BASED ON FIELD OBSERVATIONS. STRIPPED TOPSOIL SHALL BE STOCKPILED IN A LOCATION ON-SITE APPROVED BY THE DEVELOPER. ALL TREES, INCLUDING STUMPS AND ROOT SYSTEMS, VEGETATION, DEBRIS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OFF-SITE. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS GOVERNING SPILLAGE OF DEBRIS WHILE TRANSPORTING TO A DISPOSAL SITE. ALL COSTS ASSOCIATED WITH DISPOSAL OF MATERIAL SHALL BE INCLUDED IN THE CONTRACT AMOUNT.

4. BURNING: BURNING SHALL NOT BE PERMITTED ON THE PROJECT SITE UNLESS APPROVED IN WRITING BY THE GOVERNING AUTHORITIES AND THE DEVELOPER.

5. PROOF ROLLING: UPON COMPLETION OF STRIPPING OPERATIONS, AND PRIOR TO PLACEMENT OF ANY FILL MATERIALS, THE STRIPPED AREAS SHOULD BE OBSERVED TO DETERMINE IF ADDITIONAL EXCAVATION IS REQUIRED TO REMOVE WEAK OR OTHERWISE OBJECTIONABLE MATERIALS THAT WOULD ADVERSELY AFFECT THE FILL PLACEMENT. THE SUBGRADE SHOULD BE FIRM AND ABLE TO SUPPORT CONSTRUCTION EQUIPMENT WITHOUT DISPLACEMENT. SOFT OR YIELDING SUBGRADE SHOULD BE CORRECTED AND MADE STABLE BEFORE CONSTRUCTION PROCEEDS. PROOF ROLLING SHOULD BE PERFORMED USING A HEAVY PNEUMATIC TIRE ROLLER, LOADED DUMP TRUCK, OR SIMILAR PIECE OF EQUIPMENT WEIGHING 25 TONS. THE PROOF ROLLING OPERATIONS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE.

6. UNSTABLE MATERIAL: WHEN CLAY OR OTHER UNSTABLE MATERIAL IS PRESENT IN AREAS OF PROPOSED BUILDING PADS OR PAVED AREAS, THE GEOTECHNICAL ENGINEER SHALL OBSERVE THE STABILITY OF ANY EXISTING CLAY OR WEATHERED MATERIAL THAT IS PRESENT IN THE SUBBASE, AND SHALL DETERMINE WHETHER ADDITIONAL EXCAVATION OF THESE MATERIALS WILL BE REQUIRED. IF THIS MATERIAL IS DEEMED SUITABLE FOR SUBBASE MATERIAL, THE SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF SIX (6) INCHES, ITS MOISTURE CONTENT ADJUSTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER, AND THEN RE-COMPACTED TO ONE HUNDRED (100) PERCENT OF THE OPTIMUM DENSITY DETERMINED BY THE STANDARD PROCTOR TEST, ASTM D - 698 PRIOR TO PLACEMENT OF FILL MATERIALS.

7. CONTROLLED FILL: ALL SOILS USED FOR CONTROLLED FILL SHOULD BE FREE OF ROOTS, VEGETATION, AND OTHER DELETERIOUS OR UNDESIRABLE MATTER. ROCKS LESS THAN 4 INCHES IN LARGEST DIMENSION WITHIN 15" OF PROPOSED SUBGRADE ELEVATION, LESS THAN 6 INCHES IN SIZE FROM 15" TO 36" OF PROPOSED SUBGRADE ELEVATION, LESS THAN 12 INCHES IN SIZE FROM 36" TO 72" OF PROPOSED SUBGRADE ELEVATION, AND LESS THAN 18 INCHES IN LARGEST DIMENSION FOR FILLS IN EXCESS OF 72" FROM SUBGRADE ELEVATION, WILL BE ALLOWED AS ACCEPTABLE FILL MATERIAL. ROCK FILLS SHOULD BE SUPPLEMENTED WITH A SUFFICIENT AMOUNT OF FINE MATERIAL TO PREVENT VOIDS. SOILS IMPORTED FROM OFF-SITE FOR USE AS FILL SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER. THE FILL MATERIAL SHOULD BE PLACED IN LEVEL, UNIFORM LIFTS, WITH EACH LIFT COMPACTED TO THE MINIMUM DRY DENSITY WITHIN THE COMPACTION SOIL MOISTURE RANGES RECOMMENDED. THE LOOSE LIFT THICKNESS SHOULD NOT EXCEED 10 INCHES. EACH LAYER SHOULD BE PROPERLY PLACED, MIXED, SPREAD, AND COMPACTED TO BETWEEN 95 AND 100 PERCENT OF STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D 698.

8. PROPOSED GRADES: THE PROPOSED CONTOURS INDICATED ON THE GRADING PLAN ARE FINISHED GRADES AND ARE SHOWN AT ONE-FOOT INTERVALS. SPOT ELEVATIONS SHOWN IN PAVED AREAS ARE TOP OF PAVEMENT, UNLESS NOTED OTHERWISE.

9. MASS GRADE ELEVATIONS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR MASS GRADING OF THE SITE TO THE FOLLOWING ELEVATIONS:

- 6" BELOW FINISHED GRADE FOR STANDARD DUTY PAVEMENT AREAS.
- 4" BELOW FINISHED GRADE FOR ALL SIDEWALK PAVEMENT AREAS.
- 6" BELOW FINISHED GRADE FOR ALL LANDSCAPE AREAS.

A TOLERANCE OF +/- 0.10 FEET OF THE FINISHED GRADE WILL BE ALLOWED FOR ALL AREAS UNDER PROPOSED BUILDING PADS AND UNDER PROPOSED PAVEMENT. ALL LANDSCAPE AREAS ARE TO BE GRADED WITHIN +/- 0.30 FEET OF THE FINISHED GRADE.

10. LANDSCAPE AREAS: ALL LANDSCAPE AREAS AND OTHER DISTURBED AREAS WITHIN THE LIMITS OF THE PROPERTY NOT DESIGNATED TO BE PAVED SHALL RECEIVE SIX (6) INCHES OF TOPSOIL. REFER TO THE EROSION AND SEDIMENT CONTROL PLANS AND/OR LANDSCAPE PLANS FOR LIMITS OF TOPSOIL PLACEMENT.

11. EARTHWORK QUANTITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALCULATING THE EARTHWORK QUANTITIES BASED ON THE EXISTING AND PROPOSED CONTOURS SHOWN ON THESE PLANS. ALL EARTHWORK SHALL BE CONSIDERED UNCLASSIFIED EXCAVATION AND BID ON A LUMP SUM BASIS, UNLESS NOTED OTHERWISE.

TREE PROTECTION NOTES

1. GENERAL CONSTRUCTION NOTES: REFER TO SHEET C0.1 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.

2. TREE PROTECTION IDENTIFICATION: PRIOR TO GRADING, BRUSH REMOVAL, OR SITE CONSTRUCTION, THE CONTRACTOR SHALL MEET WITH THE DEVELOPER AND/OR ENGINEER AT THE SITE TO ASCERTAIN THE AREAS OF THE EXISTING TREES TO BE PROTECTED AND PRESERVED. THE CONTRACTOR SHALL THEN CLEARLY TAG OR MARK ALL TREES TO BE PROTECTED AND PRESERVED. NO TREES SHALL BE CUT AND/OR REMOVED FROM THE PROJECT SITE UNTIL SPECIFICALLY AUTHORIZED IN WRITING BY THE GOVERNING AUTHORITY AND/OR DEVELOPER.

3. TREE PROTECTION FENCE: THE CONTRACTOR SHALL ERECT A FENCE (PER DETAILS) AROUND EACH TREE TO PREVENT THE PLACEMENT OF DEBRIS OR FILL WITHIN THE DRIP LINE OF THE TREE. THE TREE PROTECTION FENCE LOCATION SHOWN ON THE PLAN IS SCHEMATIC IN NATURE.

4. TREE CANOPY RESTRICTIONS: DURING CONSTRUCTION, THE CONTRACTOR SHALL PROHIBIT CLEANING, PARKING OR STORAGE OF EQUIPMENT OR MATERIALS UNDER THE CANOPY OF ANY TREE OR GROUP OF TREES BEING PRESERVED. THE CONTRACTOR SHALL NOT ALLOW THE DISPOSAL OF ANY WASTE MATERIAL SUCH AS, BUT NOT LIMITED TO, PAINT, OIL SOLVENTS, ASPHALT, CONCRETE, MORTAR, ETC., IN THE CANOPY AREA.

5. TREE ATTACHMENT RESTRICTIONS: NO ATTACHMENTS OR WIRES OF ANY KIND, OTHER THAN THOSE OF A PROTECTIVE NATURE, SHALL BE ATTACHED TO ANY TREE.

6. FILL RESTRICTIONS: NO FILL OR EXCAVATION MAY OCCUR WITHIN THE DRIP LINE OF A TREE TO BE PRESERVED WITHOUT AN APPROVED PLAN FOR USE OF TREE WELLS OR RETAINING WELLS. CHANGES OF GRADE SIX (6) INCHES OR GREATER SHALL REQUIRE ADDITIONAL MEASURES TO MAINTAIN PROPER OXYGEN AND WATER EXCHANGE WITH THE ROOT SYSTEM. IN ADDITION, THE FOLLOWING GUIDELINES ARE TO PROTECT THE TREES TO BE PRESERVED.

A. WITH MAJOR GRADE CHANGES, A RETAINING WALL OR TREE WELL OF A DESIGN APPROVED BY THE GOVERNING AUTHORITY SHALL BE CONSTRUCTED AROUND THE TREE NO CLOSER THAN HALF THE DISTANCE BETWEEN THE TRUNK AND THE DRIP LINE. THE RETAINING WALL SHOULD BE CONSTRUCTED SO AS TO MAINTAIN THE EXISTING GRADES AROUND THE TREE OR GROUP OF TREES.
B. AT NO TIME SHALL A WALL, PAVEMENT OR POROUS PAVEMENT BE PLACED LESS THAN FIVE (5) FEET OR ONE (1) FOOT FOR EVERY TWO (2) INCHES IN CALIPER, WHICHEVER IS GREATER, TO THE TRUNK OF THE TREE.
C. ROOT PRUNING WILL BE REQUIRED WHEN THE CRITICAL ROOT ZONE IS TO BE DISTURBED. THIS IS IN AREAS WHERE PAVING EXTENDS TO BENEATH THE DRIP LINE OF THE TREE.

NO.	REVISION	BY	DATE

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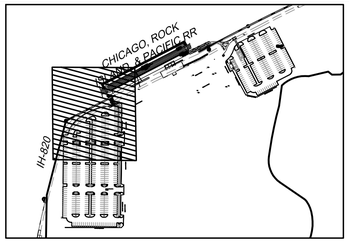
GRADING PLAN
SHEET 1 OF 3

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
DAVID C. GREGORY
89296
LICENSED PROFESSIONAL ENGINEER
11-1-22

Date:	12/30/2019
Scale:	1"=20'
Drawn By:	ICE
Reviewed By:	ICE
Project:	5010-37

SHEET
C3.1



KEYMAP
N.T.S.

BM #1 = 526.05
TEXAS STATE HIGHWAY DEPARTMENT MONUMENT DISK LOCATED ON THE SOUTHEAST WALK OF THE WESTBOUND TRINITY BLVD BRIDGE CROSSING OVER EAST LOOP 820 NORTH

BM #2 = 495.68
BOXED X CUT IN THE NORTHWEST CORNER OF AN INLET LOCATED ON THE NORTH SIDE OF TRINITY BLVD ON THE EAST SIDE OF A GRAVEL ENTRY FOR THE POLY C WELL PAD

WARNING
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NORTH

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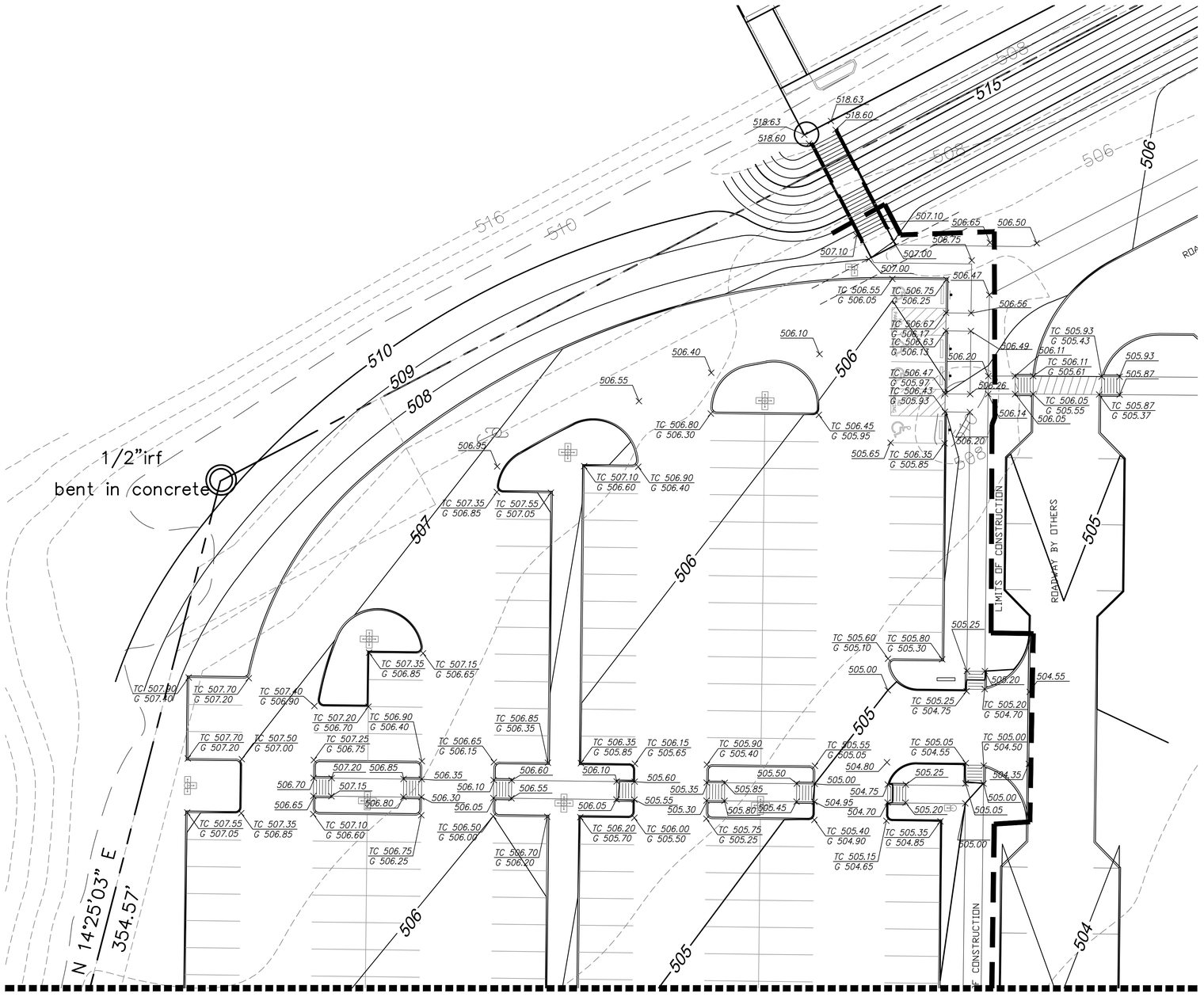
GRAPHIC SCALE IN FEET
SCALE: 1"=20'



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GRADING PLAN
SHEET 2 OF 3

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
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11-1-22

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SHEET
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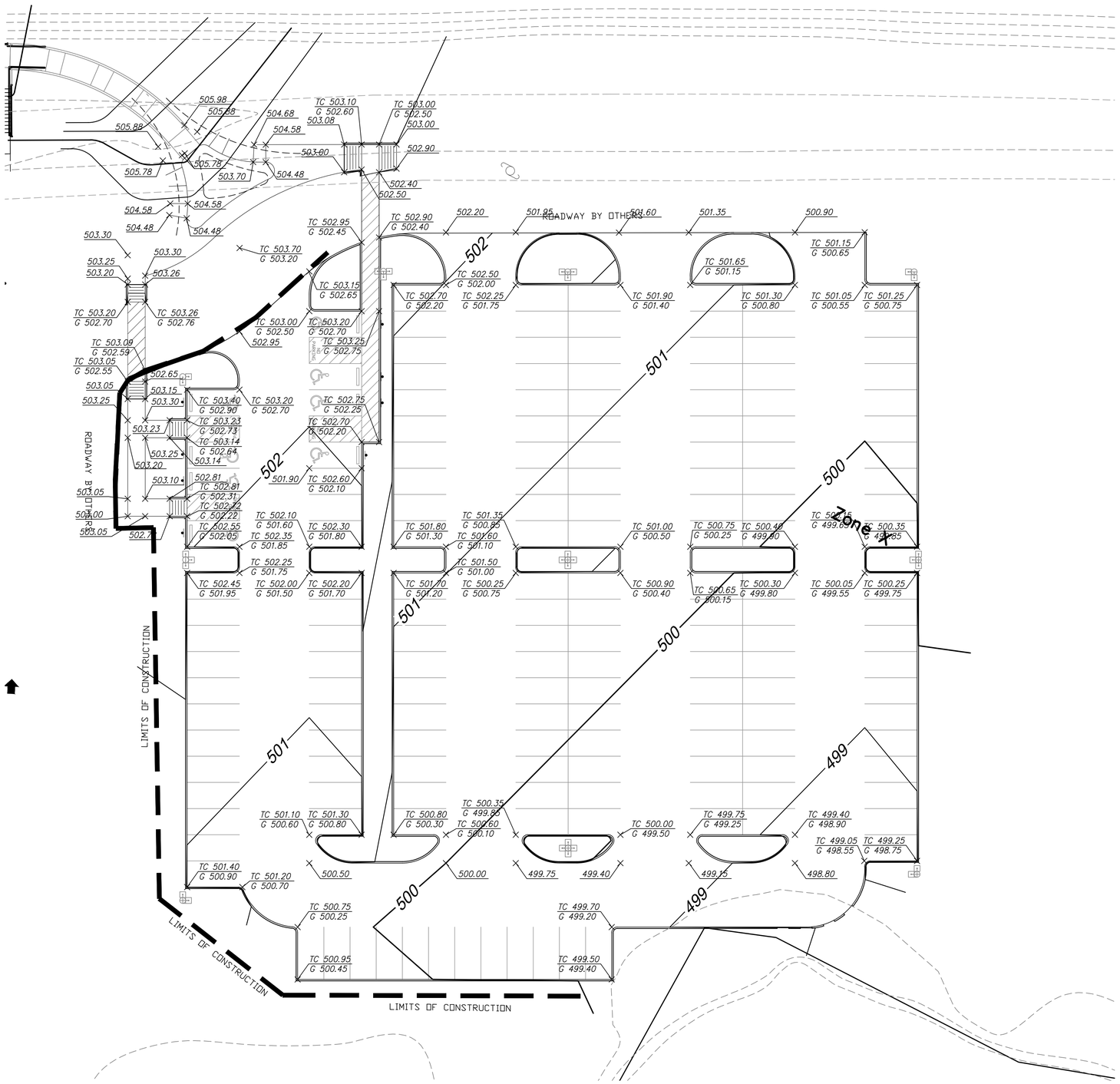

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GRADING PLAN
SHEET 3 OF 3

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
DAVID C. GREGORY
89296
LICENSED PROFESSIONAL ENGINEER
11-12-20

Date:	12/30/2019
Scale:	1"=20'
Drawn By:	ICE
Reviewed By:	ICE
Project:	5010-37

SHEET
C3.3

WARNING

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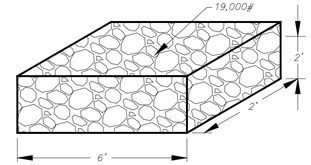
NOT-IN-CONTRACT



WALL DETAIL
N.T.S.

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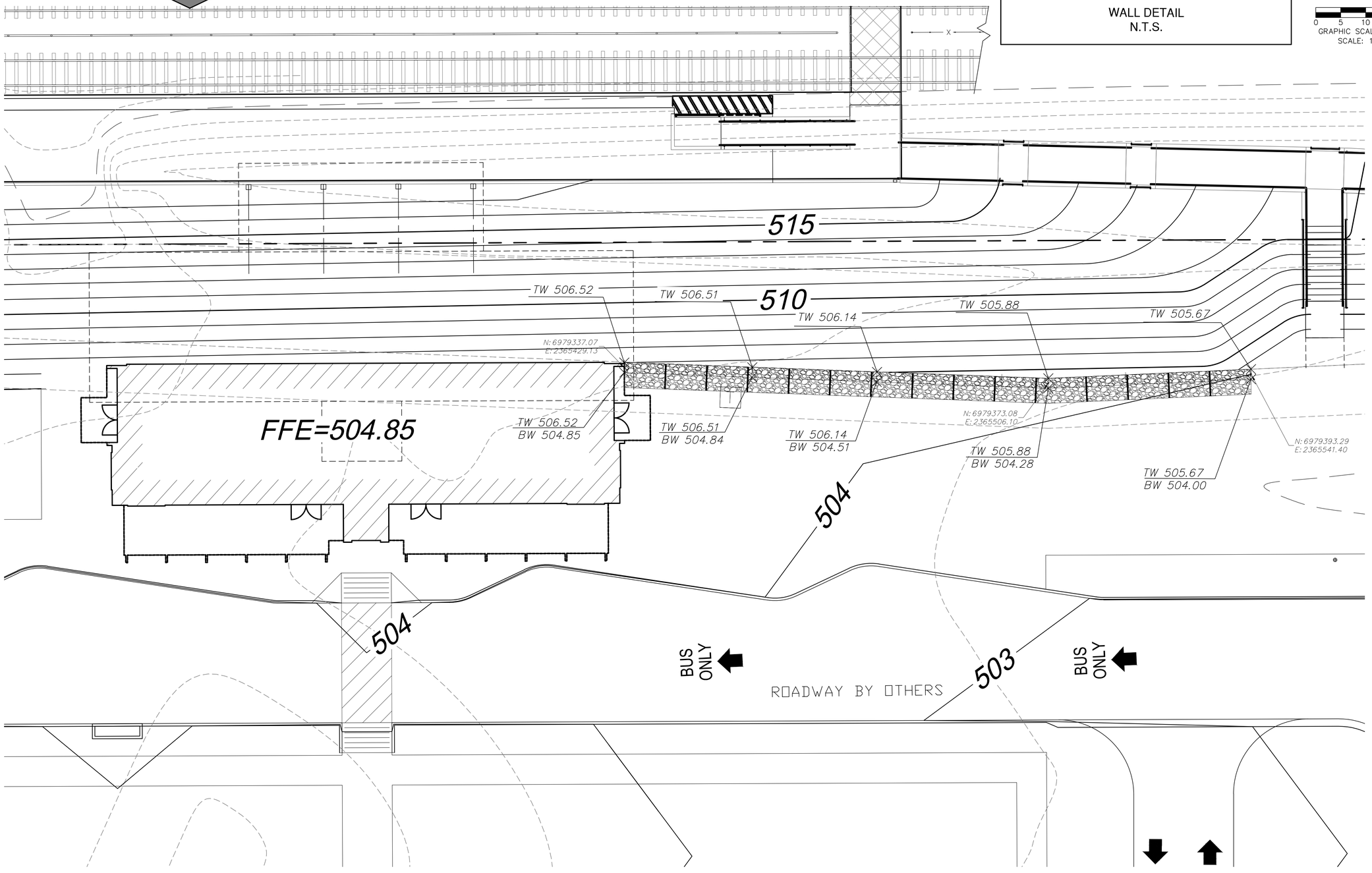
GRAPHIC SCALE IN FEET
SCALE: 1"=10'



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GRADING PLAN
WALL DETAIL

TRINITY METRO
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11-14-22

Date:	12/30/2019
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SHEET
C3.4

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NORTH

0 30 60 90 120
GRAPHIC SCALE IN FEET
SCALE: 1"=60'

LEGEND

- SILT FENCE — SF
- INLET PROTECTION — IP
- STABILIZED CONSTRUCTION ENTRANCE — CE
- FINISHED SLOPE
- TREE PROTECTION FENCE

EROSION CONTROL NOTES

1. **GENERAL CONSTRUCTION NOTES:** REFER TO SHEET C1.1 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.

2. **SWPPP COMPLIANCE:** THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WHILE CONDUCTING HIS ACTIVITIES ON THIS PROJECT. IN ADDITION TO CONSTRUCTING THOSE ITEMS INDICATED ON THE PLAN SHEETS, COMPLIANCE WITH THE SWPPP INCLUDES CONFORMANCE TO CERTAIN PRACTICES AND PROCEDURES (IDENTIFIED IN THE (SWPPP) DURING PROJECT CONSTRUCTION. THE SWPPP PLANS AND DOCUMENTS ARE PROVIDED FOR THE SOLE BENEFIT OF THE CONTRACTOR AS A PLANNING TOOL FOR COMPLYING WITH THE ENVIRONMENTAL REGULATIONS OF THIS PROJECT. THE CONTRACTOR IS EXPECTED TO PROVIDE, EXPAND, SUBMIT AND MONITOR A FULL COMPREHENSIVE SWPPP BEYOND WHAT IS HEREIN PROVIDED.

3. **BMP INSTALLATION:** PRIOR TO COMMENCING GRADING OPERATIONS, THE CONTRACTOR SHALL INSTALL ALL SWPPP MEASURES AND DEVICES AS INDICATED ON THE EROSION & SEDIMENT CONTROL PLAN. ALL SWPPP MEASURES AND DEVICES SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND DETAILS SHOWN IN THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS CONSTRUCTION "BEST MANAGEMENT PRACTICES" (BMP) MANUAL, OR AS MODIFIED BY THE CONTRACT DOCUMENTS.

4. **CLEANING, REPAIR AND MAINTENANCE:** THE CONTRACTOR SHALL REFER TO THE SWPPP FOR SEQUENCING OF CONSTRUCTION, INSTALLATION OF NEW EROSION CONTROL DEVICES AND CLEANING, REPAIR AND MAINTENANCE OF EXISTING EROSION CONTROL DEVICES. THE CONTRACTOR SHALL REVISE, RELOCATE AND/OR ADD DEVICES TO REFLECT ACTUAL SITE CONDITIONS AND TO ACCOMMODATE LOCATIONS FOR CONSTRUCTION TRAILER AREAS, STORAGE AREAS, FUELING AREAS, TOILETS, TRASH RECEPTACLES AND WASHOUT AREAS. ANY ACCIDENTAL RELEASE OF SEDIMENT OR POLLUTANTS FROM THE SITE SHALL BE CLEANED BY THE CONTRACTOR.

5. **SITE ENTRY/EXIT LOCATIONS:** SITE ENTRY AND EXIT LOCATIONS SHALL BE MAINTAINED BY THE CONTRACTOR IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS MUST BE REMOVED IMMEDIATELY. WHEN WASHING OF VEHICLES IS REQUIRED TO REMOVE SEDIMENT PRIOR TO ENTRANCE TO A PUBLIC ROADWAY, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN. ALL FINES IMPOSED FOR TRACKING ONTO PUBLIC ROADS SHALL BE PAID BY THE CONTRACTOR.

6. **PROTECTION OF ADJACENT PROPERTY:** CONTRACTOR SHALL ASSUME FULL LIABILITY FOR DAMAGE TO ADJACENT PROPERTIES AND/OR PUBLIC RIGHT-OF-WAY RESULTING FROM FAILURE TO FULLY IMPLEMENT AND EXECUTE ALL EROSION CONTROL METHODS AND PROCEDURES SHOWN AND NOTED IN THE PLANS AND SWPPP.

7. **RE-VEGETATION:** AT THE COMPLETION OF PAVING AND FINAL GRADING OPERATIONS, ALL DISTURBED AREAS SHALL BE VEGETATED IN ACCORDANCE WITH THE LANDSCAPE ARCHITECTS' PLANS. IN AREAS NOT COVERED BY LANDSCAPE PLAN, THE CONTRACTOR SHALL PROVIDE HYDROMULCH SEEDING AND/OR SODDING FOR ALL DISTURBED AREAS (NOT DESIGNATED TO BE PAVED) IN ACCORDANCE WITH ALL GOVERNING AUTHORITIES' SPECIFICATIONS.

8. **BMP REMOVAL:** THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL SEDIMENT BARRIERS AND INLET PROTECTION AFTER VEGETATION HAS BEEN COMPLETED AND ALL AREAS OF THE SITE HAVE BEEN STABILIZED AND ACCEPTED BY THE GOVERNING AUTHORITIES AND THE DEVELOPER.

BM #1 = 526.05
TEXAS STATE HIGHWAY DEPARTMENT MONUMENT DISK LOCATED ON THE SOUTHEAST WALK OF THE WESTBOUND TRINITY BLVD BRIDGE CROSSING OVER EAST LOOP 820 NORTH

BM #2 = 495.68
BOXED X CUT IN THE NORTHWEST CORNER OF AN INLET LOCATED ON THE NORTH SIDE OF TRINITY BLVD ON THE EAST SIDE OF A GRAVEL ENTRY FOR THE POLY C WELL PAD

NO.	REVISION	BY	DATE

DCG ENGINEERING
DCG Engineering, Inc.
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Keller, TX 76248
Phone: (817) 874-2941 or (817) 201-4477
www.dcgengineering.com
Engineering Firm Registration Number F-21947

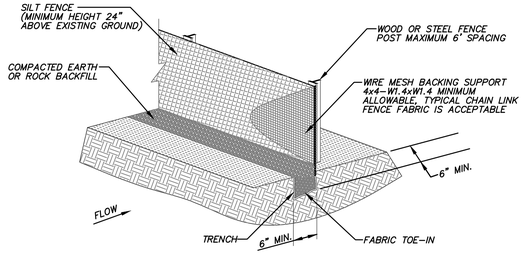
EROSION AND SEDIMENT CONTROL PLAN

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
DAVID C. GREGORY
89296
LICENSED PROFESSIONAL ENGINEER
11-14-22

Date:	12/30/2019
Scale:	1"=_'
Drawn By:	ICE
Reviewed By:	ICE
Project:	5010-37

SHEET
C4.1

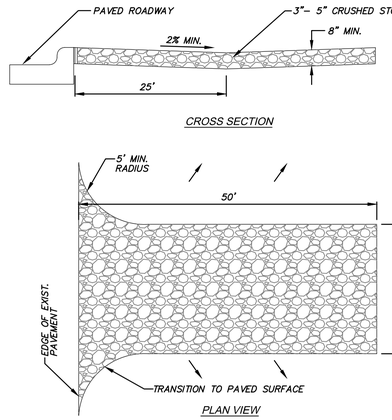


NOTE:

1. WOOD OR STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. THE POSTS MUST BE EMBEDDED A MINIMUM OF ONE FEET FOR STEEL OR TWO FEET FOR WOOD.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT), WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON THE UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL SUPPORT POST. THERE SHALL BE A 6 INCH DOUBLE OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHED A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. CONTRACTOR SHALL PROVIDE TRIANGULAR SEDIMENT FILTER DIKE WHERE SILT FENCE IS REQUIRED BUT NOT INSTALLABLE.

SILT FENCE

NOT TO SCALE

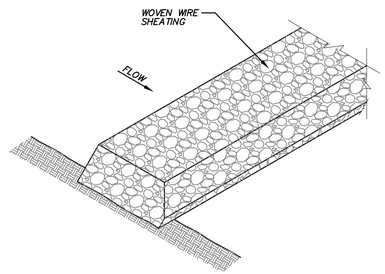


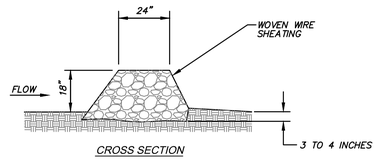
NOTES:

1. STONE SIZE: 3"-5" CRUSHED ROCK OR ACCEPTABLE CRUSHED PORTLAND CEMENT CONCRETE.
2. LENGTH: AS EFFECTIVE, BUT NOT LESS THAN 30 FEET.
3. THICKNESS: NOT LESS THAN 6".
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WASHING: WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC ROADWAY, MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
8. CONTRACTOR TO COORDINATE EXACT LOCATION OF THIS DETAIL.

STABILIZED CONSTRUCTION ACCESS

NOT TO SCALE





NOTES:

1. USE OPEN GRADED ROCK 4-8 INCHES IN DIAMETER FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK 3-5 INCHES IN DIAMETER FOR OTHER CONDITIONS.
2. THE STONE OVERFLOW SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
3. THE STONE OVERFLOW SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN EVENT AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
5. WHEN THE SITE IS COMPLETELY STABILIZED, THE DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

STONE OVERFLOW

NOT TO SCALE

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LEGEND

SAWCUT, REMOVE AND DISPOSE OF EXISTING CURB, GUTTER & PAVEMENT

PROPOSED IRRIGATION SLEEVE — IRR —

DOWELED EXPANSION JOINT – "DE" JOINT — DE —

THICKENED EDGE EXPANSION JOINT – "E" JOINT — E —

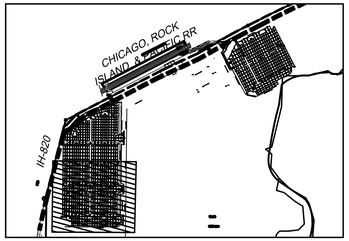
"S" SAWED DUMMY JOINT OR CONSTRUCTION JOINT WITH BARS

"LT" LONGITUDEINAL CONSTRUCTION JOINT AND TRANSVERSE CONTRACTION JOINT WITH DOWEL BARS

STANDARD DUTY PAVEMENT:
6" 3,500 PSI CONCRETE PVMT. W/#4 BARS @ 18" O.C.E.W ON 8" COMPACTED SUBGRADE TO 95% AT OR ABOVE OPTIMUM MOISTURE CONTENT. (ASTM D 698)

SIDEWALK & FLATWORK:
4" REINFORCED CONCRETE SIDEWALK, FLATWORK (3,600X PSI AT 28 DAYS) W/#3 BARS @ 18" O.C.E.W ON 6" COMPACTED SUBGRADE TO 95% AT OR ABOVE OPTIMUM MOISTURE CONTENT. (ASTM D 698)

EXISTING CONCRETE PAVEMENT



KEYMAP
N.T.S.

WARNING

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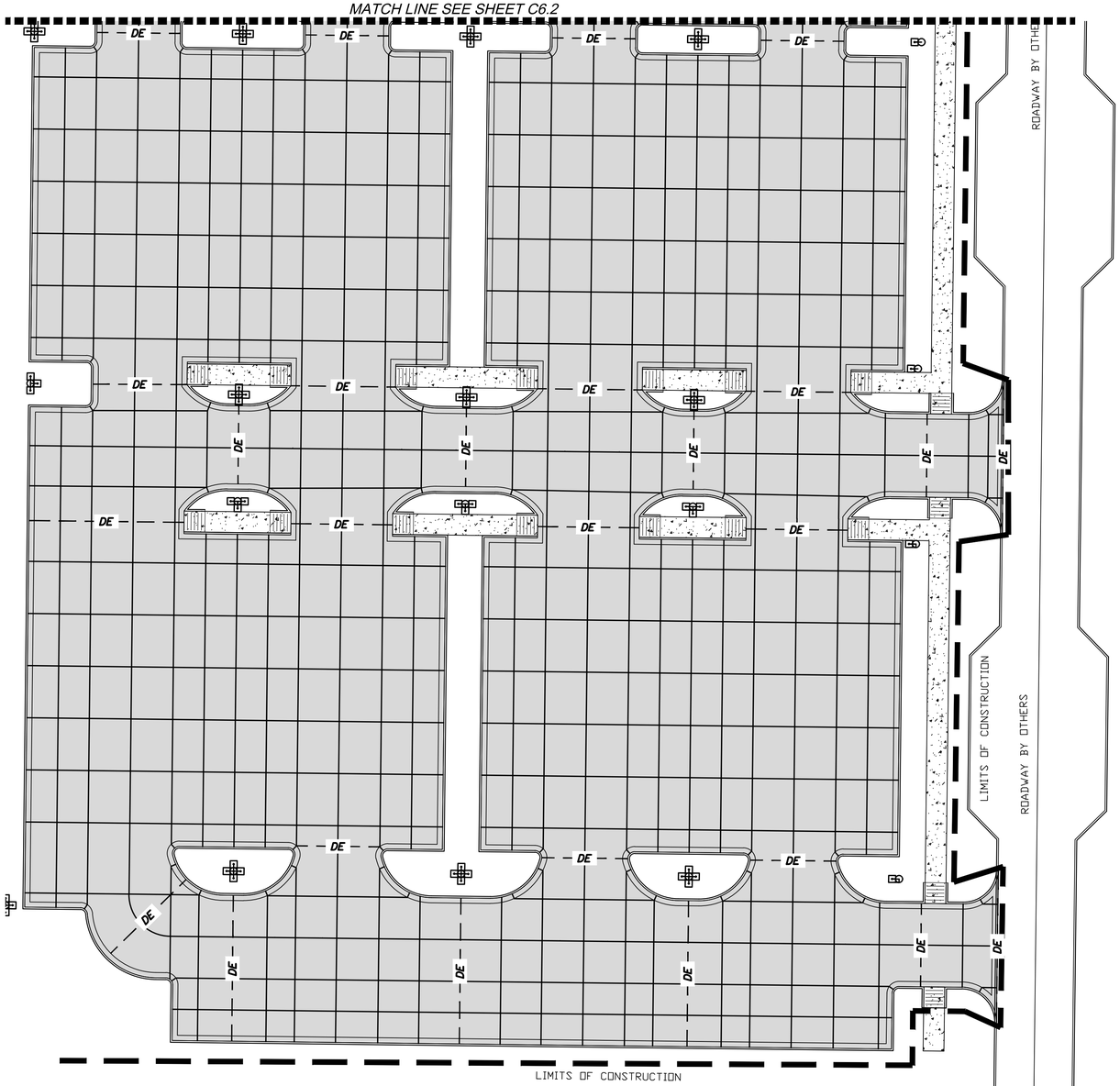
NORTH

0 10 20 30 40
1"=20' HORIZ.

MATCH LINE SEE SHEET C6.2



PAVING NOTES

1. **GENERAL CONSTRUCTION NOTES:** REFER TO SHEET C1.1 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.

2. **PROTECTION OF EXISTING IMPROVEMENTS:** THE CONTRACTOR SHALL TAKE CARE NOT TO DISTURB EXISTING UTILITIES, BUILDING FOUNDATION OR OTHER SITE STRUCTURES DURING PAVEMENT OPERATIONS.

3. **SUBGRADE PREPARATION:** PREPARATION OF SUBGRADE UNDER PAVED AREAS SHALL BE PERFORMED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES' SPECIFICATIONS.

PREPARATION OF THE SUBGRADE FOR PAVING WITHIN RIGHT-OF-WAY, ACCESS EASEMENTS AND/OR FIRE LANES SHALL NOT BE INITIATED UNTIL ALL TESTING OF UNDERGROUND UTILITIES HAS BEEN COMPLETED AND VERIFIED TO MEET THE GOVERNING AUTHORITIES' SPECIFICATIONS AND AUTHORIZATION TO PROCEED HAS BEEN RECEIVED FROM THE INSPECTOR.

PAVEMENT SUBGRADE SHALL NOT BE ALLOWED TO RETAIN WATER. WET MATERIAL SHALL BE REMOVED TO DRY, SOUND MATERIAL AND APPROPRIATE DENSITY ACHIEVED PRIOR TO PAVING OPERATIONS.

4. **PROOF-ROLL SUBGRADE:** THE SUBGRADE SHALL BE PROOF-ROLLED WITH HEAVY PNEUMATIC EQUIPMENT. ANY SOFT OR PUMPING AREAS SHALL BE EXCAVATED TO FIRM SUBGRADE AND BACKFILLED AND RE-COMPACTED IN CONFORMANCE WITH THE GEOTECHNICAL REPORT.

5. **HYDRATED LIME:** HYDRATED LIME (IF REQUIRED) SHALL MEET THE REQUIREMENTS OF TXDOT ITEM 260, LIME TREATMENT USED AS SUBGRADE. LIME SHALL BE APPLIED AT THE RATE OF 6% BY WEIGHT, THOROUGHLY MIXED AND BLENDED WITH THE TOP 6" OF SUBGRADE AND UNIFORMLY COMPACTED TO A MINIMUM OF 100 PERCENT OF STANDARD PROCTOR (ASTM D698) DETERMINED BY THAT TEST. LIME STABILIZATION SHALL EXTEND ONE (1) FOOT OUTSIDE THE LIMITS OF THE PAVED AREA. IT SHOULD BE PROTECTED AND MAINTAINED IN A MOIST CONDITION UNTIL THE PAVEMENT IS PLACED.

6. **SAND CUSHION PROHIBITED:** THE USE OF SAND CUSHION UNDER PAVEMENT, INCLUDING SIDEWALKS, IS STRICTLY PROHIBITED.

7. **REINFORCING BARS:** ALL REINFORCING BARS SHALL BE GRADE 40 KSI DEFORMED REINFORCING STEEL. SIZE AND SPACING SHALL BE IN ACCORDANCE WITH THE DETAILS.

8. **BAR CHAIRS:** ALL REINFORCING STEEL AND DOWEL BARS IN PAVEMENT SHALL BE SUPPORTED AND MAINTAINED AT THE CORRECT CLEARANCES BY THE USE OF BAR CHAIRS OR OTHER APPROVED SUPPORT.

9. **CONNECTION TO EXISTING PAVEMENT:** WHERE PROPOSED PAVEMENT TO EXISTING PAVEMENT IS TO BE CONSTRUCTED BY THE CONTRACTOR, AT LEAST 15" OF REINFORCING STEEL SHALL BE EXPOSED FROM THE EXISTING PAVEMENT, OR THE CONTRACTOR SHALL PROVIDE HORIZONTAL DOWEL BARS PER THE DETAILS.

10. **TEMPERATURE CONDITIONS FOR CONCRETE PLACEMENT:** CONCRETE SHALL NOT BE PLACED WHEN THE TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT AND FALLING, BUT MAY BE PLACED WHEN TEMPERATURE IS ABOVE 35 DEGREES FAHRENHEIT AND RISING. THE TEMPERATURE READING SHALL BE TAKEN IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT.

11. **CONCRETE PAVEMENT CURING:** MEMBRANE CURING TYPE 2, WHITE PIGMENTED, SHALL BE USED FOR CURING ALL CONCRETE SURFACES IMMEDIATELY AFTER FINISHING OF SURFACES AND SHALL BE IN ACCORDANCE WITH THE TEXAS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS ITEM #526.

12. **TESTING:** SAMPLES FOR STRENGTH TESTS OF THE CONCRETE PAVEMENT WILL BE TAKEN BY THE GEOTECHNICAL ENGINEER TO VERIFY DESIGN STRENGTH. PAVEMENT AREAS FOUND TO BE DEFICIENT IN STRENGTH SHALL BE REMOVED AND REPLACED SOLELY AT THE EXPENSE OF THE CONTRACTOR. THE GEOTECHNICAL ENGINEER SHALL ALSO RANDOMLY CORE THE PAVEMENT TO VERIFY THE THICKNESS OF CONCRETE. ANY AREA FOUND TO BE DEFICIENT IN THICKNESS SHALL BE REMOVED AND REPLACED SOLELY AT THE EXPENSE OF THE CONTRACTOR.

13. **SIDEWALKS AND RAMPS:** CONSTRUCTION OF SIDEWALKS, WHEELCHAIR RAMPS AND ACCESSIBLE ROUTES SHALL BE IN ACCORDANCE WITH THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND THE AMERICANS DISIBILITY ACT (ADA).

14. **PAVEMENT MARKINGS:** PAVEMENT MARKINGS SHALL BE PROVIDED IN ACCORDANCE WITH THE TEXAS "UNIFORM TRAFFIC MANUAL FOR PAVEMENT MARKINGS". FIRE LANES SHALL BE STRIPED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES' REQUIREMENTS. ALL HANDICAP SYMBOLS, SIGNAGE AND PAVEMENT MARKINGS SHALL COMPLY WITH TAS AND ADA STANDARDS.

PAVEMENT JOINTING NOTES

1. **PAVEMENT JOINT LAYOUT:** IF A PROPOSED PAVEMENT JOINT LAYOUT PLAN HAS BEEN PROVIDED BY THE ENGINEER, THE CONTRACTOR SHALL IMPLEMENT THAT PLAN OR PROVIDE AN ALTERNATE JOINT LAYOUT TO THE ENGINEER FOR REVIEW. IF A PAVEMENT JOINT LAYOUT PLAN HAS NOT BEEN PROVIDED, THE CONTRACTOR WILL BE RESPONSIBLE FOR PREPARATION OF THE PLAN AND SUBMITTAL TO THE ENGINEER FOR REVIEW. THE CONTRACTORS' JOINT LAYOUT PLAN SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW A MINIMUM OF 2 WEEKS PRIOR TO BEGINNING PAVING CONSTRUCTION.

2. **SAW CUTTING:** SAW CUTTING SHALL BE DONE WITHIN EIGHT (8) HOURS OF POUR OR AS SOON AS CONCRETE CAN SUPPORT WEIGHT. THE CONTRACTOR SHALL MARK JOINT LOCATIONS AT THE CENTERLINE OF THE DOWEL LENGTH DURING HIS PAVING OPERATIONS. ALL SAWED JOINTS ARE TO BE TRUE IN ALIGNMENT AND SHALL CONTINUE THROUGH THE CURB. RADIAL JOINTS SHALL BE NO SHORTER THAN EIGHTEEN (18) INCHES.

3. **JOINT SEALING:** ALL CONSTRUCTION JOINTS SHALL BE SAWN, CLEANED OF DEBRIS, DIRT, DUST, SCALE, CURING COMPOUND AND CONCRETE, BLOWN DRY AND IMMEDIATELY SEALED. JOINT SEALING MATERIAL SHALL BE SONNEBORN SL 2 OR AN APPROVED EQUAL.

4. **ODD SHAPED PANELS:** ODD SHAPED PANELS SHALL BE REINFORCED WITH #3 BARS AT 18" EACH WAY. AN ODD SHAPED PANEL IS CONSIDERED TO BE ONE IN WHICH THE SLAB TAPERS TO A SHARP ANGLE WHEN THE LENGTH TO WIDTH RATIO EXCEEDS 3 TO 1 OR WHEN A SLAB IS NEITHER SQUARE NOR RECTANGULAR.

5. **EXPANSION JOINTS:** THE CONTRACTOR SHALL PROVIDE AN EXPANSION JOINT AROUND THE PERIMETER OF ANY BLOCKOUT IN THE CONCRETE PAVING.

CONDUIT AND SLEEVING NOTES

1. **GENERAL CONSTRUCTION NOTES:** REFER TO SHEET C1.1 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.

2. **PLACEMENT OF CONDUIT AND SLEEVES:** ALL UNDERGROUND CONDUIT AND SLEEVES ARE TO BE PLACED BEFORE SITE PAVING CONSTRUCTION COMMENCES AND SHALL BE BURIED A MINIMUM OF 24" BELOW THE BOTTOM OF PAVEMENT, EXCEPT ELECTRICAL CONDUIT WHICH REQUIRE A MINIMUM COVER OF 36". ALL CONDUIT AND SLEEVES SHALL EXTEND TWO (2) FEET BEYOND THE BACK OF CURB OR EDGE OF SIDEWALK. TURN CONDUIT UPWARD AND CAP EACH CONDUIT 6" ABOVE FINISH GRADE. THE CONTRACTOR SHALL FURNISH DETAILED AS-BUILT LOCATION INFORMATION FOR ALL CONDUIT AND SLEEVES TO THE DEVELOPER.

3. **TELEPHONE CONDUIT:** FURNISH AND INSTALL TWO (2) 4" DIAMETER SCHEDULE 40 PVC TELEPHONE CONDUIT WITH PULL WIRES FROM THE SITE PROPERTY LINE TO 5' OUTSIDE THE BUILDING WALL AT THE TELEPHONE ROOM IN THE BUILDING. CONDUIT SHALL BE CAPPED AT BOTH ENDS. THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL TELEPHONE COMPANY TO VERIFY THE EXACT LOCATION OF CONDUIT TO BE INSTALLED FOR THEIR USE. MARK LOCATIONS OF CONDUIT WITH #3 X 36" REBAR INSTALLED 2' INTO THE GROUND AT EACH END LOCATION.

4. **ELECTRIC AND GAS CONDUIT:** THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL ELECTRIC AND GAS PROVIDER TO VERIFY THE EXACT SIZE, TYPE, NUMBER AND LOCATION OF CONDUIT AND/OR SLEEVING REQUIRED TO BE PROVIDED BY THE CONTRACTOR FOR GAS AND ELECTRIC FACILITIES TO SERVE THIS SITE. MARK LOCATIONS OF CONDUIT WITH #3 X 36" REBAR INSTALLED 2' INTO THE GROUND AT EACH END LOCATION.

5. **SITE LIGHTING CONDUIT:** REFERENCE MEP PLANS FOR SITE LIGHTING AND ALL RELATED CONDUIT, WIRING, PULL BOXES, POLE BASES AND ASSOCIATED ELECTRICAL WORK TO BE COORDINATED AND/OR PROVIDED FOR BY THE CONTRACTOR PRIOR TO PAVING OPERATIONS.

6. **IRRIGATION CONDUIT:** ALL IRRIGATION CONDUIT AND SLEEVES SHALL BE SCHEDULE 40 PVC, INSTALLED WITH A MINIMUM OF 24" COVER. REFERENCE THE PAVING PLAN AND/OR LANDSCAPE PLANS FOR NUMBER OF CONDUIT, SIZE AND LOCATIONS OF PROPOSED IRRIGATION CONDUITS AND SLEEVES.

7. **PULL WIRES:** ALL UNDERGROUND CONDUIT AND SLEEVES SHALL BE INSTALLED WITH PULL WIRES.

8. **CONFLICTS:** IN THE EVENT OF A CONFLICT BETWEEN CONDUIT AND STORM DRAIN AND/OR UTILITY PIPING, THE CONTRACTOR SHALL ADJUST CONDUIT DOWNWARD FOR CLEARANCE.

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PAVING PLAN
SHEET 1 OF 3

TRINITY METRO
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SHEET
C6.1

LEGEND

SAWCUT, REMOVE AND DISPOSE OF EXISTING CURB, GUTTER & PAVEMENT

PROPOSED IRRIGATION SLEEVE — IRR —

DOWELED EXPANSION JOINT – "DE" JOINT — DE —

THICKENED EDGE EXPANSION JOINT – "E" JOINT — E —

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SIDEWALK & FLATWORK:
4" REINFORCED CONCRETE SIDEWALK, FLATWORK (3,600X PSI AT 28 DAYS) W.#3 BARS @ 18" O.C.EW ON 6" COMPACTED SUBGRADE TO 95% AT OR ABOVE OPTIMUM MOISTURE CONTENT. (ASTM D 698)

EXISTING CONCRETE PAVEMENT

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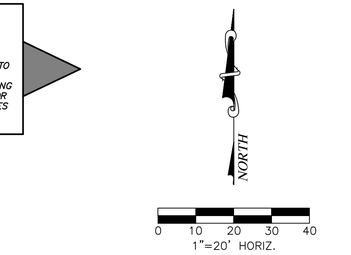

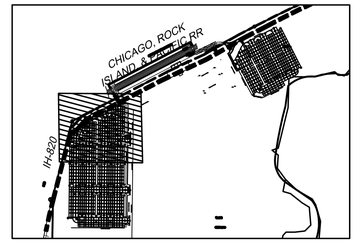

KEYMAP
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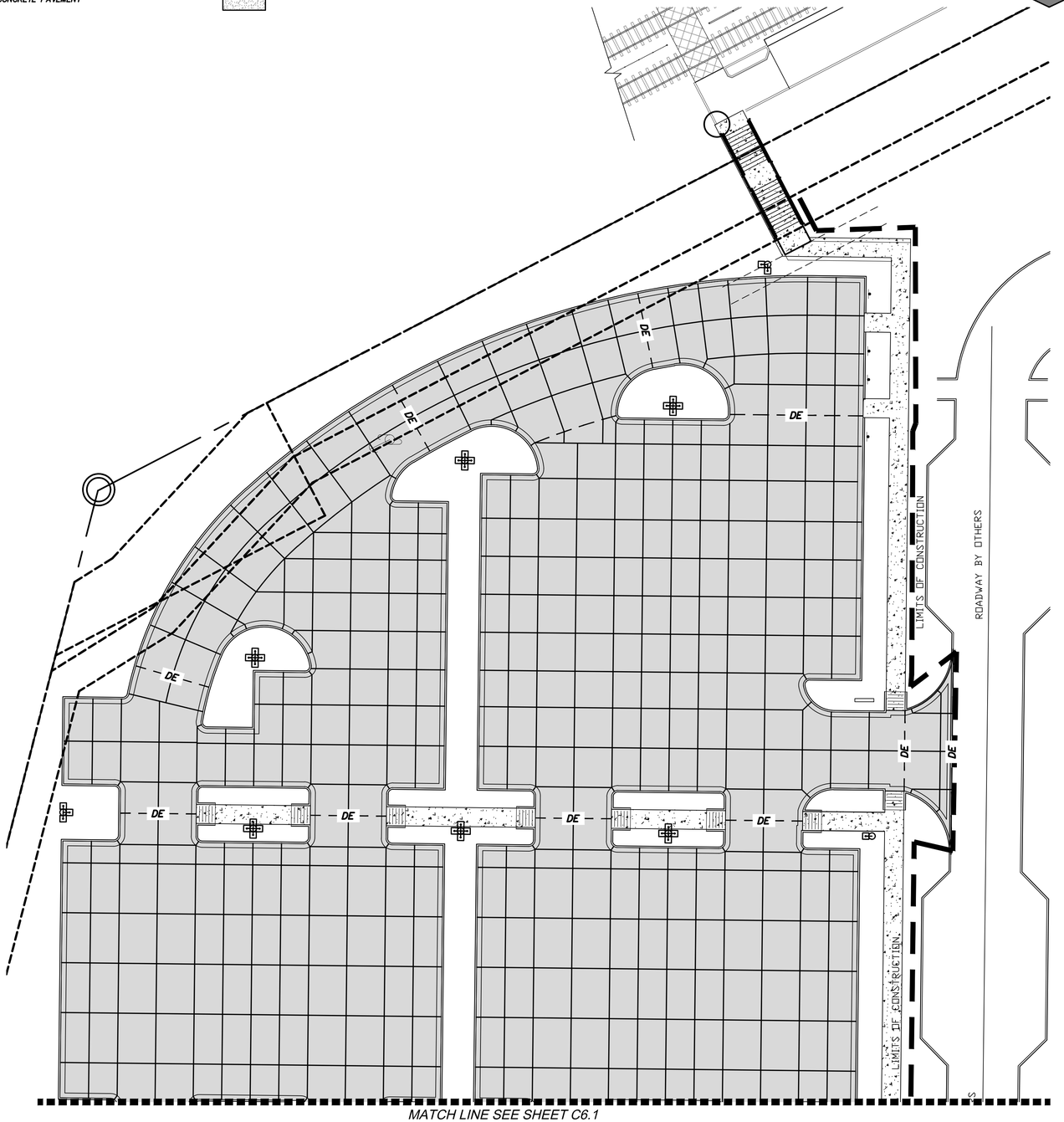

MATCH LINE SEE SHEET C6.1

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PAVING PLAN
SHEET 2 OF 3

TRINITY METRO
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SAWCUT, REMOVE AND DISPOSE OF EXISTING CURB, GUTTER & PAVEMENT

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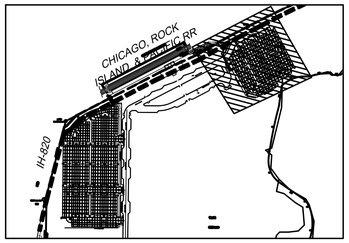

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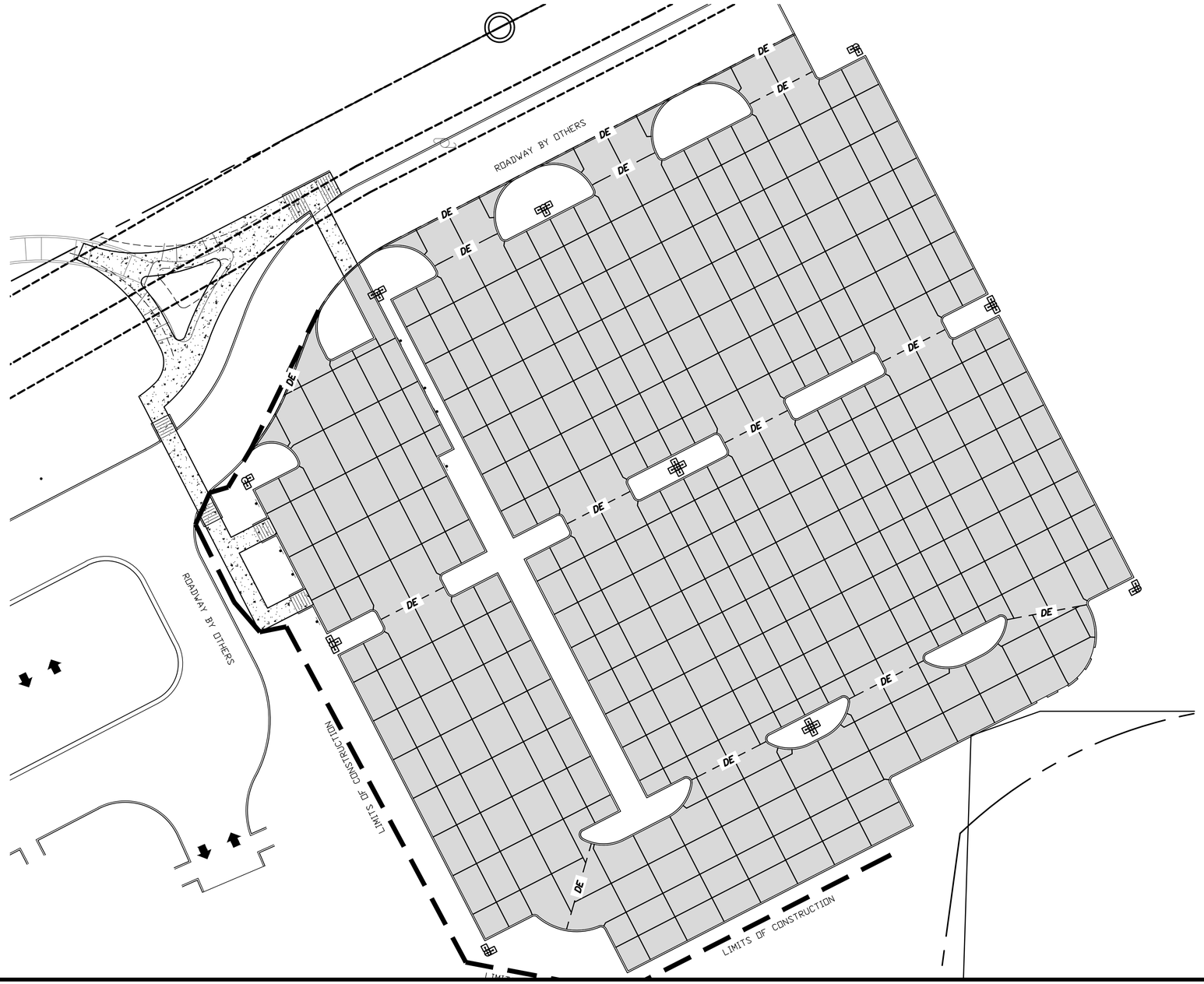

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PAVING PLAN
SHEET 3 OF 3

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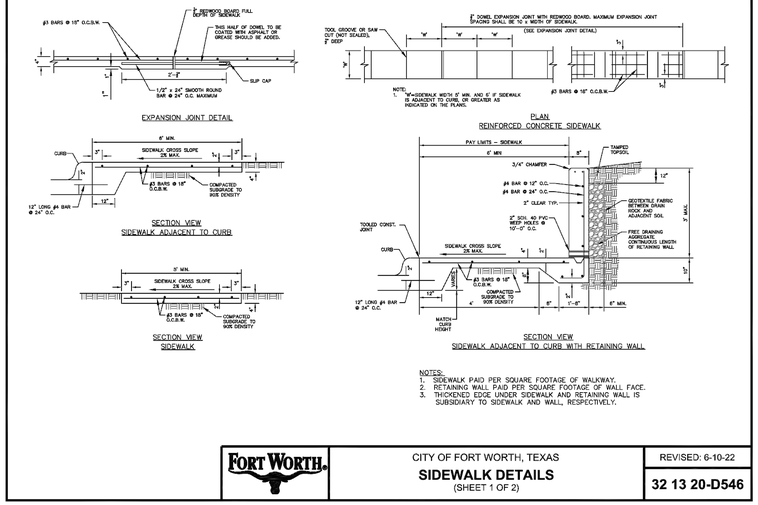
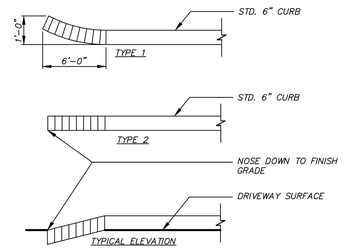
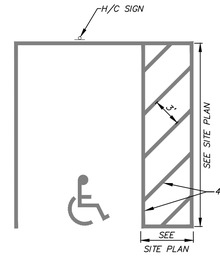
SHEET
C6.3



SIDEWALK DETAILS 1 of 2 N.T.S. 14

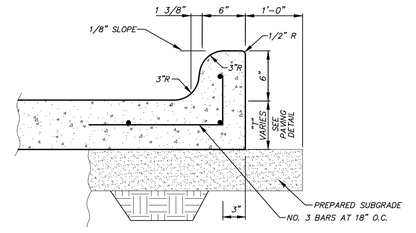


STANDARD CURB NOSING N.T.S. 13

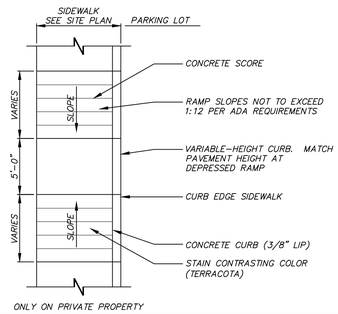


THE WORDS "NO PARKING" SHALL BE STENCILED IN THE BOTTOM OF THE LOADING ZONE WITH 12" TALL LETTERS PER TAS DIRECTIVES AS SHOWN ON SITE PLAN

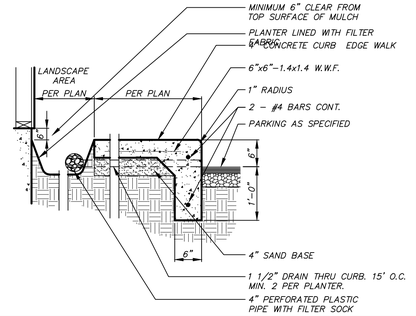
HANDICAP CROSS HATCH N.T.S. 12



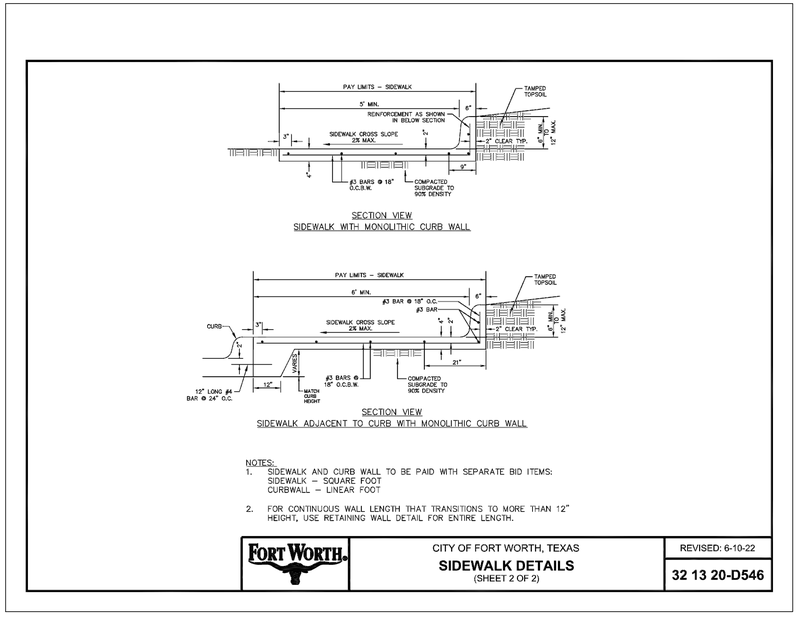
CONCRETE CURB N.T.S. 9



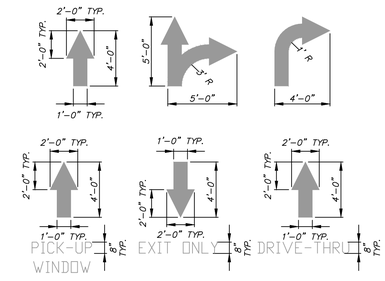
HANDICAP ACCESS RAMP N.T.S. 5



PLANTER & CURBED S/W N.T.S. 2

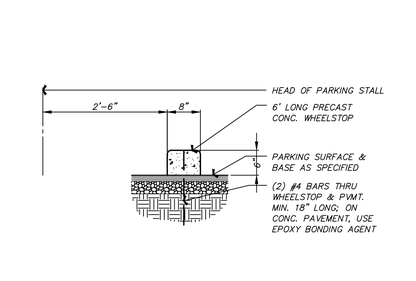


SIDEWALK DETAILS 2 of 2 N.T.S. 15

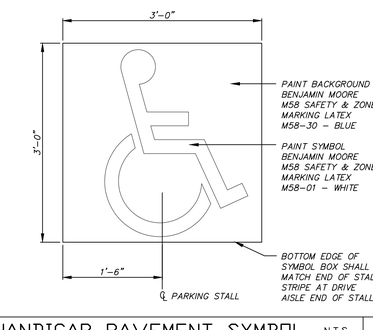


ALL PAVEMENT MARKINGS TO BE WHITE PAVEMENT PAINT, UNLESS STATED OTHERWISE.

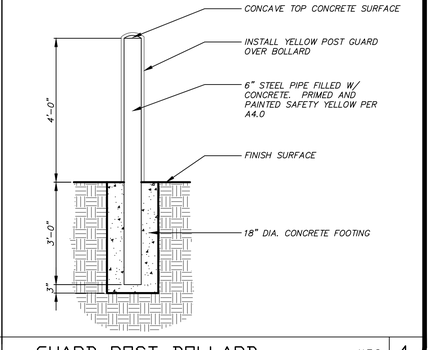
PAINTED TRAFFIC ARROWS N.T.S. 10



CONCRETE WHEELSTOP N.T.S. 3



HANDICAP PAVEMENT SYMBOL N.T.S. 7



GUARD POST BOLLARD N.T.S. 4

//DCG ENGINEERING
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www.dcgengineering.com
Engineering Firm Registration Number F-21947

NO.	REVISION	BY	DATE

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
DAVID C. GREGORY
89296
LICENSED PROFESSIONAL ENGINEER
11-14-22

Date: 12/30/2019
Scale:
Drawn By:
Reviewed By:
Project: 5010-37

SHEET
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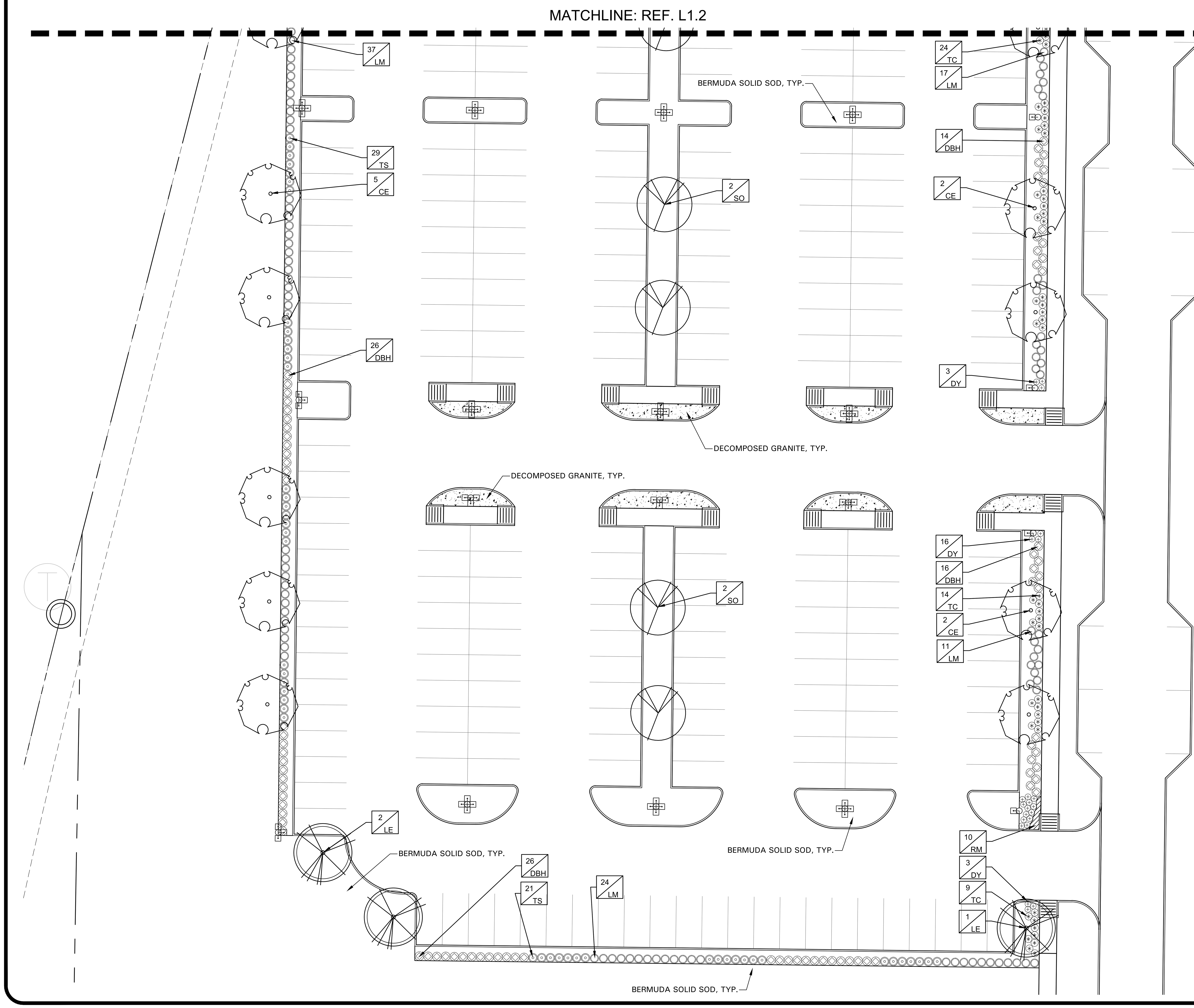

GENERAL LAWN NOTES

1. CONTRACTOR SHALL COORDINATE OPERATIONS AND AVAILABILITY OF EXISTING TOPSOIL WITH ON-SITE CONSTRUCTION MANAGER
2. LAWN AREAS SHALL BE LEFT 1" BELOW FINAL FINISHED GRADE PRIOR TO TOPSOIL INSTALLATION.
3. CONTRACTOR TO FIND GRADE AREAS TO ACHIEVE FINAL CONTOURS AS SHOWN ON CIVIL DRAWINGS. POSITIVE DRAINAGE SHALL BE PROVIDED AWAY FROM ALL BUILDINGS. ROUNDING AT TOP AND BOTTOM OF SLOPES SHALL BE PROVIDED AND IN OTHER BREAKS IN GRADE. CORRECT AREAS WHERE STANDING WATER MAY OCCUR.
4. ALL LAWN AREAS SHALL BE FINE GRADED, IRRIGATION TRENCHES COMPLETELY SETTLED AND FINISH GRADE APPROVED BY THE OWNER'S CONSTRUCTION MANAGER OR LANDSCAPE ARCHITECT PRIOR TO LAWN INSTALLATION.
5. CONTRACTOR SHALL REMOVE ALL ROCKS 3/4" IN DIAMETER AND LARGER. REMOVE ALL DIRT CLODS, STICKS, CONCRETE SPOILS, TRASH ETC PRIOR TO PLACING TOPSOIL AND GRASS INSTALLATION.
6. CONTRACTOR SHALL MAINTAIN ALL LAWN AREAS UNTIL FINAL ACCEPTANCE.
7. CONTRACTOR SHALL GUARANTEE ESTABLISHMENT OF ACCEPTABLE TURF AREA AND SHALL PROVIDE REPLACEMENT IF NECESSARY.

SOLID SOD:

1. SOLID SOD SHALL BE PLACED ALONG ALL IMPERVIOUS EDGES, AT A MINIMUM. THIS SHALL INCLUDE CURBS, WALKS, INLETS, MANHOLES AND PLANTING BED AREAS. SOD SHALL COVER OTHER AREAS COMPLETELY AS INDICATED BY PLAN.
2. SOD SHALL BE STRONGLY ROOTED DROUGHT RESISTANT SOD, NOT LESS THAN 2 YEARS OLD, FREE OF WEEDS AND UNDESIRABLE NATIVE GRASS AND MACHINE CUT TO PAD THICKNESS OF 3/4" (+1/4"), EXCLUDING TOP GROWTH AND THATCH.
3. LAY SOD BY HAND TO COVER INDICATED AREAS COMPLETELY, ENSURING EDGES ARE TOUCHING WITH TIGHTLY FITTING JOINTS, NO OVERLAPS WITH STAGGERED STRIPS TO OFFSET JOINTS.
4. TOP DRESS JOINTS IN SOD BY HAND WITH TOPSOIL TO FILL VOIDS IF NECESSARY
5. SOD SHALL BE ROLLED TO CREATE A SMOOTH EVEN SURFACE. SOD SHOULD BE WATERED THOROUGHLY DURING INSTALLATION PROCESS.
6. SHOULD INSTALLATION OCCUR BETWEEN OCTOBER 1ST AND MARCH 1ST, OVERSEED BERMUDAGRASS SOD WITH WINTER RYEGRASS AT A RATE OF 4 POUNDS PER 1000 S.F.

HYDROMULCH:

1. SCARIFY AND LOOSEN ALL AREAS TO BE HYDROMULCHED TO A MINIMUM DEPTH OF 4" PRIOR TO TOPSOIL AND HYDROMULCH INSTALLATION.
2. BERMUDA GRASS SEED SHALL BE EXTRA HULLED, TREATED LAWN TYPE. SEED SHALL BE DELIVERED TO THE SITE IN ITS ORIGINAL UNOPENED CONTAINER AND SHALL MEET ALL STATE/LOCAL LAW REQUIREMENTS.
3. FIBER SHALL BE 100% WOOD CELLULOSE FIVER, DELIVERED TO THE SITE IN ITS ORIGINAL UNOPENED CONTAINER AS MANUFACTURED BY "CONWEB" OR EQUAL.
4. FIBER TACK SHALL BE DELIVERED TO THE SITE IN ITS UNOPENED CONTAINER AND SHALL BE 'TERRO-TACK ONE', AS MANUFACTURED BY GROWERS, INC OR APPROVED EQUAL.
5. HYDROMULCH WITH BERMUDA GRASS SEET AT A RATE OF 2 POUNDS PER 1000 S.F.
6. USE A BATTER BOARD AGAINST ALL BED AREAS TO PREVENT OVER SPRAY.
7. IF INADEQUATE MOISTURE IS PRESENT IN SOIL, APPLY WATER AS NECESSARY FOR OPTIMUM MOISTURE FOR SEED APPLICATION.
8. IF INSTALLATION OCCURS BETWEEN SEPTEMBER 1ST AND MAY 1ST, ALL HYDORMULCH AREAS SHALL BE OVER-SEEDED WITH WINTER RYE GRASS AT A RATE OF FOUR POUNDS PER ONE THOUSAND SQUARE FEET. CONTRACTOR SHALL BE REQUIRED TO RE-HYDROMULCH WITH BERMUDA GRASS THE FOLLOWING GROWING SEASON AS PART OF THIS CONTRACT.
9. AFTER APPLICATION, NO EQUIPMENT SHALL OPERATE OVER APPLIED AREAS. WATER SEEDED AREAS IMMEDIATELY AFTER INSTALLATION TO SATURATION.
10. ALL LAWN AREAS TO BE HYDROMULCHED SHALL ACHIEVE 100% COVERAGE PRIOR TO FINAL ACCEPTANCE.

LANDSCAPE NOTES

1. CONTRACTOR TO VERIFY AND LOCATE ALL PROPOSED AND EXISTING ELEMENTS. NOTIFY LANDSCAPE ARCHITECT OR DESIGNATED REPRESENTATIVE FOR ANY LAYOUT DISCREPANCIES OR ANY CONDITION THAT WOULD PROHIBIT THE INSTALLATION AS SHOWN. SURVEY DATA OF EXISTING CONDITIONS WAS SUPPLIED BY OTHERS
2. CONTRACTOR SHALL CALL 811 TO VERIFY AND LOCATE ANY AND ALL UTILITIES ON SITE PRIOR TO COMMENCING WORK. LANDSCAPE ARCHITECT SHOULD BE NOTIFIED OF ANY CONFLICTS. CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING NEAR UNDERGROUND UTILITIES.
3. A MINIMUM OF 2% SLOPE SHALL BE PROVIDED AWAY FROM ALL STRUCTURES.
4. CONTRACTOR SHALL FINE GRADE AREAS TO ACHIEVE FINAL CONTOURS AS INDICATED. LEAVE AREAS TO RECEIVE TOPSOIL 3" BELOW FINAL FINISHED GRADE IN PLANTING AREAS AND 1" BELOW FINAL FINISHED GRADE IN LAWN AREAS.
5. LANDSCAPE ISLANDS SHALL BE CROWNED, AND UNIFORM THROUGHOUT THE SITE.
6. PLANTING AREAS AND SOD TO BE SEPARATED BY STEEL EDGING. NO STEEL EDGING SHALL BE INSTALLED ADJACENT TO BUILDINGS, WALKS OR CURBS. EDGING NOT TO BE MORE THAN 1/2" ABOVE FINISHED GRADE.
7. EDGING SHALL BE CUT AT 45 DEGREE ANGLE WHERE IT INTERSECTS WALKS AND/OR CURBS.
8. MULCH SHALL BE INSTALLED AT 1/2" BELOW THE TOPS OF SIDEWALKS AND CURBING.
9. QUANTITIES ON THESE PLANS ARE FOR REFERENCE ONLY. THE SPACING OF PLANTS SHOULD BE AS INDICATED ON PLANS OR OTHERWISE NOTED. ALL TREES AND SHRUBS SHALL BE PLANTED PER DETAILS.
10. CONTAINER GROWN PLANT MATERIAL IS PREFERRED HOWEVER BALL AND BURLAP PLANT MATERIAL CAN BE SUBSTITUTED IF NEED BE AND IS APPROPRIATE TO THE SIZE AND QUALITY INDICATED ON THE PLANT MATERIAL LIST.
11. TREES SHALL BE PLANTED AT A MINIMUM OF 5' FROM ANY UTILITY LINE, SIDEWALK OR CURB. TREES SHALL ALSO BE 10' CLEAR FROM FIRE HYDRANTS.
12. 4" OF SHREDDED HARDWOOD MULCH (2" SETTLED THICKNESS) SHALL BE PLACED OVER WEED BARRIER FABRIC. MULCH SHALL BE SHREDDED HARDWOOD MULCH OR APPROVED EQUAL, PINE STRAW MULCH IS PROHIBITED.
13. WEED BARRIER FABRIC SHALL BE USED IN PLANT BEDS AND AROUND ALL TREES AND SHALL BE MIRAFI 1405 WEED BARRIER OR APPROVED EQUAL.
14. CONTRACTOR TO PROVIDE UNIT PRICING OF LANDSCAPE MATERIALS AND BE RESPONSIBLE FOR OBTAINING ALL LANDSCAPE AND IRRIGATION PERMITS.

IRRIGATION:

1. ALL REQUIRED LANDSCAPE AREAS SHALL HAVE AN AUTOMATIC IRRIGATION SYSTEM WITH A FREEZE/RAIN SENSOR. SYSTEM SHALL ALSO HAVE AN ET WEATHER BASED CONTROLLER AND BE DESIGNED AND INSTALLED BY A LICENSED IRRIGATOR.

MAINTENANCE REQUIREMENTS:

1. VEGETATION SHOULD BE INSPECTED REGULARLY TO ENSURE THAT PLANT MATERIAL IS ESTABLISHING PROPERLY AND REMAINS IN A HEALTHY GROWING CONDITION APPROPRIATE FOR THE SEASON. IF DAMAGED OR REMOVED, PLANTS MUST BE REPLACED BY A SIMILAR VARIETY AND SIZE.
2. MOWING, TRIMMING, EDGING AND SUPERVISION OF WATER APPLICATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THE OWNER OR OWNER'S REPRESENTATIVE ACCEPTS AND ASSUMES REGULAR MAINTENANCE.
3. ALL LANDSCAPE AREAS SHOULD BE CLEANED AND KEPT FREE OF TRASH, DEBRIS, WEEDS AND OTHER MATERIAL.

MISCELLANEOUS MATERIALS:

1. STEEL EDGING SHALL BE 3/16" X 4 X 16' DARK GREEN DURAEDGE STEEL LANDSCAPE EDGING UNLESS NOTED OTHERWISE ON PLANS/DETAILS.
2. RIVER ROCK SHALL BE ARIZONA RIVER ROCK, 2" - 4" DIAMETER. RIVER ROCK SHALL BE COMPACTED TO A MINIMUM OF 3" DEPTH OVER FILTER FABRIC.

PLANT SCHEDULE

LABEL	COMMON NAME
	SHADE TREES
CE	Cedar Elm
LE	Lacebark Elm
SO	Shumard Oak
	SHRUBS
DBH	Dwarf Burford Holly
DY	Dwarf Yaupon Holly
LM	Lindheimer Muhly Grass
TC	Turk's Cap
TS	Texas Sage 'Green Cloud'
	GROUNDCOVER/VINES/GRASS
RM	Creeping Rosemary
	Bermuda Solid Sod
	Decomposed Granite

N

GRAPHIC SCALE

0 20 40 FEET

Scale 1"=20' - 0"

NO.	REVISION	BY	DATE

AWR Designs, LLC
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Aledo, Texas 76008
amanda@awr-designs.com
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A W R

LANDSCAPE PLAN

TRINITY METRO
RAIL STATION
FORT WORTH, TX

REGISTERED LANDSCAPE ARCHITECT
AMANDA W. RICHARDSON
2754
STATE OF TEXAS

[illegible]

Date: 3/4/2022
Scale:
Drawn By:
Reviewed By:
Project: 5010–37

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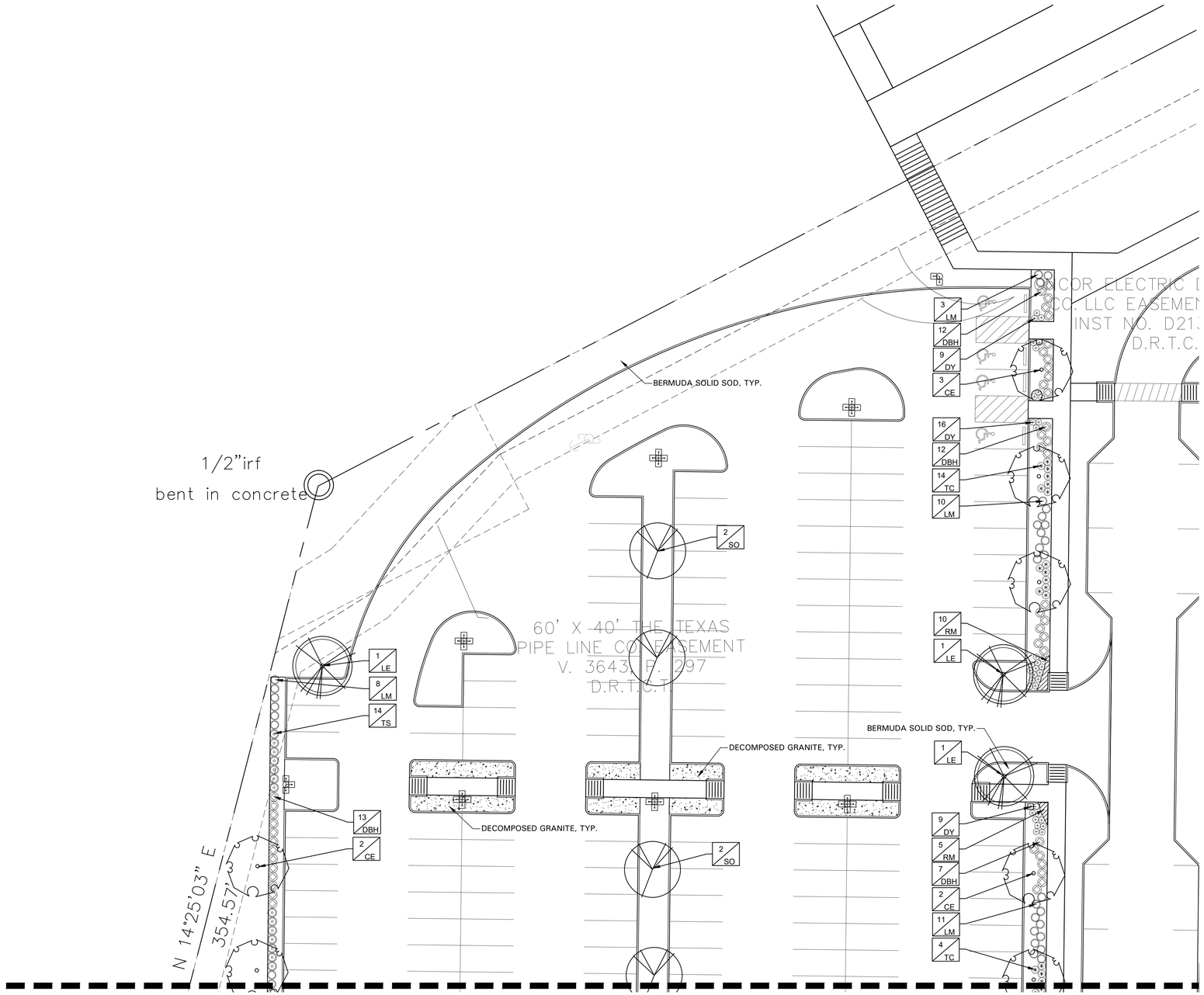

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PLANT SCHEDULE

LABEL	COMMON NAME
	SHADE TREES
CE	Cedar Elm
LE	Lacebark Elm
SO	Shumard Oak
	SHRUBS
DBH	Dwarf Burford Holly
DY	Dwarf Yaupon Holly
LM	Lindheimer Muhly Grass
TC	Turk's Cap
TS	Texas Sage 'Green Cloud'
	GROUNDCOVER/VINES/GRASS
RM	Creeping Rosemary
	Bermuda Solid Sod
	Decomposed Granite

GRAPHIC SCALE
0 20 40 FEET
Scale 1"=20' - 0"

NO.	REVISION	BY	DATE

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LANDSCAPE PLAN

TRINITY METRO
RAIL STATION
FORT WORTH, TX

REGISTERED LANDSCAPE ARCHITECT
AMANDA W. RICHARDSON
2754
STATE OF TEXAS

Date: 3/4/2022
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Drawn By:
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Project: 5010-37

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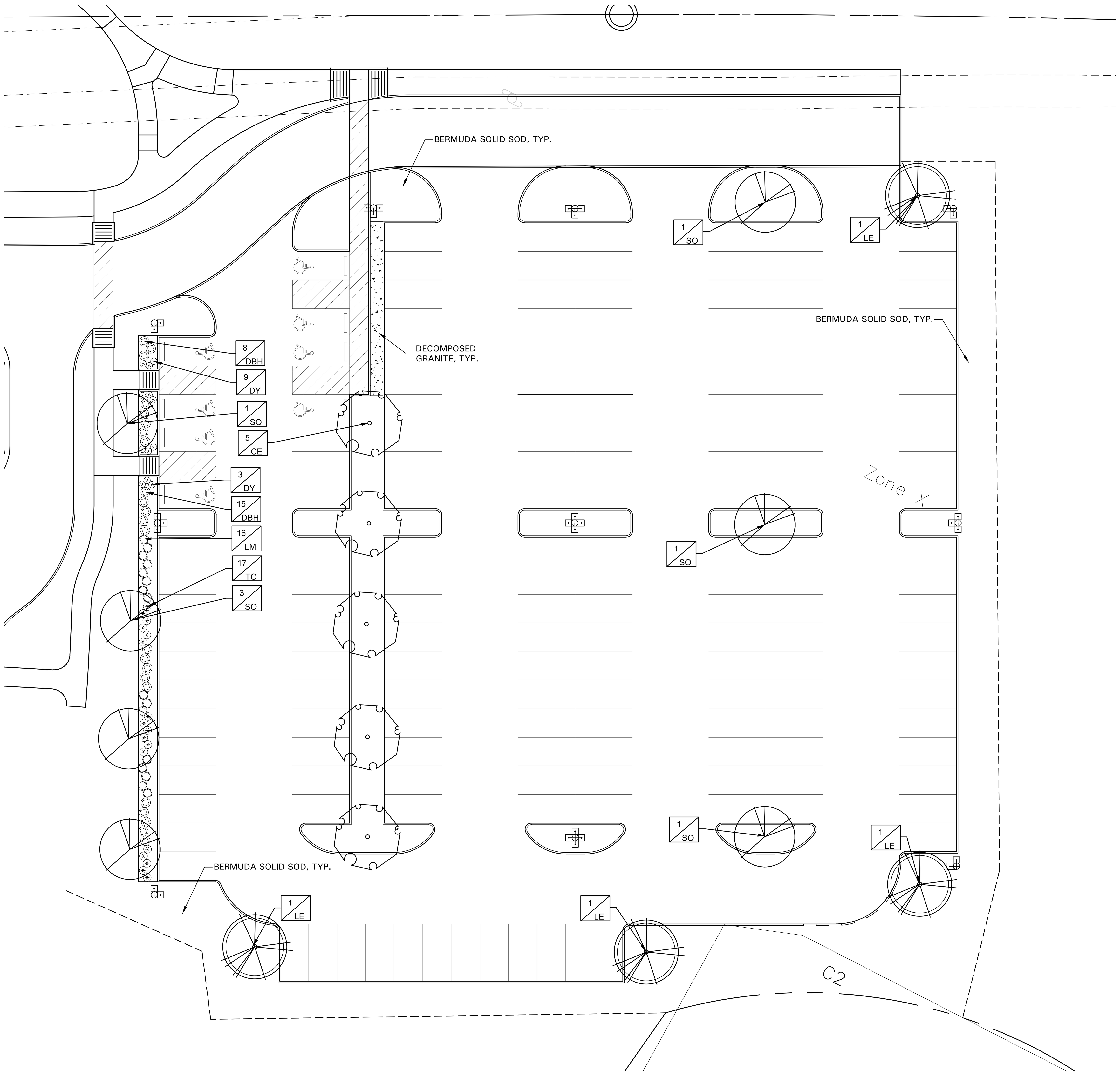
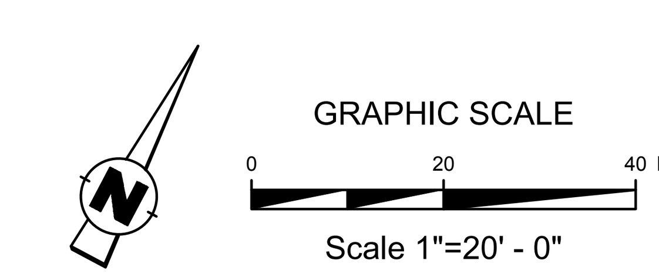


PLANT SCHEDULE

QTY	LABEL	COMMON NAME	SCIENTIFIC NAME	SIZE	NOTES
		SHADE TREES			
14	CE	Cedar Elm	*Ulmus crassifolia*	3" cal.	12' ht., 4' spread, matching
10	LE	Lacebark Elm	*Ulmus parvifolia 'Sempervirens'*	3" cal.	12' ht., 4' spread
15	SO	Shumard Oak	*Quercus shumardii*	3" cal.	12' ht., 5' spread
		SHRUBS			
84	DBH	Dwarf Burford Holly	*Ilex cornuta ' Burford Nana'*	5 gal.	full, 20" spread, 36" o.c.
68	DY	Dwarf Yaupon Holly	*Ilex vomitoria 'Condeaux'*	5 gal.	full, 24" sprd, 24" o.c.
68	LM	Lindheimer Muhly Grass	*Muhlenbergia lindheimeri*	5 gal.	full, 24" spread, 36" o.c.
81	TC	Turk's Cap	*Malvaviscus arboreus var. 'Drummondii'*	7 gal.	full, 24" sprd, 30" o.c.
		GROUNDCOVER/VINES/GRASS			
25	RM	Creeping Rosemary	*Rosmarinus officinalis 'Prostratus'*	1 gal.	full, 18" o.c.
		Bermuda Solid Sod	*Cynodon dactylon*		
		Decomposed Granite			

Plant list is an aid to bidders only. Contractor shall verify all quantities on plan. All heights and spreads are minimums. Trees shall have a strong central leader and be of matching specimens. All plant material shall meet or exceed remarks as indicated.



NO.	REVISION	BY	DATE

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LANDSCAPE PLAN

TRINITY METRO
RAIL STATION
FORT WORTH, TX

REGISTERED LANDSCAPE ARCHITECT
AMANDA W. RICHARDSON
2754
STATE OF TEXAS

[illegible]

Date: 8/17/2022
Scale:
Drawn By:
Reviewed By:
Project: 5010–37

SHEET
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SECTION 32 9300 - LANDSCAPE

PART 1 - GENERAL

1.1 QUALIFICATIONS OF THE LANDSCAPE CONTRACTOR.

A. ALL LANDSCAPE WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE FIRM SPECIALIZING IN LANDSCAPE PLANTING

1.2 REFERENCE DOCUMENTS

A. REFER TO LANDSCAPE PLANS, NOTES, SCHEDULES AND DETAILS FOR ADDITIONAL REQUIREMENTS

1.3 SCOPE OF WORK / DESCRIPTION OF WORK

A. WORK COVERED BY THESE SECTIONS INCLUDES: FURNISH ALL SUPERVISIONS, LABOR, MATERIALS, SERVICES, EQUIPMENT AND APPLIANCES REQUIRED TO COMPLETE THE WORK COVERED IN CONJUNCTION WITH THE LANDSCAPING COVERED IN LANDSCAPE PLANS AND SPECIFICATIONS INCLUDING:

1. PLANTING (TREES, SHRUBS, GRASSES)
1. BED PREP AND FERTILIZATION
3. NOTIFICATION OF SOURCES
4. WATER AND MAINTENANCE UNTIL ACCEPTANCE
5. GUARANTEE

B. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLY, TRANSPORTATION AND INSTALLATION OF MATERIALS.

C. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC.) PRIOR TO THE START OF ANY WORK

1.4 REFERENCES

A. AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY AMERICAN ASSOCIATION OF NURSERYMEN; 27 OCTOBER 1980, EDITION; BY AMERICAN NATIONAL STANDARDS INSTUTUTE (Z60.1) - PLANT MATERIAL

B. AMERICAN JOINT COMMITTEE ON HORTICULTURE NOMENCLATURE; 1942 EDITION OF STANDARDIZED PLANT NAMES.

C. TEXAS ASSOCIATION OF NURSERYMEN, GRADES AND STANDARDS

1.5 SUBMITTALS

A. PROVIDE REPRESENTATIVE QUANTITIES OF EACH SOIL, MULCH, BED MIX, GRAVEL AND STONE BEFORE INSTALLATION. SAMPLES TO BE APPROVED BY OWNER'S REPRESENTATIVE BEFORE USE.

B. SOIL AMENDMENTS AND FERTILIZERS SHOULD BE RESEARCHED AND BASED ON THE SOILS IN THE AREA.

C. BEFORE INSTALLATION, SUBMIT DOCUMENTATION THAT PLANT MATERIALS ARE AVAILABLE AND HAVE BEEN RESERVED. FOR ANY PLANT MATERIAL NOT AVAILABLE, SUBMIT REQUEST FOR SUBSTITUTION.

1.6 JOB CONDITIONS, DELIVERY, STORAGE AND HANDLING

A. GENERAL CONTRACTOR TO COMPLETE WORK BEFORE LANDSCAPE CONTRACTOR TO COMMENCE.

B. ALL PLANTING BED AREAS SHALL BE LEFT THREE INCHES BELOW FINAL GRADE OF SIDEWALKS, DRIVES AND CURBS. ALL AREAS TO RECEIVE SOLID SOD SHALL BE LEFT ONE INCH BELOW THE FINAL GRADE OF WALKS, DRIVES AND CURBS. CONSTRUCTION DEBRIS SHALL BE REMOVED PRIOR TO LANDSCAPE CONTRACTOR BEGINNING WORK

C. STORAGE OF MATERIALS AND EQUIPMENT AT THE JOB SITE WILL BE AT THE RISK OF THE LANDSCAPE CONTRACTOR. THE OWNER CANNOT BE HELD RESPONSIBLE FOR THEFT OR DAMAGE.

1.7 SEQUENCING

A. INSTALL TREES, SHRUBS, AND LINER STOCK PLANT MATERIALS PRIOR TO INSTALLATION OF LAWN/SOLID SOD.

B. WHERE EXISTING TURF AREAS ARE BEING CONVERTED TO PLANTING BEDS, THE TURF SHALL BE CHEMICALLY ERADICATED TO MINIMIZE RE-GROWTH IN THE FUTURE. AREAS SHALL BE PROPERLY PREPARED WITH AMENDED ORGANIC MATTER.

1.8 MAINTENANCE AND GUARANTEE

MAINTENANCE:

A. THE LANDSCAPE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE MAINTENANCE OF ALL WORK FROM THE TIME OF PLANTING UNTIL FINAL ACCEPTANCE BY OWNER.

B. NO TREES, GRASS, GROUNDCOVER OR GRASS WILL BE ACCEPTED UNLESS THEY SHOW HEALTHY GROWTH AND SATISFACTORY FOLIAGE CONDITIONS.

C. MAINTENANCE SHALL INCLUDE WATERING OF TREES AND PLANTS, CULTIVATION, WEED SPRAYING, EDGING, PRUNING OF TREES, MOWING OF GRASS, CLEANING UP AND ALL OTHER WORK NECESSARY FOR MAINTENANCE.

D. A WRITTEN NOTICE REQUESTING FINAL INSPECTION AND ACCEPTANCE SHOULD BE SUBMITTED TO THE OWNER AT LEAST 7 DAYS PRIOR TO COMPLETION. AN ON SITE INSPECTION BY THE OWNER'S AUTHORIZED REPRESENTATIVE WILL BE COMPLETED PRIOR TO WRITTEN ACCEPTANCE.

E. NOTIFY OWNER OR OWNER'S REPRESENTATIVE SEVEN DAYS PRIOR TO THE EXPIRATION OF THE WARRANTY PERIOD.

F. REMOVE DEAD, UNHEALTHY AND UNSIGHTLY PLANTS DURING WARRANTY PERIOD

G. REMOVE GUYING AND STAKING MATERIALS AFTER ONE YEAR

H. ALL LANDSCAPE MUST BE MAINTAINED AND GRASS MOWED/EDGED ON A WEEKLY SCHEDULE UNTIL ACCEPTANCE BY OWNER. REMOVE CLIPPINGS AND DEBRIS FROM SITE PROMPTLY.

I. REMOVE TRASH, DEBRIS, AND LITTER. WATER, PRUNE, RESTAKE TREES, FERTILIZE, WEED AND APPLY HERBICIDES AND FUNGICIDES AS REQUIRED.

J. COORDINATE THE OPERATION OF IRRIGATION SYSTEM TO ENSURE THAT PLANTS ARE ADEQUATELY WATERED. HAND WATER AREAS NOT RECEIVING ADEQUATE WATER FROM AN IRRIGATION SYSTEM.

K. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN ACCORDANCE TO THE MAINTENANCE SERVICE TO ENSURE THE SYSTEM IS IN PROPER WORKING ORDER WITH SCHEDULING ADJUSTMENTS BY SEASON TO MAXIMIZE WATER CONSERVATION.

L. REAPPLY MULCH TO BARE AND THIN AREAS.

M. SHOULD SEEDED AND/OR SODDED AREAS NOT BE COVERED BY AN AUTOMATIC IRRIGATION SYSTEM, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THESE AREAS AND OBTAINING A FULL, HEALTHY STAND OF GRASS AT NO ADDITIONAL COST TO THE OWNER.

N. TO ACHIEVE FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD, ALL OF THE FOLLOWING CONDITIONS MUST OCCUR:

a. THE LANDSCAPE SHALL SHOW ACTIVE, HEALTHY GROWTH (WITH EXCEPTIONS MADE FOR SEASONAL DORMANCY). ALL PLANTS NOT MEETING THIS CONDITION SHALL BE REJECTED AND REPLACED BY HEALTHY PLANT MATERIAL PRIOR TO FINAL ACCEPTANCE.

b. ALL HARDSCAPE SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE.

c. SODDED AREAS MUST BE ACTIVELY GROWING AND MUST REACH A MINIMUM HEIGHT OF 1 1/2 INCHES BEFORE FIRST MOWING. HYDROMULCHED AREAS SHALL SHOW ACTIVE, HEALTHY GROWTH. BARE AREAS LARGER THAN TWELVE SQUARE INCHES MUST BE RESODDED OR RESEEDED (AS APPROPRIATE) PRIOR TO FINAL ACCEPTANCE. ALL SODDED TURF SHALL BE NEATLY MOWED.

GUARANTEE:

A. TREES, SHRUBS, GROUNDCVOER SHALL BE GUARANTEED (IN WRITING) FOR A 12 MONTH PERIOD (90 DAYS FOR ANNUAL PLANTING OR AT THE END OF THE SEASONAL COLOR GROWING SEASON, WHICHEVER COMES SOONER) AFTER FINAL ACCEPTANCE. THE CONTRACTOR SHALL REPLACE ALL DEAD MATERIALS AS SOON AS WEATHER PERMITS AND UPON NOTIFICATION OF THE OWNER.

B. PLANTS INCLUDING TREES, WHICH HAVE PARTIALLY DIED SO THAT SHAPE, SIZE OR SYMMETRY HAVE BEEN DAMAGED SHALL BE CONSIDERED SUBJECT TO REPLACEMENT. IN SUCH CASES, THE OPINION OF THE OWNER SHALL BE FINAL.

C. PLANTS USED FOR REPLACEMENT SHALL BE OF THE SAME SIZE AND KIND AS THOSE ORIGINALLY PLANTED OR SPECIFIED. ALL WORK INCLUDING MATERIALS, LABOR AND EQUIPMENT USED IN REPLACEMENTS SHALL CARRY A 12 MONTH GUARANTEE. ANY DAMAGE INCLUDING RUTS IN LAWN OR BED AREAS INCURRED AS A RESULT OF MAKING REPLACEMENTS SHALL BE IMMEDIATELY REPAIRED.

D. WHEN PLANT REPLACEMENTS ARE MADE, PLANTS, SOIL MIX, FERTILIZER AND MULCH ARE TO BE UTILIZED AS ORIGINALLY SPECIFIED AND RE-INSPECTED FOR FULL COMPLIANCE WITH THE CONTRACT REQUIREMENTS. ALL REPLACEMENTS ARE INCLUDED UNDER "WORK" OF THIS SECTION.

E. THE OWNER AGREES THAT FOR THE ONE YEAR WARRANTY PERIOD TO BE EFFECTIVE, HE WILL WATER PLANTS AT LEAST TWICE A WEEK DURING DRY PERIODS.

F. THE ABOVE GUARANTEE SHALL NOT APPLY WHERE PLANTS DIE AFTER ACCEPTANCE BECAUSE OF DAMAGE DUE TO ACTS OF GOD, VANDALISM, INSECTS, DISEASE, INJURY BY HUMANS, MACHINES, THEFT OR NEGLIGENCE BY OWNER.

G. ACCEPTANCE FOR ALL LANDSCAPE WORK SHALL BE GIVEN AFTER FINAL INSPECTION BY THE OWNER PROVIDED THE JOB IS IN A COMPLETE, UNDAMAGED CONDITION AND THERE IS A STAND OF GRASS IN ALL LAWN AREAS. AT THAT TIME, THE OWNER WILL ASSUME MAINTENANCE ON THE ACCEPTED WORK.

1.9 QUALITY ASSURANCE

A. COMPLY WITH ALL FEDERAL, STATE, COUNTY AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK.

B. EMPLOY PERSONNEL EXPERIENCED AND FAMILIAR WITH THE REQUIRED WORK AND SUPERVISION BY A FOREMAN.

C. MAKE CONTACT WITH SUPPLIERS IMMEDIATELY UPON OBTAINING NOTICE OF CONTRACT ACCEPTANCE TO SELECT AND BOOK MATERIALS.

D. DEVELOP A PROGRAM OF MAINTENANCE (PRUNING AND FERTILIZATION) WHICH WILL ENSURE THE PURCHASED MATERIALS WILL MEET AND/OR EXCEED PROJECT SPECIFICATIONS.

E. DO NOT MAKE PLANT MATERIAL SUBSTITUTIONS. IF THE LANDSCAPE MATERIAL SPECIFIED IS NOT READILY AVAILABLE, SUBMIT PROOF TO LANDSCAPE ARCHITECT ALONG WITH THE PROPOSED MATERIAL TO BE USED IN LIEU OF THE SPECIFIED PLANT.

F. AT THE TIME BIDS ARE SUBMITTED, THE CONTRACTOR IS ASSUMED TO HAVE LOCATED THE MATERIALS NECESSARY TO COMPLETE THE JOB AS SPECIFIED.

G. OWNER'S REPRESENTATIVE SHALL INSPECT ALL PLANT MATERIAL AND RETAINS THE RIGHT TO INSPECT MATERIALS UPON ARRIVAL TO THE SITE AND DURING INSTALLATION. THE OWNER'S REPRESENTATIVE MAY ALSO REJECT ANY MATERIALS HE/SHE FEELS TO BE UNSATISFACTORY OR DEFECTIVE DURING THE WORK PROCESS. ALL PLANTS DAMAGED IN TRANSIT OR AT THE JOB SITE SHALL BE REJECTED.

1.10 PRODUCT DELIVERY, STORAGE AND HANDLING

A. PREPARATION

1. BALLED AND BURLAPPED B&B PLANTS): DIG AND PREPARE SHIPMENT IN A MANNER THAT WILL NOT DAMAGE ROOTS, BRANCHES, SHAPE AND FUTURE DEVELOPMENT.

2. CONTAINER GROWN PLANTS: DELIVER PLANTS IN RIGID CONTAINER TO HOLD BALL SHAPE AND PROTECT ROOT MASS.

B. DELIVERY

1. DELIVER PACKAGED MATERIALS IN SEALED CONTAINERS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. PROTECT MATERIALS FROM DETERIORATION DURING DELIVERY AND WHILE STORED ON SITE.

2. DELIVER ONLY PLANT MATERIALS THAT CAN BE PLANTED IN ONE DAY UNLESS ADEQUATE STORAGE AND WATERING FACILITIES ARE AVAILABLE ON SITE

3. PROTECT ROOT BALLS BY HEELING IN WITH SAWDUST OR OTHER APPROVED MOISTURE RETAINING MATERIAL IF NOT PLANTED WITHIN 24 HOURS OF DELIVERY.

4. PROTECT PLANTS DURING DELIVERY TO PREVENT DAMAGE TO ROOT BALL OR DESICCATION OF LEAVES.

5. KEEP PLANTS MOIST AT ALL TIMES. COVER ALL MATERIALS DURING TRANSPORT.

6. NOTIFY OWNERS REPRESENTATIVE OF DELIVERY 72 HOURS PRIOR TO DELIVERY OF PLANT MATERIAL AT JOB SITE.

7. REMOVE REJECTED PLANT MATERIAL IMMEDIATELY FROM JOB SITE.

8. TO AVOID DAMAGE OR STRESS, DO NOT LIFT, MOVE, ADJUST TO PLUMB, OR OTHERWISE MANIPULATE PLANTS BY TRUNK OR STEMS.

PART 2 - PRODUCTS

2.1 PLANT MATERIALS

A. GENERAL: WELL FORMED NO. 1 GRADE OR BETTER NURSERY GROWN STOCK. LISTED PLANT HEIGHTS ARE FROM TOPS OF FOOT BALLS TO NOMINAL TOPS OF PLANTS. PLANT SPREAD REFERS TO NOMINAL OUTER WIDTH OF THE PLANT NOT THE OUTER LEAF TIPS. PLANTS SHALL BE INDIVIDUALLY APPROVED BY THE OWNERS REPRESENTATIVE AND THEIR DECISION AS TO THEIR ACCEPTABILITY SHALL BE FINAL.

B. QUANTITIES: THE DRAWINGS AND SPECIFICATIONS ARE COMPLIMENTARY. ANYTHING CALLED FOR ON ONE AND NOT THE OTHER IS AS BINDING AS IF SHOWN AND CALLED FOR ON BOTH. THE PLANT SCHEDULE IS AN AID TO BIDDERS ONLY. CONFIRM ALL QUANTITIES ON PLAN.

C. QUANTITIES AND SIZE: PLANT MATERIALS SHALL CONFORM TO THE SIZE GIVEN ON THE PLAN AND SHALL BE HEALTHY, WELL SHAPED, FULL BRANCHED AND WELL ROOTED. SYMMETRY IS ALSO IMPERATIVE. PLANTS SHALL BE FREE FROM INSECTS, INJURY, DISEASE, BROKEN BRANCHES, DISFIGUREMENTS, INSECT EGGS AND ARE TO BE OF SPECIMEN QUALITY.

D. APPROVAL: ALL PLANTS WHICH ARE FOUND UNSUITABLE IN GROWTH OR ARE UNHEALTHY, BADLY SHAPED OR UNDERSIZED WILL BE REJECTED BY THE OWNERS REPRESENTATIVE EITHER BEFORE OR AFTER PLANTING AND SHALL BE REMOVED AT THE EXPENSE OF THE LANDSCAPE CONTRACTOR AND REPLACED WITH ACCEPTABLE SPECIMENS.

E. TREES SHALL BE HEALTHY, FULL BRANCHED, WELL SHAPED AND SHALL MEET THE MINIMUM REQUIREMENTS AS SPECIFIED ON THE PLANT SCHEDULE. ALL TREES SHALL BE OBTAINED FROM SOURCES WITHIN 200 MILES OF THE PROJECT SITE IF POSSIBLE, AND WITH SIMILAR CLIMACTIC CONDITIONS.

F. PRUNING: ALL PRUNING OF TREES AND SHRUBS SHALL BE EXECUTED BY THE LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER, PRIOR TO FINAL ACCEPTANCE.

G. PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED, EXCEPT THE PLANTS LARGER THAN THOSE SPECIFIED MAY BE USED. USE OF LARGER PLANTS SHALL NOT INCREASE THE CONTRACT PRICE.

H. WHERE MATERIALS ARE PLANTED IN MASSES, PROVIDE PLANTS OF UNIFORM SIZE.

I. ROOT SYSTEMS SHALL BE HEALTHY, DENSELY BRANCHED, FIBROUS ROOT SYSTEMS, NON-POT-BOUND, FREE FROM ENCIRCLING AND/OR GIRDLING ROOTS, AND FREE FROM ANY OTHER ROOT DEFECTS (SUCH AS J-SHAPED ROOTS).

J. ALL TREES SHALL BE STANDARD IN FORM, UNLESS OTHERWISE SPECIFIED. TREES WITH CENTRAL LEADERS WILL NOT BE ACCEPTED IF LEADER IS DAMAGED OR REMOVED. PRUNE ALL DAMAGED TWIGS AFTER PLANTING

K. TREE TRUNKS TO BE STURDY, EXHIBIT HARDENED SYSTEMS AND VIGOROUS AND FIBROUS ROOT SYSTEMS, NOT ROOT OR POT BOUND.

L. TREES WITH DAMAGED OR CROOKED LEADERS, BARK ABRASIONS, SUNSCALD, DISFIGURING KNOTS, OR\INSECT DAMAGE WILL BE REJECTED.

M. CALIPER MEASUREMENTS FOR STANDARD (SINGLE TRUNK) TREES SHALL BE AS FOLLOWS: SIX INCHES ABOVE THE ROOT FLARE FOR TREES UP TO AND INCLUDING FOUR INCHES IN CALIPER, AND TWELVE INCHES ABOVE THE ROOT FLARE FOR TREES EXCEEDING FOUR INCHES IN CALIPER

N. MULTI-TRUNK TREES SHALL BE MEASURED BY THEIR OVERALL HEIGHT, MEASURED FROM THE TOP OF THE ROOT BALL.

O. ANY TREE OR SHRUB SHOWN TO HAVE EXCESS SOIL PLACED ON TOP OF THE ROOT BALL, SO THAT THE ROOT FLARE HAS BEEN COMPLETELY COVERED, SHALL BE REJECTED.

P. SOD: PROVIDE WELL-ROOTED SOD OF THE VARIETY NOTED ON THE PLANS. SOD SHALL BE CUT FROM HEALTHY, MATURE TURF WITH SOIL THICKNESS OF 3/4" TO 1". EACH PALLET OF SOD SHALL BE ACCOMPANIED BY A CERTIFICATE FROM SUPPLIER STATING THE COMPOSITION OF THE SOD.

2.2 SOIL PREPARATION MATERIALS

A. SANDY LOAM:

1. FRIABLE, FERTILE, DARK, LOAMY SOIL, FREE OF CLAY LUMPS, SUBSOIL, STONES AND OTHER EXTRANEOUS MATERIAL AND REASONABLY FREE OF WEEDS AND FOREIGN GRASSES. LOAM CONTAINING DALLASGRASS OR NUTGRASS SHALL BE REJECTED.

2. PHYSICAL PROPERTIES AS FOLLOWS:

a. CLAY – BETWEEN 7-27%
b. SILT – BETWEEN 15-25%
c. SAND – LESS THAN 52%

3. ORGANIC MATTER SHALL BE 3%-10% OF TOTAL DRY WEIGHT.

4. IF REQUESTED, LANDSCAPE CONTRACTOR SHALL PROVIDE A CERTIFIED SOIL ANALYSIS CONDUCTED BY AN APPROVED SOIL TESTING LABORATORY VERIFYING THAT SANDY LOAM MEETS THE ABOVE REQUIREMENTS.

B. ORGANIC MATERIAL: COMPOST WITH A MIXTURE OF 80% VEGETATIVE MATTER AND 20% ANIMAL WASTE. INGREDIENTS SHOULD BE A MIX OF COURSE AND FINE TEXTURED MATERIAL.

C. PREMIXED BEDDING SOIL AS SUPPLIED BY VITAL EARTH RESOURCES, GLADEWATER, TEXAS; PROFESSIONAL BEDDING SOIL AS SUPPLIED BY LIVING EARTH TECHNOLOGY, DALLAS, TEXAS OR ACID GRO MUNICIPAL MIX AS SUPPLIED BY SOIL BUILDING SYSTEMS, DALLAS, TEXAS OR APPROVED EQUAL.

D. SHARP SAND: SHARP SAND MUST BE FREE OF SEEDS, SOIL PARTICLES AND WEEDS.

E. MULCH: DOUBLE SHREDDED HARDWOOD MULCH, PARTIALLY DECOMPOSED, DARK BROWN.

F. ORGANIC FERTILIZER: FERTILAID, SUSTANE, OR GREEN SENSE OR EQUAL AS RECOMMENDED FOR REQUIRED APPLICATIONS. FERTILIZER SHALL BE DELIVERED TO THE SITE IN ORIGINAL UNOPENED CONTAINERS, EACH BEARING THE MANUFACTURER'S GUARANTEED STATEMENT OF ANALYSIS.

G. COMMERCIAL FERTILIZER: 10-20-10 OR SIMILAR ANALYSIS. NITROGEN SOURCE TO BE A MINIMUM 50% SLOW RELEASE ORGANIC NITROGEN (SCU OR UF) WITH A MINIMUM 8% SULFUR AND 4% IRON, PLUS MICRONUTRIENTS.

H. PEAT: COMMERCIAL SPHAGNUM PEAT MOSS OR PARTIALLY DECOMPOSED SHREDDED PINE BARK OR OTHER APPROVED ORGANIC MATERIAL.

2.3 MISCELLANEOUS MATERIALS

A. STEEL EDGING - SHALL BE 3/16" X 4" X 16" DARK GREEN LANDSCAPE EDGING. DURAEDGE STEEL OR APPROVED EQUAL.

B. TREE STAKING - TREE STAKING SOLUTIONS OR APPROVED SUBSTITUTE; REFER TO DETAILS.

C. FILTER FABRIC - MIRAFI 1405 BY MIRAFI INC. OR APPROVED SUBSTITUTE. AVAILABLE AT LONE STAR PRODUCTS, INC. (469-523-0444)

D. SAND - UNIFORMLY GRADED, WASHED, CLEAN, BANK RUN SAND.

E. GRAVEL: WASHED NATIVE PEA GRAVEL, GRADED 1" TO 1.5"

F. DECOMPOSED GRANITE - BASE MATERIAL OF NATURAL MATERIAL MIX OF GRANITE AGGREGATE NOT TO EXCEED 1/8" IN DIAMETER COMPOSED OF VARIOUS STAGES OF DECOMPOSED EARTH BASE.

G. RIVER ROCK - LOCALLY AVAILABLE NATIVE RIVER ROCK BETWEEN 2"-4" IN DIAMETER.

H. PRE-EMERGENT HERBICIDES: ANY GRANULAR, NON-STAINING PRE-EMERGENT HERBICIDE THAT IS LABELED FOR THE SPECIFIC ORNAMENTALS OR TURF ON WHICH IT WILL BE UTILIZED. PRE-EMERGENT HERBICIDES SHALL BE APPLIED PER THE MANUFACTURER'S LABELED RATES.

PART 3 - EXECUTION

3.1 PREPARATION

A. LANDSCAPE CONTRACTOR TO INSPECT ALL EXISTING CONDITIONS AND REPORT ANY DEFICIENCIES TO THE OWNER.

B. ALL PLANTING AREAS SHALL BE CONDITIONED AS FOLLOWS:

1. PREPARE NEW PLANTING BEDS BY SCRAPING AWAY EXISTING GRASS AND WEEDS AS NECESSARY. TILL EXISTING SOIL TO A DEPTH OF SIX (6") INCHES PRIOR TO PLACING COMPOST AND FERTILIZER. APPLY FERTILIZER AS PER MANUFACTURER'S RECOMMENDATIONS. ADD SIX (6") INCHES OF COMPOST AND TILL INTO A DEPTH OF SIX (6") INCHES OF SPECIFIED MULCH (SETTLED THICKNESS).

2. BACKFILL FOR TREE PITS SHALL BE AS FOLLOWS: USE EXISTING TOP SOIL ON SITE (USE IMPORTED TOPSOIL AS NEEDED) FREE FROM LARGE CLUMPS, ROCKS, DEBRIS, CALICHE, SUBSOILS, ETC., PLACED IN NINE (9") INCH LAYERS AND WATERED IN THOROUGHLY.

C. GRASS AREAS:

1. BLOCKS OF SOD SHOULD BE LAID JOINT TO JOINT (STAGGERED JOINTS) AFTER FERTILIZING THE GROUND FIRST. ROLL GRASS AREAS TO ACHIEVE A SMOOTH, EVEN SURFACE. THE JOINTS BETWEEN THE BLOCKS OF SOD SHOULD BE FILLED WITH TOPSOIL WHERE THEY ARE GAPED OPEN, THEN WATERED THOROUGHLY.

3.2 INSTALLATION

A. MAINTENANCE OF PLANT MATERIALS SHALL BEGIN IMMEDIATELY AFTER EACH PLANT IS DELIVERED TO THE SITE AND SHALL CONTINUE UNTIL ALL CONSTRUCTION HAS BEEN SATISFACTORILY ACCOMPLISHED.

B. PLANT MATERIALS SHALL BE DELIVERED TO THE SITE ONLY AFTER THE BEDS ARE PREPARED AND AREAS ARE READY FOR PLANTING. ALL SHIPMENTS OF NURSERY MATERIALS SHALL BE THOROUGHLY PROTECTED FROM THE WINDS DURING TRANSIT. ALL PLANTS WHICH CANNOT BE PLANTED AT ONCE, AFTER DELIVERY TO THE SITE, SHALL BE WELL PROTECTED AGAINST THE POSSIBILITY OF DRYING BY WIND AND BALLS OF EARTH OF B & B PLANTS SHALL BE KEPT COVERED WITH SOIL OR OTHER ACCEPTABLE MATERIAL. ALL PLANTS REMAIN THE PROPERTY OF THE CONTRACTOR UNTIL FINAL ACCEPTANCE.

C. POSITION THE TREES AND SHRUBS IN THEIR INTENDED LOCATION AS PER PLAN.

D. NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE FOR INSPECTION AND APPROVAL OF ALL POSITIONING OF PLANT MATERIALS.

E. EXCAVATE PITS WITH VERTICAL SIDES AND HORIZONTAL BOTTOM. TREE PITS SHALL BE LARGE ENOUGH TO PERMIT HANDLING AND PLANTING WITHOUT INJURY TO BALLS OF EARTH OR ROOTS AND SHALL BE OF SUCH DEPTH THAT,WHEN PLANTED AND SETTLED, THE CROWN OF THE PLANT SHALL BEAR THE SAME RELATIONSHIP TO THE FINISH GRADE AS IT DID TO SOIL SURFACE IN ORIGINAL PLACE OF GROWTH. THE SIDES OF THE HOLE SHOULD BE ROUGH AND JAGGED, NEVER SLICK OR GLAZED.

F. SHRUB AND TREE PITS SHALL BE NO LESS THAN TWENTY-FOUR (24") INCHES WIDER THAN THE LATERAL DIMENSION OF THE EARTH BALL AND SIX (6") INCHES DEEPER THAN IT'S VERTICAL DIMENSION. REMOVE AND HAUL FROM SITE ALL ROCKS AND STONES OVER THREE-QUARTER (¾") INCH IN DIAMETER. PLANTS SHOULD BE THOROUGHLY MOIST BEFORE REMOVING CONTAINERS.

G. PERCOLATION TEST: FILL THE HOLE WITH WATER. IF THE WATER LEVEL DOES NOT PERCOLATE WITHIN 24 HOURS, THE TREE NEEDS TO MOVE TO ANOTHER LOCATION OR HAVE DRAINAGE ADDED. INSTALL A PVC STAND PIPE PER TREE IF THE PERCOLATION TEST FAILS.

H. BACKFILL ONLY WITH 5 PARTS EXISTING SOIL OR SANDY LOAM AND 1 PART BED PREPARATION. WHEN THE HOLE IS DUG IN SOLID ROCK, TOPSOIL FROM THE SAME AREA SHOULD NOT BE USED. CAREFULLY SETTLE BY WATERING TO PREVENT AIR POCKETS. REMOVE THE BURLAP FROM THE TOP ⅓ OF THE BALL, AS WELL AS ALL NYLON, PLASTIC STRING AND WIRE. CONTAINER TREES WILL USUALLY BE ROOT BOUND, IF SO FOLLOW STANDARD NURSERY PRACTICE OF 'ROOT SCORING'.

I. DO NOT WRAP TREES.

J. DO NOT OVER PRUNE.

K. REMOVE NURSERY TAGS AND STAKES FROM ALL PLANTS

L. REMOVE BOTTOM OF PLANT BOXES PRIOR TO PLACING PLANTS. REMOVE SIDES AFTER PLACEMENT AND PARTIAL BACKFILLING.

M. REMOVE UPPER THIRD OF BURLAP FROM BALLED AND BURLAPPED TREES AFTER PLACEMENT.

N. PLACE PLANT UPRIGHT AND PLUMB IN CENTER OF HOLE. ORIENT PLANTS FOR BEST APPEARANCE.

O. MULCH THE TOP OF THE BALL. DO NOT PLANT GRASS ALL THE WAY TO THE TRUNK OF THE TREE. LEAVE THE AREA ABOVE THE TOP OF THE BALL AND MULCH WITH AT LEAST TWO (2") INCHES OF SPECIFIED MULCH.

P. ALL PLANT BEDS AND TREES TO BE MULCHED WITH A MINIMUM SETTLED THICKNESS OF TWO (2") INCHES OVER THE ENTIRE BED OR PIT.

Q. OBSTRUCTION BELOW GROUND: IN THE EVENT THAT ROCK, OR UNDERGROUND CONSTRUCTION WORK OR OBSTRUCTIONS ARE ENCOUNTERED IN ANY PLANT PIT EXCAVATION WORK TO BE DONE UNDER THIS SECTION, ALTERNATE LOCATIONS MAY BE SELECTED BY THE OWNER. WHERE LOCATIONS CANNOT BE CHANGED, THE OBSTRUCTIONS SHALL BE REMOVED TO A DEPTH OF NOT LESS THAN THREE (3') FEET BELOW GRADE AND NO LESS THAN SIX (6") INCHES BELOW THE BOTTOM OF BALL WHEN PLANT IS PROPERLY SET AT THE REQUIRED GRADE. THE WORK OF THIS SECTION SHALL INCLUDE THE REMOVAL FROM THE SITE OF SUCH ROCK OR UNDERGROUND OBSTRUCTIONS ENCOUNTERED AT THE COST OF THE LANDSCAPE CONTRACTOR.

R. TREES AND LARGE SHRUBS SHALL BE STAKED AS SITE CONDITIONS REQUIRE. POSITION STAKES TO SECURE TREES AGAINST SEASONAL PREVAILING WINDS.

S. PRUNING AND MULCHING: PRUNING SHALL BE DIRECTED BY THE LANDSCAPE ARCHITECT AND SHALL BE PRUNED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICE FOLLOWING FINE PRUNING, CLASS I PRUNING STANDARDS PROVIDED BY THE NATIONAL ARBORIST ASSOCIATION.

1. DEAD WOOD, SUCKERS, BROKEN AND BADLY BRUISED BRANCHES SHALL BE REMOVED. GENERAL TIPPING OF THE BRANCHES IS NOT PERMITTED. DO NOT CUT TERMINAL BRANCHES.

2. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS.

3. IMMEDIATELY AFTER PLANTING OPERATIONS ARE COMPLETED, ALL TREE PITS SHALL BE COVERED WITH A LAYER OF ORGANIC MATERIAL TWO (2") INCHES IN DEPTH. THIS LIMIT OF THE ORGANIC MATERIAL FOR TREES SHALL BE THE DIAMETER OF THE PLANT PIT.

Q. STEEL EDGE INSTALLATION: EDGE SHALL BE ALIGNED AS INDICATED ON PLANS. STAKE OUT LIMITS OF STEEL CURBING AND OBTAIN OWNERS APPROVAL PRIOR TO INSTALLATION.

1. ALL STEEL CURBING SHALL BE FREE OF KINKS AND ABRUPT BENDS.

2. TOP OF EDGING SHALL BE ½" MAXIMUM HEIGHT ABOVE FINAL FINISHED GRADE.

3. STAKES ARE TO BE INSTALLED ON THE PLANTING BED SIDE OF THE CURBING, AS OPPOSED TO THE GRASS SIDE.

4. DO NOT INSTALL STEEL EDGING ALONG SIDEWALKS OR CURBS.

5. CUT STEEL EDGING AT 45 DEGREE ANGLE WHERE EDGING MEETS SIDEWALKS OR CURBS.

3.3 CLEANUP AND ACCEPTANCE

A. CLEANUP: DURING THE WORK, THE PREMISES SHALL BE KEPT NEAT AND ORDERLY AT ALL TIMES. STORAGE AREAS FOR ALL MATERIALS SHALL BE SO ORGANIZED SO THAT THEY, TOO, ARE NEAT AND ORDERLY. ALL TRASH AND DEBRIS SHALL BE REMOVED FROM THE SITE AS WORK PROGRESSES. KEEP PAVED AREAS CLEAN BY SWEEPING OR HOSING THEM AT END OF EACH WORK DAY.

B. REPAIR RUTS, HOLES AND SCARES IN GROUND SURFACES.

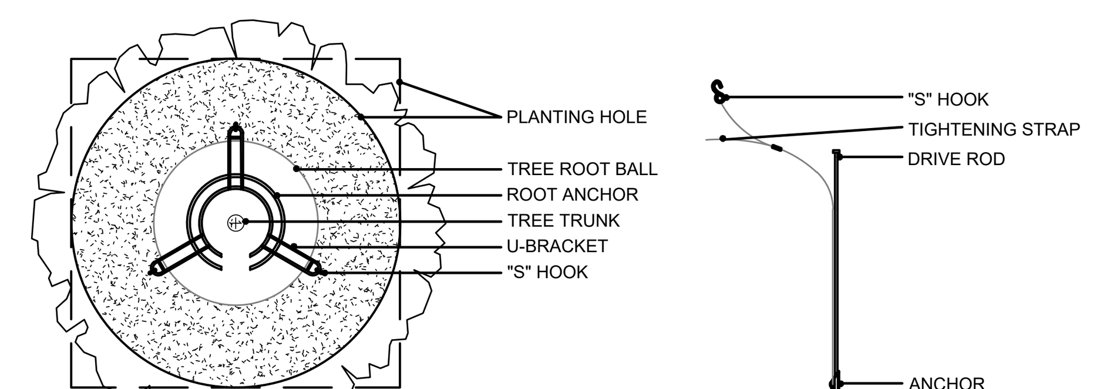
C. ENSURE THAT WORK IS COMPLETE AND PLANT MATERIALS ARE IN VIGOROUS AND HEALTHY GROWING CONDITION.

D. UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE LANDSCAPE CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.

E. WHEN/IF THE INSPECTED PLANTING WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, THE LANDSCAPE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.

F. THE LANDSCAPE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE LANDSCAPE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.

END OF SECTION

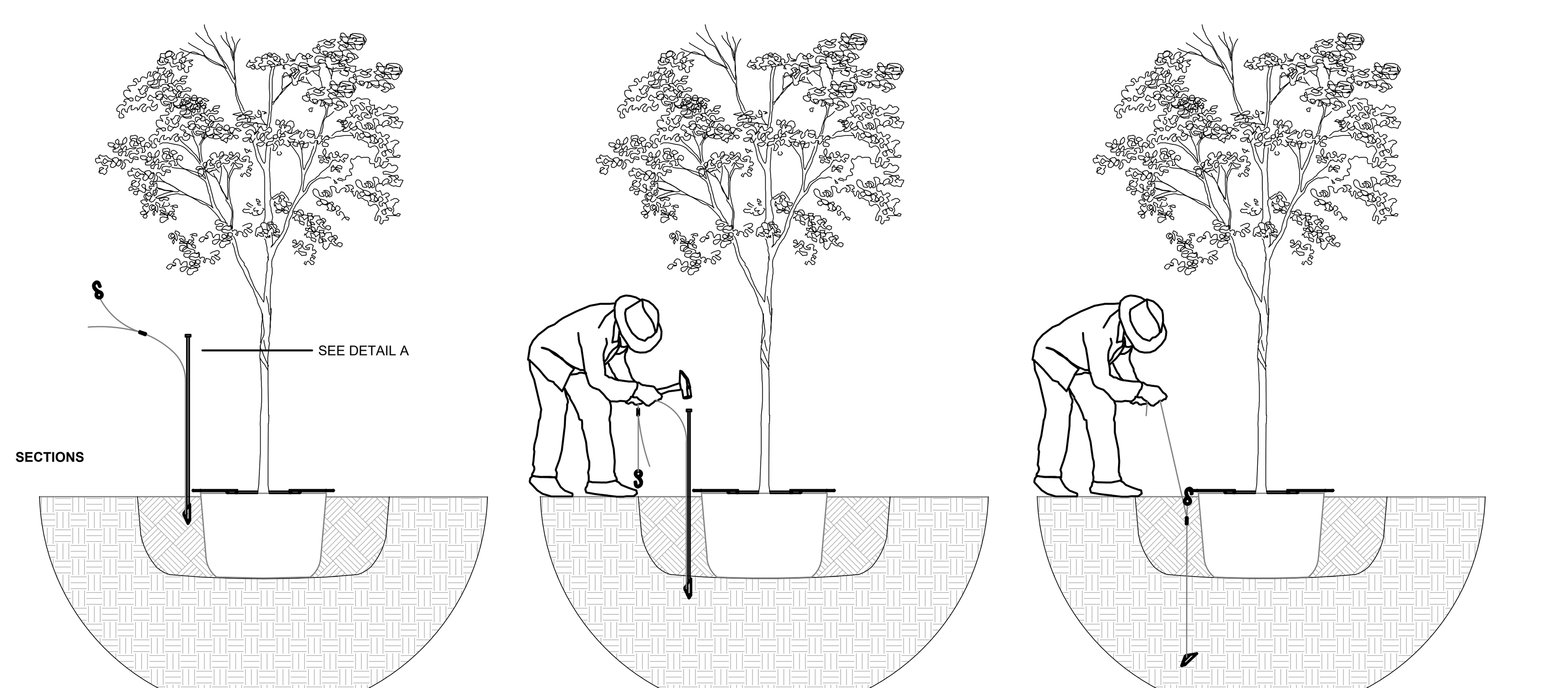


PLAN

DETAIL A

ROOT ANCHOR ITEM#	ROOT BALL & CONTAINER SIZE	ANCHOR INSTALLATION DEPTH	QUANTITY & ANCHOR SIZE
15-BG	10 / 15 Gallon or 17" root ball	12 - 18" Minimum Depth	3 - V68 Anchors
30-BG	20 / 39 Gallon or 22" root ball	18 - 24" Minimum Depth	3 - V68 Anchors
45/65-BG	45 / 65 Gallon or 27-30" root ball	24 - 30" Minimum Depth	3 - V68 Anchors
100-BG	95 / 100 Gallon or 36" root ball	30 - 36" Minimum Depth	3 - V68 Anchors
150-BG	150 Gallon or 42" root ball	48" Minimum Depth	3 - V68 Anchors
200-BG	200 Gallon or 48" root ball	48" Minimum Depth	3 - V88 Anchors
300-BG	300 Gallon or 58" root ball	48" Minimum Depth	3 - V88 Anchors
CUSTOM-BG	Root Balls larger than 60"	TBD	

SECTIONS



STEP 1:

- SET TREE IN PLANTING PIT
- PLACE ANCHOR WITH RING SIDE DOWN AGAINST TOP OF ROOT BALL
- CENTER ROOT ANCHOR'S INNER RING(S) AROUND TRUNK OF TREE
- ALIGN DRIVE ROD AS CLOSE AS POSSIBLE TO OUTSIDE EDGE OF U-BRACKET

STEP 2:

- DRIVE ANCHOR STRAIGHT DOWN INTO UNDISTURBED SUBBASE SOIL
- SEE CHART FOR RECOMMENDED DEPTHS PER TREE SIZE

STEP 3:

- REMOVE DRIVE ROD
- REPEAT STEPS 1 & 2 FOR ALL THREE (3) ANCHOR LOCATIONS
- PULL BACK ON STRAP APPROXIMATELY 3" FOR THE V-68 ANCHOR, OR 6" TO 7" FOR THE V-88 ANCHOR TO SET ANCHOR INTO A HORIZONTAL OR LOCKED POSITION. A FULCRUM MAY BE REQUIRED TO ASSIST IN SETTING THE ANCHOR.
- PLACE "S" HOOK OVER THE END OF THE U-BRACKET
- PULL STRAP UP VERTICALLY UNTIL ROOT ANCHOR RINGS BITE INTO THE TOP OF THE ROOT BALL AND U-BRACKETS ARE SETTING FLUSH ON TOP OF THE ROOT BALL
- TIE EXCESS STRAP OFF TO THE U-BRACKET ALLOWING ENOUGH REMAINING STRAP TO ADJUST TREE, IF NECESSARY

RootAnchor™ Underground Tree Support

Tree Stake Solutions

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Rosharon, Texas 77583
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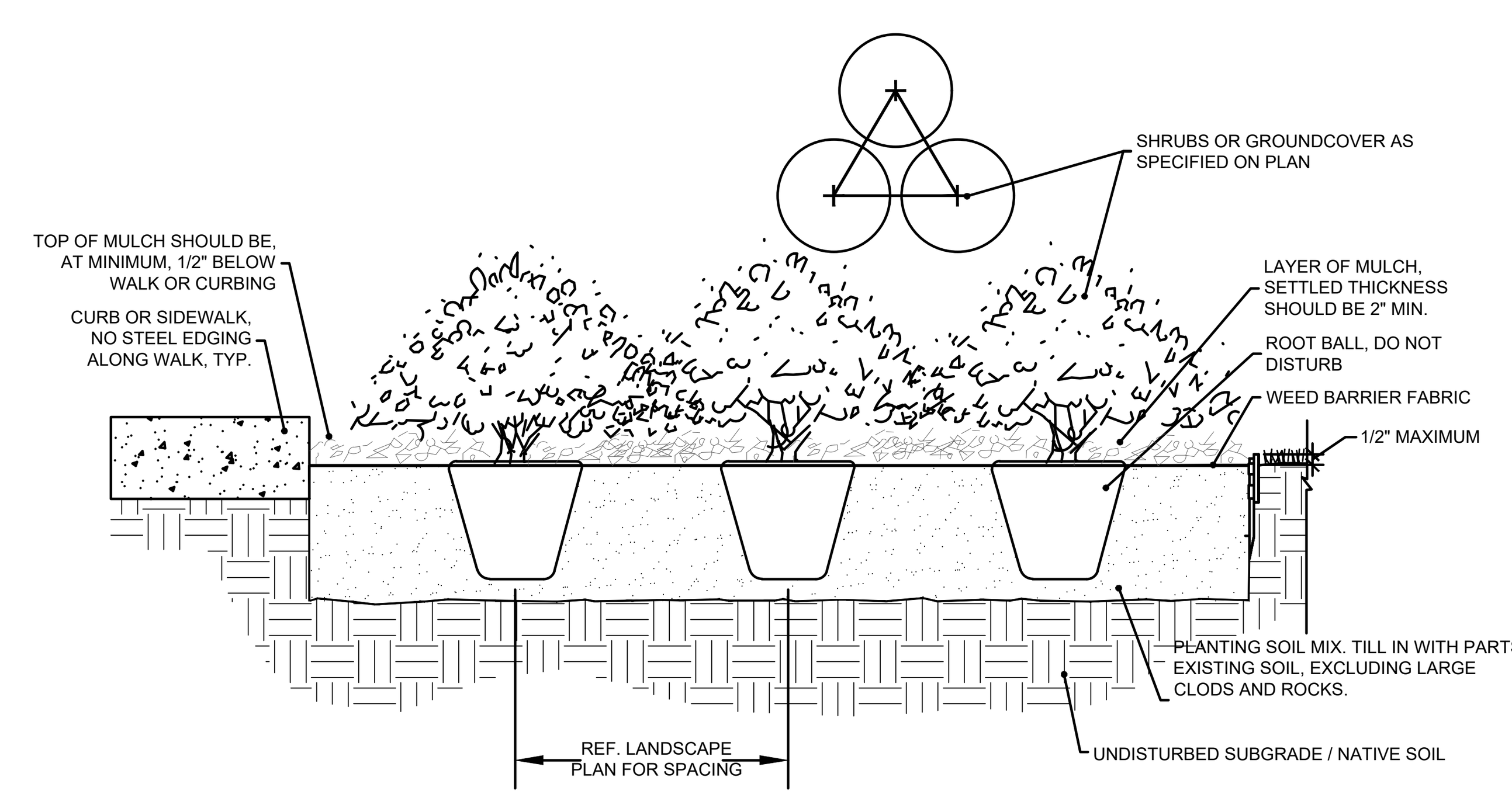
1 TREE PLANTING
N.T.S.



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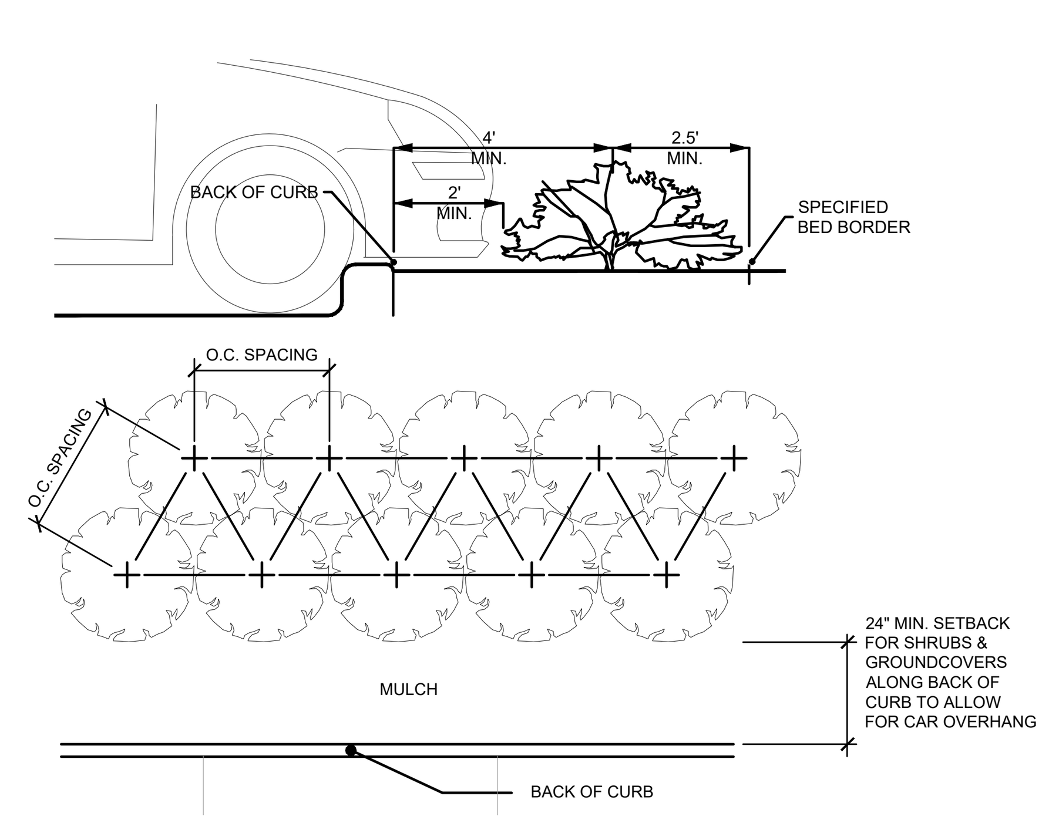

3 SHRUB SPACING AND PLANTING AT B.O.C.
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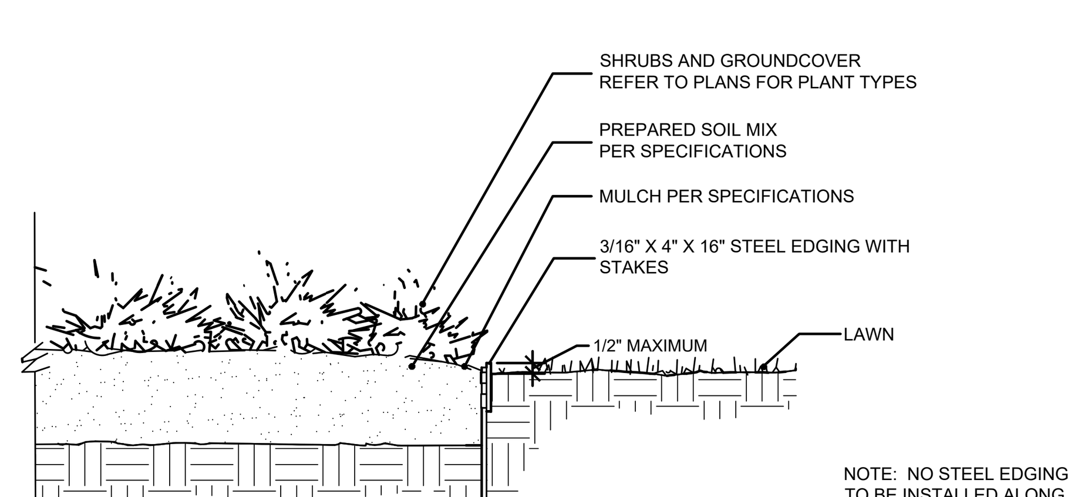
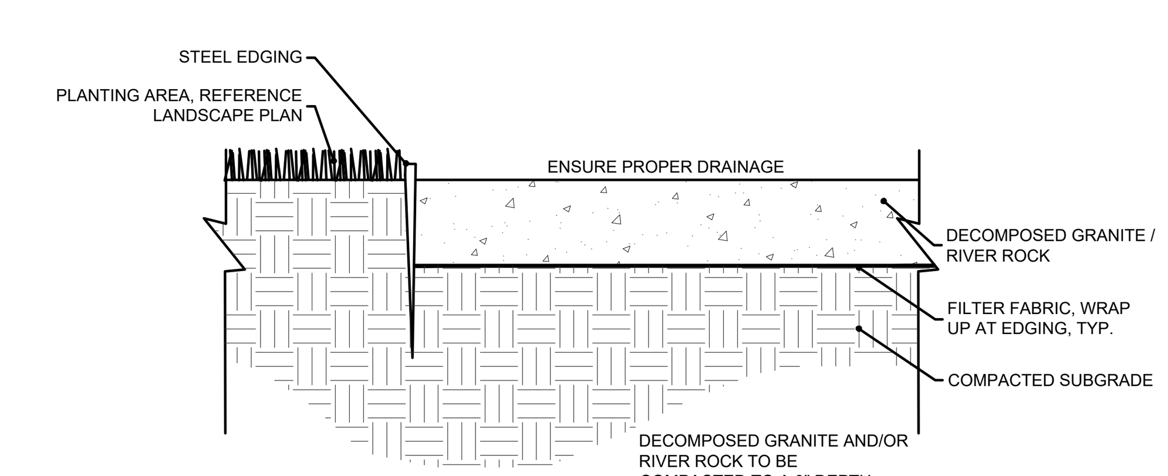


NOTE: NO STEEL EDGING TO BE INSTALLED ALONG SIDEWALKS

4 STEEL EDGING DETAIL
N.T.S.



5 DECOMPOSED GRANITE / RIVER ROCK
N.T.S.

NO.	REVISION	BY	DATE

AWR Designs, LLC
P.O. Box 1746
Aledo, Texas 76008
amanda@awr-designs.com
c. 512.517.5589

LANDSCAPE SPECIFICATIONS AND DETAILS

TRINITY METRO RAIL STATION FORT WORTH, TX

REGISTERED LANDSCAPE ARCHITECT
AMANDA W. RICHARDSON
2754
STATE OF TEXAS

Date: 3/4/2022
Scale:
Drawn By:
Reviewed By:
Project: 5010-37

SHEET
L1.4

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

NOTE:
1. ENTIRE SYSTEM SHALL BE INSTALLED PER TCEQ STANDARDS, MANUFACTURER'S SPECIFICATIONS AND ALL CITY CODES.

2. THIS DESIGN IS DIAGRAMMATIC, ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR DESIGN CLARIFICATION ONLY, AND SHALL BE INSTALLED IN PLANTING AREAS WITHIN THE PROPERTY LINES OR LIMITS INDICATED ON PLAN. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL ABOVE GROUND IRRIGATION EQUIPMENT WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION, OR IRRIGATION CONTRACTOR MAY BE REQUIRED TO MOVE SUCH ITEMS AT HIS OWN COST.

3. VARIOUS AREAS ON PLAN ARE SHOWING SINGLE HEAD COVERAGE. IF OWNER SHOULD ELECT FOR FULL COVERAGE, CONTRACTOR TO PROCURE THE PROPER PERMITS AND BID ALTERNATE FOR THESE ADDITIONAL SPRAY HEADS, ZONES, AND CONTROLLER EXPANSION FOR THE SYSTEM.

4. IRRIGATION CONTRACTOR IS TO COORDINATE LOCATION AND PLACEMENT OF ALL IRRIGATION ITEMS WITH THE GENERAL CONTRACTOR. CONTRACTOR IS TO USE EXTREME CAUTION IN TRENCHING TO AVOID EXISTING AND PROPOSED UTILITIES. CONTRACTOR TO LOCATE ALL UTILITIES PRIOR TO IRRIGATION INSTALLATION.

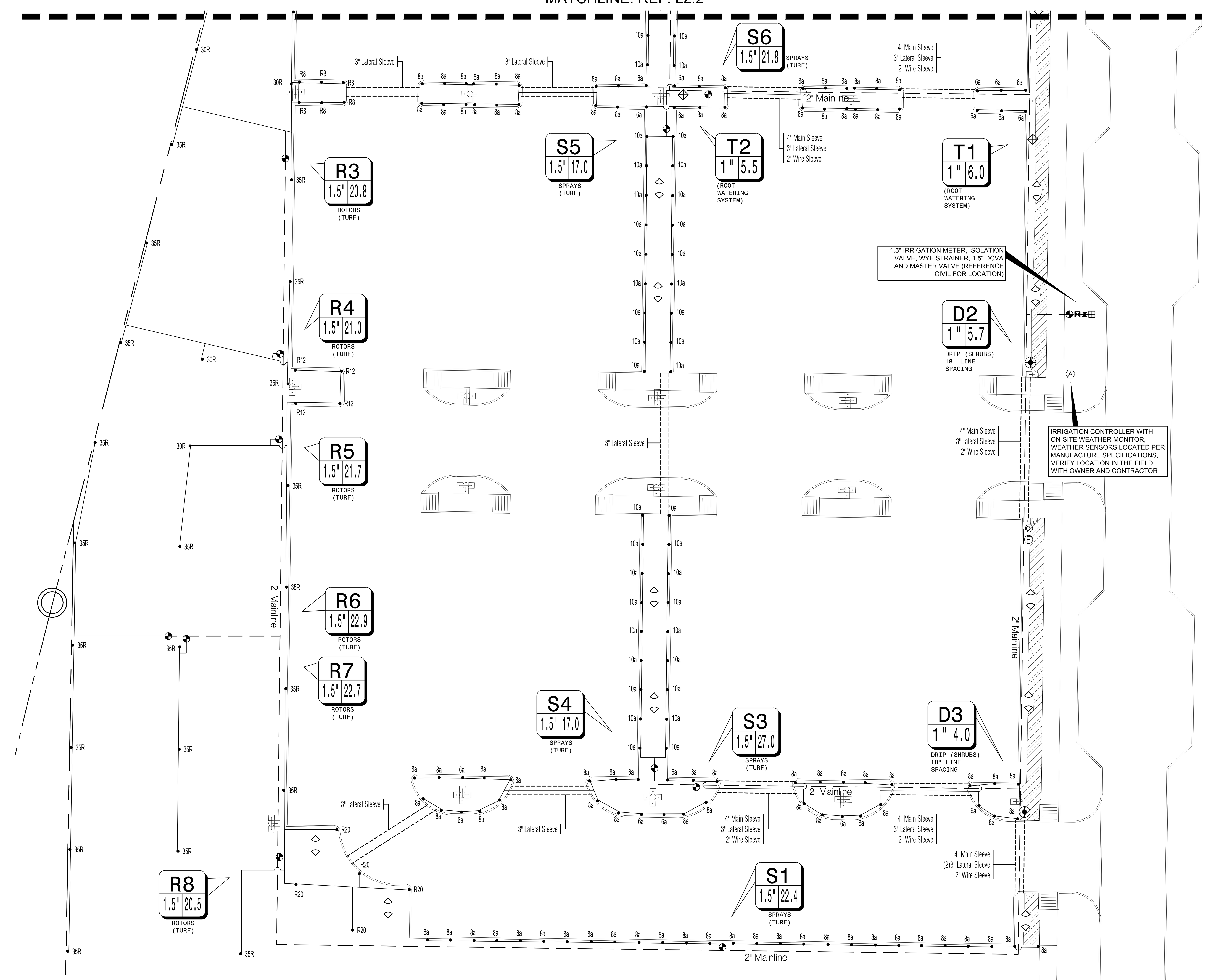
5. IRRIGATION SPRAY NOZZLES TO BE ADJUSTED TO AVOID PAVEMENT, BUILDING, WALLS, FENCES, UTILITIES, EQUIPMENT, SIGNAGE, AND CALL BOX

6. REFERENCE LANDSCAPE PLAN FOR LOCATION OF GRAVEL, STEEL EDGING AND ALL PROPOSED PLANT MATERIAL.

7. IN TURF AREAS (BOTH SOD AND HYDROMULCH AREAS) OUTSIDE OF IRRIGATION PERMANENT COVERAGE, CONTRACTOR TO PROVIDE TEMPORARY IRRIGATION UNTIL ESTABLISHED, TYP

8. CONTRACTOR TO TAKE ALL NECESSARY MEASURES TO PREVENT WATER HAMMER AND SYSTEM COLLAPSE BY DISCHARGING AIR DURING STARTUP AND ALLOWING AIR TO ENTER DURING SHUTDOWN. INSTALL THRUST BLOCKS AND AIR/VACUUM RELIEF VALVES AS NECESSARY TO PROTECT MAINLINE SYSTEM. INSTALL PER MANUFACTURE'S RECOMMENDATIONS.

MATCHLINE: REF. L2.2



SLEEVING NOTES

1. PIPING AND CONTROL WIRES SHALL BE INSTALLED IN SEPARATE SLEEVES UNDER PAVING. REFERENCE DRAWINGS FOR SLEEVE SIZE AND LOCATION.
2. SLEEVES SHALL BE FURNISHED AND INSTALLED BY GENERAL CONTRACTOR.
3. INSTALLATION OF SLEEVES SHALL BE TWENTY - FOUR (24") BELOW TOP OF PAVEMENT OR FINISHED GRADE.
4. SLEEVES SHALL EXTEND ONE (1') FOOT BEYOND EDGE OF ALL PAVEMENT AND STAKED FOR LOCATION.
5. ALL SLEEVES SHALL BE SCHEDULE 40 PVC PIPE, CAPPED ON BOTH ENDS AND SIZED AT LEAST TWO TIMES LARGER THAN THE DIAMETER OF THE PIPE INSIDE THE SLEEVE.
6. SLEEVE LOCATIONS SHALL BE MARKED ONTO THE CURB WITH A SAWCUT OF TWO PARALLEL LINES THAT ARE TWO (2") INCHES LONG AND ONE (1") APART.
7. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF SLEEVES AND SHALL ALSO BE RESPONSIBLE FOR LOCATING ANY SLEEVE THAT CANNOT BE FOUND DURING THE INSTALLATION OF THE SYSTEM.
8. CONTRACTOR SHALL FURNISH OWNER AND IRRIGATION CONTRACTOR WITH AN 'AS-BUILT' DRAWING SHOWING ALL SLEEVE LOCATIONS.

IRRIGATION GENERAL NOTES

1. THE IRRIGATION CONTRACTOR SHALL COORDINATE INSTALLATION OF THE IRRIGATION SYSTEM WITH THE LANDSCAPE CONTRACTOR SO THAT ALL PLANT MATERIAL WILL BE WATERED IN ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE IRRIGATION DESIGNER OF SITE CONDITIONS OR ASSUME FULL RESPONSIBILITY FOR ANY AND ALL ON SITE REVISIONS NECESSARY.
3. CONTRACTOR TO VERIFY DESIGN AND ITS INTENT TO PROVIDE FULL COVERAGE TO ALL NEW PLANTING MATERIAL.
4. NOTIFY IRRIGATION DESIGNER OF ANY LAYOUT DISCREPANCIES <u>PRIOR TO BIDDING</u>.
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6. IRRIGATION CONTRACTOR TO PROCURE ALL PERMITS, LICENSES AND GIVE ALL NECESSARY NOTICES THROUGHOUT THE DURATION OF THE PROJECT.
7. THE CONTRACTOR SHALL BE A REGISTERED LICENSED IRRIGATOR IN GOOD STANDING WITH THE STATE OF TEXAS BOARDS AND REGULATORS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL PLANT MATERIAL UPON ACCEPTANCE AND THROUGH THE WARRANTY PERIOD FOR DAMAGE DUE TO IRRIGATION SYSTEM FAILURE.
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10. SLEEVES SHALL BE FURNISHED AND INSTALLED BY GENERAL CONTRACTOR. SLEEVE MATERIAL SHALL BE SCHEDULE 40, SIZE AS INDICATED ON PLAN. REFER TO SLEEVING NOTES.
11. ALL MAIN LINE AND LATERAL LINE PIPING IN PLANTING AND LAWN AREAS SHALL HAVE A MINIMUM OF 12 INCHES OF COVER. ALL PIPING UNDER PAVING SHALL HAVE A MINIMUM OF 18 INCHES OF COVER. CONTRACTOR TO VERIFY LOCAL FREEZE DEPTHS AND ADJUST DEPTH OF COVER ACCORDINGLY.
12. ZONE VALVES SHALL NOT BE LOCATED WITHIN THREE (3') FEET OF ANY DRIVEWAY, TRAFFIC AISLE, ISLAND ETC. WHERE THEY WILL BE DAMAGED BY VEHICLES DRIVING OVER CURBS.
13. ALL NOZZLES IN PARKING LOT ISLANDS AND PLANTING BEDS SHALL BE LOW ANGLE NOZZLES TO MINIMIZE OVER SPRAY ON PAVEMENT SURFACES.
14. AUTOMATIC CONTROLLER SHALL BE INSTALLED AT LOCATION SHOWN. POWER (120V) SHALL BE LOCATED IN A JUNCTION BOX WITHIN FIVE (5') FEET OF CONTROLLER, LOCATION BY OTHER TRADES. RAIN AND FREEZE SENSORS SHALL BE INSTALLED WITH EACH CONTROLLER.
15. ELECTRICAL SPLICES SHOULD BE LOCATED AT EACH VALVE AND CONTROLLER ONLY.
16. PROVIDE A 3/4" BLOW DOWN DRAIN TEE TO ALLOW WATER TO BE BLOWN FROM THE IRRIGATION LINES/SYSTEM.
17. DISTURBED AREAS IN NEED OF TURF ESTABLISHMENT MAY EXIST BEYOND COVERAGE LIMITS OF THE PERMANENT IRRIGATION SYSTEM. IN THESE AREAS, CONTRACTOR TO DETERMINE A TEMPORARY MEANS TO ESTABLISH NECESSARY TURF. CONTRACTOR IS ENCOURAGED TO BEGIN TURF ESTABLISHMENT IMMEDIATELY UPON FINAL GRADE IN ACCORDANCE WITH AND TO SATISFY SWPPP.
18. PROVIDE WITH OWNER A COPY OF ALL INSTALLED EQUIPMENT AND LINES (AS BUILT PLANS.)
19. PLACE COPY OF ZONE MAP WITH ALL ZONE VALVE LOCATIONS SHOWN AND APPROVED IRRIGATION PLAN IN PROTECTIVE JACKET IN MAIN CONTROL PANEL.
20. IRRIGATION IN TEXAS IS REGULATED BY:
THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ)
MC-178 / PO BOX 13087
AUSTIN, TEXAS 78711-3087
WWW.TECQ.STATE.TX.US.

IRRIGATION PROJECT NOTES

1. THE LOCATION OF MAINLINE AND VALVES ON THIS PLAN MAY BE SHOWN IN PAVED AREAS FOR DESIGN CLARITY ONLY. IRRIGATION ELEMENTS HAVE BEEN SHOWN ON THIS PLAN AS ACCURATELY AS POSSIBLE WITHOUT THE FORFEIT OF DESIGN CLARITY AND INTENT. ALL PIPES AND VALVES SHALL BE INSTALLED WITHIN <u>**PERVIOUS**</u> AREAS. ALL PIPE AND WIRES THAT CROSS UNDER PAVING SHALL BE INSTALLED IN SEPARATE SLEEVES AS SPECIFIED.
2. ALL SPRINKLER EQUIPMENT NUMBERS REFERENCE THE HUNTER EQUIPMENT CATALOG UNLESS OTHERWISE INDICATED.
3. TEN DAYS PRIOR TO START OF CONSTRUCTION, IRRIGATION CONTRACTOR SHALL VERIFY STATIC WATER PRESSURE. THE IRRIGATION SYSTEM FOR THIS SITE IS DESIGNED TO OPERATE WITH A PRESSURE OF SIXTY FIVE (65 PSI) POUNDS PER SQUARE INCH. SHOULD THE DESIGN PRESSURE FOR THE SYSTEM BE HIGHER THAN THE EXISTING PRESSURE, THE IRRIGATION CONTRACTOR SHALL NOTIFY THE IRRIGATION DESIGNER IMMEDIATELY.
4. IRRIGATION CONTRACTOR SHALL COORDINATE THE LOCATION OF THE CONTROLLER AND SENSORS WITH THE GENERAL CONTRACTOR AND OWNER. A 110 VOLT ELECTRICAL SERVICE TO POWER THE IRRIGATION CONTROLLER SHALL BE PROVIDED BY THE GENERAL CONTRACTOR AT THE LOCATION SHOWN ON THIS PLAN.
5. WATER SERVICE TAP, METER AND LEAD FOR THE IRRIGATION SYSTEM SHALL BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR. SERVICE LINE AND METER SHALL BE SIZED AS NOTED ON THIS PLAN.
6. TYPE AND INSTALLATION OF THE WATER METER AND BACK FLOW PREVENTION DEVICE SHALL BE DETERMINED BY THE GOVERNING AUTHORITY. AN ISOLATION VALVE SHALL BE PROVIDED BETWEEN THE WATER METER AND BACK FLOW DEVICE.
7. ALL CALCULATIONS FOR THIS IRRIGATION SYSTEM ARE BASED ON PRODUCTS AND EQUIPMENT INFORMATION PROVIDED BY HUNTER. INSTALLATION OF THESE PRODUCTS SHALL NOT EXCEED MANUFACTURERS RECOMMENDATIONS.
8. REFERENCE HUNTER GUIDELINES AND SPECIFICATIONS PRIOR TO INSTALLATION. CONFIRM REQUIREMENTS FOR CONTROLLER, WATERPROOF CONNECTIONS, GROUNDING, SURGE PROTECTORS, DECODERS, VALUES, AND WIRING PRIOR TO INSTALLATION. HUNTER TECHNICAL SERVICES (760) 591-7383. <u>WWW.HUNTERINDUSTRIES.COM</u>
9. SPRAY HEADS LOCATED IN TURF AREAS SHALL BE HUNTER PROS-04-PRS30 SPRAY BODIES WITH PRO ADJUSTABLE NOZZLES, FIXED ARC NOZZLES, AND STRIP PATTERN NOZZLES RATE AND AS INDICATED ON THE PLAN.
10. MP ROTATOR HEADS SHALL BE PROS-04-PRS40 SPRAY BODIES WITH MP1000, MP2000, MP3000, MP3500, MPRSS530, MPRCS515, AND MPLCS515 NOZZLES. RADIUS LESS THAN 12 FEET SHALL BE PRS30 AND PRS40 SPRAY BODIES WITH MP800SR. MP ROTATOR AREAS WITH LESS THAN 90 DEGREES SHALL BE MP CORNER NOZZLES.
11. IRRIGATION ROTOR HEADS SHALL BE PGP ULTRA MODELS PGP-04-PRB WITH MPR NOZZLES.
12. IRRIGATION REMOTE CONTROL VALVES SHALL BE 1" AND/OR 1.5" HUNTER ICV AS INDICATED. PRIOR TO ALL REMOTE CONTROL VALVES, INSTALL A NOMINALLY SIZED BALL VALVE WITHIN THE SAME BOX.
13. SIZE OF VALVES ARE AS SHOWN ON PLAN. VALVES SHALL BE INSTALLED IN APPROVED BOXES WITH COVERS LARGE ENOUGH TO PERMIT MANUAL OPERATION, REMOVAL OF SOLENOID AND / OR VALVE COVER WITHOUT ANY EARTH EXCAVATION. OWNERS MAY ELECT LOCKING BOXES ON A PROJECT BY PROJECT BASIS.
14. QUICK COUPLING VALVES SHALL BE HUNTER INSTALLED PER DETAIL SHOWN. SWING JOINTS SHALL BE CONSTRUCTED USING ¾" SCHEDULE 80 ELBOWS. CONTRACTOR SHALL SUPPLY OWNER WITH THREE (3) CH75 COUPLERS AND THREE (3) #10HSL SWIVEL HOSE ELLS AS PART OF THIS CONTRACT.
15. IRRIGATION SYSTEM AUTOMATIC CONTROLLER SHALL BE HUNTER HCC IN METAL WALL MOUNT (HCC-800-M) AND METAL PEDESTAL (ICC-PED) INSTALL PER MANUFACTURER'S RECOMMENDATIONS. CONFIRM WIRING, GROUNDING AND SURGE PROTECTION REQUIREMENTS BEFORE INSTALLING. PLAN ASSUMES CONVENTIONAL WIRING, IF TWO-WIRE IS USED, INSTALL PER MANUFACTURE'S RECOMMENDATIONS.
16. DRIP IRRIGATION REMOTE CONTROL VALVES SHALL BE HUNTER ICZ-101-LF-40 AS INDICATED. DRIP TUBING SHALL BE HUNTER HDL-06-12-CV.
17. INSTALL DRIP TUBING/LINES PER MANUFACTURERS RECOMMENDATIONS. USE PLD-LOC FITTINGS PLD-LOC 075, PLD-LOC 050, PLD-LOC ELB, PLD-LOC CPL, PLD-LOC CAP, PLD-LOC TEE, PLD-LOC OR USE FHS BARB FITTINGS PLD-075, PLD-050, PLD-ELB, PLD-CPL, PLD-CAP, PLD-TEE, PLD-075-TBTEE, PLD-BV. USE ECO-INDICATOR ECO-ID. USE LINE FLUSHING VALVE HUNTER AFV-B.
18. DRIP TUBING SHALL BE SPACED 18" APART IN SHRUB AREAS. REFER TO MANUFACTURERS RECOMMENDATIONS.
19. ROOT BUBBLERS SHALL BE HUNTER FULL-CIRCLE BUBBLERS WITH PROS-06-PRS30 WITH PCN MODEL 25 NOZZLES.
20. ALL VALVE CONTROL WIRE SHALL BE SIZED PER MANUFACTURER GUIDELINES BY THE CONTRACTOR ACCORDING TO THE ACTUAL FIELD DISTANCE. ALL CONNECTIONS SHALL BE WATER-PROOF, KEPT TO A MINIMUM, AND LOCATED IN AN APPROVED BOX.

IRRIGATION LEGEND

SYMBOL	DESCRIPTION	MANUFACTURER	MODEL NO.
10a ●	SPRAYS WITH PRO ADJ. NOZZLES	HUNTER	PROS-04-PRS30
R20 ●	MP ROTATORS	HUNTER	PROS-04-PRS40
25R ●	ROTORS WITH MPR NOZZLES	HUNTER	PGP-04-PRB
◊	FULL-CIRCLE BUBBLERS	HUNTER	PROS-06-PRS30 WITH PCN25 NOZZLES
◕	REMOTE CONTROL VALVE	HUNTER	ICV
⧗	1.5" DOUBLE CHECK ASSEMBLY	FEBCO	850 SERIES
⊕	1" TREE CONTROL ZONE KIT	HUNTER	
▨	HDL DRIPLINE	HUNTER	HDL-06-12-CV
Ⓕ	LINE FLUSHING VALVE	HUNTER	AFV-B
◎	PRESSURE OPERATOR INDICATOR	HUNTER	ECO-ID
⊕	DRIP CONTROL VALVE	HUNTER	ICZ-101-LF-40

IRRIGATION LEGEND

SYMBOL	DESCRIPTION
⊞	1.5" IRRIGATION METER
Ⓐ	HUNTER - HCC IN METAL WALL MOUNT AND METAL PEDESTAL, WITH RAIN AND FREEZE SENSORS
⧓	ISOLATION VALVE
——	LATERAL PIPING REFER TO PLAN CLASS 200 PVC
— —	MAINLINE PIPING REFER TO PLAN SCH. 40 PVC, SIZED AS SHOWN (INSTALL THRUST BLOCKS AND AIR/VACUUM RELIEF VALVES AS NECESSARY TO PROTECT MAINLINE SYSTEM)
=======	IRRIGATION SLEEVE, SCH. 40 PVC, MIN. TWICE SIZE OF PIPE TO BE INSERTED, ONE SLEEVE PER PIPE CONTROL WIRING SLEEVE, 2" SCH. 40 PVC
D1 1" 8.8	VALVE STATION # (WHERE D = DRIP TUBING, S = SPRAY, R = ROTOR, T = TREE DRIP) VALVE SIZE GPM

N

GRAPHIC SCALE
0 20 40 FEET
Scale 1"=20' - 0"

NO.	REVISION	BY	DATE

AWR
AWR Designs, LLC
P.O. Box 1746
Aledo, Texas 76008
amanda@awr-designs.com
c. 512.517.5589

IRRIGATION PLAN

TRINITY METRO
RAIL STATION
FORT WORTH, TX

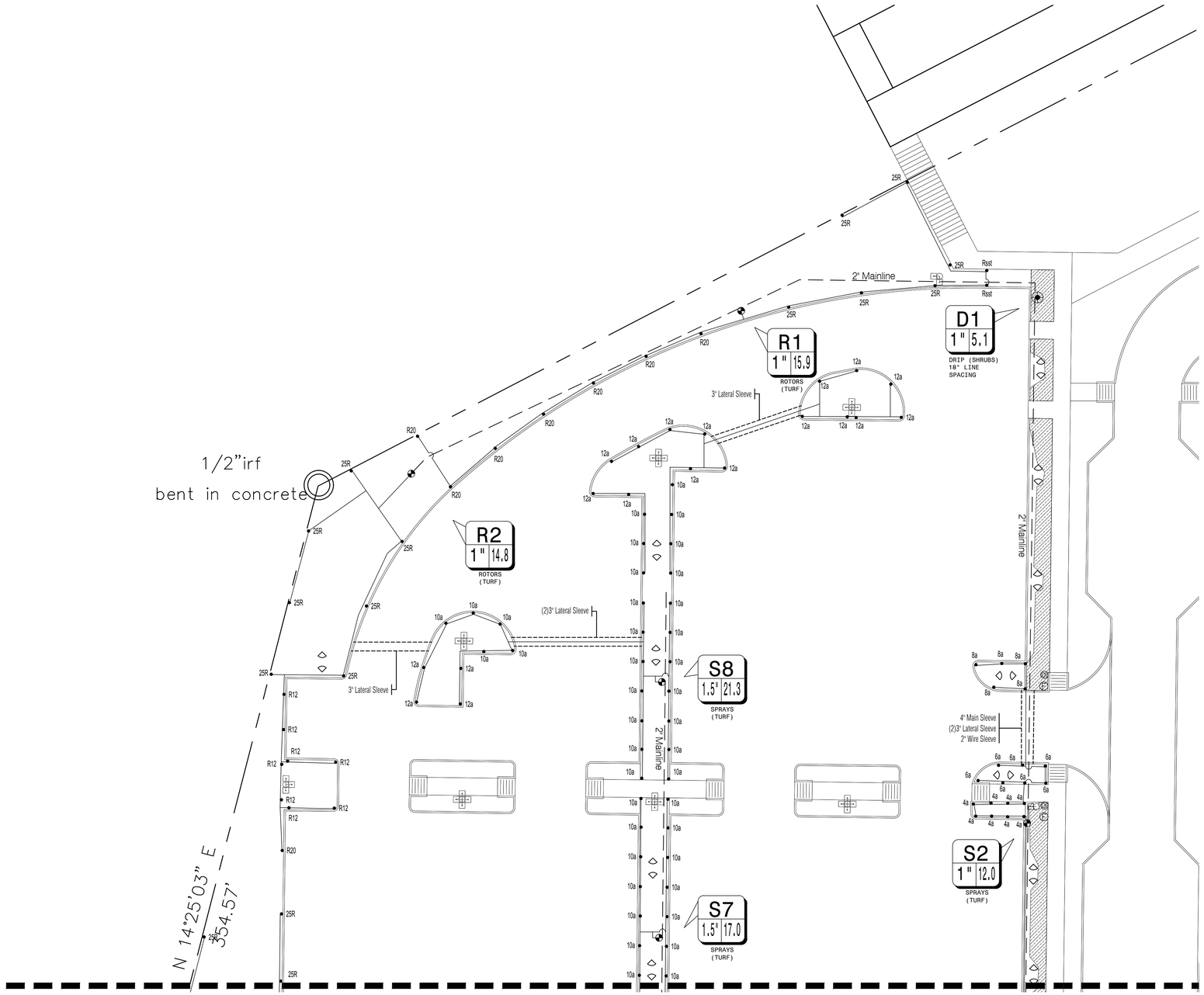
STATE OF TEXAS
AMANDA RICHARDSON
14033
LICENSED IRRIGATOR

[illegible]

Date: 8/17/2022
Scale:
Drawn By:
Reviewed By:
Project: 5010–37

SHEET
L2.1

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



MATCHLINE: REF. L2.1

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NO.	REVISION	BY	DATE

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PO Box 1764
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c: 512.217.5589

AWR

IRRIGATION PLAN

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
AMANDA RICHARDSON
14033
LICENSED IRRIGATION

Date: 8/17/2022
Scale:
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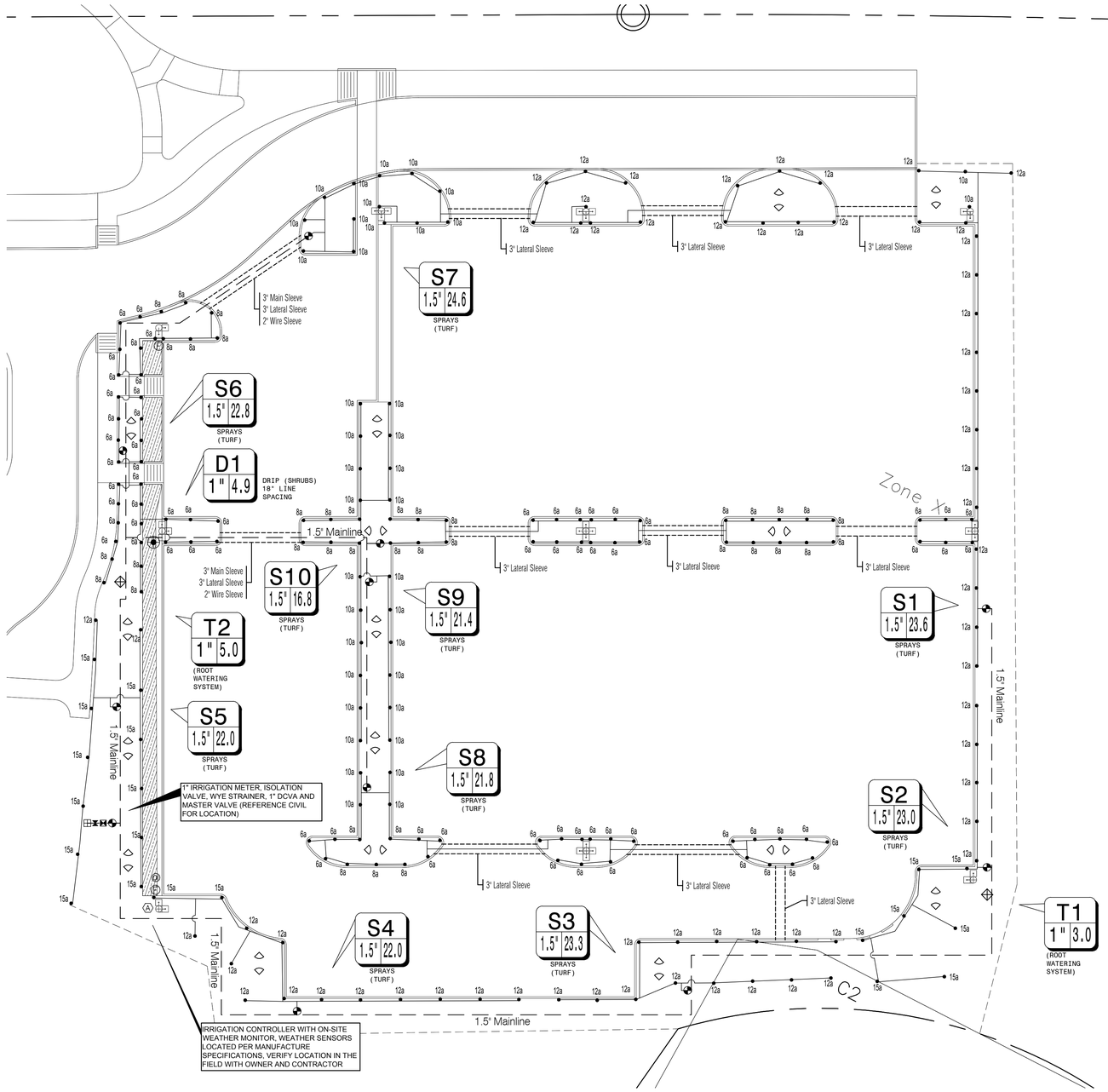

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MC-178 / PO BOX 13087
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WWW.TECQ.STATE.TX.US.

IRRIGATION PROJECT NOTES

1. THE LOCATION OF MAINLINE AND VALVES ON THIS PLAN MAY BE SHOWN IN PAVED AREAS FOR DESIGN CLARITY ONLY. IRRIGATION ELEMENTS HAVE BEEN SHOWN ON THIS PLAN AS ACCURATELY AS POSSIBLE WITHOUT THE FORFEIT OF DESIGN CLARITY AND INTENT. ALL PIPES AND VALVES SHALL BE INSTALLED WITHIN **PERVIOUS** AREAS. ALL PIPE AND WIRES THAT CROSS UNDER PAVING SHALL BE INSTALLED IN SEPARATE SLEEVES AS SPECIFIED.
2. ALL SPRINKLER EQUIPMENT NUMBERS REFERENCE THE HUNTER EQUIPMENT CATALOG UNLESS OTHERWISE INDICATED.
3. TEN DAYS PRIOR TO START OF CONSTRUCTION, IRRIGATION CONTRACTOR SHALL VERIFY STATIC WATER PRESSURE. THE IRRIGATION SYSTEM FOR THIS SITE IS DESIGNED TO OPERATE WITH A PRESSURE OF SIXTY FIVE (65 PSI) POUNDS PER SQUARE INCH. SHOULD THE DESIGN PRESSURE FOR THE SYSTEM BE HIGHER THAN THE EXISTING PRESSURE, THE IRRIGATION CONTRACTOR SHALL NOTIFY THE IRRIGATION DESIGNER IMMEDIATELY.
4. IRRIGATION CONTRACTOR SHALL COORDINATE THE LOCATION OF THE CONTROLLER AND SENSORS WITH THE GENERAL CONTRACTOR AND OWNER. A 110 VOLT ELECTRICAL SERVICE TO POWER THE IRRIGATION CONTROLLER SHALL BE PROVIDED BY THE GENERAL CONTRACTOR AT THE LOCATION SHOWN ON THIS PLAN.
5. WATER SERVICE TAP, METER AND LEAD FOR THE IRRIGATION SYSTEM SHALL BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR. SERVICE LINE AND METER SHALL BE SIZED AS NOTED ON THIS PLAN.
6. TYPE AND INSTALLATION OF THE WATER METER AND BACK FLOW PREVENTION DEVICE SHALL BE DETERMINED BY THE GOVERNING AUTHORITY. AN ISOLATION VALVE SHALL BE PROVIDED BETWEEN THE WATER METER AND BACK FLOW DEVICE.
7. ALL CALCULATIONS FOR THIS IRRIGATION SYSTEM ARE BASED ON PRODUCTS AND EQUIPMENT INFORMATION PROVIDED BY HUNTER. INSTALLATION OF THESE PRODUCTS SHALL NOT EXCEED MANUFACTURERS RECOMMENDATIONS.
8. REFERENCE HUNTER GUIDELINES AND SPECIFICATIONS PRIOR TO INSTALLATION. CONFIRM REQUIREMENTS FOR CONTROLLER, WATERPROOF CONNECTIONS, GROUNDING, SURGE PROTECTORS, DECODERS, VALUES, AND WIRING PRIOR TO INSTALLATION. HUNTER TECHNICAL SERVICES (760) 591-7383. WWW.HUNTERINDUSTRIES.COM
9. SPRAY HEADS LOCATED IN TURF AREAS SHALL BE HUNTER PROS-04-PRS30 SPRAY BODIES WITH PRO ADJUSTABLE NOZZLES, FIXED ARC NOZZLES, AND STRIP PATTERN NOZZLES RATE AND AS INDICATED ON THE PLAN.
10. MP ROTATOR HEADS SHALL BE PROS-04-PRS40 SPRAY BODIES WITH MP1000, MP2000, MP3000, MP3500, MPRSS530, MPRCS515, AND MPLCS515 NOZZLES. RADIUS LESS THAN 12 FEET SHALL BE PRS30 AND PRS40 SPRAY BODIES WITH MP800SR. MP ROTATOR AREAS WITH LESS THAN 90 DEGREES SHALL BE MP CORNER NOZZLES.
11. IRRIGATION ROTOR HEADS SHALL BE PGP ULTRA MODELS PGP-04-PRB WITH MPR NOZZLES.
12. IRRIGATION REMOTE CONTROL VALVES SHALL BE 1" AND/OR 1.5" HUNTER ICV AS INDICATED. PRIOR TO ALL REMOTE CONTROL VALVES, INSTALL A NOMINALLY SIZED BALL VALVE WITHIN THE SAME BOX.
13. SIZE OF VALVES ARE AS SHOWN ON PLAN. VALVES SHALL BE INSTALLED IN APPROVED BOXES WITH COVERS LARGE ENOUGH TO PERMIT MANUAL OPERATION, REMOVAL OF SOLENOID AND / OR VALVE COVER WITHOUT ANY EARTH EXCAVATION. OWNERS MAY ELECT LOCKING BOXES ON A PROJECT BY PROJECT BASIS.
14. QUICK COUPLING VALVES SHALL BE HUNTER INSTALLED PER DETAIL SHOWN. SWING JOINTS SHALL BE CONSTRUCTED USING ¾" SCHEDULE 80 ELBOWS. CONTRACTOR SHALL SUPPLY OWNER WITH THREE (3) CP75 COUPLERS AND THREE (3) #10HSL SWIVEL HOSE ELLS AS PART OF THIS CONTRACT.
15. IRRIGATION SYSTEM AUTOMATIC CONTROLLER SHALL BE HUNTER HCC IN METAL WALL MOUNT (HCC-800-M) AND METAL PEDESTAL (ICC-PED) INSTALL PER MANUFACTURER'S RECOMMENDATIONS. CONFIRM WIRING, GROUNDING AND SURGE PROTECTION REQUIREMENTS BEFORE INSTALLING. PLAN ASSUMES CONVENTIONAL WIRING, IF TWO-WIRE IS USED, INSTALL PER MANUFACTURE'S RECOMMENDATIONS.
16. DRIP IRRIGATION REMOTE CONTROL VALVES SHALL BE HUNTER ICZ-101-LF-40 AS INDICATED. DRIP TUBING SHALL BE HUNTER HDL-06-12-CV.
17. INSTALL DRIP TUBING/LINES PER MANUFACTURERS RECOMMENDATIONS. USE PLD-LOC FITTINGS PLD-LOC 075, PLD-LOC 050, PLD-LOC ELB, PLD-LOC CPL, PLD-LOC CAP, PLD-LOC TEE, PLD-LOC OR USE FHS BARB FITTINGS PLD-075, PLD-050, PLD-ELB, PLD-CPL, PLD-CAP, PLD-TEE, PLD-075-TBTEE, PLD-BV. USE ECO-INDICATOR ECO-ID. USE LINE FLUSHING VALVE HUNTER AFV-B.
18. DRIP TUBING SHALL BE SPACED 18" APART IN SHRUB AREAS. REFER TO MANUFACTURERS RECOMMENDATIONS.
19. ROOT BUBBLERS SHALL BE HUNTER FULL-CIRCLE BUBBLERS WITH PROS-06-PRS30 WITH PCN MODEL 25 NOZZLES.
20. ALL VALVE CONTROL WIRE SHALL BE SIZED PER MANUFACTURER GUIDELINES BY THE CONTRACTOR ACCORDING TO THE ACTUAL FIELD DISTANCE, ALL CONNECTIONS SHALL BE WATER-PROOF, KEPT TO A MINIMUM, AND LOCATED IN AN APPROVED BOX.

NOTE:
1. ENTIRE SYSTEM SHALL BE INSTALLED PER TCEQ STANDARDS, MANUFACTURER'S SPECIFICATIONS AND ALL CITY CODES.

2. THIS DESIGN IS DIAGRAMMATIC, ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR DESIGN CLARIFICATION ONLY, AND SHALL BE INSTALLED IN PLANTING AREAS WITHIN THE PROPERTY LINES OR LIMITS INDICATED ON PLAN. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL ABOVE GROUND IRRIGATION EQUIPMENT WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION, OR IRRIGATION CONTRACTOR MAY BE REQUIRED TO MOVE SUCH ITEMS AT HIS OWN COST.

3. VARIOUS AREAS ON PLAN ARE SHOWING SINGLE HEAD COVERAGE. IF OWNER SHOULD ELECT FOR FULL COVERAGE, CONTRACTOR TO PROCURE THE PROPER PERMITS AND BID ALTERNATE FOR THESE ADDITIONAL SPRAY HEADS, ZONES, AND CONTROLLER EXPANSION FOR THE SYSTEM.

4. IRRIGATION CONTRACTOR IS TO COORDINATE LOCATION AND PLACEMENT OF ALL IRRIGATION ITEMS WITH THE GENERAL CONTRACTOR. CONTRACTOR IS TO USE EXTREME CAUTION IN TRENCHING TO AVOID EXISTING AND PROPOSED UTILITIES. CONTRACTOR TO LOCATE ALL UTILITIES PRIOR TO IRRIGATION INSTALLATION.

5. IRRIGATION SPRAY NOZZLES TO BE ADJUSTED TO AVOID PAVEMENT, BUILDING, WALLS, FENCES, UTILITIES, EQUIPMENT, SIGNAGE, AND CALL BOX

6. REFERENCE LANDSCAPE PLAN FOR LOCATION OF GRAVEL, STEEL EDGING AND ALL PROPOSED PLANT MATERIAL.

7. IN TURF AREAS (BOTH SOD AND HYDROMULCH AREAS) OUTSIDE OF IRRIGATION PERMANENT COVERAGE, CONTRACTOR TO PROVIDE TEMPORARY IRRIGATION UNTIL ESTABLISHED, TYP

8. CONTRACTOR TO TAKE ALL NECESSARY MEASURES TO PREVENT WATER HAMMER AND SYSTEM COLLAPSE BY DISCHARGING AIR DURING STARTUP AND ALLOWING AIR TO ENTER DURING SHUTDOVN. INSTALL THRUST BLOCKS AND AIR/VACUUM RELIEF VALVES AS NECESSARY TO PROTECT MAINLINE SYSTEM. INSTALL PER MANUFACTURE'S RECOMMENDATIONS.

IRRIGATION LEGEND			
SYMBOL	DESCRIPTION	MANUFACTURER	MODEL NO.
10a	SPRAYS WITH PRO ADJ. NOZZLES	HUNTER	PROS-04-PRS30
R20	MP ROTATORS	HUNTER	PROS-04-PRS40
25R	ROTORS WITH MPR NOZZLES	HUNTER	PGP-04-PRB
	FULL-CIRCLE BUBBLERS	HUNTER	PROS-06-PRS30 WITH PCN25 NOZZLES
	REMOTE CONTROL VALVE	HUNTER	ICV
	1" DOUBLE CHECK ASSEMBLY	FEBCO	850 SERIES
	1" TREE CONTROL ZONE KIT	HUNTER	
	HDL DRIPLINE	HUNTER	HDL-06-12-CV
F	LINE FLUSHING VALVE	HUNTER	AFV-B
	PRESSURE OPERATOR INDICATOR	HUNTER	ECO-ID
	DRIP CONTROL VALVE	HUNTER	ICZ-101-LF-40

IRRIGATION LEGEND	
SYMBOL	DESCRIPTION
	1" IRRIGATION METER
A	HUNTER - HCC IN METAL WALL MOUNT AND METAL PEDESTAL, WITH RAIN AND FREEZE SENSORS
	ISOLATION VALVE
	LATERAL PIPING REFER TO PLAN CLASS 200 PVC
	MAINLINE PIPING REFER TO PLAN SCH. 40 PVC, SIZED AS SHOWN (INSTALL THRUST BLOCKS AND AIR/VACUUM RELIEF VALVES AS NECESSARY TO PROTECT MAINLINE SYSTEM)
=======	IRRIGATION SLEEVE, SCH. 40 PVC, MIN. TWICE SIZE OF PIPE TO BE INSERTED, ONE SLEEVE PER PIPE CONTROL WIRING SLEEVE, 2" SCH. 40 PVC
D1 1"|8.8	VALVE STATION # (WHERE D = DRIP TUBING, S = SPRAY, R = ROTOR, T = TREE DRIP) VALVE SIZE GPM

GRAPHIC SCALE
0 20 40 FEET
Scale 1"=20' - 0"

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NO.	REVISION	BY	DATE

IRRIGATION PLAN

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
AMANDA RICHARDSON
14033
LICENSED IRRIGATOR

Date: 8/17/2022
Scale:
Drawn By:
Reviewed By:
Project: 5010–37

SHEET
L2.3

SECTION 32 8423 - UNDERGROUND IRRIGATION SLEEVES AND UTILITY CONDUITS

PART 1 - GENERAL

1.1 DESCRIPTION

A. PROVIDE UNDERGROUND IRRIGATION SLEEVES AS INDICATED ON THE DRAWINGS.

1.2 RELATED WORK

A. SECTION 32 8424 - IRRIGATION SYSTEM.

1.3 REFERENCE STANDARDS

A. AMERICAN STANDARD FOR TESTING AND MATERIALS (ASTM) - LATEST EDITION.

PART 2 - MATERIALS

2.1 GENERAL

A. POLYVINYL CHLORIDE PIPE (PVC) - SCHEDULE 40 SHALL BE USED FOR ALL SLEEVING PURPOSES.

B. PVC PIPES SHALL BE MARKED WITH SDR NUMBER, ASTM STANDARD NUMBER, AND THE NSF SEAL.

C. SOLVENT SHALL BE USED AS RECOMMENDED BY MANUFACTURER TO MAKE SOLVENT WELDED JOINTS. PIPE AND FITTINGS SHOULD BE CLEANED BEFORE APPLYING SOLVENT.

PART 3 - EXECUTION

3.1 INSTALLATION

A. A MINIMUM OF TWENTY FOUR (24) INCHES COVER SHALL BE PROVIDED OVER THE TOP OF SLEEVE FROM FINISH GRADE.

B. SLEEVES SHALL BE EXTENDED ONE (1) FOOT PAST THE EDGE OF PAVEMENT OF WALLS. INSTALL A NINETY DEGREE ELBOW ON EACH SLEEVE AND ADD ADDITIONAL LENGTH TO EXTEND ABOVE FINISH GRADE BY TWELVE (12) INCHES. CAP PIPE ENDS.

3.2 BACKFILL

A. BACKFILL SHALL BE PLACED OVER SLEEVES IN SIX (6) INCH LIFTS. SOIL SHALL BE TAMPED INTO PLACE, TAKING CARE TO NOT DAMAGE SLEEVE.

B. REPAIR ANY DAMAGE FROM IMPROPER COMPACTION.

END OF SECTION

SECTION 32 8424 - IRRIGATION SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. PROVIDE A COMPLETE IRRIGATION SYSTEM INSTALLATION AS DETAILED AND SPECIFIED. THIS SHALL INCLUDE FURNISHING ALL LABOR, MATERIAL, EQUIPMENT AND SERVICES NECESSARY TO PROVIDE COMPLETE INSTALLATION. WORK INCLUDES:

a. TRENCHING

b. BACKFILL

c. AUTOMATIC CONTROLLED SYSTEM

d. AS BUILT DRAWINGS

B. SLEEVING AS SHOWN SHALL BE FURNISHED BY THE GENERAL CONTRACTOR.

C. METER AND POWER SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

1.2 RELATED WORK

C. REFERENCE IRRIGATION PLANS FOR CONTROLLER, HEAD AND ALL VALVE LOCATIONS.

D. REFERENCE LANDSCAPE PLANS, NOTES, DETAILS FOR ADDITIONAL REQUIREMENTS.

E. SECTION 32 9300 - LANDSCAPE

F. SECTION 32-8423 - UNDERGROUND IRRIGATION SLEEVE AND UTILITY CONDUITS

1.3 REFERENCE STANDARDS

A. AMERICAN STANDARD FOR TESTING AND MATERIALS (ASTM) - LATEST EDITION.

1.4 QUALITY ASSURANCE AND REQUIREMENTS

A. PERMITS AND FEES: THE CONTRACTOR SHALL OBTAIN AND PAY FOR ANY PERMITS NECESSARY AND ALL OBSERVATIONS AS REQUIRED.

B. MANUFACTURER'S DIRECTIONS: MANUFACTURER'S DIRECTIONS AND DETAILED DRAWINGS SHALL BE FOLLOWED IN ALL CASES WHERE THE MANUFACTURERS OF ARTICLES USED IN THIS CONTRACT FURNISH DIRECTIONS COVERING POINTS NOT SHOWN IN THE DRAWINGS AND SPECIFICATIONS.

C. ORDINANCES, CODES, AND REGULATIONS: ALL LOCAL, MUNICIPAL AND STATE LAWS, AND RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR. ANYTHING CONTAINED IN THESE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CONFLICT WITH ANY OF THE ABOVE RULES AND REGULATIONS AND REQUIREMENTS OF THE SAME.

D. HOWEVER, WHEN THESE SPECIFICATIONS AND DRAWINGS CALL FOR OR DESCRIBE MATERIALS, WORKMANSHIP, OR CONSTRUCTION OF A BETTER QUALITY, HIGHER STANDARD OR LARGER SIZE THAN IS REQUIRED BY THE ABOVE RULES AND REGULATIONS, THESE SPECIFICATIONS AND DRAWINGS SHALL TAKE PRECEDENCE.

1.5 SCHEDULE OF MATERIALS

A. MATERIALS LIST:

a. ALL EQUIPMENT MANUFACTURERS AND MODEL NUMBERS SHALL BE AS NOTED ON THE PLANS.

b. THE CONTRACTOR SHALL FURNISH THE ARTICLES, EQUIPMENT, MATERIALS, OR PROCESSES SPECIFIED BY NAME IN THE DRAWINGS AND SPECIFICATIONS. NO SUBSTITUTION WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.

c. A COMPLETE MATERIAL LIST OF EQUIPMENT SHALL BE SUBMITTED BEFORE PERFORMING ANY WORK. SUBMITTAL SHOULD INCLUDE ALL MANUFACTURERS' SPECIFICATIONS AND LITERATURE FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

d. EQUIPMENT OR MATERIALS INSTALLED OR FURNISHED WITHOUT PRIOR APPROVAL OF THE LANDSCAPE ARCHITECT MAY BE REJECTED.

e. APPROVAL OF ANY ITEM, ALTERNATE OR SUBSTITUTE INDICATES ONLY THAT THE PRODUCT OR PRODUCTS APPARENTLY MEET THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS ON THE BASIS OF THE INFORMATION OR SAMPLES SUBMITTED.

f. MANUFACTURER'S WARRANTIES SHALL NOT RELIEVE THE CONTRACTOR OF HIS LIABILITY UNDER THE GUARANTEE. SUCH WARRANTIES SHALL ONLY SUPPLEMENT THE GUARANTEE.

1.4 RECORD AND AS BUILT DRAWINGS/SUBMITTALS

A. CONTRACTOR SHALL PROVIDE AND KEEP UP TO DATE AND COMPLETE "AS-BUILT" RECORD SET OF PRINTS.

B. CONTRACTOR SHOULD USE ALL SYMBOLS AND NOTATIONS CONSISTENT WITH THE ORIGINAL DRAWINGS.

C. IN "AS-BUILT" DRAWINGS, CONTRACTOR SHALL LOCATE:

a. CONNECTION TO EXISTING WATER LINES

b. CONNECTION TO ELECTRICAL POWER

c. GATE VALVES

d. ROUTING OF SPRINKLER PRESSURE LINES

e. SPRINKLER CONTROL VALVES

f. QUICK COUPLING VALVES

g. OTHER RELATED EQUIPMENT

D. SUBMIT COMPLETED TRACINGS PRIOR TO FINAL ACCEPTANCE. DATE AND SIGN ALL DRAWINGS.

E. EQUIPMENT TO BE FURNISHED:

a. SUPPLY AS PART OF THIS CONTRACT THE FOLLOWING TOOLS:

i. QUICK COUPLING KEYS, THREE (3) WITH BOILER DRAINS ATTACHED USING BRASS REDUCER.

ii. THREE (3) KEYS FOR EACH AUTOMATIC CONTROLLER

b. THE ABOVE MENTIONED EQUIPMENT SHALL BE TURNED OVER TO THE OWNER AT THE CONCLUSION OF THE PROJECT.

F. THE IRRIGATION CONTRACTOR SHOULD DEMONSTRATE THAT THE FINAL INSTALLED SYSTEM WILL OPERATE ACCORDING TO THE INTENT OF THE DESIGNED AND SPECIFIED SYSTEM. IRRIGATION CONTRACTOR SHALL GUARANTEE 100% COVERAGE TO ALL AREAS TO BE IRRIGATION.

1.5 MAINTENANCE AND GUARANTEE

A. MAINTENANCE AND WORKMANSHIP SHALL BE GUARANTEED FULLY FOR ONE (1) YEAR AFTER FINAL ACCEPTANCE.

B. PROVIDE MAINTENANCE OF SYSTEM, CLEANING AND ADJUSTMENT OF THE HEADS, FOR ONE (1) YEAR AFTER COMPLETION OF INSTALLATION.

C. GUARANTEE IS LIMITED TO REPAIR AND REPLACEMENT OF DEFECTIVE MATERIALS AND WORKMANSHIP, INCLUDING THE REPAIR OF BACKFILL SETTLEMENT.

1.6 TESTING

A. PERFORM TESTING REQUIRED WITH OTHER TRADES INCLUDING EARTHWORK, PAVING, PLUMBING, ETC. TO AVOID CUTTING, PATCHING OR BORING.

B. WATER PRESSURE SHOULD BE FOUND PRIOR TO STARTING CONSTRUCTION. DETERMINE/CONFIRM THAT STATIC WATER PRESSURE IS MORE THAN THE WATER PRESSURE NEEDED FOR THE SYSTEM TO FUNCTION PROPERTY. IF STATIC PRESSURE IS LESS THAN THE DESIGN PRESSURE NEEDED, DO NOT START WORK UNTIL THE LANDSCAPE ARCHITECT IS NOTIFIED.

1.7 COORDINATION

A. COORDINATE INSTALLATION OF ALL PRODUCTS, INCLUDING EARTHWORK, PAVING AND PLUMBING.

B. COORDINATE TO ENSURE THAT ELECTRICAL POWER SOURCE IS IN PLACE.

C. COORDINATE INSTALLATION WITH WORK SPECIFIED IN OTHER SECTIONS.

D. COORDINATE WITH THE LANDSCAPE CONTRACTOR TO ENSURE PLANT MATERIAL IS UNIFORMLY WATERED IN ACCORDANCE WITH INTENT SHOWN ON DRAWINGS.

PART 2 - PRODUCTS

2.1 MATERIALS

B. REFER TO CONSTRUCTION DRAWINGS AND NOTES.

C. SPRINKLER HEADS IN LAWN AREAS AS SPECIFIED ON PLAN

D. PVC PIPE: CLASS 200 SPR 21

E. COPPER TUBING (FOR CITY CONNECTIONS): TYPE "M"

F. 24V WIRE - SIZE 14, TYPE UF

G. ELECTRIC VALVES TO BE ALL PLASTIC CONSTRUCTION AS INDICATED ON PLANS.

H. REFER TO DRAWING FOR BACKFLOW PREVENTION LOCATION - COORDINATE EXACT LOCATION WITH THE GENERAL CONTRACTOR.

PART 3 - EXECUTION

3.1 INSPECTION:

A. SITE CONDITIONS:

a. ALL SCALED DIMENSIONS ARE APPROXIMATE. THE CONTRACTOR SHALL CHECK AND VERIFY ALL SIZE DIMENSIONS.

b. EXERCISE EXTREME CARE IN EXCAVATING AND WORKING NEAR UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO UTILITIES WHICH ARE CAUSED BY ANY OF HIS OPERATIONS OR NEGLECT.

c. COORDINATE INSTALLATION OF IRRIGATION MATERIALS, INCLUDING PIPE, SO THERE SHALL BE NO INTERFERENCE WITH UTILITIES OR OTHER CONSTRUCTION DIFFICULTY IN PLANTING TREES, SHRUBS, AND GROUNDCOVERS. COORDINATE WORK WITH OTHER SITE CONTRACTORS.

3.2 PREPARATION

A. PHYSICAL LAYOUT:

a. PIPING AND HEAD LAYOUT AS SHOWN ON PLANS IS SCHEMATIC ONLY. ALL PIPES TO BE INSTALLED DIRECTLY BEHIND CURBS, WALKS AND WALLS WHEREVER POSSIBLE.

b. PRIOR TO INSTALLATION CONTRACTOR SHALL STAKE OUT ALL PRESSURE SUPPLY LINES, ROUTING AND LOCATION OF SPRINKLER HEADS.

c. ALL LAYOUTS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

B. WATER SUPPLY:

a. IRRIGATION SYSTEM SHALL BE CONNECTED TO WATER SUPPLY POINTS OF CONNECTION AS INDICATED ON THE DRAWINGS.

b. CONNECTIONS SHOULD BE MADE AT APPROXIMATE LOCATIONS AS SHOWN ON DRAWINGS. CONTRACTOR SHALL VERIFY IN FIELD AND BE RESPONSIBLE FOR MINOR CHANGES CAUSED BY ACTUAL SITE CONDITIONS.

3.3 INSTALLATION

A. TRENCHING

a. DIG TRENCHES STRAIGHT 6" WIDE WITH NEAR VERTICAL SIDE AND SUPPORT PIPE CONTINUOUSLY ON BOTTOM OF TRENCH. REMOVE LUMBER, RUBBISH, LARGE ROCKS ETC. FROM TRENCHES. LAY PIPE TO AN EVEN GRADE - WITH A FIRM, UNIFORM BEARING FOR ENTIRE LENGTH OF PIPE.

b. REMOVE FOREIGN MATTER OR DIRT FROM INSIDE OF PIPE BEFORE WELDING AND KEEP PIPING CLEAN BY ANY MEANS POSSIBLE DURING AND AFTER LAYING OF PIPE.

c. PROVIDE A MINIMUM OF EIGHTEEN (18) INCHES OF COVER FOR ALL PRESSURE SUPPLY LINES.

d. PROVIDE A MINIMUM OF TWELVE (12) INCHES OF COVER FOR ALL NON-PRESSURE LINES.

e. PROVIDE A MINIMUM COVER OF EIGHTEEN (18) INCHES FOR ALL CONTROL WIRING.

f. NO MACHINE TRENCHING, UNLESS APPROVED BY THE LANDSCAPE ARCHITECT, SHALL BE DONE WITHIN DRIP LINE OF EXISTING TREES. TRENCHING SHOULD BE DONE BY HAND, TUNNELING OR BORING OR OTHER METHODS APPROVED BY THE LANDSCAPE ARCHITECT. IT SHOULD BE UNDERSTOOD THAT PIPING LAYOUT IS DIAGRAMMATIC AND PIPING SHALL BE ROUTED AROUND TREES AND SHRUBS IN SUCH A MANNER TO AVOID DAMAGE TO PLANTS.

B. BACKFILL

a. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL REQUIRED TESTS ARE PERFORMED. TRENCHES SHALL BE CAREFULLY BACKFILLED WITH THE EXCAVATED MATERIALS APPROVED FOR BACKFILLING, CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND OR OTHER APPROVED MATERIALS, FREE FROM LARGE CLODS, STONES OR STICKS.

b. IF SETTLEMENT OCCURS AND SUBSEQUENT ADJUSTMENTS IN PIPE, VALVES, SPRINKLER HEADS, LAWN OR PLANTING OR OTHER CONSTRUCTION ARE NECESSARY, THE CONTRACTOR SHALL MAKE ALL REQUIRED ADJUSTMENTS WITHOUT THE COST TO THE OWNER.

C. TRENCHING AND BACKFILL UNDER PAVING:

a. ALL IRRIGATION MAIN LINE AND LATERAL LINES OR WIRING LOCATED UNDER AREAS WHERE PAVING, ASPHALTIC PAVING, OR CONCRETE SHALL BE INSTALLED IN SCHEDULE 40 PVC SLEEVES OF ADEQUATE SIZE. SEE SECTION 32 8423.

D. ASSEMBLIES

a. INSTALL ALL ASSEMBLIES SPECIFIED HEREIN IN ACCORDANCE WITH RESPECTIVE DETAILS. IN ABSENCE OF DETAIL DRAWINGS OR SPECIFICATIONS, PERFORM SUCH WORK IN ACCORDANCE WITH BEST STANDARD PRACTICES OR MANUFACTURER'S RECOMMENDATIONS AS APPROVED BY THE LANDSCAPE ARCHITECT.

b. MAKE SOLVENT WELDED JOINTS USING ONLY THE SOLVENT RECOMMENDED BY THE MANUFACTURER. PIPES AND FITTINGS SHOULD BE CLEANED OF ALL DIRT AND DUST AND MOISTENED BEFORE APPLYING SOLVENT.

c. ON PVC TO METAL CONNECTIONS, THE CONTRACTOR SHALL WORK METAL CONNECTIONS FIRST. USE NON HARDENING PIPE DOPE OR TEFLON TAPE ON THREADED PVC ADAPTERS INTO WHICH PIPE MAY BE WELDED. LIGHT WRENCH PRESSURE IS ALL THAT IS REQUIRED, USE THREADED PVC ADAPTERS INTO WHICH THE PIPE MAY BE WELDED.

E. LINE CLEARANCE: ALL LINES SHALL HAVE A MINIMUM CLEARANCE OF SIX (6) INCHES FROM EACH OTHER AND FROM OTHER TRADES. PARALLEL LINES SHALL NOT BE DIRECTLY INSTALLED ONE OVER THE OTHER.

F. WIRING: SUPPLY WIRE FROM THE AUTOMATIC CONTROLLER TO ALL THE VALVES. A SEPARATE WIRE IS REQUIRED TO EACH ELECTRIC VALVE. A COMMON NEUTRAL WIRE IS ALSO REQUIRED FROM EACH CONTROL TO EACH OF THE VALVES. BUNDLE MULTIPLE WIRES AND TAPE THEM TOGETHER AT TEN FOOT INTERVALS. EXPANSION COILS OF TEN INCHES SHALL BE INSTALLED APPROXIMATELY EVERY 100 FEET. MAKE ALL SPLICES WATERPROOF.

G. AUTOMATIC CONTROLLER: INSTALL AS PER MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS. REMOVE CONTROL VALVES SHALL BE CONNECTED TO CONTROLLER IN NUMERICAL SEQUENCE AS SHOWN ON THE DRAWINGS. EACH REMOVE CONTROL VALVE SHALL BE WIRED TO ONE STATION OF THE CONTROLLER.

H. REMOTE CONTROL VALVES:

a. INSTALL WHERE SHOWN ON DRAWINGS AND DETAILS. VALVES SHALL BE SIZED ACCORDING TO THE DRAWINGS.

b. INSTALL IN A LEVEL POSITION IN ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS.

c. WHEN GROUPED TOGETHER, ALLOW AT LEAST TWELVE (12) INCHES BETWEEN VALVES. INSTALL EACH REMOTE CONTROL VALVE IN A SEPARATE VALVE BOX. EACH VALVE NUMBER AND ITS CONTROLLER LETTER SHALL BE STENCILED INSIDE VALVE BOX TOP WITH EXTERIOR PAINT.

I. FLUSHING OF SYSTEM:

a. AFTER ALL NEW SPRINKLER PIPE LINES AND RISERS ARE IN PLACE AND CONNECTED, ALL NECESSARY WORK HAS BEEN COMPLETED, AND PRIOR TO INSTALLATION OF SPRINKLER HEADS, THE CONTROL VALVES SHALL BE OPENED AND A FULL HEAD OF WATER USED TO FLUSH OUT THE SYSTEM.

b. SPRINKLER HEADS SHALL BE INSTALLED ONLY AFTER FLUSHING OF THE SYSTEM HAS BEEN ACCOMPLISHED.

J. SPRINKLER HEADS:

a. INSTALL HEADS AS DESIGNED ON THE DRAWINGS. MAKE APPROPRIATE ADJUSTMENTS TO HEAD LAYOUT TO ACCOMMODATE FOR ACTUAL FIELD CONDITIONS.

b. SPACING OF HEADS SHALL NOT EXCEED THE MAXIMUM INDICATED ON THE DRAWINGS. IN NO CASE SHALL THE SPACING EXCEED THE MAXIMUM RECOMMENDED BY THE MANUFACTURER.

c. ALL SPRINKLERS TO ATTACH TO LATERAL LINES WITH FLEXIBLE CONNECTORS. REFERENCE DETAILS ON DRAWINGS.

3.4 TESTING

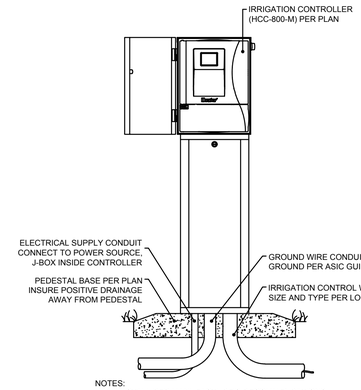
A. THE CONTRACTOR SHALL TEST SPRINKLER MAIN FOR TWELVE TO FOURTEEN HOURS UNDER NORMAL PRESSURE. IF LEAKS ARE PRESENT, REPLACE JOINT OR JOINS AND REPEAT TEST.

B. A COMPLETE TEST SHALL BE MADE PRIOR TO BACKFILLING. BACKFILLING MATERIALS MAY BE PLACED IN TRENCHES IN LIFTS TO ENSURE STABILITY OF THE LINE UNDER THE PRESSURE OF BACKFILL. IN EACH CASE, LEAVE FITTINGS AND COUPLINGS OPEN TO VISUALLY INSPECT FOR FULL PERIOD OF TEST.

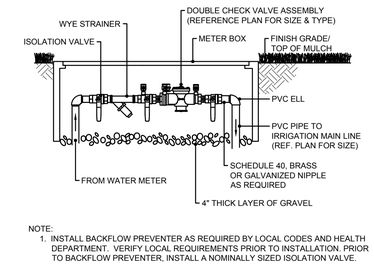
C. WHEN SYSTEM IS COMPLETE, A COVERAGE TEST SHALL BE PERFORMED IN THE PRESENCE OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. IT SHALL BE DETERMINED IF THE WATER COVERAGE FOR ALL PLANTING AREAS IS COMPLETE AND ADEQUATE. FURNISH ALL MATERIALS AND PERFORM ALL WORK REQUIRED TO CORRECT ANY INADEQUACIES OF COVERAGE.

D. UPON COMPLETION OF EACH PHASE OF WORK, THE ENTIRE SYSTEM SHOULD BE TESTED AND ADJUSTED TO MEET SITE REQUIREMENTS.

END OF SECTION

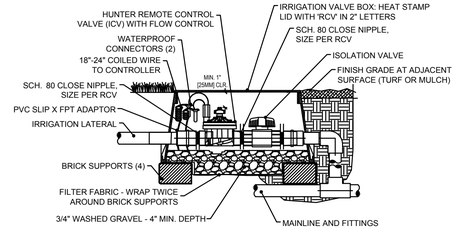


1 HCC IRRIGATION CONTROLLER (ICC-PED)
N.T.S.

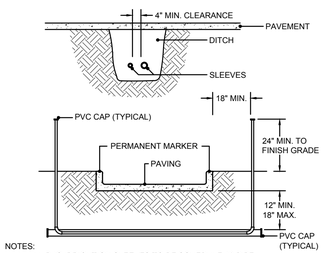


NOTE:
1. INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES AND HEALTH DEPARTMENT. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION. PRIOR TO BACKFLOW PREVENTER, INSTALL A NOMINALLY SIZED ISOLATION VALVE.

2 DOUBLE CHECK ASSEMBLY
N.T.S.

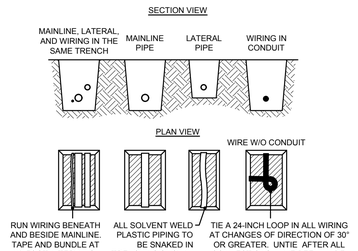


3 IN-LINE VALVE (ICV) WITH ISOLATION VALVE
N.T.S.



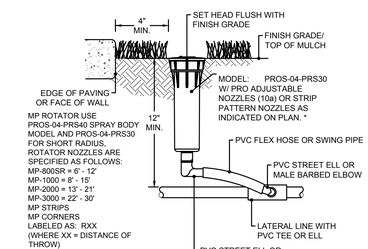
NOTES:
1. ALL PVC IRRIGATION SLEEVES TO BE SCHEDULE 40 PIPE.
2. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
3. WHERE THERE IS MORE THAN ONE SLEEVE, EXTEND THE SMALLER SLEEVE TO 24-INCHES MINIMUM ABOVE FINISH GRADE.
4. MECHANICALLY TAMP TO 95% PROCTOR.
5. SLEEVE LOCATIONS SHALL BE MARKED ONTO THE TOP OF CURB WITH A SAWCUT OF TWO PARALLEL LINES THAT ARE 2" LONG AND 1" APART.

4 IRRIGATION PVC SLEEVES
N.T.S.



NOTES:
1. SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SCH 40 PVC TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN.
2. FOR PIPE AND WIRE BURIAL DEPTHS, SEE SPECIFICATIONS. MINIMUM - 12"
3. BACKFILL AND COMPACT TRENCHES TO ORIGINAL GRADE.

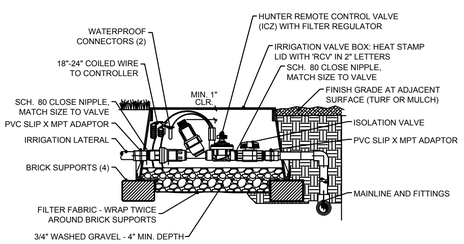
5 PIPE AND WIRING TRENCHING
N.T.S.



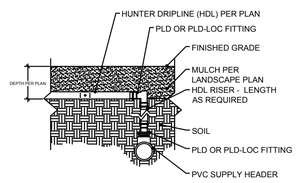
MP ROTATOR USE PROS-04-PRS40 SPRAY BODY MODEL AND PROS-04-PRS30 FOR SHORT RADIUS, ROTATOR NOZZLES ARE SPECIFIED AS FOLLOWS:
MP-800SR = 6' - 12'
MP-1000 = 8' - 15'
MP-2000 = 13' - 21'
MP-3000 = 22' - 30'
MP STRIPS
MP CORNERS
LABELED AS: RXX
(WHERE XX = DISTANCE OF THROW)
ROTORS USE PGP ULTRA, PGP-04-PRB MODEL W/ MPR-25, -30, OR -35 NOZZELS LABELED AS: XXR

NOTE:
1. MAY NOT BE USED IN LANDSCAPE AREAS LESS THAN FORTY-EIGHT INCHES (48") IN LENGTH OR WIDTH.

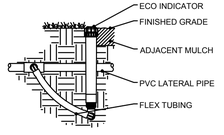
6 POP-UP SPRAY BODY OR POP-UP ROTOR
N.T.S.



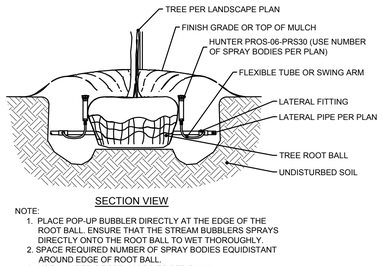
7 DRIP CONTROL ZONE KIT W/ ISOLATION VALVE
N.T.S.



8 HUNTER DRIPLINE CONNECTION W/DRIPLINE AND ELBOW
N.T.S.



9 ECO INDICATOR- FLEX TUBING
N.T.S.



NOTE:
1. PLACE POP-UP BUBBLER DIRECTLY AT THE EDGE OF THE ROOT BALL. ENSURE THAT THE STREAM BUBBLERS SPRAYS DIRECTLY ONTO THE ROOT BALL TO WET THOROUGHLY.
2. SPACE REQUIRED NUMBER OF SPRAY BODIES EQUIDISTANT AROUND EDGE OF ROOT BALL.
2. USE NUMBER OF SPRAY BODIES PER PLAN.

10 TREE BUBBLER ASSEMBLY WITH HUNTER PROS-06-PRS30
N.T.S.

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NO.	REVISION	BY	DATE

IRRIGATION SPECIFICATIONS AND DETAILS

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
AMANDA RICHARDSON
14033
LICENSED IRRIGATOR

Date: 8/17/2022
Scale:
Drawn By:
Reviewed By:
Project: 5010-37

SHEET
L2.4

ELECTRICAL SPECIFICATIONS

PART 1 – GENERAL

1. DESCRIPTION
   a. DEFINITIONS
      1. THE FOLLOWING DEFINITIONS APPLY TO THIS PROJECT:
         1. FURNISH – TO SUPPLY THE MATERIAL NECESSARY TO PERFORM THE TASK.
         2. INSTALL – TO SUPPLY THE LABOR NECESSARY TO COMPLETE THE TASK.
         3. PROVIDE – TO FURNISH AND INSTALL MATERIAL AND LABOR TO COMPLETE THE TASK.
   b. INDUSTRY – STANDARDS
      1. THE FOLLOWING IS A LIST OF ABBREVIATIONS USED IN THE ELECTRICAL SPECIFICATION:
         1. NEC – NATIONAL ELECTRIC CODE
         2. NEMA – NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
         3. UL – UNDERWRITERS LABORATORIES, INC.
         4. HVAC – HEATING, VENTILATION, AIR CONDITIONING
         5. IEEE – INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
         6. GFCI – GROUND FAULT CIRCUIT INTERRUPTER
         7. AIC – AMPERES INTERRUPTING CAPACITY
   c. THE ELECTRICAL SPECIFICATIONS COVERS ALL ELECTRICAL WORK FOR THE PROJECT. WORK SHALL INCLUDE LABOR, MATERIAL, AND ACCESSORIES NECESSARY TO ACCOMPLISH THE WORK AS SPECIFIED AND SHOWN ON THE DRAWINGS, INCLUDING CONNECTION AND CHECKOUTS OF EQUIPMENT FURNISHED BY OTHERS (OTHER TRADES, THE OWNER, AND OTHER CONTRACTORS), AND TO ALL KITCHEN EQUIPMENT AND AS INDICATED ON DRAWINGS OR AS REQUIRED.
   d. THIS WORK INCLUDES BUT IS NOT LIMITED TO: ELECTRICAL SERVICE AND DISTRIBUTION SYSTEMS, DISCONNECT SWITCHES, LIGHTING FIXTURES, AND CONTROL WIRING WITH FINAL CONNECTIONS TO ALL EQUIPMENT REQUIRED FOR A COMPLETE SYSTEM.
   e. EC TO VERIFY TYPE OF POWER SERVICE AVAILABLE (UNDERGROUND OR OVERHEAD) PRIOR TO SUBMITTING A PROPOSAL.
   f. EC TO VERIFY METERING, IN ACCORDANCE WITH LOCAL ELECTRIC UTILITY COMPANY REQUIREMENTS FOR GENERAL SERVICE SCHEDULE.
   g. EC SHALL PROVIDE 1-PHASE 3-WIRE 120/240V SERVICE. IF FOR ANY REASON THIS IS NOT AVAILABLE, THE EC SHALL NOTIFY THE OWNER IN WRITING PRIOR TO SUBMITTING A PROPOSAL.
   h. EC SHALL PROVIDE LABELS 3/16" INCH HIGH FOR DESCRIPTION OF MAIN SWITCHBOARD, PANELBOARD, AND ALL BRANCH CIRCUITS.
2. CODES, PERMITS, AND INSPECTIONS
   a. INSTALLATION SHALL COMPLY WITH ALL LAWS APPLYING TO ELECTRICAL WORK IN EFFECT, INCLUDING THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, THE NATIONAL ELECTRICAL SAFETY CODE, ALL LOCAL GOVERNING CODES AND ORDINANCES, WITH THE REGULATIONS OF THE SERVING ELECTRICAL UTILITY COMPANY. PROVIDE ALL REQUIRED PERMITS AND INCLUDE THE COST OF SAME IN THE COST OF THE PROJECT. OBTAIN AND PAY FOR (WITHOUT ADDITIONAL EXPENSE OF THE OWNER) ALL REQUIRED INSPECTIONS AND REVIEWS.
   b. THE EC SHALL UPGRADE THESE SPECIFICATIONS AS REQUIRED TO MEET COMPLIANCE WITH ALL APPLICABLE CODES IN EFFECT; HOWEVER, WHERE THESE SPECIFICATIONS MAKE STIPULATIONS OVER AND ABOVE THE MINIMUM REQUIREMENTS OF APPLICABLE CODES, THE CONTRACTOR SHALL NOT DOWN-GRADE THESE SPECIFICATIONS TO MINIMUM CODE REQUIREMENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER.
3. QUALITY ASSURANCE
   a. THE FOLLOWING INDUSTRY STANDARDS AS APPLICABLE TO THE ELECTRICAL WORK SHALL APPLY TO THE WORK OF THIS DIVISION EXCEPT WHERE THE REQUIREMENTS OF THESE SPECIFICATIONS ARE MORE THAN THE LISTED STANDARDS, THEN SPECIFICATIONS WILL TAKE PRECEDENCE:
      1. UL – UNDERWRITERS LABORATORIES
      2. NEMA – NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION
      3. NECA – NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION
      4. ANSI – AMERICAN NATIONAL STANDARDS INSTITUTE
      5. ASTM – AMERICAN SOCIETY OF TESTING MATERIALS
   b. ALL MATERIALS SHALL BE NEW, UL LISTED AND LABELED WHERE LABELED MATERIALS ARE AVAILABLE, UNDAMAGED AND FREE OF DEFECTS AT TIME OF INSTALLATION. MATERIALS OR EQUIPMENT DAMAGED IN SHIPMENT OR OTHERWISE DAMAGED PRIOR TO OR DURING INSTALLATION SHALL NOT BE REPAIRED AT THE JOB SITE, BUT SHALL BE REPLACED WITH NEW MATERIALS. WHEN THE MANUFACTURER'S NAME APPEARS IN THESE SPECIFICATIONS AND DRAWINGS, IT SHALL BE CONSTRUED THAT THE MANUFACTURER HAS TO MEET THE FULL REQUIREMENTS OF THE SPECIFICATIONS AND DRAWINGS AND THAT HIS STANDARD CATALOGED ITEM MAY BE UNACCEPTABLE WITHOUT MODIFICATION.
4. WORKING CLEARANCE
   a. THE SIZE OF ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS IS BASED ON DIMENSION OF A PARTICULAR MANUFACTURER (GENERALLY THE FIRST NAMED). WHILE OTHER MANUFACTURERS MAY BE ACCEPTABLE, IT IS THE RESPONSIBILITY OF THE TRADE TO DETERMINE IF THE EQUIPMENT PROPOSED WILL FIT IN THE ALLOCATED SPACE.
   b. INSTALL ALL EQUIPMENT IN A MANNER TO PERMIT ACCESS TO ALL SURFACES. MAINTAIN PROPER CLEARANCE TO MEET ALL SAFETY AND OPERATING CODES, PARTICULARLY NEC. INCLUDE ALL REQUIREMENTS DICTATED BY OPERATION, CONTROL, ADJUSTMENT, MAINTENANCE, AND POSSIBLE REPLACEMENT OF EQUIPMENT IN DETERMINING CLEARANCE.
   c. SHOULD THERE BE APPARENT VIOLATIONS OF NEC CODE CLEARANCE, NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONNECTION OR PLACEMENT OF EQUIPMENT.
5. COORDINATION
   a. INSTALLATION STUDIES ARE REQUIRED TO COORDINATE THE ELECTRICAL WORK WITH THE WORK OF OTHER TRADES. PREPARE COORDINATION DRAWINGS AT ACCURATE SCALES WHERE SEVERAL ELEMENTS OF ELECTRICAL OR COMBINED MECHANICAL/STRUCTURAL/ELECTRICAL WORK MUST BE SEQUENCED AND POSITIONED WITH PRECISION IN ORDER TO FIT INTO THE AVAILABLE SPACE.
   b. SHOW THE ACTUAL PHYSICAL DIMENSIONS WHERE REQUIRED FOR PROPER INTEGRATION OF EQUIPMENT WITH BUILDING SYSTEMS.
   c. PROVIDE APPROVED SHOP DRAWINGS TO ALL REQUIRED DISCIPLINES AND VERIFY FINAL ELECTRICAL CHARACTERISTICS BEFORE ROUGHING POWER FEEDS TO ANY EQUIPMENT. WHEN ELECTRICAL DATA ON APPROVED SHOP DRAWINGS DIFFERS FROM COMPLETED DESIGN, MAKE NECESSARY ADJUSTMENTS TO THE WIRING, DISCONNECTS, AND BRANCH CIRCUIT PROTECTION FOR THE EQUIPMENT ACTUALLY INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
   d. DAMAGE FROM INTERFERENCE CAUSED BY INADEQUATE COORDINATION SHALL BE RECTIFIED AT NO ADDITIONAL COST TO THE OWNER.
6. WORKMANSHIP
   a. ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED.
   b. ANY MATERIAL ITEMS OR WORK NOT SHOWN ON THE DRAWINGS, BUT MENTIONED IN THESE SPECIFICATIONS OR VICE-VERSA, OR ANY ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER.
7. TESTS
   a. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY ON ALL ELECTRICAL WORK INSTALLED UNDER THIS CONTRACT TO PERFORM TESTS NECESSARY TO DEMONSTRATE TO THE SATISFACTION OF THE ENGINEER THAT ALL PARTS OF THIS CONTRACT HAVE BEEN COMPLETED AND ARE IN WORKING ORDER.
   b. ALL SECONDARY POWER WIRING SHALL BE ENTIRELY FREE OF GROUNDS AND SHORT CIRCUITS.
   c. IT IS INTENDED THAT THE PHASES ON THE PANELS BE BALANCED TO WITHIN 10% PHASE TO PHASE.

PART 2 – PRODUCTS

1. GENERAL
   a. ALL EQUIPMENT OF A PARTICULAR KIND, SUCH AS WIRING DEVICES, PANELBOARDS, AND LIGHTING FIXTURES OF THE SAME TYPE SHALL BE THE PRODUCT OF THE SAME MANUFACTURER.
   b. PROVIDE ACCESS PANELS FOR ALL EQUIPMENT AND DEVICES REQUIRING SAME SIZE AS REQUIRED FOR PROPER ACCESS AND MAINTENANCE. MINIMUM ACCEPTABLE SIZE IS 12 INCHES BY 12 INCHES CLEAR OPENING WHERE HAND ACCESS ONLY IS REQUIRED.
   c. PROVIDE LABELS FOR EACH MOTOR CONTROLLER, SAFETY SWITCH, RELAY, PANELBOARD, CONTACTOR, TIMER, CONTROL DEVICE, METER, AND CIRCUIT BREAKER. LABELS SHALL BE LAMINATED, PHENOLIC STRIPS 1/16" THICK AND ENGRAVED TO SHOW BLACK LETTERS ON A WHITE BACKGROUND NOT LESS THAN 1/4" HIGH. SIZE STRIPS TO PROPERLY FIT MANUFACTURER'S BRACKETS AND BE LEGIBLE. WHERE MANUFACTURER'S BRACKETS ARE NOT PROVIDED, MOUNT LABELS WITH PROPER SCREWS OR AN APPROVED ADHESIVE.
2. RACEWAYS
   a. CONDUIT, RIGID STEEL; GALVANIZED OR SHERARDIZED AND MANUFACTURED IN ACCORDANCE WITH ANSI STANDARD C80.L. FITTINGS SHALL BE PIPE THREADED, MALLEABLE IRON. CONNECTORS SHALL BE INSULATED THROAT TYPE.
   b. CONDUIT, PVC; POLYVINYLCHLORIDE SCHEDULE 80 PIPE SPECIFICALLY MANUFACTURED AND LABELED (UL STANDARD 651) FOR USE AS ELECTRICAL CONDUIT. FITTINGS SHALL BE EITHER SOCKET WELDED TYPE OR PIPE THREADED WITH INSULATED THROAT.
   c. CONDUIT, FLEXIBLE METALLIC; GALVANIZED, INTERLOCKED SPIRALLY WOUND STEEL STRIP WITH GALVANIZED OR SHERARDIZED FITTINGS. LISTED PER UL-L. FITTINGS SHALL BE OF THE SQUEEZE TYPE WITH INSULATED THROATS.
   d. CONDUIT, LIQUIDTIGHT METALLIC; GALVANIZED, INTERLOCKED SPIRALLY WOUND STEEL STRIP WITH OVERALL JACKET OF LIQUID TIGHT PVC, UL LISTED. FITTINGS SHALL BE STEEL OR MALLEABLE IRON INSULATED THROAT, WATERTIGHT.
   e. ELECTRIC METALLIC TUBING; GALVANIZED OR SHERARDIZED AND MANUFACTURED IN ACCORDANCE WITH ANSI STANDARD C80.3. FITTINGS 1/2" THROUGH 2" TRADE SIZE SHALL BE COMPRESSION TYPE, MANUFACTURED FROM MALLEABLE IRON OR STEEL, AND RAIN AND/OR CONCRETE-TIGHT AS REQUIRED BY INSTALLATION. POT METAL OR DIE CAST TYPE FITTINGS ARE PROHIBITED. CONNECTS SHALL BE INSULATED THROAT TYPE.
   f. RACEWAYS: ALL CONDUIT SHALL BE EITHER RIGID STEEL OR ELECTRICAL METALLIC TUBING. FOR IN SLAB AND UNDERGROUND INSTALLATIONS, SCHEDULE 80 PVC OR RIGID STEEL SHALL BE USED, INSTALLED PER NEC.
   g. FITTINGS AND BUSHINGS: ALL REQUIRED BENDS, FITTINGS, JUNCTION BOXES, ETC., WHETHER OR NOT THEY ARE SHOWN ON THE DRAWINGS, SHALL BE INSTALLED TO SATISFY ALL CODES AND STANDARDS OF GOOD PRACTICE. ALL CONDUITS ENTERING/LEAVING A CONDUIT OR RACEWAY SHALL BE AFFORDED ABRASION PROTECTION BY AN ADEQUATE BUSHING OR OTHER APPROVED MEANS.
3. CONDUCTORS AND CABLES
   a. GENERAL: ALL CONDUCTORS SHALL BE NINETY-EIGHT PERCENT (98%) CONDUCTIVITY SOFTDRAWN COPPER, NEW, INSULATED IN ACCORDANCE WITH NEC CODE FOR THE TYPE OF SERVICE. UNLESS NOTED OTHERWISE, CONDUCTORS No. 8 AWG AND LARGER SHALL BE INSULATED WITH TYPE "THW" INSULATION AND HAVE STRANDED CONDUCTORS. ALL OTHER CONDUCTORS SHALL BE INSULATED WITH TYPE "THWN" INSULATION AND HAVE SOLID CONDUCTORS, EXCEPT THAT WIRE IN FIXTURE CHANNELS AND OTHER SPECIAL LOCATIONS SHALL BE SPECIFICALLY NOTED TO THE CONTRARY ON THE DRAWINGS OR IN THE NEC. INSULATION SHALL BE RATED FOR 600 VOLTS AC SERVICE MINIMUM AND COLOR-CODED IN ACCORDANCE WITH ACCEPTED STANDARDS.
   b. CONNECTORS FOR SPLICING CONDUCTORS #10 AWG AND SMALLER SHALL BE LIVE SPRING TYPE PRESSURE CONNECTORS AS MANUFACTURED BY 3M "SCOTCHLOK" OR APPROVED EQUAL.
   c. CONNECTORS FOR #8 AWG AND LARGER SHALL BE TWO-WAY LONG BARREL COMPRESSION TYPE WITH INSULATING COVER, THOMAS & BETTS "COLOR-KEYED" OR APPROVED EQUAL. WHERE "GUTTER TRAPS" ARE REQUIRED, CONNECTORS ARE TO BE H-TYPE WITH INSULATING COVERS.
   d. TERMINATIONS FOR MOTORS WITH #10 AWG AND SMALLER CONDUCTORS IN INTERIOR LOCATIONS MAY BE MADE WITH SPRING TYPE PRESSURE CONNECTORS, #8 AWG AND LARGER SHALL BE THOMAS & BETTS "MOTOR PIGTAIL CONNECTORS" WITH SLIP-ON INSULATORS SECURED BY "TY-RAPS".
   e. ELECTRICAL INSULATING TYPE SHALL BE "SCOTCH" No. 88 OR 99 OR APPROVED EQUAL.
4. BOXES
   a. OUTLET BOXES: GALVANIZED PRESSED STEEL WITH GALVANIZED STEEL EXTENSION RINGS OR PLASTER RINGS OR TILE RINGS TO PROVIDE EXPOSED SURFACE FLUSH WITH WALL OR CEILING FINISH. PROVIDE ALL CEILING OUTLET BOXES WITH "NO-BOLT" OR THROUGH AND LOCK-NUTTED TYPE FIXTURE STUDS.
   b. JUNCTION AND PULL BOXES: FABRICATE IN ACCORDANCE WITH NEMA AND NEC STANDARDS AND REQUIREMENTS INSOFAR AS MATERIAL, GAUGES, DIMENSIONS, AND FABRICATION METHODS. BOXES SHALL BEAR THE UL LABEL. WHERE BOXES ARE NOT SIZED ON THE DRAWINGS, THEY SHALL BE SIZED IN ACCORDANCE WITH NEC CODE REQUIREMENTS. FINISH IN STANDARD GREY ENAMEL, WITH SIDES AND BACK SPOT-WELDED IN POSITION AND THE REMOVABLE SCREW COVER MOUNTED WITH BRASS MACHINE SCREWS.
5. CABINETS AND ENCLOSURES
   a. FURNISH AND INSTALL FLUSH CABINETS AND ENCLOSURES AS SHOWN ON THE PLANS AND AS HEREIN SPECIFIED. UNIT SHALL BE PROVIDED WITH DEAD FRONT SUB PANEL, RECESSED AS REQUIRED, TO HOUSE CONTROLS. DOOR SHALL BE PROVIDED WITH CONCEALED HINGES AND FLUSH KEY OPERATED LOCK. DOOR AND TRIM SHALL BE PRIME PAINTED FOR FIELD PAINTING TO MATCH WALL FINISHES. PROVIDE KNOCK-OUTS, LOUVERS, AND IDENTIFICATION ENGRAVINGS AS REQUIRED TO MEET FIELD CONDITIONS. EXACT BACKBOX SIZE TO BE COORDINATED WITH EQUIPMENT SUPPLIER.
6. CIRCUIT DISCONNECTS
   a. SAFETY SWITCHES: SAFETY SWITCHES SHALL CONSIST OF A BOX, FRONT COVER, AND CIRCUIT PROTECTOR DEVICE ALL MANUFACTURED BY SQUARE D OR EQUAL, AND ASSEMBLED IN ACCORDANCE WITH NEMA STANDARDS WITH UL LISTING AND LABEL. THE CIRCUIT PROTECTOR DEVICE SHALL BE GENERAL DUTY, QUICK-MAKE, QUICK-BREAK FUSED OR UNFUSED SWITCH RATED FOR MOTOR CIRCUITS AND/OR SERVICE ENTRANCE DUTY, IF REQUIRED. SWITCHES WILL BE FUSIBLE OR NON-FUSIBLE AS DICTATED BY PLANS/LOCAL CODES AND WILL BE NEMA TYPE 1 FOR INDOOR (DRY) INSTALLATION OR A NEMA TYPE 3R ENCLOSURE FOR OUTDOOR INSTALLATION. FUSED UNITS SHALL BE FURNISHED COMPLETE WITH PROPER FUSES.
7. SERVICE/DISTRIBUTION EQUIPMENT
   a. DISTRIBUTION PANELS AND PANELBOARDS SHALL BE SQUARE D OR EQUAL.
   b. PANELBOARDS:
      1. SQUARE D PANELBOARDS OR EQUAL USED IN SERIES WITH I-LINE CIRCUIT BREAKERS AND FITTED WITH SQUARE D OR EQUAL BRANCH CIRCUIT BREAKERS ARE LISTED FOR USE WITH UP TO 22,000 RMS SYMMETRICAL AMPS OF FAULT CURRENT. USE AN APPROPRIATE SQUARE D BREAKER OR EQUAL WITH EACH PANEL. PANELS SHALL BE RATED AT 22k AIC.
      2. SHALL CONSIST OF BOX, INTERIOR, FRONT, AND CIRCUIT PROTECTION DEVICES. THE ASSEMBLY SHALL BE UL LABELED AND BE LISTED FOR SERVICE. THE ASSEMBLY SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH NEMA STANDARD PB-1.
      3. THE BOX SHALL BE FABRICATED FROM CODE GAUGE GALVANIZED STEEL IN ACCORDANCE WITH THE LATEST UL STANDARD (UL-50) AND SHALL HAVE A TURNED EDGE AROUND THE FRONT FOR RIGIDITY AND FOR CLAMPING ON FRONT. PROVIDE STANDARD KNOCKOUTS ON REMOVABLE BOX ENDS. FABRICATE FROM SHEET STEEL AND FINISH WITH BAKED ON GREY ENAMEL OVER RUST INHIBITOR. EACH FRONT SHALL HAVE A DOOR MOUNTED ON SEMI-CONCEALED HINGES WITH A CYLINDER LOCK, INDEX CARD CIRCUIT DIRECTORY MOUNTED BEHIND CLEAR PLASTIC AND HELD IN A METAL FRAME AND CONCEALED TRIM CLAMPS FOR MOUNTING TO THE BOX. ALL LOCKS SHALL BE MASTER KEYED AND ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN.
      4. ALL INTERIORS SHALL BE COMPLETELY FACTORY ASSEMBLED. THE DESIGN OF THE INTERIOR SHALL PERMIT REPLACEMENT OF INDIVIDUAL BRANCH BREAKERS WITHOUT DISTURBING THE ADJACENT UNITS AND WITHOUT MACHINE DRILLING OR TAPPING. BUS BARS FOR PANELS RATED 600 AMPERES OR MORE SHALL BE TIN PLATED 98% CONDUCTIVITY COPPER OR TIN FINISH ALUMINUM (57% CONDUCTIVITY) OF RECTANGULAR CROSS-SECTION. BUS BAR CONNECTIONS TO BRANCH CIRCUIT BREAKERS SHALL BE THE PHASE SEQUENCE TYPE AND ACCEPT BOLT-ON TYPE BREAKERS ONLY.
      5. BREAKERS SHALL BE QUICK-MAKE, QUICK-BREAK, THERMAL-MAGNETIC MOLDED CASE CIRCUIT BREAKERS ONE, TWO, OR THREE POLE WITH INTEGRAL CROSSBAR FOR MULTI-POLE UNITS, EQUIPPED WITH AN OVER CENTER, TRIP-FREE, TOGGLE-TYPE OPERATING ACTION AND POSITIVE HANDLE INDICATION OF BREAKER STATUS. CIRCUIT BREAKERS SHALL BE UL LISTED IN ACCORDANCE WITH UL STANDARD 489.
      6. EACH PANELBOARD, AS A COMPLETE UNIT, SHALL HAVE A SHORT CIRCUIT RATING EQUAL TO OR GREATER THAN THE INTEGRATED EQUIPMENT RATING SHOWN ON THE DRAWINGS. THE RATING SHALL BE ESTABLISHED BY TESTING WITH THE OVERCURRENT DEVICES MOUNTED IN THE PANELBOARD. THE SHORT CIRCUIT TESTS ON THE OVERCURRENT DEVICES ON THE STRUCTURE SHALL BE MADE SIMULTANEOUSLY BY CONNECTING THE FAULT TO EACH OVERCURRENT DEVICE WITH THE PANELBOARD CONNECTED TO ITS RATED SUPPLY VOLTAGE.
8. OVERCURRENT PROTECTIVE DEVICES
   a. FUSES: FUSES OF THE PROPER SIZE, RATING, AND ELECTRICAL CHARACTERISTICS SHALL BE PROVIDED IN EACH FUSIBLE DEVICE. FUSES OF 600 VOLTS AND BELOW SHALL BE UL CLASS RK-1, CURRENT-LIMITING, TIME-DELAY, DUAL-ELEMENT, 200,000 AMPERE RMS SYMMETRICAL INTERRUPTING CAPACITY ON NON-MOTOR CIRCUITS AND UL CLASS RK-5, TIME-DELAY, DUAL-ELEMENT, 200,000 AMPERES RMS SYMMETRICAL INTERRUPTING CAPACITY ON MOTOR ELEMENTS.
   b. APPROVED MANUFACTURERS: BUSSMANN OR FERRAZ SHAWMUT (ALL FUSES SHALL BE OF SAME MANUFACTURER AND FUSE TYPE TO INSURE SELECTIVE COORDINATION).
   c. CIRCUIT BREAKERS: CIRCUIT BREAKERS OF THE PROPER SIZE, RATING, AND ELECTRICAL CHARACTERISTICS SHALL BE PROVIDED WHERE CALLED FOR ON DRAWINGS. BREAKERS SHALL BE THERMAL MAGNETIC MOLDED-CASE WITH QUICK-MAKE, QUICK-BREAK, OVER CENTER TOGGLE TYPE MECHANISM AND TRIP-FREE HANDLE MECHANISM. THE SAME BREAKER SHALL BE ENCLOSED IN A SUITABLE NEMA RATED ENCLOSURE. BREAKERS SHALL BE OF SAME MANUFACTURER AS THOSE IN THE PANELBOARDS.
      1. PANELBOARD BRANCH/FEEDER CIRCUIT BREAKERS: ALL DOWNSTREAM BREAKERS MUST BE SQUARE D OR EQUAL TO MAINTAIN SERIES LISTING. IF FUSIBLE DISCONNECTS ARE USED, SQUARE D OR EQUAL PANELBOARDS AND CIRCUIT BREAKERS SHALL BE USED.
      2. GROUND FAULT CIRCUIT INTERRUPTER (GFCI) BREAKERS: GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE CIRCUIT BREAKERS SHALL BE SIMILAR TO THE PANELBOARD CIRCUIT BREAKERS BUT WITH GROUND FAULT PROTECTION. GFCI BREAKERS SHALL BE UL APPROVED AS CLASS A DEVICES IN ACCORDANCE WITH UL STANDARD 943.
9. LIGHTING
   a. FIXTURES ARE SPECIFIED IN THE SCHEDULE BY MANUFACTURER'S NAME AND CATALOG NUMBER.
   b. LAMPS: ALL LAMPS USED ON THIS PROJECT SHALL BE NEW, DELIVERED TO THE JOB SITE IN THE ORIGINAL PACKAGING CASES AND SLEEVES AND SHALL BE OF THE SAME MANUFACTURER.
   c. PHOTOCELL (OUTDOOR): ELECTRONIC LIGHT SENSOR SHALL BE TORK EPC-1 OR EQUAL. ENCLOSED IN A LEXON HOUSING WITH A 1/2" CONDUIT MOUNTING AND 180 DEGREE SWIVEL. LIGHTING CONTROLLER AS A 2 TO 100 FOOT-CANDLE LIGHT ADJUSTMENTS. INSTALL IN A WEATHER TIGHT JUNCTION BOX ON THE ROOF PER MANUFACTURER'S RECOMMENDATIONS. SET SENSOR TO 100 FOOT-CANDLE LEVEL.
      1. LIGHTING CONTROLLER (OUTDOOR LIGHTING CONTROL): THE LIGHTING CONTROLLER SHALL BE THE TORK LC-200 OR EQUAL IN A NEMA 1 ENCLOSURE. THE LC-200 USED IN CONJUNCTION WITH A TORK EPC-1 OR EQUAL PHOTOCELL.
   d. CONTACTOR (OUTDOOR LIGHTING CONTROL):
      1. THE LIGHTING CONTACTORS USED WITH THE OUTDOOR PHOTOCELLS SHALL BE SIMILAR AND EQUAL TO SQUARE D ELECTRICALLY HELD LIGHTING CONTACTOR CLASS 8903 TYPE LG-80 FORM F WITH 120V CONTROL COIL, NORMALLY OPEN CONTACTORS RATED AT 30 AMPS CONTINUOUS IN NEMA TYPE 1 ENCLOSURE WITH FUSED CONTROL CIRCUIT.
   e. PHOTOCELL BYPASS SWITCH:
      1. THE PHOTOCELL BYPASS SWITCH SHALL BY A "BRYANT" #4801-L SINGLE POLE LOCK TYPE 15A 120-277 VOLT SWITCH WITH KEY #6006 AND COVERPLATE (WHITE).

PART 3 – EXECUTION

1. METHOD OF PROCEDURE
   a. ERECT EQUIPMENT PARTS AT SUCH TIME AND IN SUCH A MANNER AS TO MINIMIZE INTERFERENCES AND DELAYS IN THE EXECUTION OF THE WORK CARE SHALL BE USED IN THE ERECTION AND INSTALLATION OF ALL EQUIPMENT AND MATERIALS TO AVOID MARRING SURFACES OF THE WORK. DAMAGES SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
   b. EQUIPMENT REQUIRING ELECTRICAL SERVICE SHALL NOT BE ENERGIZED OR PLACED IN SERVICE UNTIL ALL INTERESTED PARTIES HAVE BEEN DULY NOTIFIED AND ARE PRESENT OR HAVE WAIVED THEIR RIGHT TO REPRESENT. WHERE EQUIPMENT TO BE PLACED IN SERVICE INVOLVES SERVICE OR CONNECTION FROM ANOTHER CONTRACTOR OR THE OWNER. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING WHEN THE EQUIPMENT WILL BE READY. THE OWNER SHALL BE NOTIFIED AS FAR IN ADVANCE AS POSSIBLE, OF THE DATE VARIOUS ITEMS OF EQUIPMENT WILL BE COMPLETE.
   c. THE WORK OF THIS TRADE INCLUDES ROUGH-IN FOR AND FINAL CONNECTION & REQUIRED TO ALL MISCELLANEOUS EQUIPMENT FURNISHED BY OTHERS, OR UNDER OTHER DIVISIONS OF THE WORK. THIS SHALL INCLUDE POWER AND CONTROL WIRING. WIRING DEVICES AND COVER PLATES FOR BUILT-IN EQUIPMENT AND INCLUDED IN THE WORK OF THIS DIVISION. SAFETY DISCONNECTS AND OTHER MISCELLANEOUS PROTECTIVE DEVICES REQUIRED BY NEC ARE INCLUDED IN THE WORK OF THIS DIVISION. DO ALL ROUGHING-IN AND FINAL CONNECTIONS FROM APPROVED SHOP DRAWINGS ONLY.
   d. CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED ELECTRICAL CONDUIT AND WIRING FOR ALL MOTOR STARTERS AND ELECTRICAL CONTROLS. CONTRACTOR SHALL MAKE LINE VOLTAGE ELECTRICAL CONNECTIONS AS REQUIRED FOR HVAC SYSTEMS.
   e. EC SHALL INSTALL THE CONNECTIONS TO ALL RECEPTACLES, SALES COUNTERS, GONDOLAS, AND FINAL CONNECTIONS TO ALL FIXTURES AFTER FIXTURES ARE IN PLACE.
   f. EC SHALL VERIFY EXACT LOCATION OF ALL SIGNS WITH OWNER'S REPRESENTATIVE. PROVIDE ALL CONDUITS AND WIRED WITH STUB-UPS AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND MAKE ALL FINAL CONNECTIONS AS REQUIRED BY HVAC.
   g. WIRING:
      1. ALL WORK SHALL BE COMPLETED IN A NEAT AND WORKMAN-LIKE MANNER. THE EC SHALL CONTACT THE OWNER'S REPRESENTATIVE SHOULD THIS PLAN REQUIRE MODIFICATION TO COMPLY WITH LOCAL CODES.
      2. ALL CONDUCTORS SHALL BE RUN IN APPROVED METALLIC RACEWAY OR CONDUIT AND SHALL BE UNIFORMLY COLOR CODED THROUGHOUT THE ENTIRE SYSTEM. SPLICES, TAPS, AND TERMINALS SHALL BE MADE ONLY IN J-BOXES, OUTLET BOXES, AND PANELBOARDS.
      3. ALL CONDUCTORS SHALL BE COPPER THHN, 90 DEGREES CELSIUS, WITH A MINIMUM WIRE SIZE OF #12 AWG (ALUMINUM CONDUCTORS SHALL NOT BE USED). THE EC SHALL ENSURE THE CONDUCTORS UTILIZED ARE IN KEEPING WITH GOOD PRACTICE FOR THE CIRCUIT/PROTECTIVE DEVICES EMPLOYED. THE NEUTRAL CONDUCTOR (WHERE USED) SHALL HAVE THE SAME AMPACITY AS THE ASSOCIATED PHASE.
      4. THE EC SHALL ENSURE THAT CIRCUIT AMPACITY AND SHORT CIRCUIT/OVERLOAD PROTECTION IS APPROPRIATE FOR THE EQUIPMENT BEING INSTALLED. UL LISTED CONDITIONS SHALL BE OBSERVED.
      5. TO COMPLY WITH NEC/UL LISTING CONDITIONS, ROOFTOP UNITS MAY BE SHOWN WITH FUSED DISCONNECT SWITCHES:
         1. ALL FUSES SERVING MOTOR LOADS WILL BE OF THE DUAL ELEMENT TYPE.
         2. DUE TO THE DIFFERENT INTERRUPTING CHARACTERISTICS, PANELBOARD CIRCUIT BREAKERS MAY BE RATED HIGHER THAN THE DUAL ELEMENT FUSES THEY SUPPLY TO ENSURE SUFFICIENT STARTING CIRCUIT.
      6. WIRE SIZE LISTED ARE MINIMUM, CONDUCTORS SHALL BE SELECTED SUCH THAT THE MAXIMUM VOLTAGE DROP BETWEEN THE PANELBOARD AND LOAD (AT FULL LOAD AMPS) SHALL NOT EXCEED THE FOLLOWING GUIDELINES:
         1. MOTOR LOADS (AIR CONDITIONING, REFRIGERATION, ETC.) – 2% OF CIRCUIT VOLTAGE AT PANELBOARD.
         2. ALL OTHER LOADS – 5% OF CIRCUIT VOLTAGE AT PANELBOARD.
      7. THE EC SHALL PROVIDE DEDICATED CIRCUITS WITH ISOLATED GROUND FOR ALL CIRCUITS ORIGINATING FROM PANELS. THE PURITY OF THE ISOLATED GROUND SHALL BE MAINTAINED BY USING ONLY INSULATED GROUNDING CONDUCTORS AND ISOLATED GROUND. THE GROUNDING CONDUCTOR FOR THE ISOLATED GROUND SHALL NOT MAKE ELECTRICAL CONTACT WITH THE COMMON GROUND OR ANY ITEM CONNECTED TO THE COMMON GROUND (IE CONDUITS, J-BOXES, SWITCH BOXES, ETC.) AT ANY POINT OTHER THAN AT THE SERVICE GROUNDING TERMINAL. REFER TO NEC 250.96(B).
   h. COMPLIANCE WITH THE DRAWING AND ANY NOTES THEREIN IS REQUIRED. PROVIDE OPENINGS AND SLEEVES FOR ELECTRICAL WORK.
2. RACEWAYS
   a. GENERAL: ALL POWER AND LIGHTING CIRCUITS SHALL BE RUN IN METALLIC RACEWAYS EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE. THESE RACEWAYS SHALL BE RUN CONCEALED IN ALL FINISHED AREAS, AND WHERE RUN EXPOSED SHALL BE SQUARE TO THE BUILDING AND HELD TIGHT TO THE BUILDING CONSTRUCTION. LOW VOLTAGE, TELEPHONE, INTERCOM, MUSIC, ALARM, AND SECURITY WIRING RUN ABOVE ACCESSIBLE CEILINGS SHALL BE RUN USING INSULATED CABLE. METALLIC CONDUIT FOR THESE SYSTEMS SHALL BE PROVIDED ONLY WHERE RUN INSIDE WALLS. THE DRAWINGS INDICATE THE REQUIRED SIZE OF ALL RACEWAYS (EXCEPT AS HEREIN AFTER SPECIFIED), THE POINTS OF TERMINATION AND THE SUGGESTED ROUTING. HOWEVER, THE INSTALLER IS RESPONSIBLE FOR PROPER COORDINATION WITH BUILDING STRUCTURE AND THE WORK OF OTHER TRADES. FURNISH ALL REQUIRED BENDS, ELBOWS, FITTINGS, JUNCTION AND PULL BOXES, WHETHER OR NOT SPECIFICALLY SHOWN ON DRAWINGS, THAT MAY BE REQUIRED TO SATISFY CODES AND THE STANDARDS OF GOOD PRACTICE. WHERE CONDUITS FOR BOTH BRANCH AND FEEDER CIRCUITS ARE RUN CONCEALED, CONDUITS MAY BE RUN OUT OF SQUARE TO THE BUILDING PROVIDING THE SHORTEST POSSIBLE RUN IS UTILIZED. RACEWAY SIZES ARE BASED ON THE USE OF COPPER CONDUCTORS AND NEC FILL.
   b. USAGE: CONDUIT, WHERE INDICATED, SHALL BE CONSTRUED AS ELECTRICAL RACEWAYS AND SHALL CONFORM TO THE FOLLOWING: CONCEALED IN HUNG CEILINGS AND INTERIOR PARTITIONS – EMT WITH SET SCREW TYPE FITTINGS. UNDERGROUND OR BELOW INTERIOR SLABS – GRS. (NOTE: PVC CONDUIT IS PERMITTED OUTSIDE FOR PARKING AREA LIGHTING, SIGNS, ETC. ELBOWS SHALL BE GRS).
   c. CONDUIT BENDS SHALL BE MADE TO THE LARGEST POSSIBLE RADIUS FOR EASE IN PULLING CONDUCTORS AND TO PROVIDE A NEATLY INSTALLED APPEARANCE. EQUIPMENT AND CONDITIONS PERMITTING, POWER CONDUIT BENDS SHALL CONFORM TO THE FOLLOWING:

1-1/2 IN	18 IN RADIUS
2 IN	24 IN RADIUS
2-1/2 IN	24 IN RADIUS
3 IN	36 IN RADIUS

   d. GRS CONDUIT SHALL BE CUT WITH POWER OR HACKSAW AND CLEANLY REAMED TO REMOVE ALL BURRS AND ALL FIELD CUT THREADS SHALL BE PAINTED WITH WHITE LEAD BEFORE COUPLINGS ARE APPLIED.
4. WIRING INSTALLATION
   a. ALL CONDUCTORS SHALL BE COPPER THHN, 90 DEGREES CELSIUS, MINIMUM WIRER SIZE SHALL BE #12 AWG WIRE AND #6 AWG AND LARGER SHALL BE STRANDED. INSULATION SHALL BE TYPE THWN OR THW, OR AS SHOWN ON THE PLANS AND SHALL CONFORM WITH NEC FOR THE PARTICULAR APPLICATION.
   b. GENERAL: EXCEPT FOR SUCH ITEMS AS ARE NORMALLY WIRED AT THEIR POINT OF MANUFACTURE AND SO DELIVERED – AND UNLESS SPECIFICALLY NOTED TO THE CONTRARY HEREIN – THE ELECTRICAL TRADE SHALL DO ALL ELECTRICAL WIRING OF EVERY CHARACTER. IT IS THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS THAT ALL SYSTEMS AND EQUIPMENT SHALL BE PROVIDED WITH ALL NECESSARY UTILITY CONNECTIONS, COMPLETED TO ALLOW SAFE AND PROPER OPERATION OF SAID SYSTEMS. WHEN IT IS NECESSARY FOR TRADES PERFORMING WORK COVERED BY THIS DIVISION TO MAKE FINAL CONNECTIONS TO ITEMS OF EQUIPMENT BEING FURNISHED BY OTHERS, OR BY OTHER TRADES UNDER OTHER DIVISIONS, ALL SUCH WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS DIVISION AND ALL MATERIALS USED SHALL BE AS SPECIFIED HEREIN.
   c. WIRE SIZE: MINIMUM WIRE SIZE FOR BRANCH CIRCUITS SHALL BE #12 AWG, EXCEPT THAT HOMERUNS LONGER THAN 50 FOOT LENGTH FROM THE PANEL TO THE CIRCUIT'S ELECTRICAL LOAD CENTER SHALL BE #10 AWG MINIMUM. WHERE MORE THAN THREE CURRENT CARRYING CONDUCTORS ARE ENCLOSED IN THE SAME RACEWAY, CONDUCTORS ARE TO BE DERATED PER NEC AND WIRE SIZE INCREASED AS REQUIRED. WHERE THE INCREASED CONDUCTOR SIZE REQUIRES, INCREASE THE RACEWAY SIZE AS WELL. FOR CONTROL WIRING, USE #14 AWG MINIMUM FOR FIXTURE WIRING, AS PERMITTED BY NEC. USE #18 AWG MINIMUM FOR SIGNAL AND COMMUNICATIONS SYSTEMS USE WIRE SIZE AS SPECIFICALLY REQUIRED BY THE SYSTEM SUPPLIER.
   d. MAKE CONNECTIONS TO TERMINALS USING PRESSURE TYPE CONNECTORS. SOLDERED JOINTS ARE PROHIBITED. ALL JOINTS IN CONDUITS SHALL BE MADE AT AN ACCESSIBLE LOCATION WITHIN A BOX BY TWISTING THE BARE CONDUCTORS ENDS TOGETHER AND APPLYING A WIRE CONNECTOR IN ALL SIZES UP TO THE MAXIMUM CAPACITY OF THE CONNECTOR. JOINTS SHALL BE TAPED WITH AN APPROVED ELECTRICAL TAPE. SPLICES FOR CONDUCTORS LARGER THAN #10 AWG SHALL BE MADE WITH AN APPROVED COMPRESSION (SQUEEZE) CONNECTOR INSULATED WITH NOT LESS THAN TWO LAYERS OF ELECTRICAL FILL TAPE TO 1.5 TIMES THE THICKNESS OF INSULATION, FOLLOWED BY TWO (MINIMUM) LAYERS OF HALF-LAPPED ELECTRICAL TAPE FOR MECHANICAL PROTECTION. LOCATE ALL SPLICES IN BOXES OR FITTINGS OF PROPER SIZE PER NEC.
   e. IDENTIFY ALL WIRES AND CABLES WITH BRADY ADHESIVE WIRE MARKERS AT EACH BOX, PANEL, AND OUTLET. IDENTIFICATION SHALL, AS A MINIMUM, INDICATE THE PANEL AND CIRCUIT SUPPLYING THE OUTLET. AT THE PANEL END, THE LOAD SERVED AND ITS LOCATION SHALL BE INDICATED. PROVIDE A MINIMUM OF 8 IN. SLACK WIRE AT EACH OUTLET FOR MAKING CONNECTION TO THE DEVICE OR TO PROVIDE FOR A FUTURE DEVICE IN A BOX.
5. BOXES
   a. EACH BOX SHALL BE OF PROPER SIZE TO ACCOMMODATE THE DEVICE AND FUNCTION FOR WHICH IT IS SHOWN. BOXES FOR WALL DEVICES SHALL BE FURNISHED COMPLETE WITH PLASTER RING OR TILE RING ACCORDING TO WALL CONSTRUCTION WHERE REQUIRED. BOXES FOR INSTALLATION IN MASONRY WALLS SHALL BE SPECIAL SQUARE CORNER MASONRY TYPE. BOXES FOR MOUNTING OF LIGHTING FIXTURES SHALL BE FOUR INCH OCTAGON, EQUIPPED WITH 3/8 IN. "NO BOLT" FIXTURE STUD. BOXES FOR FLOOR OUTLETS SHALL BE CONCRETE PROOF STEEL BOXES WITH ADJUSTABLE TOPS AND DEVICES AS HEREINAFTER NOTED OR SHOWN. ALL BOXES SHALL BE FURNISHED COMPLETE WITH PROPER COVER AND/OR DEVICE PLATE AND DEVICE.
6. SYSTEM GROUNDING
   a. GENERAL: EQUIPMENT, RACEWAY SYSTEMS, WIRING SYSTEM NEUTRALS, RECEPTACLES AND POWER OUTLETS, MOTORS, AND MOTORIZED EQUIPMENT, SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250.
   b. GROUNDING MATERIAL:
      1. GROUND RODS – 3/4" DIA., 10' LONG, COPPER WELD.
      2. GROUND CONDUCTOR – SIZE AS PER NEC REQUIREMENTS, BARE STRANDED, SOFT DRAWN OR SOFT ANNEALED, COPPER WIRE.
      3. JOINTS AND CONNECTIONS – MOLDED FUSION WELDING PROCESS USING PROPER MOLD AND THE NUMBER, SIZE, AND TYPE OF CARTRIDGE FOR THE JOINT OR CONNECTION. WATERPIPE CONNECTION, SILICON BRONZE APPROVED MECHANICAL CONNECTOR DESIGNED FOR THE PIPE AND CABLE TO BE BONDED.
7. PANELBOARD INSTALLATION
   a. MOUNT PANELBOARDS WITH CENTERLINE AT 5 FT 6 IN ABOVE FINISHED FLOOR, EXCEPT THAT THE HIGHEST BREAKER HANDLE SHALL BE BELOW 6 FT 5 IN ABOVE FINISH FLOOR. ARRANGE BREAKERS SO THAT THE BREAKER RATING IS VISIBLE WITH THE FRONT PANEL IN PLACE.
   b. PANEL DIRECTORIES, AS A MINIMUM, SHALL BE TYPEWRITTEN AND INDICATE BREAKER POSITION NUMBER, EQUIPMENT SERVED, ROOM NAME AND NUMBER, AND THE PANEL IDENTIFICATION. THE PANEL IDENTIFICATION SHALL BE LOCATED ON THE PANEL TRIM AND SHALL CONSIST OF A BLACK LAMINATED PHENOLIC LABEL, SCREW MOUNTED, WITH THE PANEL IDENTIFICATION MATCHING PANEL IDENTIFICATION ON DRAWINGS, ENGRAVED IN 1/4 IN WHITE LETTERS. LABEL ALL CONDUCTORS WITH ADHESIVE WRAP LABELS WITHIN 2 IN OF THE CONDUCTOR TERMINATION PRIOR TO INSTALLATION OF TRIM.
8. LIGHTING FIXTURE INSTALLATION
   a. PROVIDE A LIGHTING FIXTURE FOR EACH AND EVERY OUTLET IN ACCORDANCE WITH TYPE DESIGNATION AND FIXTURE SCHEDULE ON THE DRAWINGS. VERIFY THE ARCHITECTURAL FINISHES AND CEILING CONSTRUCTION AND – REGARDLESS OF THE CATALOG NUMBER PREFIXES AND SUFFIXES SHOWN – PROVIDE FIXTURES WITH THE PROPER TRIM, FRAMES, SUPPORTS, AND HANGARS AND OTHER MISCELLANEOUS APPURTENANCES TO PROPERLY COORDINATE WITH SAID FINISHES. REINFORCE CEILING CONSTRUCTION AS REQUIRED TO PROPERLY SUPPORT THE WEIGHT OF FIXTURES INSTALLED THEREON.
   b. IMMEDIATELY PRIOR TO FINAL INSPECTION: THOROUGHLY CLEAN ALL FIXTURES INSIDE AND OUT, INCLUDING PLASTICS AND GLASSWARE. ADJUST TRIM TO FIT ADJACENT SURFACES. REPLACE BROKEN OR DAMAGED PARTS. INSTALL NEW LAMPS. ELECTRICALLY AND MECHANICALLY TEST THE SYSTEM FOR PROPER OPERATION.
9. CLEANING
   a. THOROUGHLY CLEAN ALL FIXTURES, SWITCHES, OTHER DEVICES, PANELBOARDS, AND EQUIPMENT PROVIDED OR CONNECTED IN THIS CONTRACT. ALL SURFACES SHALL BE PROPERLY POLISHED AND SHALL BE FREE OF PAINT AND ALL OTHER DIRT OR DEBRIS. TOUCHUP OR COMPLETELY REFINISH ALL EQUIPMENT FURNISHED WITH FACTORY FINISHES THAT IS DAMAGED DURING DELIVERY OR CONSTRUCTION. PROPERLY PROTECT THE FRONTS OF ALL PANELBOARDS, SWITCHBOARDS, AND SIMILAR EQUIPMENT TO PREVENT MARRING AND OTHER DEFACING.
   b. AT ALL TIMES, KEEP THE PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIALS OR RUBBISH CAUSED BY THE WORK OF THE TRADESMEN DOING ELECTRICAL WORK. AT COMPLETION OF THE WORK, REMOVE ALL RUBBISH, TOOLS, EQUIPMENT, AND SURPLUS MATERIALS. BROM CLEAN ALL ASSIGNED SPACES PRIOR TO LEAVING THE PREMISES.
10. TESTING AND LOAD BALANCING
   a. TEST ALL CIRCUITS TO ASSURE THEM TO BE FREE OF GROUNDS AND SHORTS. LIGHT AND TEST EACH LAMP. PROVIDE AND TEST THE AVAILABLE VOLTAGE ON THE LOAD SIZE OF EACH DISCONNECT. VERIFY PROPER OPERATION OF THE DISCONNECT.
   b. THE EC SHALL TEST, PRIOR TO ENERGIZING FOR THE FIRST TIME, ALL PIECES OF ELECTRICAL EQUIPMENT TO ASSURE THEY HAVE THE PROPER PHASE TO PHASE TO GROUND INSULATION AND TO BE FREE OF SHORTS. AFTER ENERGIZING, EACH LUMINAIRE SHALL BE LIT AND TESTED.
   c. THE VARIOUS CIRCUITS SERVED FROM THE PANELBOARDS VARY IN LOAD. THE EC SHALL CAREFULLY BALANCE THE LOAD ON EACH LEG OF THE SERVICE. WHEN ALL LOAD IS TURNED ON AND THE SYSTEM IS OPERATING AT 100%, THE INITIAL UNBALANCE SHALL NOT EXCEED 10%. NOTE: WITH PHASE 3 DELTA, PHASES A AND C SHALL BE BALANCED WITHIN 10%, PHASE B SHALL BE BALANCED AS CLOSELY AS POSSIBLE.
   d. INSPECTION
      1. EC SHALL FURNISH AT THE COMPLETION OF THE PROJECT OR EACH INSPECTION POINT AN INTERMEDIATE OR FINAL INSPECTION CERTIFICATE FROM THE LOCAL INSPECTING AUTHORITY.
   e. PERFORMANCE REQUIRED:
      1. ALL EQUIPMENT AND FIXTURES SHALL BE PROPERLY CONNECTED WITH ADEQUATE POWER AND CHECKED THOROUGHLY FOR PROPER OPERATION.
      2. ALL EXPOSED EQUIPMENT SHALL BE INSTALLED AS PER DRAWINGS AND IS SUBJECT TO INSPECTION FOR WORKMAN-LIKE APPEARANCE.

END OF SECTION

NO.	REVISION	BY	DATE

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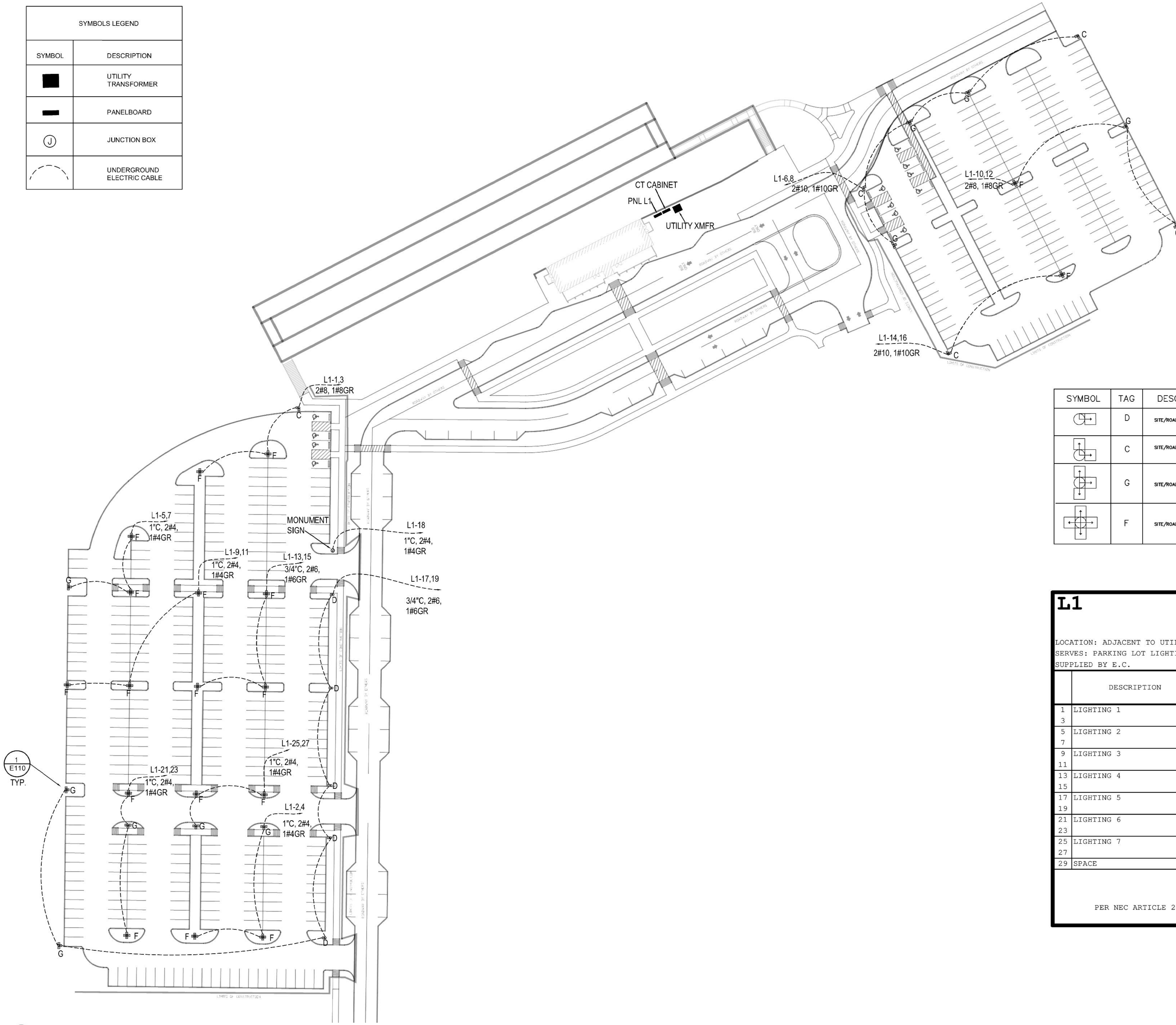
Date: 10/25/2022
Scale: NTS
Drawn By: TRM
Reviewed By:
Project: 29510

E010

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
■	UTILITY TRANSFORMER
▬	PANELBOARD
Ⓙ	JUNCTION BOX
◠	UNDERGROUND ELECTRIC CABLE



1 ELECTRICAL SITE PLAN

3/32" = 1'-0"

SYMBOL	TAG	DESCRIPTION	MANUFACTURER / MODEL	VOLTS/WATT	LAMP QTY/TYPE	MOUNTING
	D	SITE/ROADWAY LUMINAIRE	KIM LIGHTING 1SA ALT4P70-120L4K 240 A26 VSF-2SB PS	240 V/2-275 VA	1 / LED	POLE MOUNTED 1@25' KIM LIGHTING HERITAGE ARMS B/SB-HA11L-PS COPPER POLE RSS 25'-6" POLE DM28 FBC VD GALV WITH BASE COVER, J-HOOK AND J-BOX AT 12" DOWN FROM TOP
	C	SITE/ROADWAY LUMINAIRE	KIM LIGHTING 2SB ALT 4P70-120L4K 240 A26 VSF-1SA PS	240 V/2-551 VA	2 / LED	POLE MOUNTED 1@25' KIM LIGHTING HERITAGE ARMS B/SB-HA11L-PS COPPER POLE RSS 25'-6" POLE DM28 FBC VD GALV WITH BASE COVER, J-HOOK AND J-BOX AT 12" DOWN FROM TOP
	G	SITE/ROADWAY LUMINAIRE	KIM LIGHTING 3ST ALT4P70-120L4K 240 A26 VSF-3ST PS*	240 V/2-826 VA	3 / LED	POLE MOUNTED 1@25' KIM LIGHTING HERITAGE ARMS B/SB-HA11L-PS COPPER POLE RSS 25'-6" POLE DM28 FBC VD GALV WITH BASE COVER, J-HOOK AND J-BOX AT 12" DOWN FROM TOP
	F	SITE/ROADWAY LUMINAIRE	KIM LIGHTING 4SC ALT5P70-120L4K 240 A26 VSF-4SC PS	240 V/2-1102 VA	4 / LED	POLE MOUNTED 1@25' KIM LIGHTING HERITAGE ARMS B/SB-HA11L-PS COPPER POLE RSS 25'-6" POLE DM28 FBC VD GALV WITH BASE COVER, J-HOOK AND J-BOX AT 12" DOWN FROM TOP

* VERIFY MODEL NUMBER WITH MANUFACTURER

L1 **PANELBOARD NEW**

120/240V, 1PH, 3W
225A M.C.B.
24K AIC
GROUND BAR

LOCATION: ADJACENT TO UTILITY TRANSFORMER
SERVES: PARKING LOT LIGHTING
SUPPLIED BY E.C.

SURFACE MOUNT

	DESCRIPTION	WIRE	BRKR	PL	KVA A		KVA B		PL	BRKR	WIRE	DESCRIPTION	
1	LIGHTING 1	8	20	2	1.38	1.51			2	20	4	LIGHTING 8	2
3							1.38	1.51					4
5	LIGHTING 2	4	20	2	1.51	1.79			2	20	10	LIGHTING 9	6
7							1.51	1.79					8
9	LIGHTING 3	4	20	2	1.65	1.24			2	20	8	LIGHTING 10	10
11							1.65	1.24					12
13	LIGHTING 4	6	20	2	1.65	0.83			2	20	10	LIGHTING 11	14
15							1.65	0.83					16
17	LIGHTING 5	6	20	2	1.51	1.20			1	20	10	MONUMENT SIGN	18
19							1.51	0.00				SPACE	20
21	LIGHTING 6	4	20	2	1.51	0.00						SPACE	22
23							1.51	0.00				SPACE	24
25	LIGHTING 7	4	20	2	1.51	0.00						SPACE	26
27							1.51	0.00				SPACE	28
29	SPACE				0.00	0.00						SPACE	30

	A		B	
TOTAL CONNECTED	17.32	KVA	16.12	KVA
TOTAL CONNECTED	144.31	AMPS	134.31	AMPS
TOTAL LOAD	33.43	KVA	139.31	AMPS
PER NEC ARTICLE 220 FEEDER LOAD	41.79	KVA	174.14	AMPS

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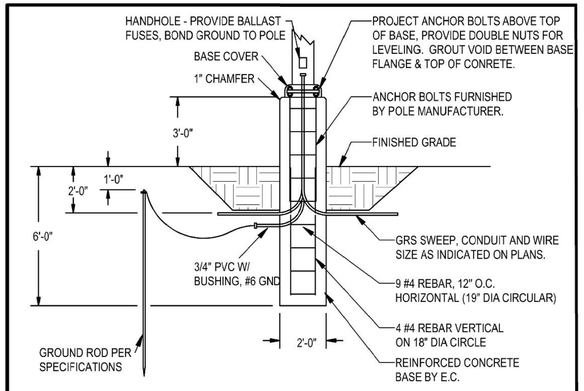
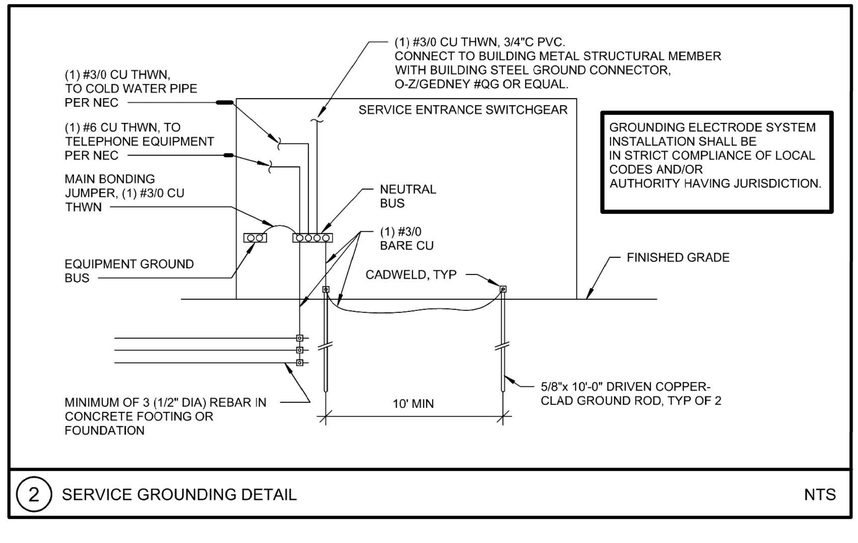
E100



NOTES:

1. CONCRETE: MNDOT MIX No. 3Y43, AIR ENTRAINED, 5000 PSI AFTER 28 DAYS, MAX AGGREGATE 3/4".
2. REINFORCEMENT: TYPE A-615 NEW BILLET STOCK A.S.T.M. GRADE 60.
3. IF THE ANTICIAPTED FORECAST TEMPERATURE IS 35° OR LESS, THE BASE SHALL BE INSULATED WITH EITHER BLANKETS OR POLY AND STRAW FOR A MINIMUM OF 3 DAYS.

1 POLE MOUNT GROUNDING AND CONDUIT NTS



2 SERVICE GROUNDING DETAIL NTS

ARC FLASH INFORMATION

CATEGORY 0	USE THIS INFORMATION IN ACCORDANCE WITH APPLICABLE OSHA STANDARDS, NFPA 70E, AND OTHER REQUIRED SAFE ELECTRICAL WORK PRACTICES
18 INCHES	FLASH PROTECTION BOUNDARY
1.2 CAL/CM²	MAX INCIDENT ENERGY AT 18" WORKING DISTANCE
CATEGORY 0	PPE CATEGORY (PER NFPA 70E-2009)
480 VAC	SHOCK HAZARD WHEN COVER IS OPEN
42 INCHES	LIMITED APPROACH
12 INCHES	RESTRICTED APPROACH } PER NFPA 70E-2009
1 INCH	PROHIBITED APPROACH

Q2C: 12345678
DATE: 12/26/08

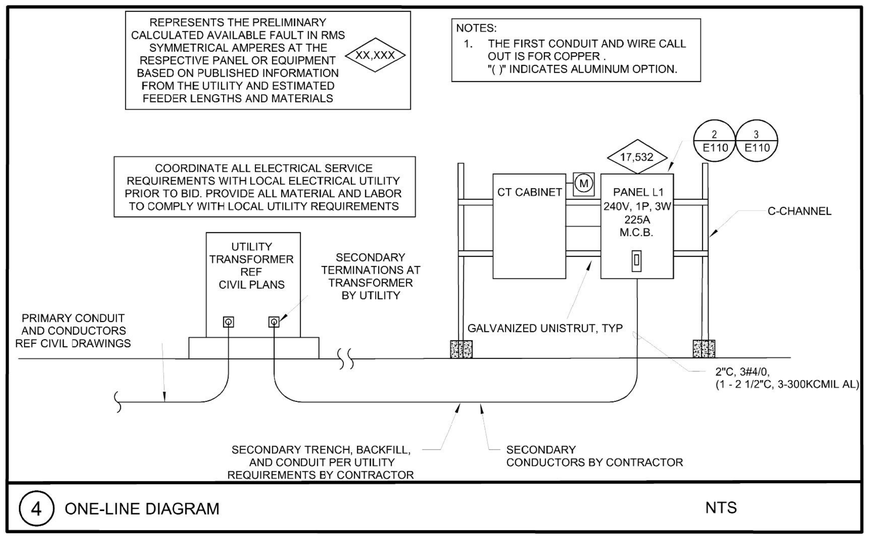
VALUES PRODUCED BY AN ENGINEERING ANALYSIS. ANY SYSTEM MODIFICATION, ADJUSTMENT OR PROTECTIVE DEVICE SETTINGS, OR FAILURE TO PROPERLY MAINTAIN EQUIPMENT WILL INVALIDATE THIS LABEL.

NOTES:

A. CONTRACTOR SHALL PERFORM ARC FLASH COORDINATION STUDY IN IN ACCORDANCE WITH NEC 110.16 AND NFPA 70E. CONTRACTOR SHALL PROVIDE A COPY OF THE STUDY TO OWNER'S REPRESENTATIVE UPON COMPLETION.

B. INSTALL PERMANENT LABEL, SIMILAR TO THE ABOVE, TO ALL SWITCHBOARDS AND PANELBOARDS TO WARN OF POTENTIAL ARC FLASH HAZARDS.

3 ARC FLASH DETAIL NTS



4 ONE-LINE DIAGRAM NTS

Jason C. Adams P.E.
toomyfchoice.com
479-636-5004
JOB NO.: 29510
SUITE 0268
1805 N 2ND ST
ROGERS, AR 72756 DESIGNED BY: TRM

NO.	REVISION	BY	DATE

TRINITY METRO
RAIL STATION
FORT WORTH, TX

STATE OF TEXAS
JASON C. ADAMS
106703
LICENSED
PROFESSIONAL ENGINEER
Oct 25, 2022
Jason Christopher Adams, P.E.
(F-13925)
TX License # 106703

Date: 10/25/2022
Scale: NTS
Drawn By: TRM
Reviewed By:
Project: 29510

E110