Business Services
Contracts Office
5735 47th Avenue ● Sacramento, CA 95824
(916) 643-2464
Rose Ramos, Chief Business Officer
Robert Aldama, Purchasing Manager II

ADDENDUM NO. 2

Date: March 23, 2023

Issued by: Sacramento City Unified School District

Project: **Project #: 0525-462**
John F. Kennedy Parking Lot

This addenda shall supersede the original Information, attachments, and specifications regarding Project No. 0525-462 where it adds to, deletes from, clarifies or otherwise modifies them. All other conditions and any previous addenda shall remain unchanged.

Part A – Bidding and Contract Requirements

AD2.01 **ALL WORKMANSHIP, MATERIALS, APPLIANCES AND EQUIPMENT** which may be included in the following items shall be the same relative quantity as described for similar work set forth in the original or main specifications of which these Addendum items shall be considered a part.

Part B – TECHNICAL REQUIREMENTS

AD2.02 **ADDENDUM SECTIONS**

NONE

Part C - DRAWINGS

AD2.03 **ADDENDUM DRAWINGS** (included with this Addendum)
The following modify or supplement the issued bid documents.

A. **DELETE** SHEETS C1.1, C1.2, C1.3, C1.4, C1.5, C2.3, C3.1, L1.1, L1.2, L2.1, L2.2, L3.1, L3.2, L4.1, L4.2, E102

REPLACE with sheets C1.1, C1.2, C1.3, C1.4, C1.5, C2.3, C3.1, L1.1, L1.2, L2.1, L2.2, L3.1, L3.2, L4.1, L4.2, E102 with Addendum 02

B. SHEET A1.1.1:

1. ADD General note to read: “1. Contractor shall temporarily remove (2) Connex boxes located in the auto shop parking area and shall relocate to current location once construction is complete. Location of temporary relocation shall be coordinated with the district.”

2. ADD General note to read: "2. Chain link fencing around auto shop yard shall be removed and replaced with vinyl coated privacy fencing (green color), 6 ft -0 inches tall. This item shall be listed as a separate additive alternate on the bid form.

AD2.04 ADDITIONAL INFORMATION

A. ADD the geotechnical report included with this addendum.

B. Based on a circuit tracing completed on 2/7/23, the main parking lot was confirmed to be on a single circuit HM-14. Existing conditions for the other 2 parking lots indicated the existing lights served by panels HD and HE are fed from 2 pole breakers on day/night circuits.

C. All rail posts, including those for rolling gates, shall be as specified in section 32 31 19 and as required by the manufacturer.

D. Contractor is to dewater as necessary (per Specs) as a part of the project and contractor maybe required to provide a plug at last drain structure prior to where drainage exits the site to help with the dewatering.

E. Lime treatment is not required in the staff parking lot an alternative subgrade preparation option has been added to plans. See addendum#2.

F. Where AC paving is noted to have 1.8 percent max are the section of AC paving where the max slope is expected.

G. Sheet C1.1 – Note 3 shows removing gate. There are two (2) bollards in the sidewalk that are associated with the gate. Bollards are to be removed as well.

List of Attachments:

AD2.05 Drawing Sheets as listed in 2.03

AD2.06 Geotechnical Report dated August 30, 2022 from Wallace Kuhl and Associates (19 pages)

END OF ADDENDUM NO. 2

Acknowledgement of this Addendum will be required at time of bid:

MATCH LINE - SEE SHEET C1.2

DEMOLITION GENERAL NOTES

A. THE CONTRACTOR SHALL CONFORM TO CHAPTER 33, CALIFORNIA FIRE CODE (CFC), "FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION, AT ALL TIMES DURING THE CONSTRUCTION PROCESS. A COPY OF THIS CHAPTER CAN BE PROVIDED TO THE CONTRACTOR AT HIS REQUEST.

B. IN THE EVENT THAT ANY UNUSUAL CONDITIONS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS, THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTIONS.

C. NO BURNING OR BLASTING SHALL BE PERMITTED.

D. THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS, AND DEPTHS OF SUCH UNDERGROUND UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. HOWEVER, WARREN CONSULTING ENGINEERS CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES, NOR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH MAY BE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR OR ANY SUBCONTRACTOR FOR THIS CONTRACT SHALL NOTIFY THE OWNER TWO (2) WORKING DAYS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK IN ORDER TO VERIFY TO THE GREATEST EXTENT POSSIBLE THE EXISTING UTILITY LINES, CONFLICTS AND PROPOSED UTILITY CONNECTION POINTS.

E. ADDITIONAL DEMOLITION INFORMATION MAY BE SHOWN ON THE GRADING, DRAINAGE, AND UTILITY PLANS, AND THOSE PLANS PREPARED BY OTHER DISCIPLINES FOR THIS PROJECT.

F. ALL DEMOLISHED ITEMS SHALL BE DISPOSED OF OFFSITE AT A SUITABLE, LEGAL, DUMP SITE OR OTHER FACILITY.

G. ALL DISPOSED OF MATERIALS SHALL BE RECYCLED IF POSSIBLE.

DEMOLITION NOTES

NOTE: NOT ALL OF THESE NOTES MAY BE USED ON THIS SHEET

1. REMOVE EXISTING CONCRETE PAVING AND AGGREGATE BASE. WHERE SAWCUTS ARE NECESSARY, THEY SHALL BE A NEAT STRAIGHT LINE. CUT SHALL BE MADE AT NEAREST EXISTING JOINT TO LOCATION SHOWN.
2. REMOVE EXISTING ASPHALT PAVING AND AGGREGATE BASE. WHERE SAWCUT EDGES ARE SHOWN, THEY SHALL BE A NEAT STRAIGHT LINE. MAINTAIN CLEAN STRAIGHT CUT EDGE UNTIL NEW PAVING PLACED.
3. REMOVE AND DISPOSE OF EXISTING CHAIN LINK FENCE, GATES, GATE STOPS, POSTS AND ASSOCIATED FOOTINGS.
4. REMOVE AND DISPOSE OF EXISTING TREE, TRUNK AND ASSOCIATED ROOTS.
5. EXISTING TREE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION. (SAVE)
6. REMOVE AND DISPOSE OF EXISTING LIGHT POLE AND ASSOCIATED FOOTING.
7. REMOVE AND DISPOSE OF EXISTING CONCRETE CURB.
8. REMOVE AND DISPOSE OF EXISTING METAL POLE AND ASSOCIATED FOOTING.
9. REMOVE AND DISPOSE OF EXISTING SIGN, POST AND ASSOCIATED FOOTING.
10. REMOVE AND DISPOSE OF EXISTING BOLLARD AND ASSOCIATED FOOTING.
11. REMOVE AND DISPOSE OF EXISTING CONCRETE WHEEL STOPS.
12. BICK PLANTER NEEDS TO BE RECONFIGURED TO ACCOMMODATE THE NEW DIRVE AISLE. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF THE MARQUEE SIGN OVERHANG. OVERHANG SHALL NOT EXTEND INTO THE DRIVE AISLE. IN EVENT OF OVERLAP, CONTRACTOR SHALL NOTIFY ARCHITECT PRIOR TO WORK AS MINOR MODIFICATION TO THE DRIVE AISLE MIGHT BE REQUIRED TO AVOID THE MARQUEE SIGN. (2)
13. EXISTING FIRE HYDRANT, BOLLARDS AND BACK FLOW PREVENTER TO REMAIN AND BE PROTECTED.
14. REMOVE AND DISPOSE OF EXISTING TRUNCATED DOMES.
15. REMOVE AND DISPOSE OF EXISTING STORM DRAIN LINES AND ASSOCIATED STRUCTURES.

GRAPHIC SCALE

20' 0 10' 20' 40'

(IN FEET) 1 inch = 20 feet

NORTH

THIS DRAWING MAY HAVE BEEN ENLARGED OR REDUCED.

FILENAME: I:\22-147\CIVIL\DWG\22-147-C1.1-C1.2-C1.3.DWG

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ANTHONY J. TASSANO NO. C74696 CIVIL STATE OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEER

WCE WARREN CONSULTING ENGINEERS, INC. 1117 WINDFIELD WAY, SUITE 110 EL DORADO HILLS, CA 95762 | (916) 985-1870

JOHN F.KENNEDY HIGH SCHOOL PARKING LOT

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT

DEMOLITION PLAN

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PROJECT NO. 22-XXXX
DATE: 12/20/22
SHEET C1.1

DEMOLITION NOTES

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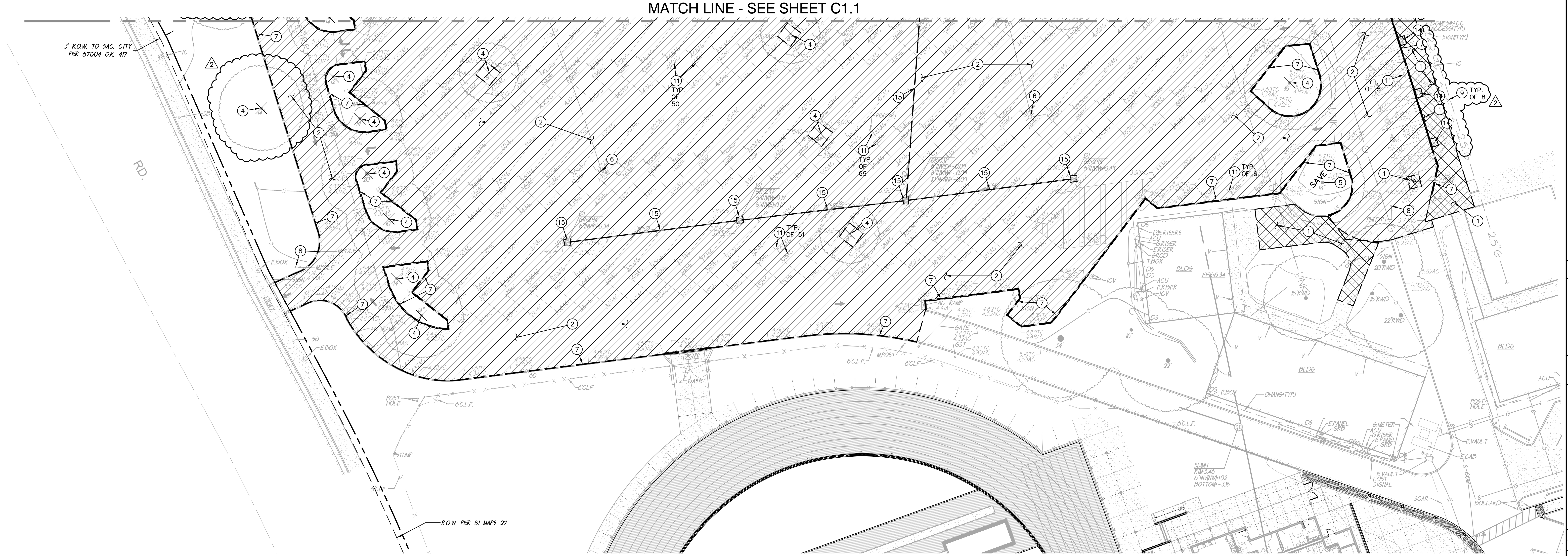
7. REMOVE AND DISPOSE OF EXISTING CONCRETE CURB.
8. REMOVE AND DISPOSE OF EXISTING METAL POLE AND ASSOCIATED FOOTING.
9. REMOVE AND DISPOSE OF EXISTING SIGN, POST AND ASSOCIATED FOOTING.
10. REMOVE AND DISPOSE OF EXISTING BOLLARD AND ASSOCIATED FOOTING.
11. REMOVE AND DISPOSE OF EXISTING CONCRETE WHEEL STOPS.
12. NOT USED (2)
13. EXISTING FIRE HYDRANT, BOLLARDS AND BACK FLOW PREVENTER TO REMAIN AND BE PROTECTED.
14. REMOVE AND DISPOSE OF EXISTING TRUNCATED DOMES.
15. REMOVE AND DISPOSE OF EXISTING STORM DRAIN LINES AND ASSOCIATED STRUCTURES.

MATCH LINE - SEE SHEET C1.1



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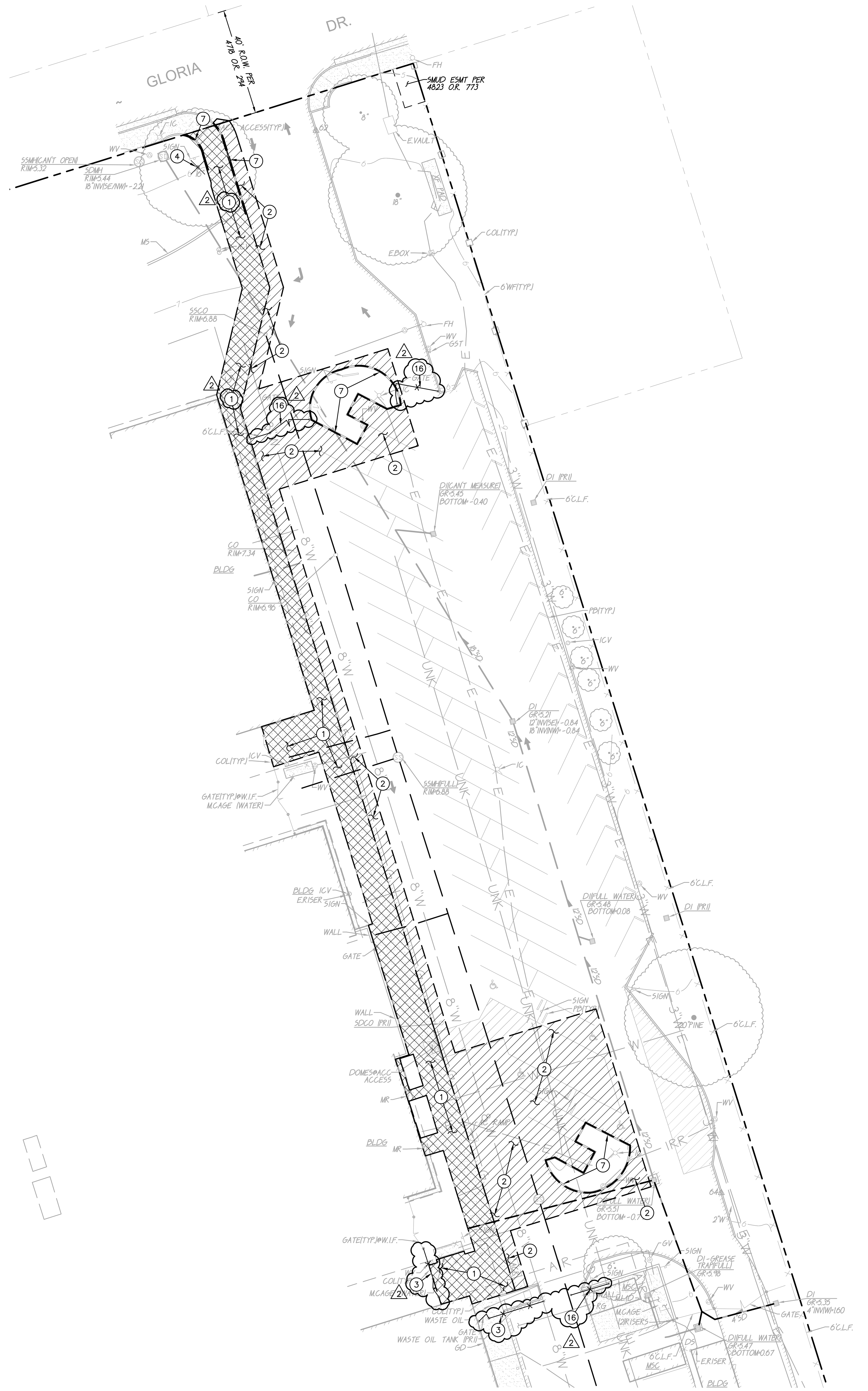
PROJECT NO.	22-XXXX
DATE:	12/20/22
SHEET	C1.2

FILENAME: I:\22-147\CIVIL\DWG\22-147-C1.1-C1.2-C1.3.DWG



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3. REMOVE AND DISPOSE OF EXISTING CHAIN LINK FENCE, GATES, POSTS AND ASSOCIATED FOOTINGS.
4. REMOVE AND DISPOSE OF EXISTING TREE, TRUNK AND ASSOCIATED ROOTS.
5. EXISTING TREE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION.
6. REMOVE EXISTING STORAGE CONTAINER AND RETURN TO DISTRICT FOR RELOCATION.
7. REMOVE AND DISPOSE OF EXISTING CONCRETE CURB.
8. REMOVE AND DISPOSE OF EXISTING STORM DRAIN PIPE TO EXTENT SHOWN.
9. REMOVE AND DISPOSE OF EXISTING DRAINAGE INLET/MANHOLE.
10. REMOVE AND DISPOSE OF EXISTING LIGHT POLE AND ASSOCIATED FOOTING.
11. REMOVE AND DISPOSE OF EXISTING CONCRETE WHEEL STOPS.
12. NOT USED (2)
13. REMOVE AND SALVAGE EXISTING FIRE HYDRANT. SEE UTILITY SHEET FOR NEW LOCATION.
14. EXISTING BUILDING TO REMAIN.
15. REMOVE AND DISPOSE OF EXISTING WALL AND ASSOCIATED FOOTING.
16. REMOVE AND DISPOSE OF EXISTING VEHICLE GATE, POSTS AND ASSOCIATED FOOTINGS. (2)

GRAPHIC SCALE

20' 0 10' 20' 40'

(IN FEET) 1 inch = 20 feet

NORTH

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SACRAMENTO CITY UNIFIED SCHOOL DISTRICT

DEMOLITION PLAN

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PROJECT NO.	22-XXXX
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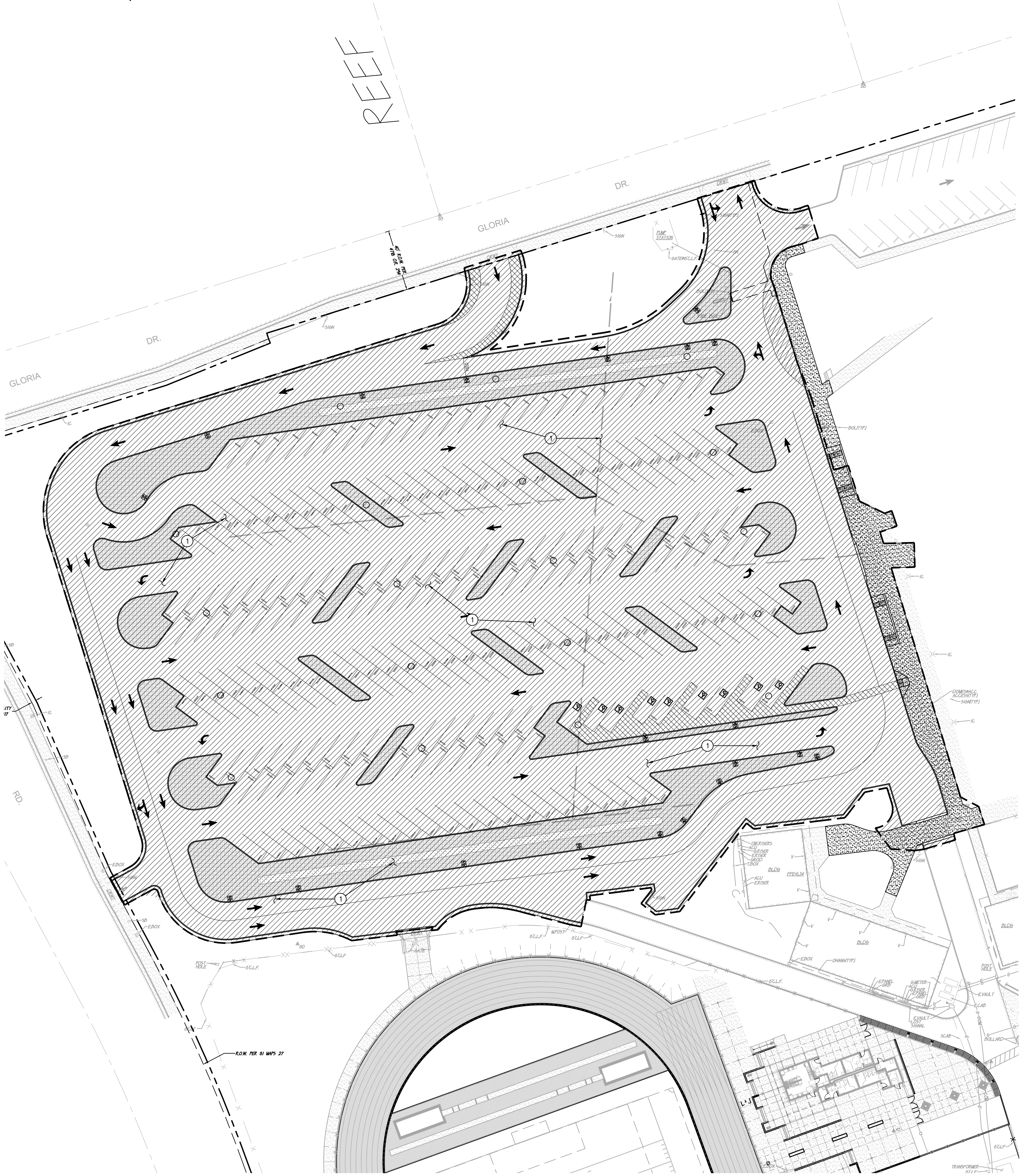
SHEET	C1.3



SUBGRADE PREPARATION

1. FOLLOWING SITE CLEARING, STRIPPING AND DEMOLITION ACTIVITIES:

   FOR AREAS TO BE CUT TO ACHIEVE SUBGRADE, EXCAVATE DOWN TO ROUGH SUBGRADE ELEVATION, SCARIFY THE EXISTING SOILS TO A MINIMUM DEPTH OF 6 INCHES AND UNIFORMLY MOISTURE CONDITION TO AT LEAST 2 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT AND COMPACT TO AT LEAST 90 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557.

   FOR AREAS TO BE FILLED TO ACHIEVE SUBGRADE, SCARIFY EXPOSED SOILS TO A MINIMUM DEPTH OF 6 INCHES AND UNIFORMLY MOISTURE CONDITION TO AT LEAST 2 PERCENT ABOVE OPTIMUM MOISTURE CONTENT AND COMPACT TO AT LEAST 90 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557. FILL MATERIAL SHALL BE PLACED IN LEVEL LAYERS NOT EXCEEDING 6 INCHES IN COMPACTED THICKNESS. FILL SHALL BE COMPACTED TO AT LEAST 90 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557.

   THE UPPER 12 INCHES OF PROPOSED SUBGRADE SHALL BE LIME TREATED AT A RATE OF AT LEAST 4.5 POUNDS OF QUICKLIME PER SQUARE FOOT MIXING DEPTH. LIME TREATED SUBGRADE SHALL BE COMPACTED TO NOT LESS 95 PERCENT OF THE ASTM D1557 MAXIUM DRY DENSITY, AT A MOISTURE CONTENT OF A LEAST 2 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT.

   LIME TREATMENT SHALL EXTEND AT LEAST 2 FEET BEYOND EDGE OF PROPOSED ASPHALT AND CONCRETE PAVING WHEN NOT ABUTTING EXISTING PAVING..

   NOTE: ALL LIME LOCATED WITHIN LANDSCAPE AREAS SHALL BE REMOVED AND REPLACED WITH TOPSOIL.

   COMPACTION OF THE UPPER 12 INCHES OF SUBGRADE, WHERE LIME IS TO BE MIXED INTO SOIL, IS NOT REQUIRED UNTIL LIME IS PLACED.

LIME TREATMENT ALTERNATIVE

AS AN ALTERNATIVE TO THE LIME TREATED SOIL SUBGRADE SECTION THE CONTRACTOR IS TO PROVIDE 12" OF CLASS II AB COMPACTED TO 95 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557 PLACED OVER TENSAR BX1100 GEOGRID

2

GENERAL NOTES

1. IN THE EVENT THAT ANY UNUSUAL CONDITIONS NOT COVERED BY THE GEOTECHNICAL INVESTIGATION REPORT OR ARE ENCOUNTERED DURING GRADING OPERATIONS THE GEOTECHNICAL ENGINEER AND THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTIONS.
2. NO BURNING SHALL BE PERMITTED.
3. THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLAN WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS, AND DEPTHS OF SUCH UNDERGROUND UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. HOWEVER, WARREN CONSULTING ENGINEERS CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES, NOR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH MAY BE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR OR ANY SUBCONTRACTOR FOR THIS CONTRACT SHALL NOTIFY THE DISTRICT TWO (2) WORKING DAYS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK IN ORDER TO VERIFY TO THE GREATEST EXTENT POSSIBLE THE EXISTING UTILITY LINES, CONFLICTS AND PROPOSED UTILITY CONNECTION POINTS.

GRAPHIC SCALE

30' 0 15' 30' 60'

(IN FEET)

1 inch = 30 feet

NORTH

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SACRAMENTO CITY UNIFIED SCHOOL DISTRICT

ENGINEERED FILL PLAN

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PROJECT NO.	22-XXXX
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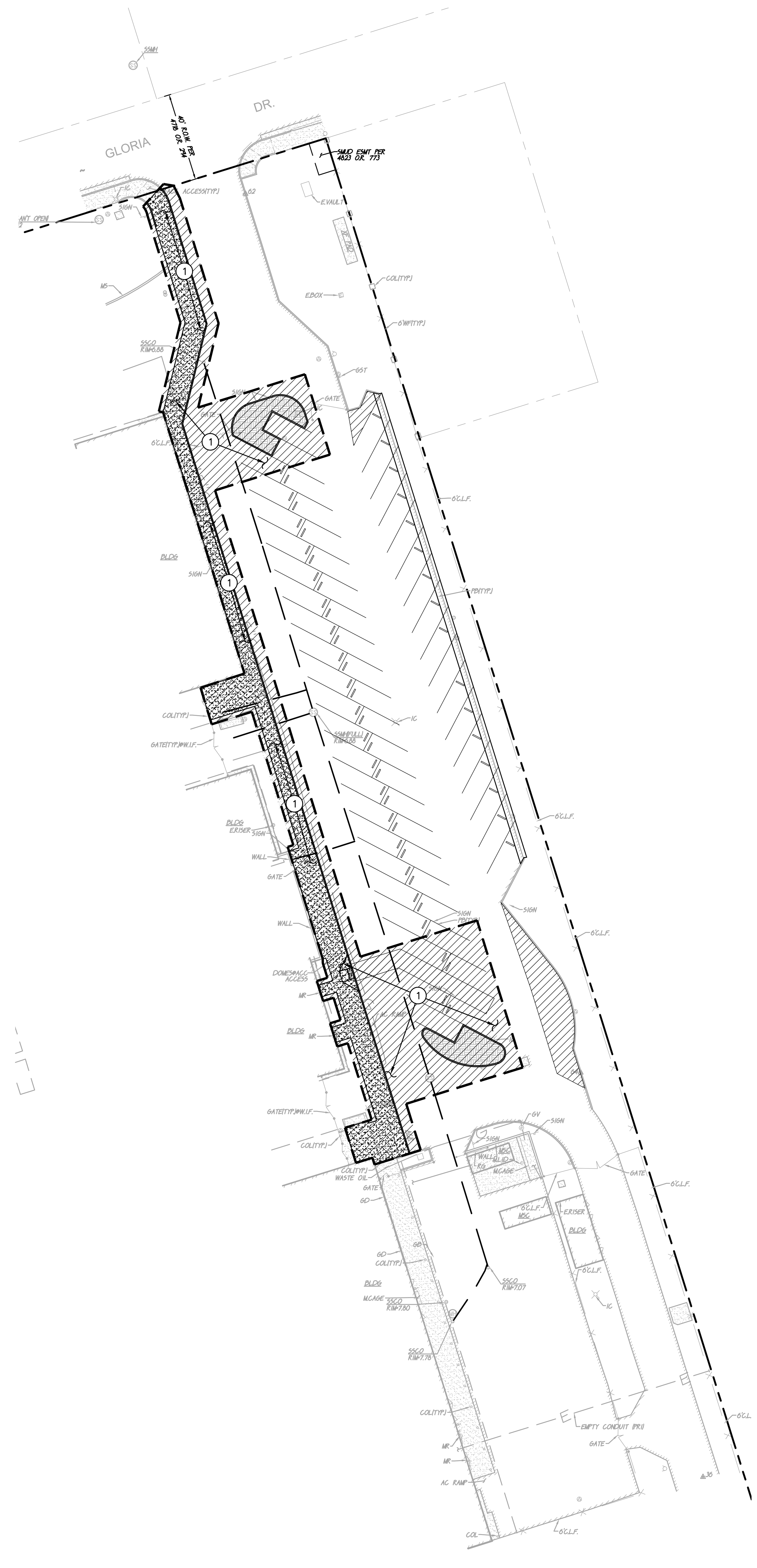
SHEET	C1.4



SUBGRADE PREPARATION

1. FOLLOWING SITE CLEARING, STRIPPING AND DEMOLITION ACTIVITIES:

   FOR AREAS TO BE CUT TO ACHIEVE SUBGRADE, EXCAVATE DOWN TO ROUGH SUBGRADE ELEVATION, SCARIFY THE EXISTING SOILS TO A MINIMUM DEPTH OF 6 INCHES AND UNIFORMLY MOISTURE CONDITION TO AT LEAST 2 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT AND COMPACT TO AT LEAST 90 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557.

   FOR AREAS TO BE FILLED TO ACHIEVE SUBGRADE, SCARIFY EXPOSED SOILS TO A MINIMUM DEPTH OF 6 INCHES AND UNIFORMLY MOISTURE CONDITION TO AT LEAST 2 PERCENT ABOVE OPTIMUM MOISTURE CONTENT AND COMPACT TO AT LEAST 90 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557. FILL MATERIAL SHALL BE PLACED IN LEVEL LAYERS NOT EXCEEDING 6 INCHES IN COMPACTED THICKNESS. FILL SHALL BE COMPACTED TO AT LEAST 90 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557.

   THE UPPER 12 INCHES OF PROPOSED SUBGRADE SHALL BE LIME TREATED AT A RATE OF AT LEAST 4.5 POUNDS OF QUICKLIME PER SQUARE FOOT MIXING DEPTH. LIME TREATED SUBGRADE SHALL BE COMPACTED TO NOT LESS 95 PERCENT OF THE ASTM D1557 MAXIUM DRY DENSITY, AT A MOISTURE CONTENT OF A LEAST 2 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT.

   LIME TREATMENT SHALL EXTEND AT LEAST 2 FEET BEYOND EDGE OF PROPOSED ASPHALT AND CONCRETE PAVING WHEN NOT ABUTTING EXISTING PAVING..

   NOTE: ALL LIME LOCATED WITHIN LANDSCAPE AREAS SHALL BE REMOVED AND REPLACED WITH TOPSOIL.

   COMPACTION OF THE UPPER 12 INCHES OF SUBGRADE, WHERE LIME IS TO BE MIXED INTO SOIL, IS NOT REQUIRED UNTIL LIME IS PLACED.

LIME TREATMENT ALTERNATIVE

AS AN ALTERNATIVE TO THE LIME TREATED SOIL SUBGRADE SECTION THE CONTRACTOR IS TO PROVIDE 12" OF CLASS II AB COMPACTED TO 95 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557 PLACED OVER TENSAR BX1100 GEOGRID 2

GENERAL NOTES

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ENGINEERED FILL PLAN

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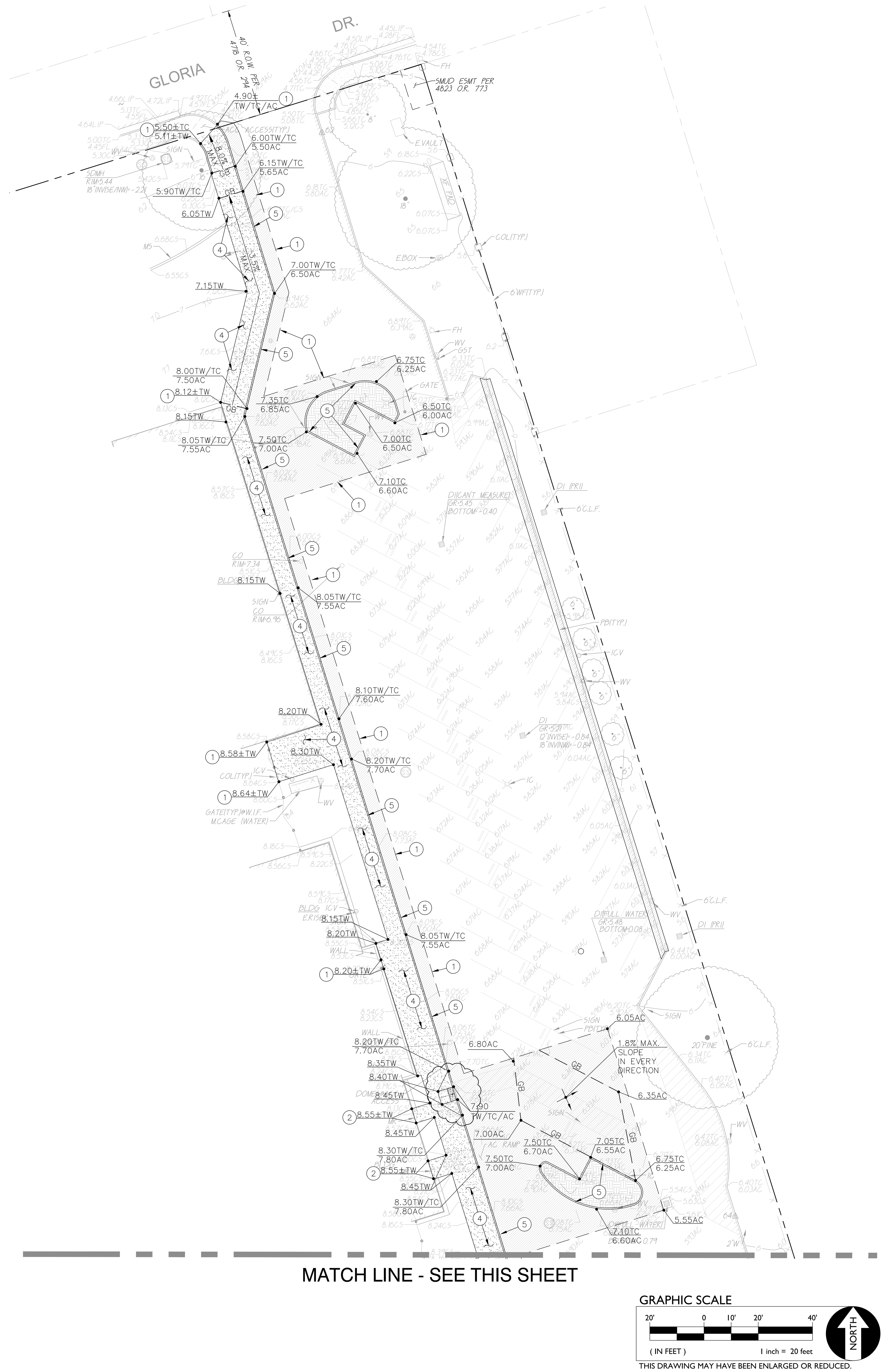
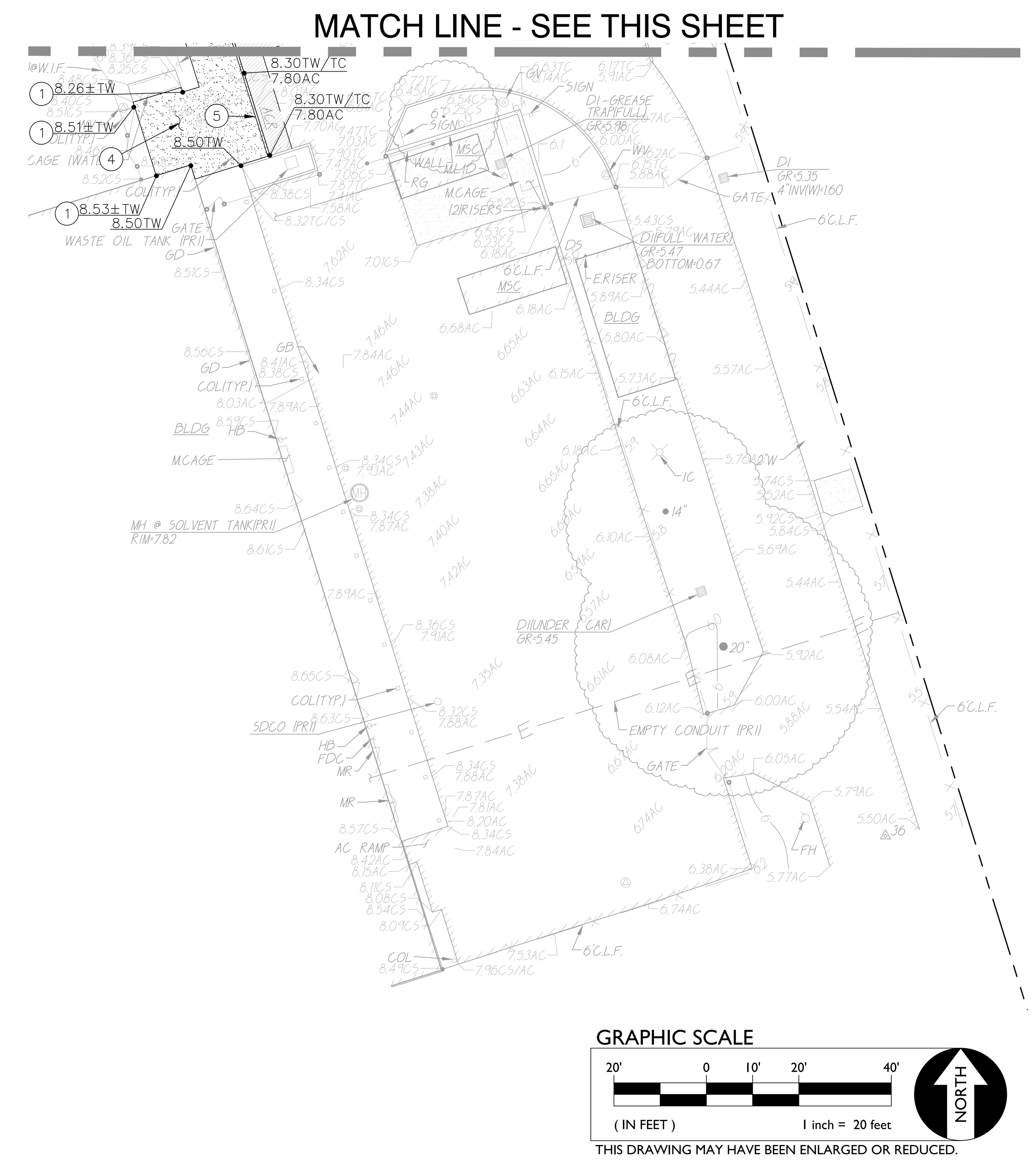
PROJECT NO.	22-XXXX
DATE:	12/20/22
SHEET	C1.5





GRADING NOTES

NOTE: NOT ALL OF THESE NOTES MAY BE USED ON THIS SHEET

1. MATCH EXISTING GRADE/ELEVATION.
2. MATCH EXISTING FINISH FLOOR GRADE/ELEVATION.
3. GRADE UNIFORMLY TOWARD SWALE AND/OR DRAIN.
4. CONSTRUCT CONCRETE SIDEWALK PER 1/C6.1
5. CONSTRUCT CONCRETE CURB PER 2/C6.1
6. CONSTRUCT CONCRETE ROLLED CURB PER 3/C6.1
7. CONSTRUCT CONCRETE FLUSH CURB PER 4/C6.1
8. CONSTRUCT CURB OPENING PER 5/C6.1
9. CONSTRUCT BIO RETENTION PER 6/C6.1
10. CONSTRUCT SWALE.

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REGISTERED PROFESSIONAL ENGINEER ANTHONY J. TASSANO NO. C74696 CIVIL STATE OF CALIFORNIA

WCE
WARREN CONSULTING ENGINEERS, INC.
1117 WINDFIELD WAY, SUITE 110
EL DORADO HILLS, CA 95762 | (916) 985-1870

JOHN F. KENNEDY HIGH SCHOOL PARKING LOT

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT

GRADING PLAN

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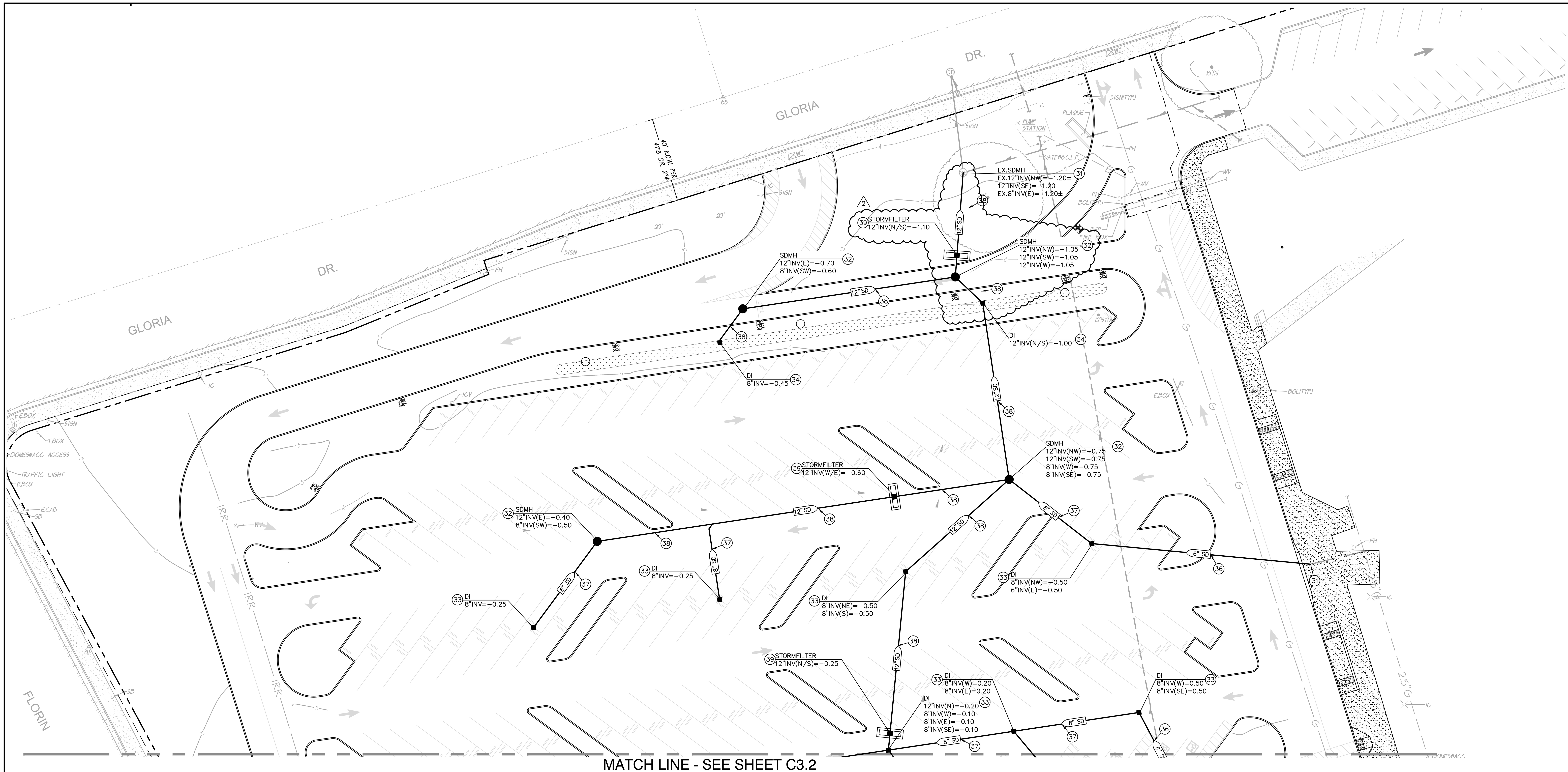
PROJECT NO.	22-XXXX
DATE:	12/20/22
SHEET	C2.3

FILENAME: I:\22-147\CIVIL\DWG\22-147-C2.1-C2.2-C2.3.DWG



DRAINAGE NOTES:

NOTE: NOT ALL OF THESE NOTES MAY BE USED ON THIS SHEET

31. CONNECT TO EXISTING STORM DRAIN LINE OR STRUCTURE. POTHOLE TO VERIFY DEPTH AND LOCATION PRIOR TO TRENCHING.
32. CONSTRUCT 48" DIAMETER STORM DRAIN MANHOLE PER. 8/C6.1
33. CONSTRUCT DROP INLET PER. 9/C6.1
34. CONSTRUCT BIO-RETENTION DROP INLET PER.. 7/C6.1
35. CONSTRUCT AREA DRAIN PER. 10/C6.1
36. PLACE 6" STORM DRAIN PER. 11/C6.1
37. PLACE 8" STORM DRAIN PER. 11/C6.1
38. PLACE 12" STORM DRAIN PER. 11/C6.1
39. PROVIDE AND INSTALL CONTECH STORMFILTER MODEL SFCB4 OR APPROVED EQUAL PER MANUFACTURES STANDARDS. 13/C6.1

GRAPHIC SCALE

20' 0 10' 20' 40'

(IN FEET) 1 inch = 20 feet

NORTH

THIS DRAWING MAY HAVE BEEN ENLARGED OR REDUCED.

FILENAME: I:\22-147\CIVIL\DWG\22-147-C3.1-C3.2.DWG

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DRAINAGE PLANS

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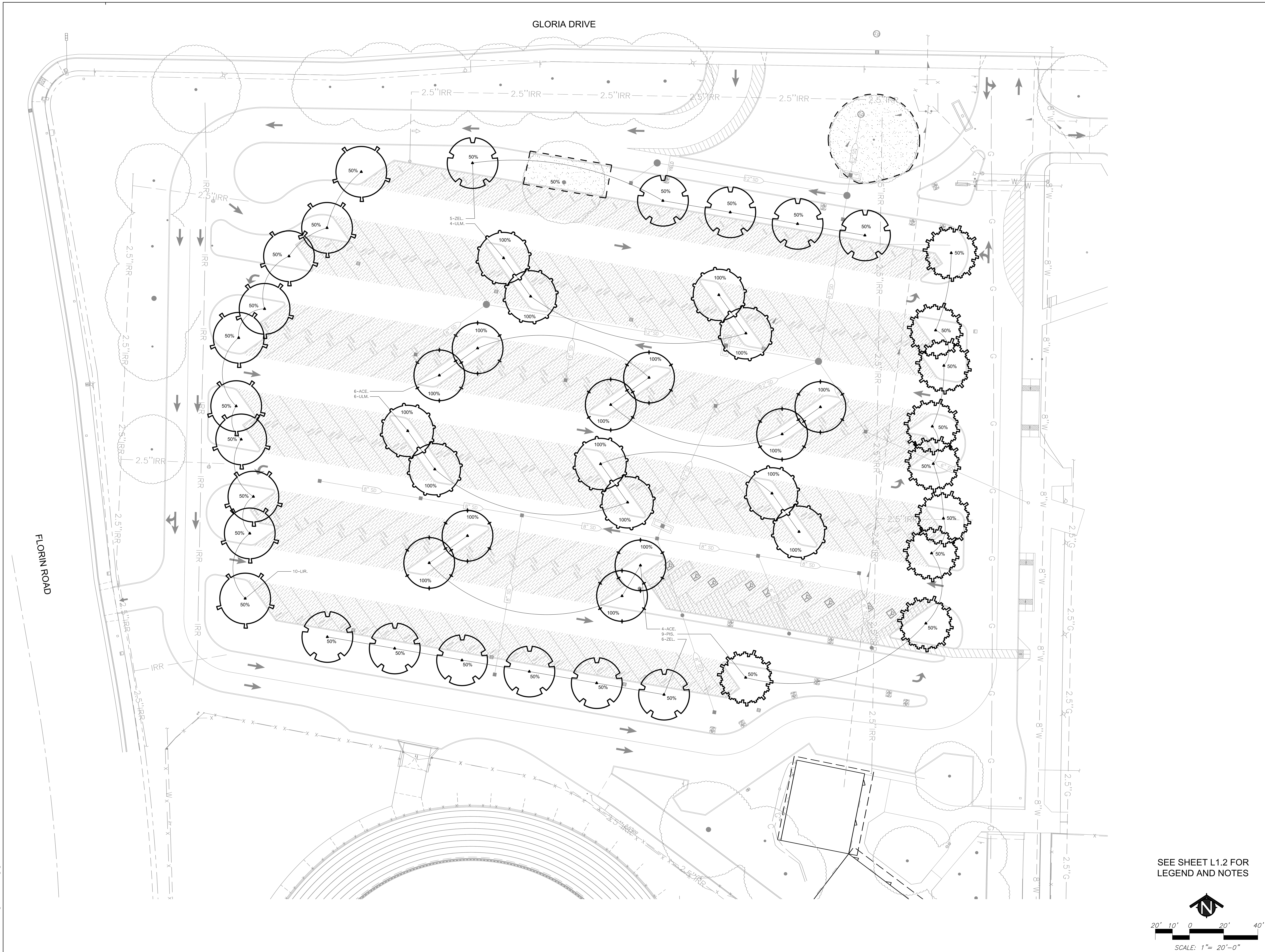
PROJECT NO.	22-XXXX
DATE:	12/20/22
SHEET	C3.1



SEE SHEET L1.2 FOR LEGEND AND NOTES

SCALE: 1"= 20'-0"

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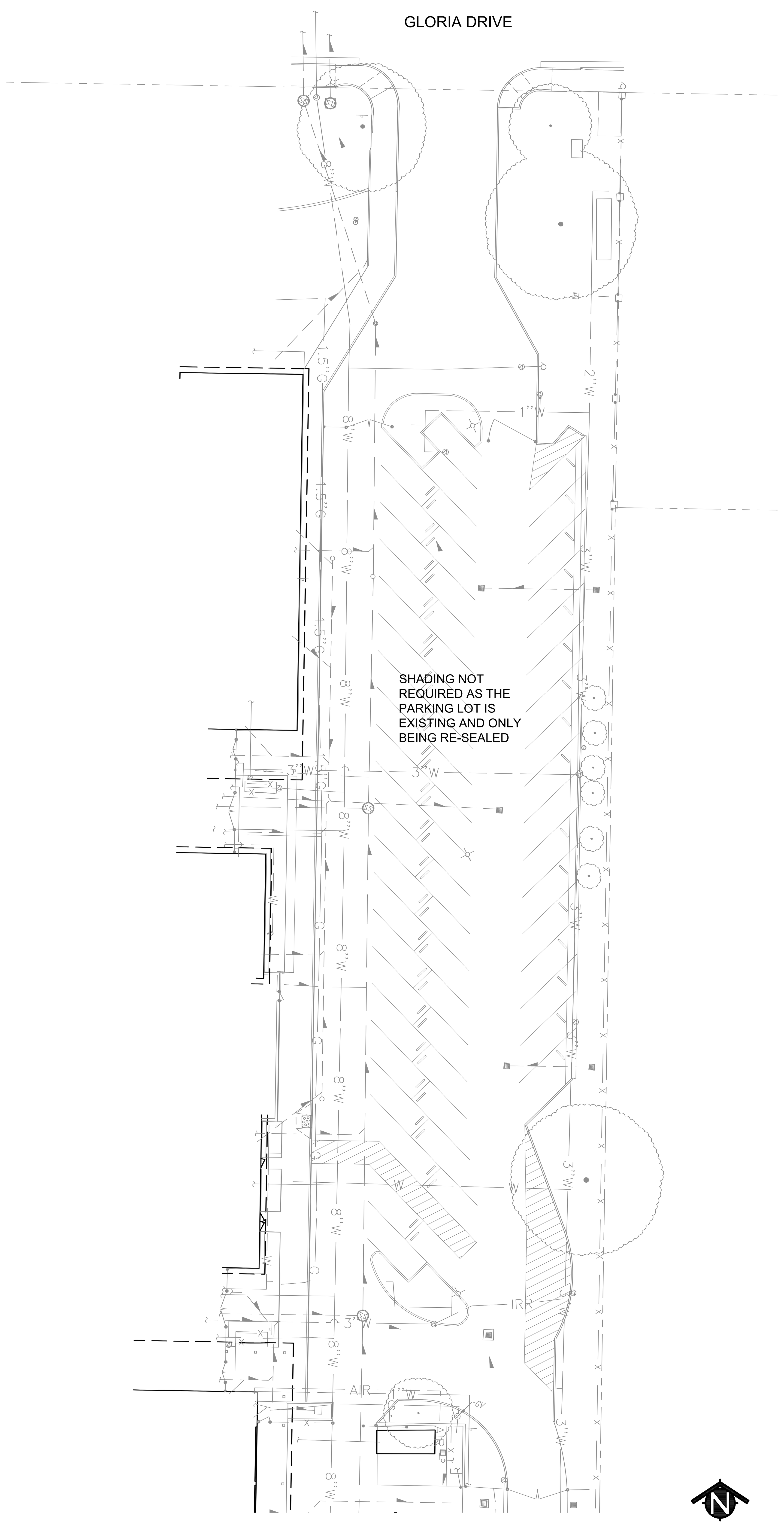
TREE PLANTING PLAN

PROJECT NO.	3186-067-000
DATE:	12/20/2022
SHEET	L1.1 (2)



KEY / LANDSCAPE LEGEND

- TREES - NOT ALL SYMBOLS SHOWN WITH TREE SHADING CANOPY PERCENTAGE
- SHADE PERCENTAGE (100%)
- PLANT QUANTITY
- PLANT KEY (7-AAA)
- AREA USED AS 'TOTAL PAVED AREA'
- EXISTING TREES TO REMAIN
- EXISTING TREE PROTECTION AREA: SEE DETAIL L4.1-1 AND 2

TREE MATERIAL LIST

SIZE	QTY.	KEY	BOTANICAL NAME ... COMMON NAME	WATER USE
			TREES:	
24" BOX	10	ACE.	ACER RUBRUM 'OCTOBER GLORY' ... RED MAPLE	MEDIUM
24" BOX	10	LIR.	LIRIODENDRON TULIPIFERA ... TULIP TREE	MEDIUM
24" BOX	9	PIS.	PISTCIA CHINENSIS 'KEITH DAVEY' ... CHINESE PISTACHE	LOW
24" BOX	10	ULM.	ULMUS WILSONIANA 'PROSPECTOR' ... PROSPECTOR ELM	LOW
24" BOX	11	ZEL.	ZELKOVA SERRATA ... ZELKOVA	MEDIUM

GENERAL LANDSCAPE REQUIREMENTS/NOTES

1. NO PLANTING SHALL BE STARTED UNTIL SPRINKLER IRRIGATION SYSTEM HAS BEEN TESTED BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE AND NOTED DEFICIENCIES CORRECTED.
2. NO PLANTING SHALL BE STARTED UNTIL SOIL PREPARATION AND FINISH GRADING OPERATIONS HAVE BEEN COMPLETED AND APPROVED BY THE OWNER'S REPRESENTATIVE.
3. QUANTITIES SHOWN ON PLANT MATERIAL LIST ARE APPROXIMATE. PROVIDE QUANTITIES INDICATED ON LANDSCAPE PLAN.
4. PLANT MATERIAL IS SUBJECT TO APPROVAL OF OWNER'S REPRESENTATIVE.
5. SEE SHEET L4.1 FOR PLANTING INSTALLATION DETAILS.

ENVIRONMENTAL REQUIREMENTS:

GENERAL: PROCEED WITH WORK IN ORDERLY AND TIMELY MANNER TO COMPLETE INSTALLATION OF LANDSCAPING WITHIN CONTRACT LIMITS.

PROTECTION:

EXISTING CONSTRUCTION: EXECUTE WORK IN AN ORDERLY AND CAREFUL MANNER TO PROTECT NEW CONCRETE WALKS, WORK OF OTHER TRADES, AND OTHER IMPROVEMENTS.

EXISTING UTILITIES: DETERMINE LOCATION OF UNDERGROUND UTILITIES AND PERFORM WORK IN A MANNER WHICH WILL AVOID POSSIBLE DAMAGE. HAND EXCAVATE, AS REQUIRED, TO MINIMIZE POSSIBILITY OF DAMAGE TO UNDERGROUND UTILITIES. MAINTAIN GRADE STAKES SET BY OTHERS UNTIL REMOVAL IS MUTUALLY AGREED UPON BY ALL PARTIES CONCERNED. BE RESPONSIBLE FOR PROTECTION OF EXISTING UTILITIES WITHIN CONSTRUCTION AREA; REPAIR DAMAGE TO UTILITIES THAT OCCUR AS A RESULT OF OPERATIONS OF THIS WORK.

LANDSCAPING: PROTECT LANDSCAPE WORK AND MATERIALS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES AND TRESPASSERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR OR REPLACE DAMAGED LANDSCAPE WORK AS DIRECTED AT NO ADDITIONAL COST TO CONTRACT.

ADVERSE CONDITIONS: WHEN CONDITIONS DETRIMENTAL TO SOD OR PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS, NOTIFY OWNER'S REPRESENTATIVE BEFORE STARTING WORK.

PLANTING AND TURF INSTALLATION SEASONS AND CONDITIONS

NO WORK SHALL BE DONE WHEN GROUND IS FROZEN, SNOW COVERED, TOO WET OR IN AN OTHERWISE UNSUITABLE CONDITION FOR AMENDING SOIL, FINISH GRADING OR PLANTING.

SOIL TESTING/SOIL IMPROVEMENT:

SEE SPECIFICATIONS 32 90 00, SECTION 3.02 SOIL TESTING AND SECTION 3.03 PREPARATION.

SOIL PERCOLATION

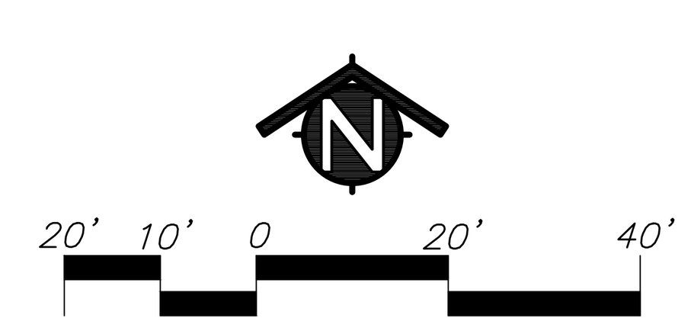
EXCAVATE 10 PLANTING PITS IN RANDOM AREAS OF SITE. FILL EXCAVATED PLANTING PITS WITH WATER TO 1/2 DEPTH OF PIT. PITS SHOULD DRAIN WITHIN 4 HOURS. IF PLANTING PITS DO NOT DRAIN, NOTIFY INSPECTOR IMMEDIATELY. PLANTING SHALL NOT BE STARTED UNTIL OWNER'S REPRESENTATIVE HAS RESOLVED A METHOD TO REMEDY DRAINAGE ISSUE.

PLANT MATERIAL STANDARDS

PLANTS SHALL BE IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) ANSI Z60.1-AMERICAN STANDARD FOR NURSERY STOCK, EXCEPT AS OTHERWISE STATED IN SPECIFICATIONS OR SHOWN ON DRAWINGS. WHERE DRAWINGS OR SPECIFICATIONS ARE IN CONFLICT WITH ANSI Z60.1, DRAWINGS AND SPECIFICATIONS SHALL PREVAIL. PRUNE, THIN OUT AND SHAPE TREES IN ACCORDANCE WITH ANSI STANDARD HORTICULTURAL PRACTICE. PRUNE TREES TO RETAIN REQUIRED HEIGHT AND SPREAD. UNLESS OTHERWISE DIRECTED BY LANDSCAPE ARCHITECT, DO NOT CUT TREE LEADERS, AND REMOVE ONLY INJURED OR DEAD BRANCHES FROM FLOWERING TREES.

EXISTING LANDSCAPE AND SPRINKLER IRRIGATION SYSTEM

WORK LIMITS OF THIS PROJECT EXTEND INTO AREAS THAT WERE PREVIOUSLY DEVELOPED UNDER OTHER CONTRACTS. PRIOR TO START OF WORK, CONTRACTOR SHALL MEET WITH OWNER'S REPRESENTATIVE TO LOCATE ALL CONNECTIONS CALLED FOR ON DRAWINGS. WORK LIMITS/FENCING SHALL BE LAID OUT BY CONTRACTOR AND VERIFIED BY OWNER'S REPRESENTATIVE. FENCE TO BE INSTALLED AND IRRIGATION SYSTEM SHALL BE TESTED WITH CONTRACTOR, INSPECTOR, AND OWNER'S REPRESENTATIVE PRESENT. DEFICIENCIES SHALL BE NOTED AT THIS TIME AND ARE THE RESPONSIBILITY OF OWNER. AT COMPLETION OF WORK, SYSTEM WILL AGAIN BE TESTED, DEFICIENCIES NOTED AT THIS TIME THAT WERE NOT NOTED PREVIOUSLY WILL BE RESPONSIBILITY OF CONTRACTOR. EXISTING LANDSCAPE THAT HAS BEEN DAMAGED DUE TO CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION BY CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
PRIOR TO MAKING ANY CONNECTION TO MAIN LINE, CONTRACTOR SHALL NOTIFY OWNER 1 WEEK IN ADVANCE SO ADJUSTMENTS TO EXISTING WATERING PROGRAMS CAN BE MADE.



SCALE: 1"= 20'-0"

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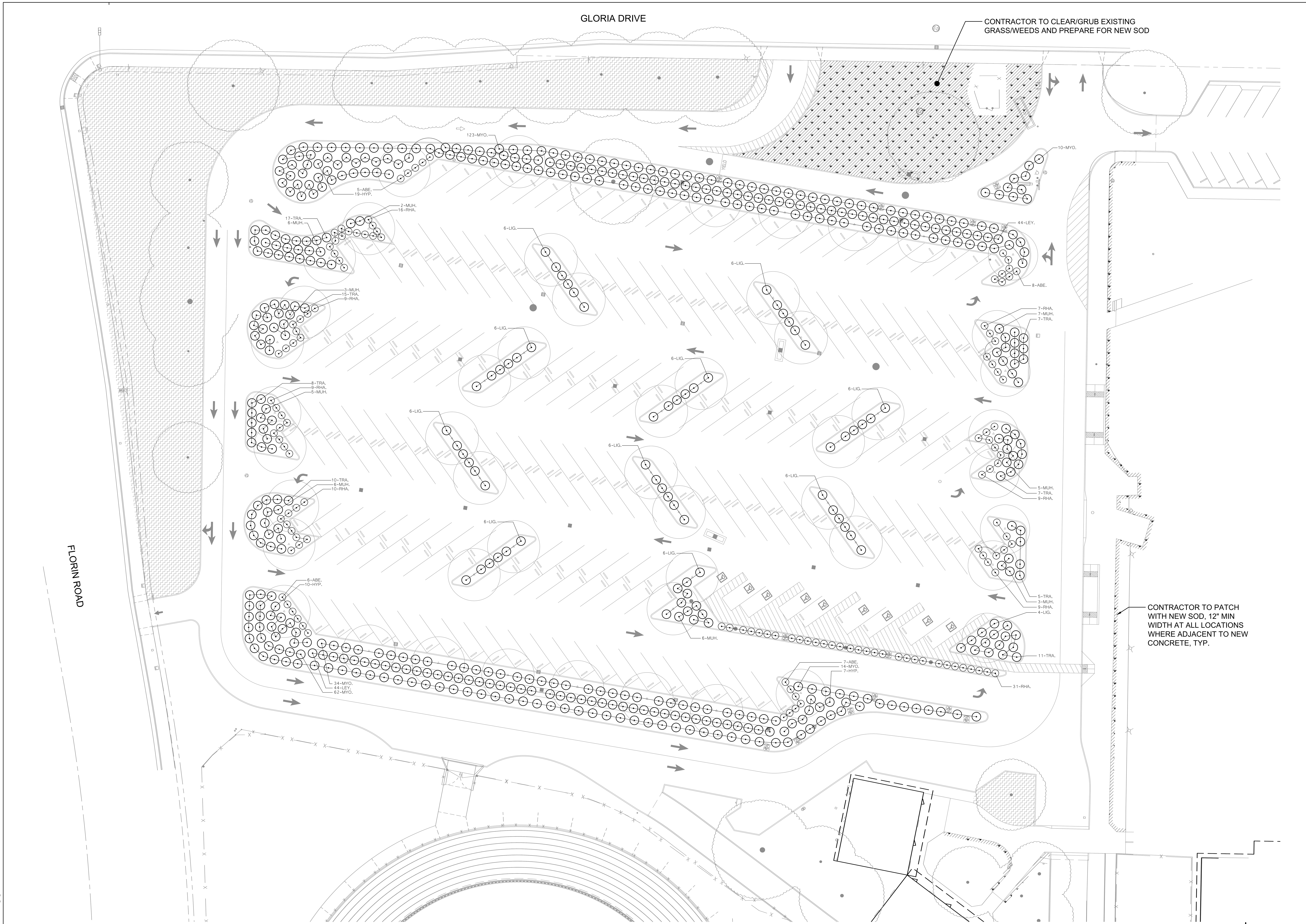
TREE PLANTING PLAN

PROJECT NO. 3186-067-000
DATE: 12/20/2022
SHEET L1.2 2



SEE SHEET L2.2 FOR LEGEND AND NOTES

SCALE: 1"= 20'-0"

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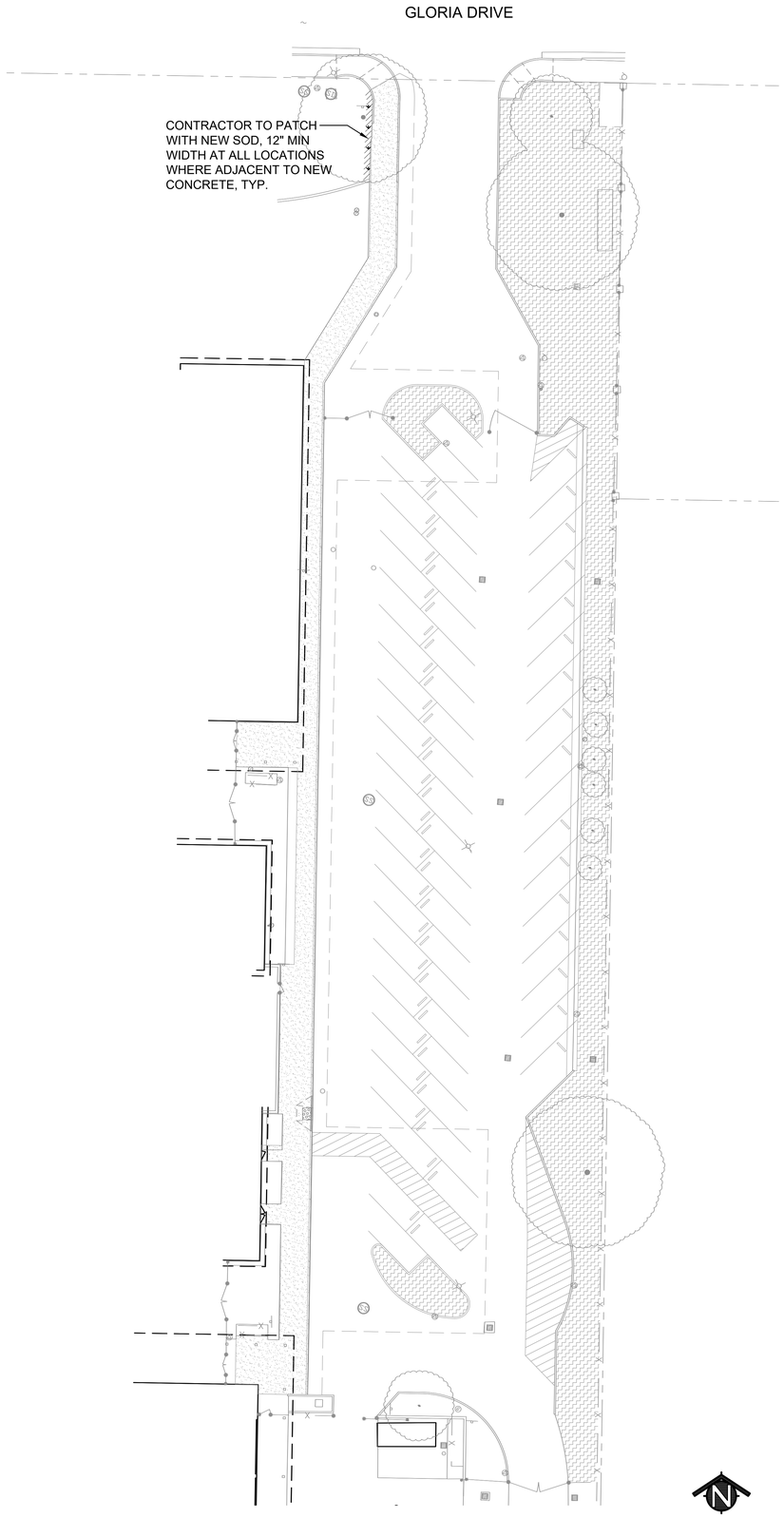
SHRUB/TURF PLANTING PLAN

PROJECT NO.	3186-067-000
DATE:	12/20/2022
SHEET	L2.1 2

AD2.10



KEY | LANDSCAPE LEGEND

- TREE OUTLINE FOR REFERENCE
- SHRUBS
- LAWN (SOD)
- EXISTING LANDSCAPE AND SPRINKLER AREAS TO REMAIN
- 7 - AAA — PLANT QUANTITY / PLANT KEY
- EXISTING TREES TO REMAIN

PLANT MATERIAL LIST

WATER USE	SIZE	QUANTITY	KEY	BOTANICAL NAME ... COMMON NAME
				SHRUBS:
MEDIUM	5 G.C.	26	ABE.	ABELIA GRANDIFLORA 'SHERWOODII' ... GLOSSY ABELIA
MEDIUM	5 G.C.	36	HYP.	HYPERICUM 'HIDCOTE' ... HIDCOTE HYPERICUM
LOW	5 G.C.	43	MUH.	MUHLENBERGIA RIGENS ... DEER GRASS
LOW	1 G.C.	243	MYO.	MYOPORUM PARVIFOLIUM ... MYOPORUM
LOW	5 G.C.	100	RHA.	RHAPHIOLEPIS UMBELLATA 'MINOR' ... DWARF YEDDO HAWTHORN
MEDIUM	1 G.C.	80	TRA.	TRACHELOSPERMUM JASMINOIDES ... STAR JASMINE
				BIOSWALE:
LOW	5 G.C.	88	LEY.	LEYMUS CONFENSATUS ... GIANT WILD RYE

GENERAL LANDSCAPE REQUIREMENTS/NOTES

1. NO PLANTING SHALL BE STARTED UNTIL SPRINKLER IRRIGATION SYSTEM HAS BEEN TESTED BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE AND NOTED DEFICIENCIES CORRECTED.
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4. PLANT MATERIAL IS SUBJECT TO APPROVAL OF OWNER'S REPRESENTATIVE.
5. SEE SHEET L4.1 FOR PLANTING INSTALLATION DETAILS.

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SOIL PERCOLATION

EXCAVATE 10 PLANTING PITS IN RANDOM AREAS OF SITE. FILL EXCAVATED PLANTING PITS WITH WATER TO 1/2 DEPTH OF PIT. PITS SHOULD DRAIN WITHIN 4 HOURS. IF PLANTING PITS DO NOT DRAIN, NOTIFY INSPECTOR IMMEDIATELY. PLANTING SHALL NOT BE STARTED UNTIL OWNER'S REPRESENTATIVE HAS RESOLVED A METHOD TO REMEDY DRAINAGE ISSUE.

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SHRUB/TURF PLANTING PLAN

PROJECT NO. 3186-067-000
DATE: 12/20/2022
SHEET L2.2 2

AD2.11

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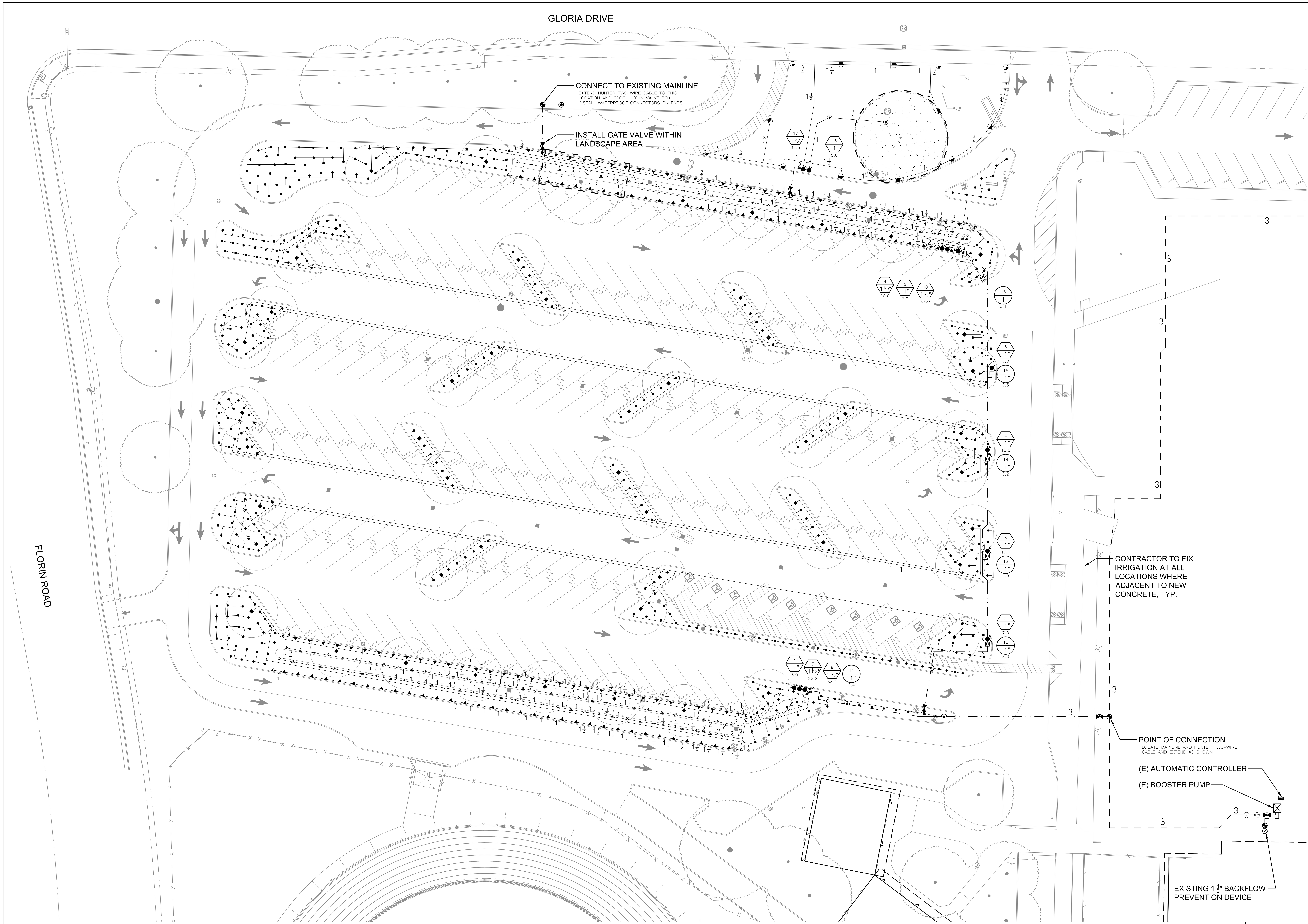

SEE SHEET L3.2 FOR LEGEND AND NOTES

SCALE: 1"= 20'-0"

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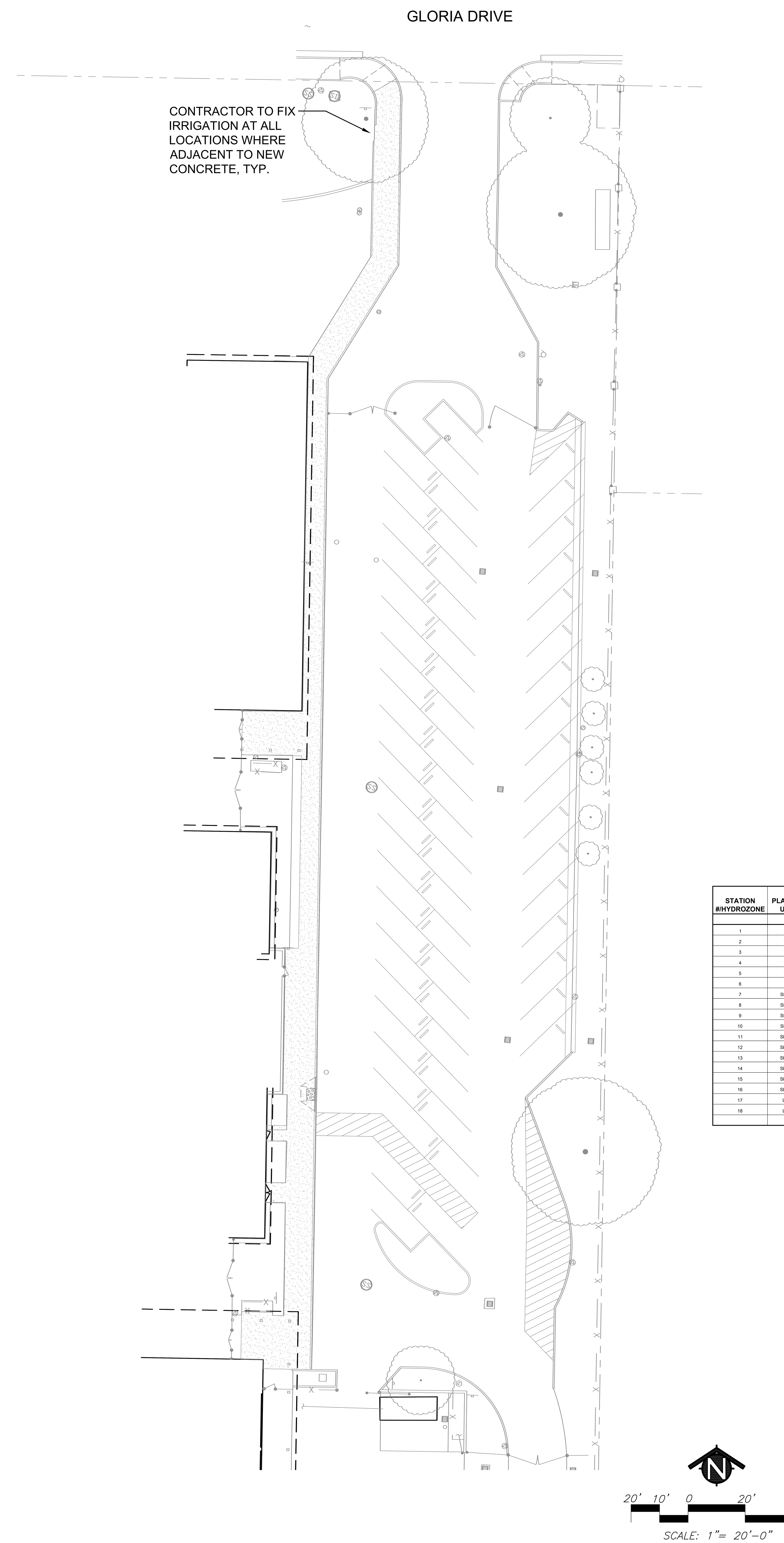
LANDSCAPE IRRIGATION PLAN

PROJECT NO.	3186-067-000
DATE:	12/20/2022
SHEET	L3.1



KEY	SPRINKLER IRRIGATION LEGEND
	EXISTING AUTOMATIC CONTROLLER:
	EXISTING REDUCED PRESSURE BACKFLOW PREVENTION DEVICE:
	EXISTING BOOSTER PUMP
MV FS	EXISTING MASTER VALVE/FLOW SENSOR ASSEMBLY:
	POINT OF CONNECTION: THIS SPRINKLER IRRIGATION SYSTEM IS DESIGNED TO OPERATE AT EXISTING STATIC WATER PRESSURE AND 40 PSI DYNAMIC WATER PRESSURE WITH MAXIMUM FLOW OF 40.3 GPM.
	GATE VALVE: TYPE: LEEMCO LMV-XXBB BELL WITH A NON-RISING STEM AND OPERATING NUT. GATE VALVE INSTALLLED IN A VALVE BOX WITH TOP OF BOX SET FLUSH TO FINISH GRADE. GATE VALVE TO BE LINE SIZE.
	EXISTING PRESSURE MAIN LINE:
	PRESSURE MAIN LINE: TYPE: ASTM D1785, PVC SCHEDULE 40. TRENCH DEPTH: IN PLANTED AREAS: 24" MINIMUM COVER. UNDER PAVED AREAS: 24" MINIMUM COVER. PVC SCHEDULE 40 SLEEVES ARE REQUIRED FOR ALL PIPING UNDER PAVEMENT.
	LATERAL LINE: TYPE: ASTM D1785, PVC SCHEDULE 40, SOLVENT WELD ALL UNSIZED PIPE SHALL BE 3/4" SIZE. TRENCH DEPTH: IN PLANTED AREAS: POP-UP SPRAY HEADS - 12" MINIMUM COVER. ROTOR HEADS: - 18" MINIMUM COVER. BUBBLER HEADS: - 12" MINIMUM COVER. UNDER PAVED AREAS: 24" MINIMUM COVER. PVC SCHEDULE 40 SLEEVES ARE REQUIRED FOR ALL PIPING UNDER PAVEMENT.
	AUTOMATIC CONTROL VALVE: HUNTER ICV-AS-ADJ SERIES WITH HUNTER DUAL-1 DECODER. DUAL-S REQUIRED WHEN INSTALLING GROUNDING ROD.
	AUTOMATIC DRIP IRRIGATION VALVE/FILTER/PRESSURE REGULATOR: HUNTER ICV-AS-ADJ SERIES WITH HY-075 FILTER REGULATOR WITH HUNTER DUAL-1 DECODER. DUAL-S REQUIRED WHEN INSTALLING GROUNDING ROD.
	SHRUB POP-UP SPRAY HEADS: HUNTER: PROS-06 WITH CHECK VALVE SERIES WITH MP800SR NOZZLES. FULL, HALF, AND QUARTER SPRAY PATTERNS.
	LAWN POP-UP ROTOR HEADS: FULL CIRCLE HUNTER: I-20-04-SS-2.5; HALF CIRCLE HUNTER: I-20-04-SS-2.5; QUARTER CIRCLE HUNTER: I-20-04-SS-2.5
	TREE BUBBLER HEADS (TWO PER SYMBOL): HUNTER: RZWS-18-25-CV
	SHRUB BUBBLER HEADS: HUNTER: IH RISER TUBING WITH HEB-20 NOZZLE AND CV SCREEN.
1 / 1" / 0.0; A1 / 1" / 0.00	INDICATES CONTROL VALVE AND STATION NUMBER
	INDICATES CONTROL VALVE SIZE
	INDICATES GALLONS PER MINUTE
	EXISTING TREE PROTECTION AREA: THE PROTECTION AREA UNDER ANY EXISTING TREE THAT IS TO REMAIN IS DEFINED BY ITS DRIP LINE OR CANOPY COVER. WITHIN THIS AREA NO STORAGE OR PARKING WILL BE PERMITTED. ALL TRENCHING WILL BE PERFORMED BY HAND. DO NOT CUT ROOTS 1" IN DIAMETER OR LARGER. USE BORING PROCEDURES WHEN ENCOUNTERING ROOTS 1" SIZE AND LARGER. NO ROOTS ARE TO BE EXPOSED LONGER THAN 48 HOURS.
	GROUNDING ROD ASSEMBLY: TO BE INSTALLED ALONG THE TWO-WIRE PATH EVERY 1000' AND AT TERMINATION OF LINE. USE DUAL-S DECODER.

IRRIGATION SCHEDULE TABLE

STATION #/HYDROZONE	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION TYPE	FLOW (GPM)	PRECIP. RATE (PR) INCH/HR	IRRIGATION EFFICIENCY (IE)	SOIL TYPE	ROOT DEPTH	SLOPE	EXPOSURE
1	TREE - MED	0.5	BUBBLER	8.0	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
2	TREE - MED	0.5	BUBBLER	7.0	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
3	TREE - MED	0.5	BUBBLER	10.0	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
4	TREE - MED	0.5	BUBBLER	10.0	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
5	TREE - MED	0.5	BUBBLER	8.0	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
6	TREE - MED	0.5	BUBBLER	7.0	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
7	SHRUBS - MED	0.4	POP-UP SPRAY	33.8	0.93	0.75	SANDY LOAM	12-24"	0-5%	FULL SUN
8	SHRUBS - MED	0.4	POP-UP SPRAY	33.5	0.93	0.75	SANDY LOAM	12-24"	0-5%	FULL SUN
9	SHRUBS - MED	0.4	POP-UP SPRAY	30.0	0.93	0.75	SANDY LOAM	12-24"	0-5%	FULL SUN
10	SHRUBS - MED	0.4	POP-UP SPRAY	33.0	0.93	0.75	SANDY LOAM	12-24"	0-5%	FULL SUN
11	SHRUBS - LOW	0.2	BUBBLER	2.4	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
12	SHRUBS - LOW	0.2	BUBBLER	3.0	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
13	SHRUBS - LOW	0.2	BUBBLER	1.9	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
14	SHRUBS - LOW	0.2	BUBBLER	2.2	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
15	SHRUBS - LOW	0.2	BUBBLER	2.5	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
16	SHRUBS - LOW	0.2	BUBBLER	3.1	0.50	0.81	SANDY LOAM	12-24"	0-5%	FULL SUN
17	LAWN - HIGH	0.8	I-20 ROTORS	32.5	0.45	0.75	SANDY LOAM	6"	0-5%	FULL SUN
18	LAWN - HIGH	0.8	I-20 ROTORS	7.5	0.45	0.75	SANDY LOAM	6"	0-5%	FULL SUN

MAINTENANCE PERIOD (X/Y Z GAL)

STATION #/HYDROZONE	JANUARY	FEBUARY	MARCH	APRIL	MAY	JUNE
1	0 /1 0 GAL	0 /1 0 GAL	7 /1 262 GAL	32 /2 2,292 GAL	35 /3 3,732 GAL	28 /5 4,911 GAL
2	0 /1 0 GAL	0 /1 0 GAL	7 /1 229 GAL	32 /2 2,005 GAL	35 /3 3,266 GAL	28 /5 4,297 GAL
3	0 /1 0 GAL	0 /1 0 GAL	7 /1 327 GAL	32 /2 2,865 GAL	35 /3 4,666 GAL	28 /5 6,139 GAL
4	0 /1 0 GAL	0 /1 0 GAL	7 /1 327 GAL	32 /2 2,865 GAL	35 /3 4,666 GAL	28 /5 6,139 GAL
5	0 /1 0 GAL	0 /1 0 GAL	7 /1 262 GAL	32 /2 2,292 GAL	35 /3 3,732 GAL	28 /5 4,911 GAL
6	0 /1 0 GAL	0 /1 0 GAL	7 /1 229 GAL	32 /2 2,005 GAL	35 /3 3,266 GAL	28 /5 4,297 GAL
7	0 /1 0 GAL	0 /1 0 GAL	3 /1 514 GAL	15 /2 4,498 GAL	16 /3 7,325 GAL	13 /5 9,638 GAL
8	0 /1 0 GAL	0 /1 0 GAL	3 /1 509 GAL	15 /2 4,458 GAL	16 /3 7,260 GAL	13 /5 9,553 GAL
9	0 /1 0 GAL	0 /1 0 GAL	3 /1 456 GAL	15 /2 3,992 GAL	16 /3 6,502 GAL	13 /5 8,555 GAL
10	0 /1 0 GAL	0 /1 0 GAL	3 /1 502 GAL	15 /2 4,391 GAL	16 /3 7,152 GAL	13 /5 9,410 GAL
11	0 /1 0 GAL	0 /1 0 GAL	3 /1 31 GAL	13 /2 275 GAL	14 /3 448 GAL	11 /5 589 GAL
12	0 /1 0 GAL	0 /1 0 GAL	3 /1 39 GAL	13 /2 344 GAL	14 /3 560 GAL	11 /5 737 GAL
13	0 /1 0 GAL	0 /1 0 GAL	3 /1 25 GAL	13 /2 218 GAL	14 /3 355 GAL	11 /5 467 GAL
14	0 /1 0 GAL	0 /1 0 GAL	3 /1 29 GAL	13 /2 252 GAL	14 /3 411 GAL	11 /5 540 GAL
15	0 /1 0 GAL	0 /1 0 GAL	3 /1 33 GAL	13 /2 286 GAL	14 /3 467 GAL	11 /5 614 GAL
16	0 /1 0 GAL	0 /1 0 GAL	3 /1 41 GAL	13 /2 355 GAL	14 /3 579 GAL	11 /5 761 GAL
17	0 /1 0 GAL	0 /1 0 GAL	14 /1 2,043 GAL	62 /2 17,876 GAL	68 /3 29,113 GAL	53 /5 38,307 GAL
18	0 /1 0 GAL	0 /1 0 GAL	14 /1 471 GAL	62 /2 4,125 GAL	68 /3 6,718 GAL	53 /5 8,840 GAL
MONTHLY RAINFALL (SACRAMENTO)	3.6	3.5	2.8	1.2	0.7	0.2
MONTHLY ET (SACRAMENTO)	1.0 JAN	1.8 FEB	3.2 MAR	4.7 APR	6.4 MAY	7.7 JUN
MONTHLY TOTALS (GAL)	0 GAL	0 GAL	6,331 GAL	55,396 GAL	90,216 GAL	118,706 GAL

STATION #/HYDROZONE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMEBER	DECEMBER
1	31 /5 5,500 GAL	22 /6 4,649 GAL	31 /3 3,340 GAL	50 /1 1,768 GAL	0 /1 0 GAL	0 /1 0 GAL
2	31 /5 4,813 GAL	22 /6 4,068 GAL	31 /3 2,922 GAL	50 /1 1,547 GAL	0 /1 0 GAL	0 /1 0 GAL
3	31 /5 6,876 GAL	22 /6 5,811 GAL	31 /3 4,174 GAL	50 /1 2,210 GAL	0 /1 0 GAL	0 /1 0 GAL
4	31 /5 6,876 GAL	22 /6 5,811 GAL	31 /3 4,174 GAL	50 /1 2,210 GAL	0 /1 0 GAL	0 /1 0 GAL
5	31 /5 5,500 GAL	22 /6 4,649 GAL	31 /3 3,340 GAL	50 /1 1,768 GAL	0 /1 0 GAL	0 /1 0 GAL
6	31 /5 4,813 GAL	22 /6 4,068 GAL	31 /3 2,922 GAL	50 /1 1,547 GAL	0 /1 0 GAL	0 /1 0 GAL
7	14 /5 10,795 GAL	10 /6 9,124 GAL	15 /3 6,554 GAL	23 /1 3,470 GAL	0 /1 0 GAL	0 /1 0 GAL
8	14 /5 10,699 GAL	10 /6 9,043 GAL	15 /3 6,496 GAL	23 /1 3,439 GAL	0 /1 0 GAL	0 /1 0 GAL
9	14 /5 9,581 GAL	10 /6 8,099 GAL	15 /3 5,817 GAL	23 /1 3,080 GAL	0 /1 0 GAL	0 /1 0 GAL
10	14 /5 10,540 GAL	10 /6 8,908 GAL	15 /3 6,399 GAL	23 /1 3,388 GAL	0 /1 0 GAL	0 /1 0 GAL
11	12 /5 660 GAL	9 /6 558 GAL	13 /3 401 GAL	20 /1 212 GAL	0 /1 0 GAL	0 /1 0 GAL
12	12 /5 825 GAL	9 /6 697 GAL	13 /3 501 GAL	20 /1 265 GAL	0 /1 0 GAL	0 /1 0 GAL
13	12 /5 523 GAL	9 /6 442 GAL	13 /3 317 GAL	20 /1 168 GAL	0 /1 0 GAL	0 /1 0 GAL
14	12 /5 605 GAL	9 /6 511 GAL	13 /3 367 GAL	20 /1 194 GAL	0 /1 0 GAL	0 /1 0 GAL
15	12 /5 688 GAL	9 /6 581 GAL	13 /3 417 GAL	20 /1 221 GAL	0 /1 0 GAL	0 /1 0 GAL
16	12 /5 853 GAL	9 /6 721 GAL	13 /3 518 GAL	20 /1 274 GAL	0 /1 0 GAL	0 /1 0 GAL
17	60 /5 42,903 GAL	42 /6 36,264 GAL	60 /3 26,049 GAL	96 /1 13,790 GAL	0 /1 0 GAL	0 /1 0 GAL
18	60 /5 9,901 GAL	42 /6 8,369 GAL	60 /3 6,011 GAL	96 /1 3,182 GAL	0 /1 0 GAL	0 /1 0 GAL
MONTHLY RAINFALL (SACRAMENTO)	0	0.1	0.3	1	2.1	3.3
MONTHLY ET (SACRAMENTO)	8.4 JUL	7.2 AUG	5.4 SEP	3.7 OCT	1.7 NOV	0.9 DEC
MONTHLY TOTALS (GAL)	132,950 GAL	112,375 GAL	80,720 GAL	42,734 GAL	0 GAL	0 GAL

IRRIGATION HYDROZONE INFORMATION TABLE

STATION #/HYDROZONE	PLANT WATER USE TYPE	PLANT FACTOR (PF)	HYDROZONE AREA (HA) (SQ.FT.)	PF x HA (SQ.FT.)	IRRIGATION EFFICIENCY (IE)	ETWU (GALLONS)
1	TREE - MED	0.5	160	80.0	0.81	3,178
2	TREE - MED	0.5	140	70.0	0.81	2,781
3	TREE - MED	0.5	200	100.0	0.81	3,973
4	TREE - MED	0.5	200	100.0	0.81	3,973
5	TREE - MED	0.5	160	80.0	0.81	3,178
6	TREE - MED	0.5	140	70.0	0.81	2,781
7	SHRUBS - MED	0.4	2,911	1,164.4	0.75	49,957
8	SHRUBS - MED	0.4	2,911	1,164.4	0.75	49,957
9	SHRUBS - MED	0.4	2,258	903.2	0.75	38,751
10	SHRUBS - MED	0.4	2,258	903.2	0.75	38,751
11	SHRUBS - LOW	0.2	3,208	641.6	0.81	25,488
12	SHRUBS - LOW	0.2	3,348	669.6	0.81	26,600
13	SHRUBS - LOW	0.2	2,626	525.2	0.81	20,864
14	SHRUBS - LOW	0.2	2,808	561.6	0.81	22,310
15	SHRUBS - LOW	0.2	2,843	568.6	0.81	22,588
16	SHRUBS - LOW	0.2	3,561	712.2	0.81	28,293
17	LAWN - HIGH	0.8	4,107	3,285.6	0.75	140,965
18	LAWN - HIGH	0.8	4,107	3,285.6	0.75	140,965
		TOTAL AREA	37,946		ETWU TOTAL	625,354
		TOTAL AREA (SLA)	8,214			
Eto (Sacramento)	51.9					
ESTIMATED TOTAL WATER USAGE (ETWU) = (ETo)(0.62)(PF)(HA)/IE = GAL/YEAR						
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) = (ETo)(0.62)[(0.45 x LA)+(0.55 x SLA)] = GAL/YEAR						
					MAWA TOTAL	694,832

LANDSCAPE HYDROZONE INFORMATION TABLE

STATION #/HYDROZONE	PLANT WATER USE TYPE	IRRIGATION TYPE	HYDROZONE AREA (HA) (SQ.FT.)	% OF TOTAL LANDSCAPE AREA
1	TREE - MED	BUBBLER	160	0.4%
2	TREE - MED	BUBBLER	140	0.4%
3	TREE - MED	BUBBLER	200	0.5%
4	TREE - MED	BUBBLER	200	0.5%
5	TREE - MED	BUBBLER	160	0.4%
6	TREE - MED	BUBBLER	140	0.4%
7	SHRUBS - MED	POP-UP SPRAY	2,911	7.7%
8	SHRUBS - MED	POP-UP SPRAY	2,911	7.7%
9	SHRUBS - MED	POP-UP SPRAY	2,258	6.0%
10	SHRUBS - MED	POP-UP SPRAY	2,258	6.0%
11	SHRUBS - LOW	BUBBLER	3,208	8.5%
12	SHRUBS - LOW	BUBBLER	3,348	8.8%
13	SHRUBS - LOW	BUBBLER	2,626	6.9%
14	SHRUBS - LOW	BUBBLER	2,808	7.4%
15	SHRUBS - LOW	BUBBLER	2,843	7.5%
16	SHRUBS - LOW	BUBBLER	3,561	9.4%
17	LAWN - HIGH	I-20 ROTORS	4,107	10.8%
18	LAWN - HIGH	I-20 ROTORS	4,107	10.8%
		TOTAL AREA	37,946	100.0%

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JOHN F. KENNEDY HS PARKING LOT

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT
SACRAMENTO, CA

2 ADDENUDUM #2 - 3/22/23

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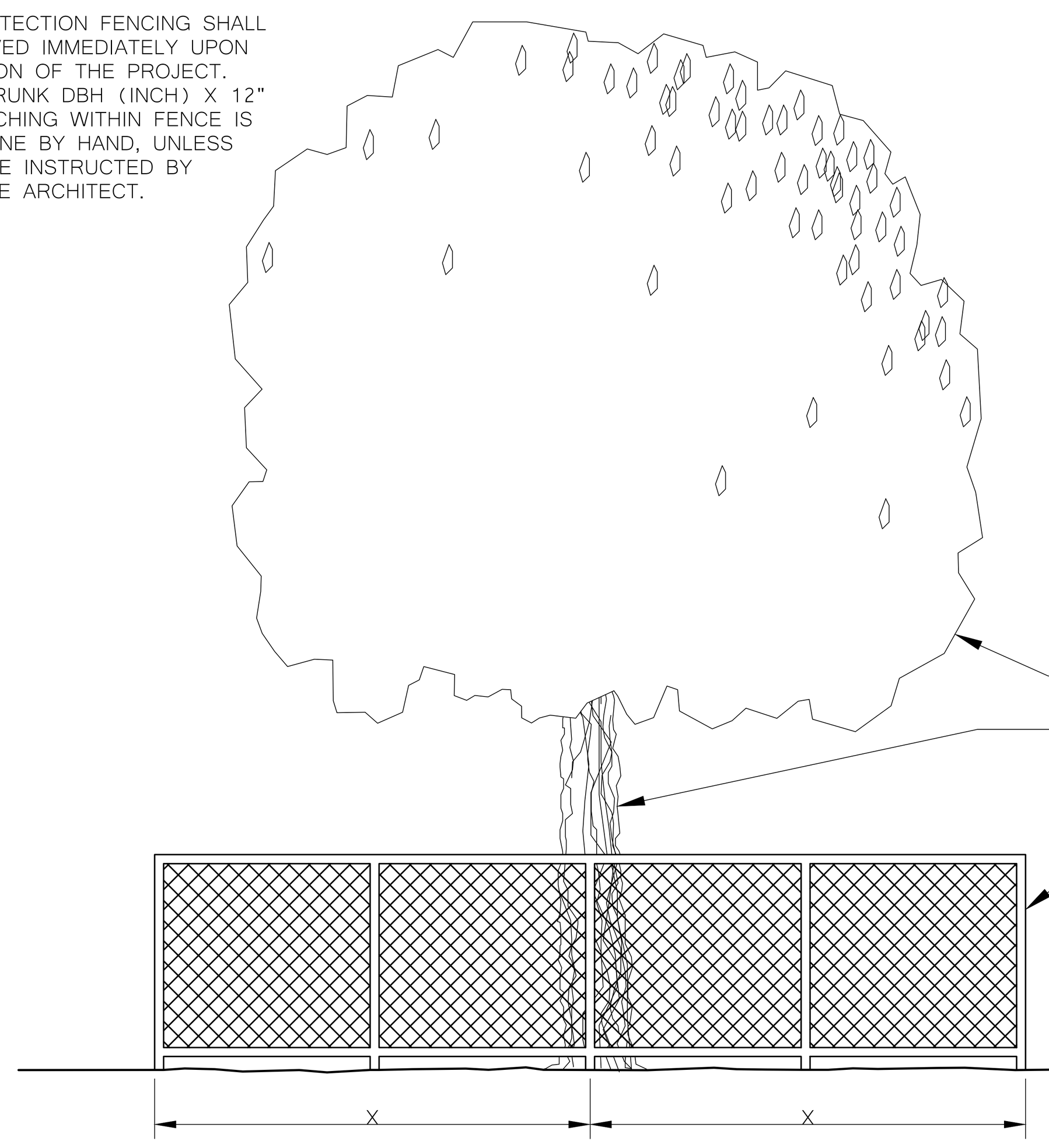
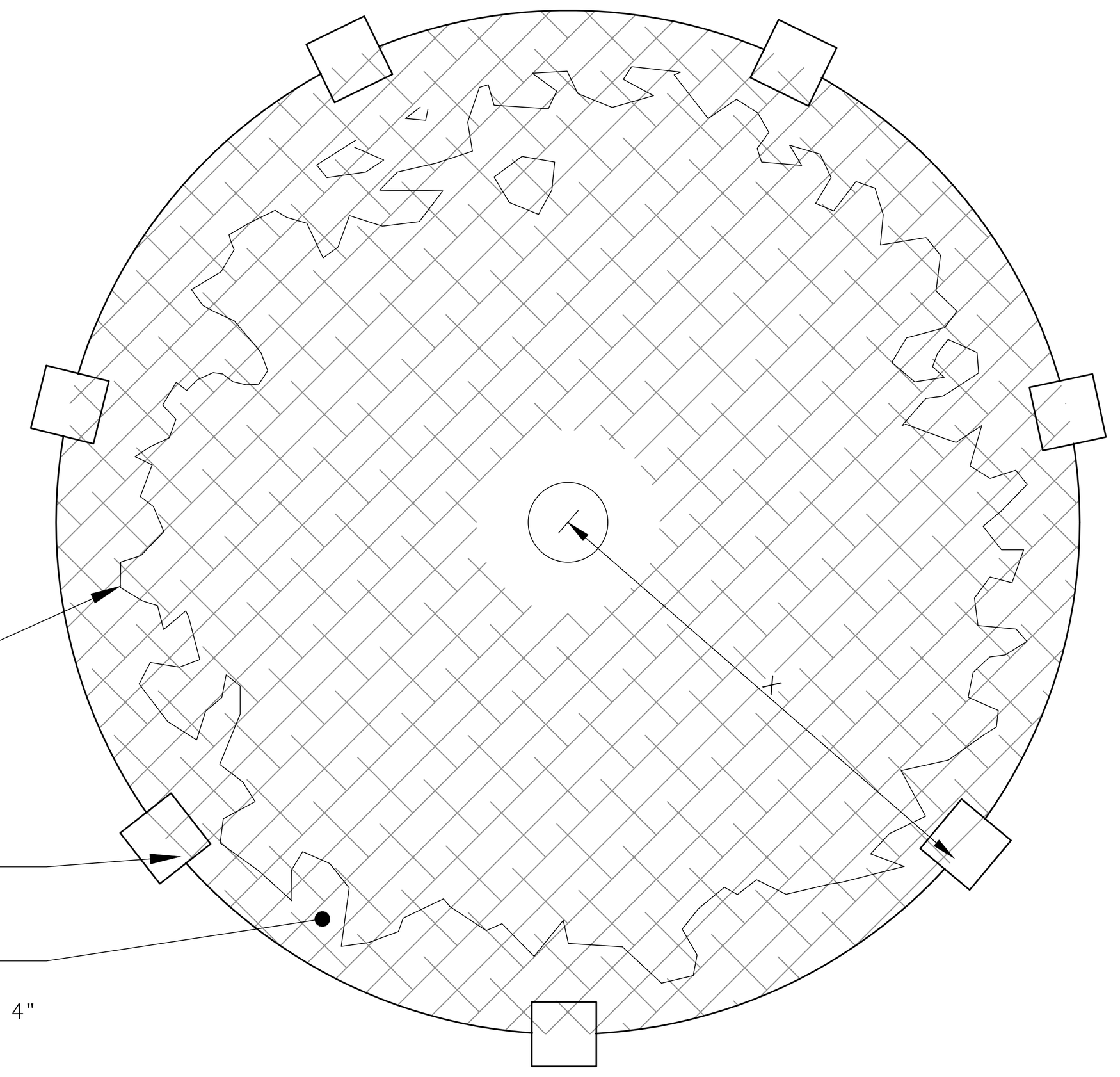
LANDSCAPE IRRIGATION PLAN

PROJECT NO. 3186-067-000
DATE: 12/20/2022
SHEET L3.2 (2)

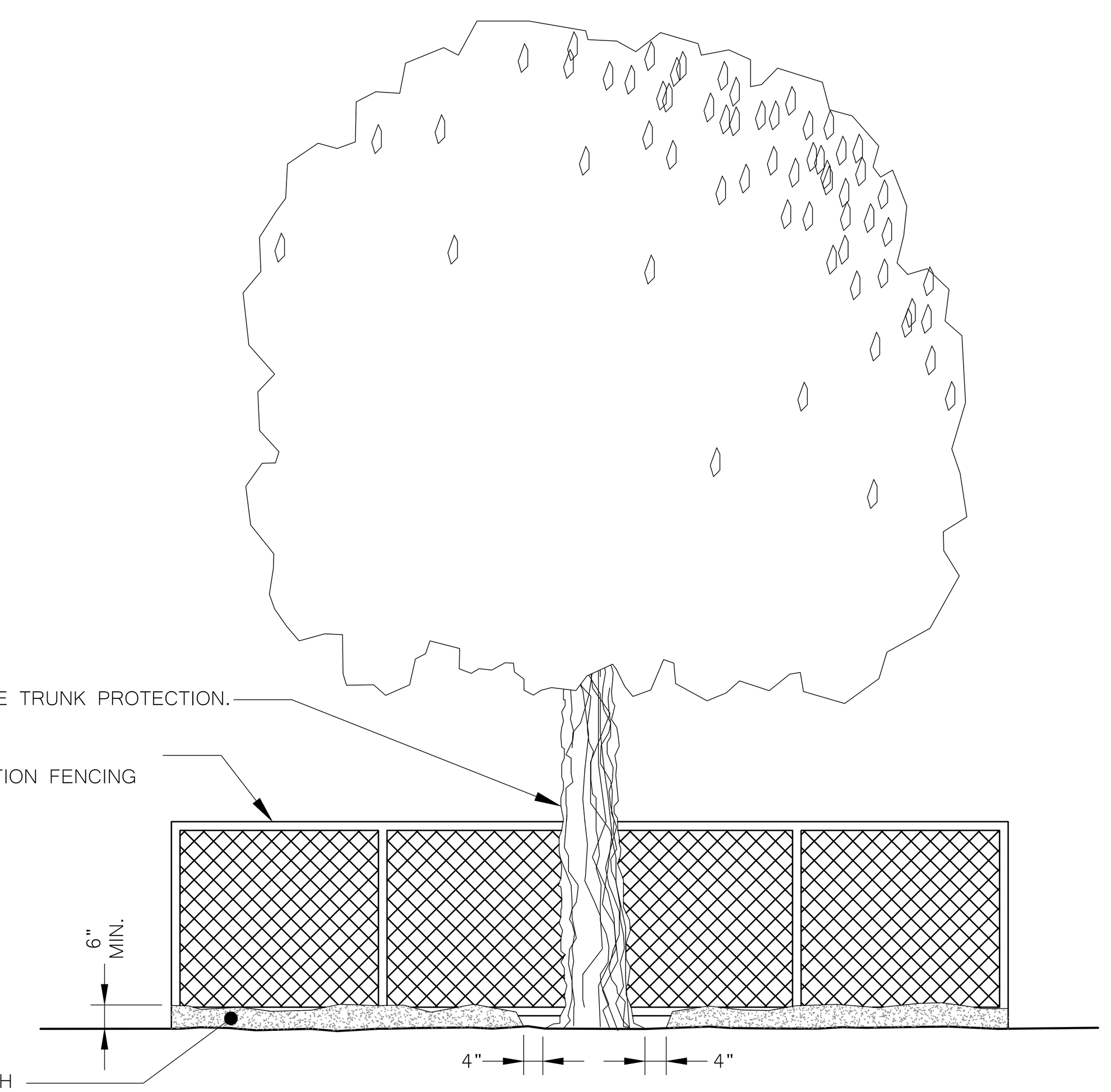
NOTE:
1. TREE PROTECTION FENCING SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF THE PROJECT.
2. X=TREE TRUNK DBH (INCH) X 12"
3. ALL TRENCHING WITHIN FENCE IS TO BE DONE BY HAND, UNLESS OTHERWISE INSTRUCTED BY LANDSCAPE ARCHITECT.



ELEVATION



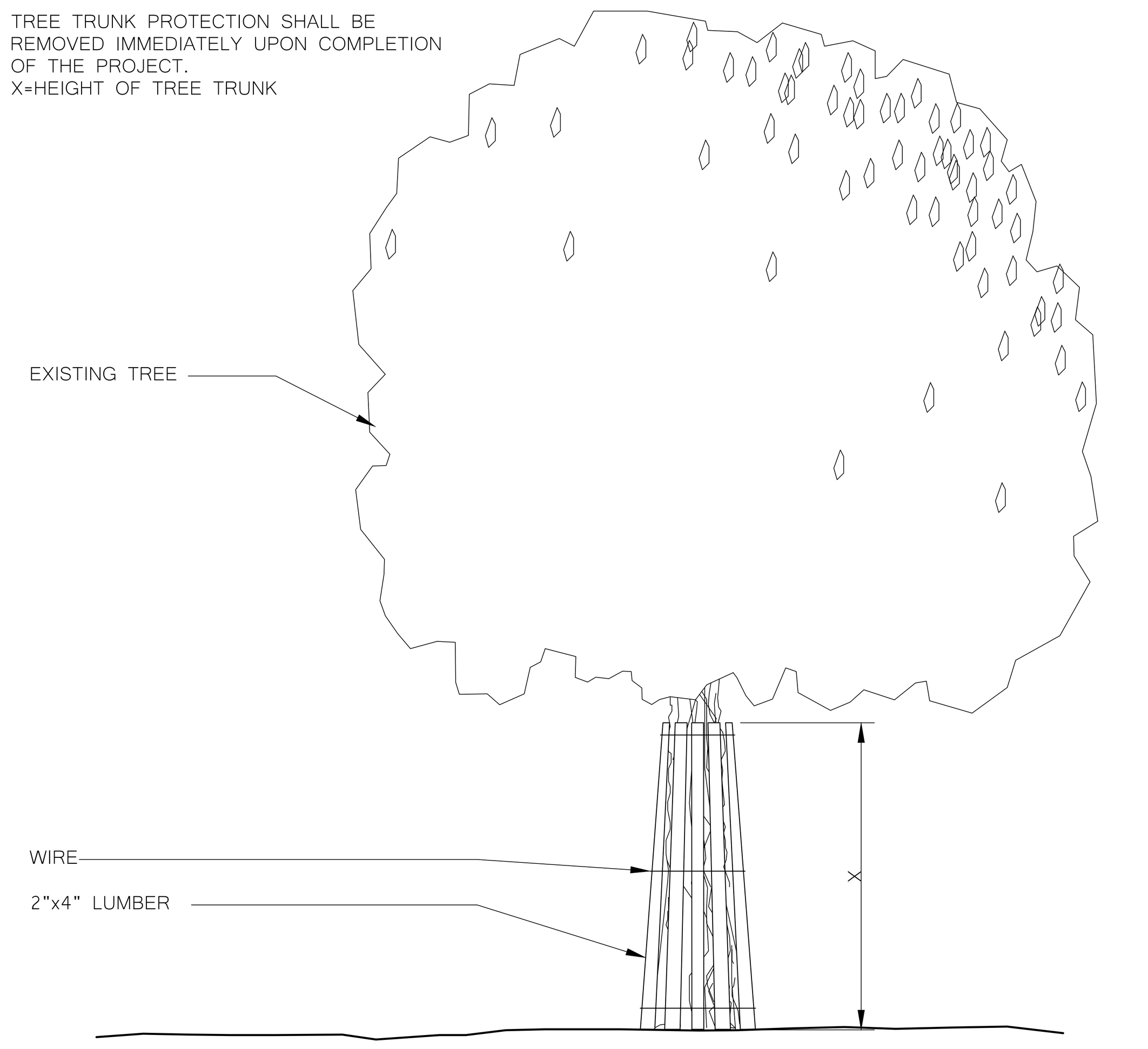
PLAN



ELEVATION - WITHIN FENCE

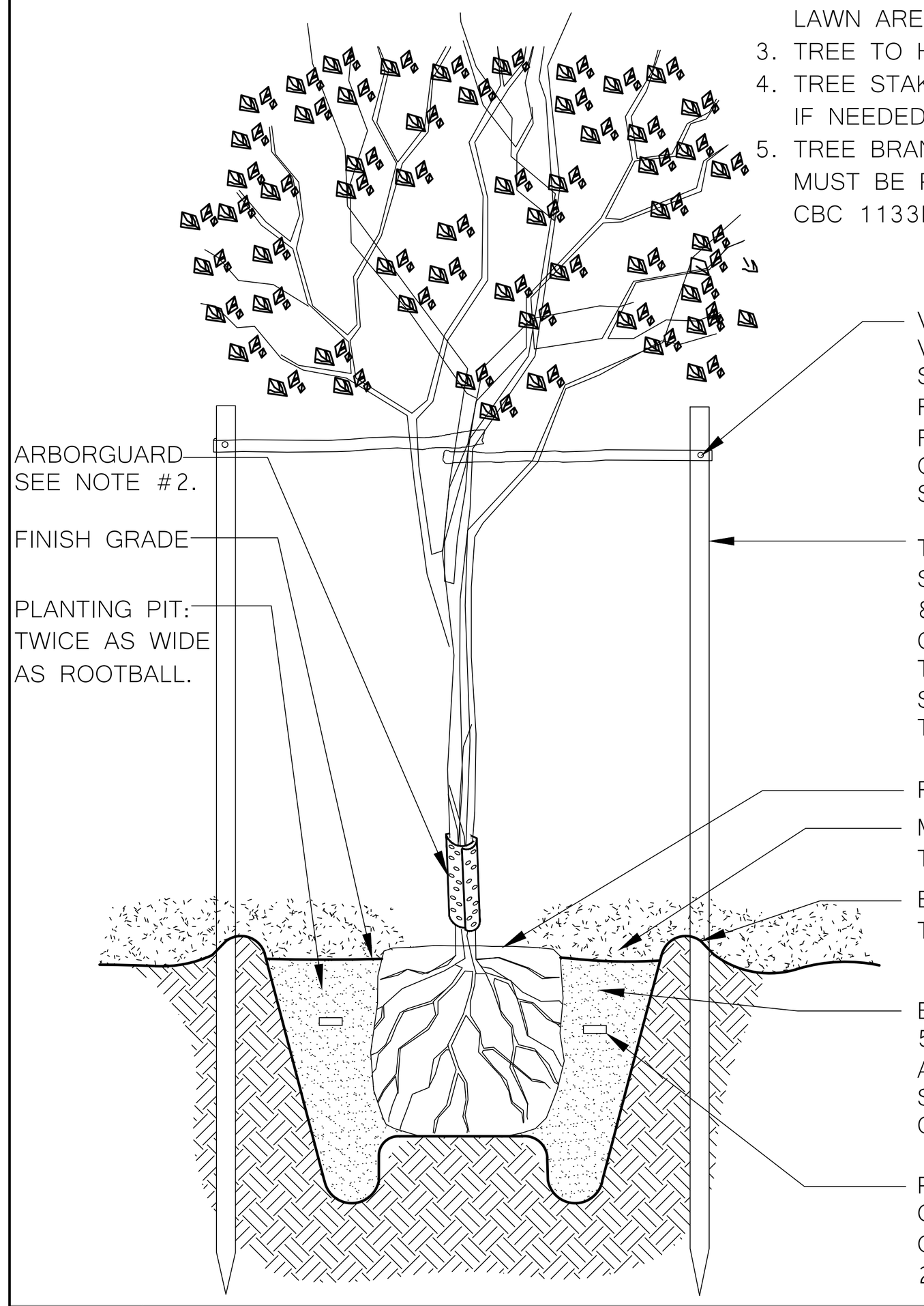
1 TREE PROTECTION FENCING DETAIL

NOTE:
1. TREE TRUNK PROTECTION SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF THE PROJECT.
2. X=HEIGHT OF TREE TRUNK



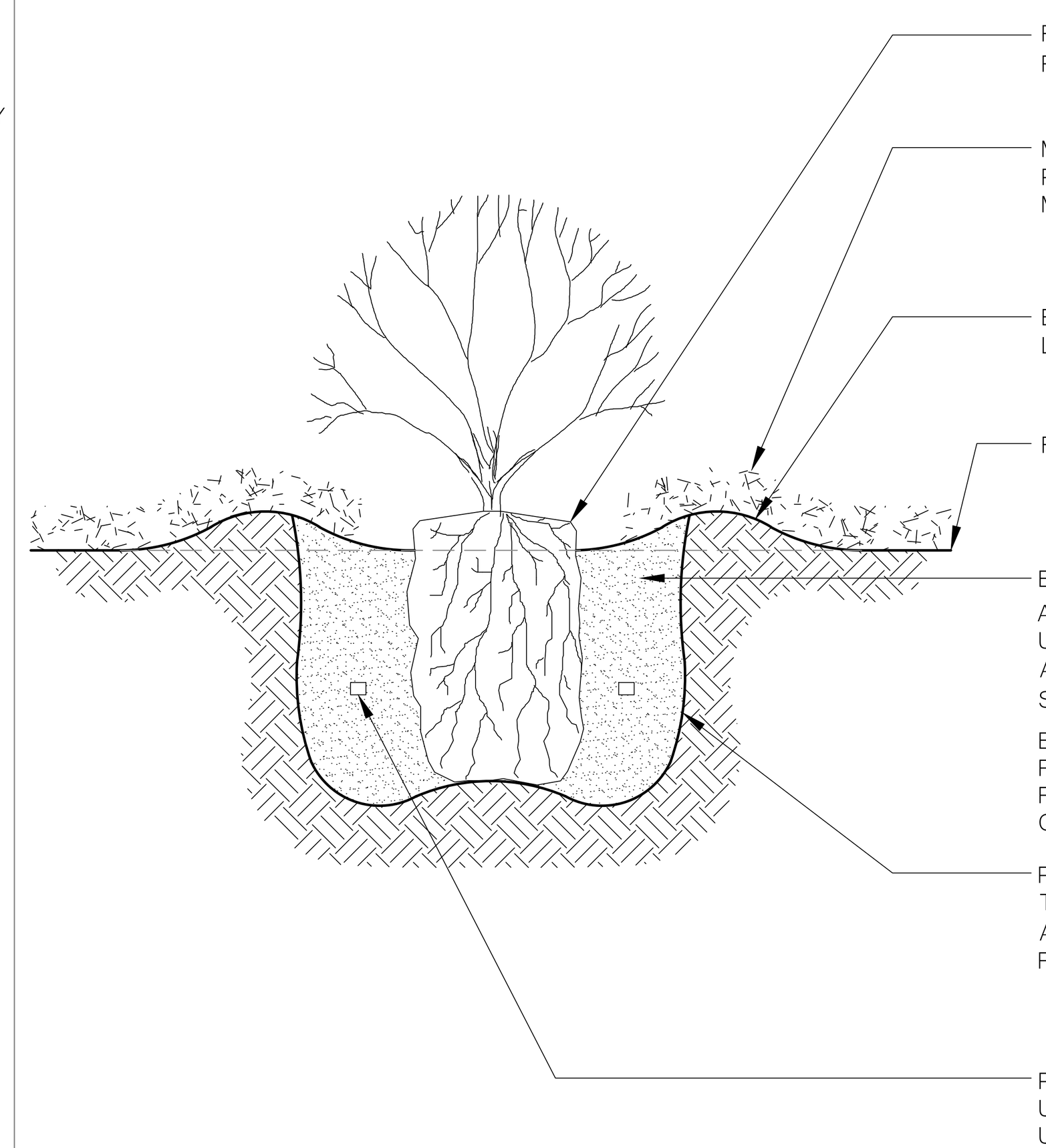
2 TREE TRUNK PROTECTION DETAIL

NOTES:
1. VITAMIN B-1: SUPERTHRIVE, LIQUINOX START OR EQUAL. APPLY AS PER MANUFACTURER'S INSTRUCTIONS WITH THE SECOND WATERING OF THE BASIN.
2. INSTALL ARBORGUARD TREE PROTECTION WHEN TREES ARE IN LAWN AREAS.
3. TREE TO HAVE DOMINANT MAIN LEADER.
4. TREE STAKES ARE INTENDED TO HOLD THE TREE UPRIGHT, IF NEEDED, TALLER TREE STAKES ARE TO BE USED.
5. TREE BRANCHES EXTENDING MORE THAN 4" OVER A WALKWAY MUST BE PRUNED UP TO AN 80" CLEARANCE PER CBC 1133B.8.6.1



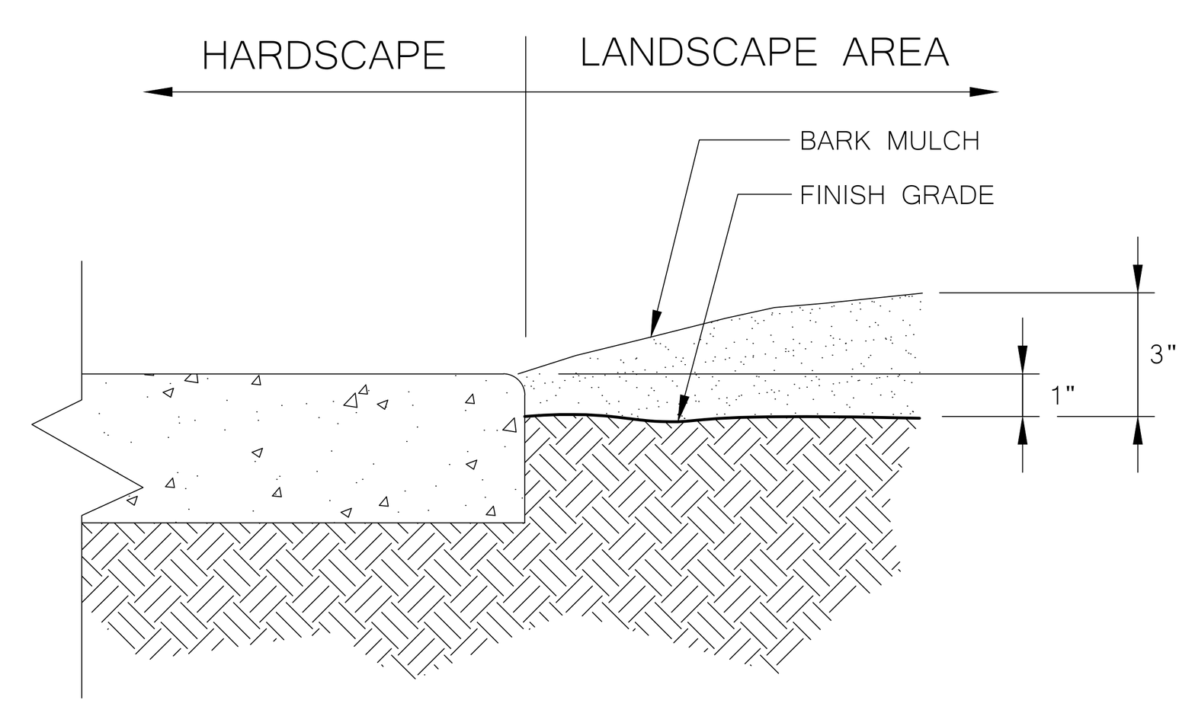
3 TREE PLANTING AND STAKING DETAIL

NOTE: VITAMIN B-1 SUPERTHRIVE LIQUINOX OR EQUAL. APPLY AS PER MANUFACTURE'S INSTRUCTIONS WITH SECOND WATERING OF THE BASIN.



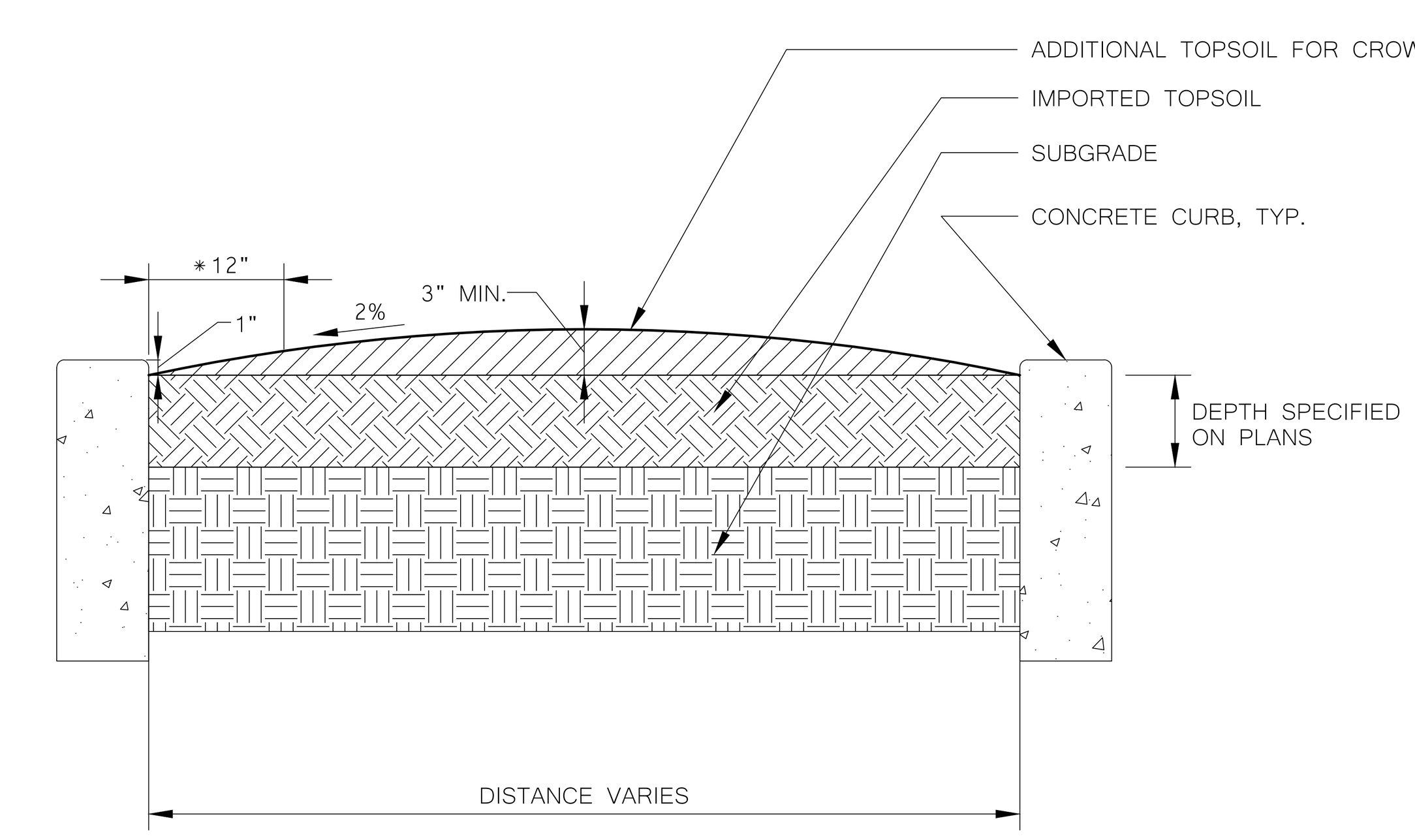
4 SHRUB PLANTING DETAIL

NOTES:
1. FINISH GRADE OF SOIL TO BE 1" BELOW ADJACENT HARDSCAPE FOR BOTH LAWN AREAS AND PLANTER BED AREAS
2. BARK MULCH DEPTH DOES NOT DICTATE THE ELEVATION OF THE FINISH GRADE
3. BARK MULCH TO BE FEATHERED DOWN TO 1" DEPTH, 12" FROM EDGE OF HARDSCAPE



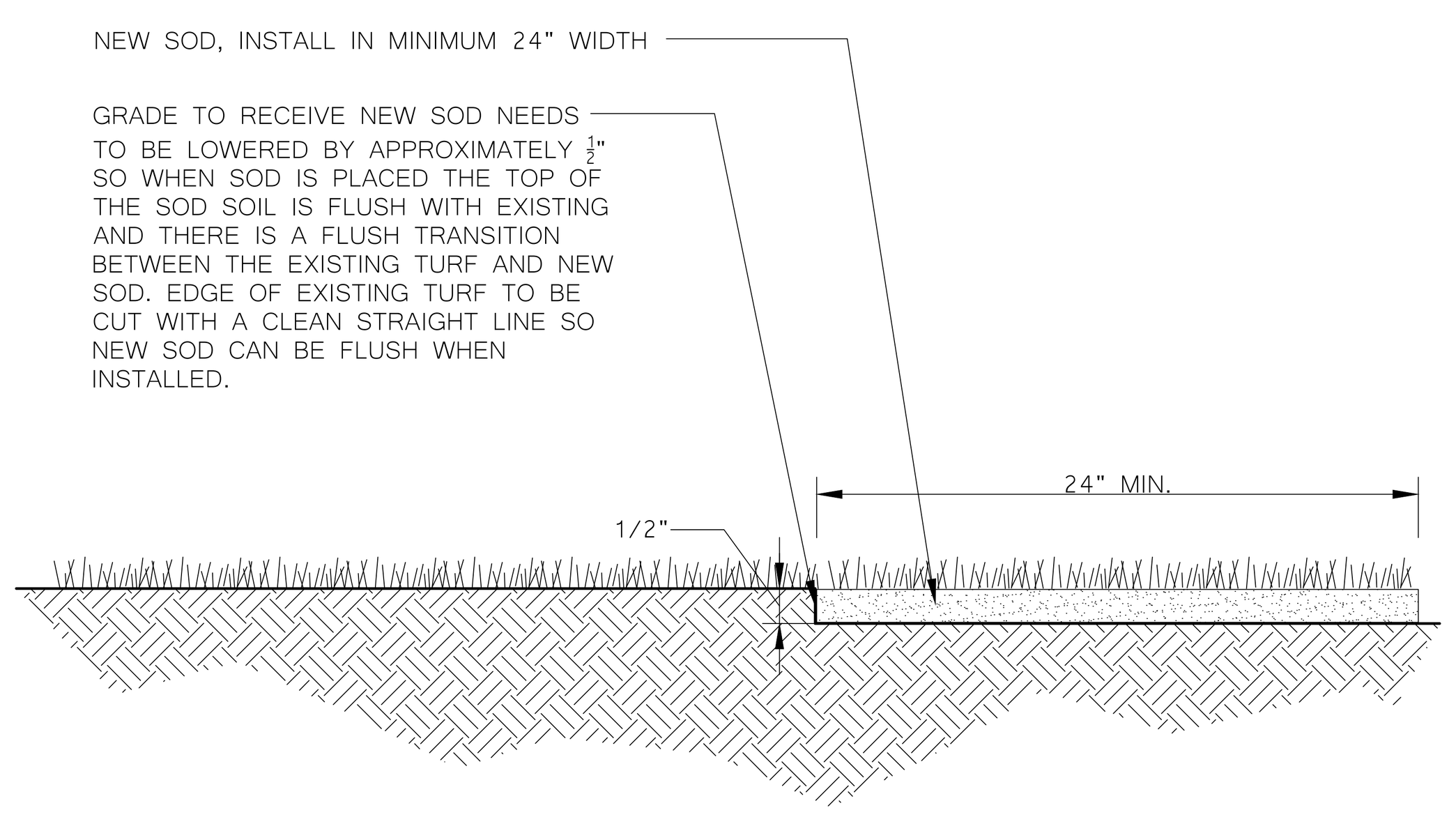
5 LANDSCAPE GRADE ADJACENT TO HARDSCAPE DETAIL

NOTES:
1. DO NOT PLACE TOPSOIL UNTIL SUBGRADE HAS BEEN APPROVED BY INSPECTOR.
*2. 12" FROM ALL CURBS FEATHER BARK TO A 1" DEPTH FROM THE FULL DEPTH SPECIFIED IN THE CONSTRUCTION DOCUMENTS.



6 PARKING LOT ISLAND PLANTER FINISH GRADE DETAIL

NOTE:
1. SEE SPECIFICATIONS FOR SOD BLEND.



7 TURF REPAIR WITH SOD DETAIL

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2 ADDENUDUM #2 - 3/22/23

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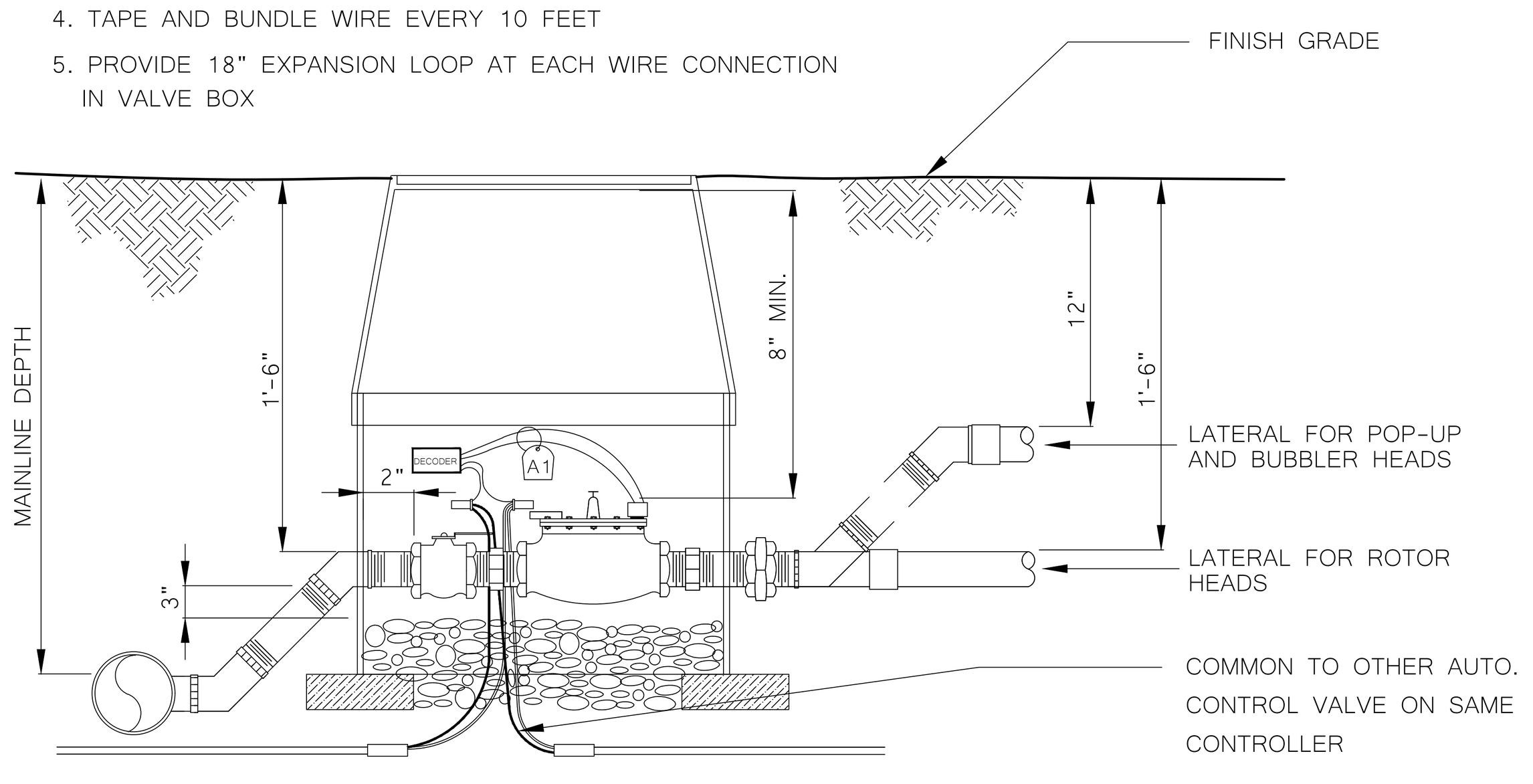
TREE PROTECTION AND LANDSCAPE PLANTING DETAILS

PROJECT NO.	3186-067-000
DATE:	12/20/2022
SHEET	L4.1 2

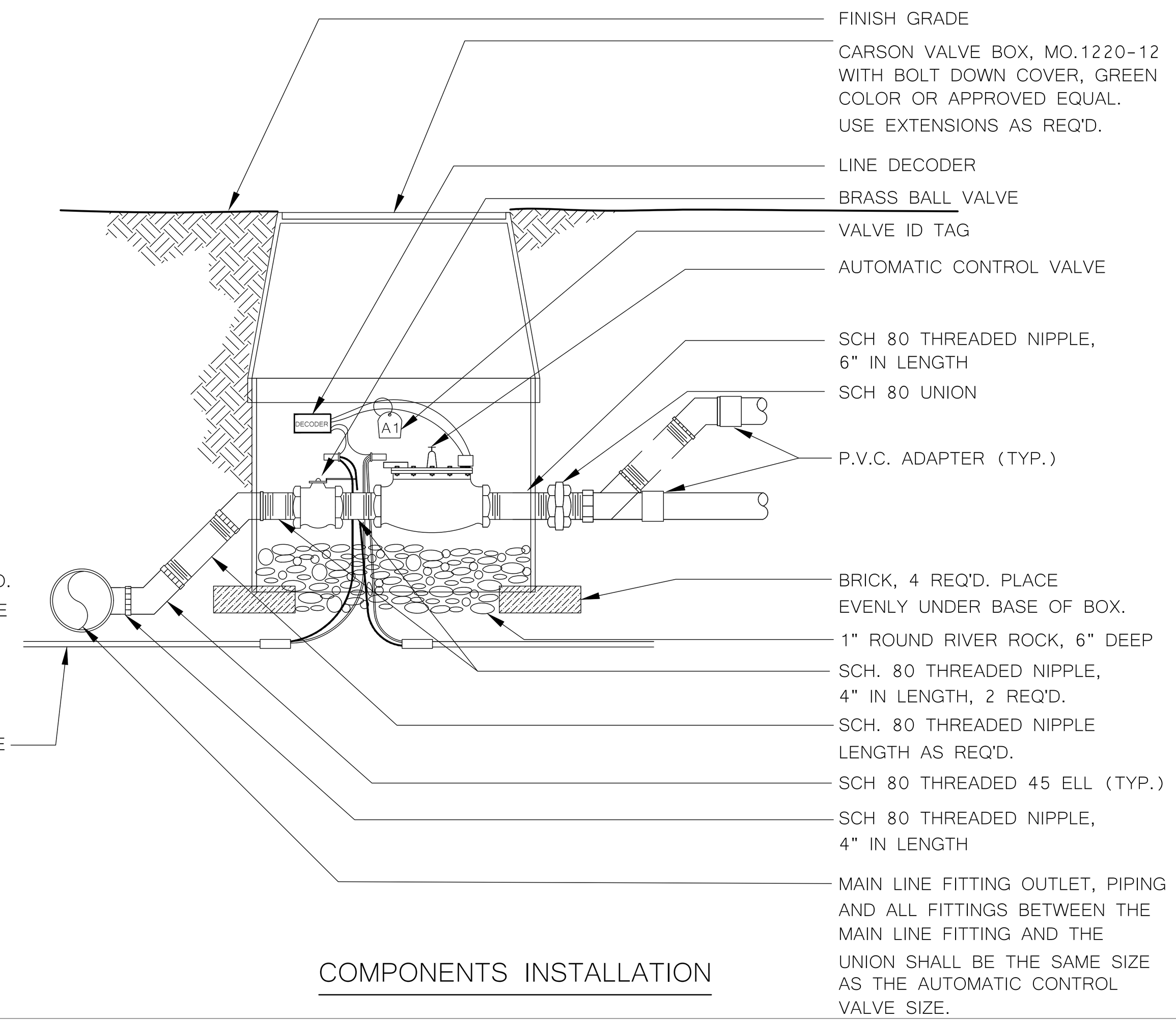
NOTES:
1. SET VALVE BOX LEVEL WITH FINISH GRADE.
2. INSTALL VALVE BOX EXTENSIONS AS REQUIRED.
3. CONNECT ALL WIRES WITH WEATHER TIGHT CONNECTORS. SPLICES IN WIRE SHALL BE PERMITTED ONLY AT VALVE LOCATIONS.
4. TAPE AND BUNDLE WIRE EVERY 10 FEET
5. PROVIDE 18" EXPANSION LOOP AT EACH WIRE CONNECTION IN VALVE BOX



6. FOR VALVES WITH PRESSURE REGULATION FEATURE, SET VALVE PRESSURE AS PER MANUFACTURERS RECOMMENDATIONS TO THE PRESSURE AS FOLLOWS:

POP-UP SPRAY HEADS:	35 - 40 PSI
INTERMEDIATE POP-UP ROTOR HEADS:	50 - 55 PSI
POP-UP ROTOR HEADS:	60 - 70 PSI
BUBBLER HEADS:	30 - 40 PSI

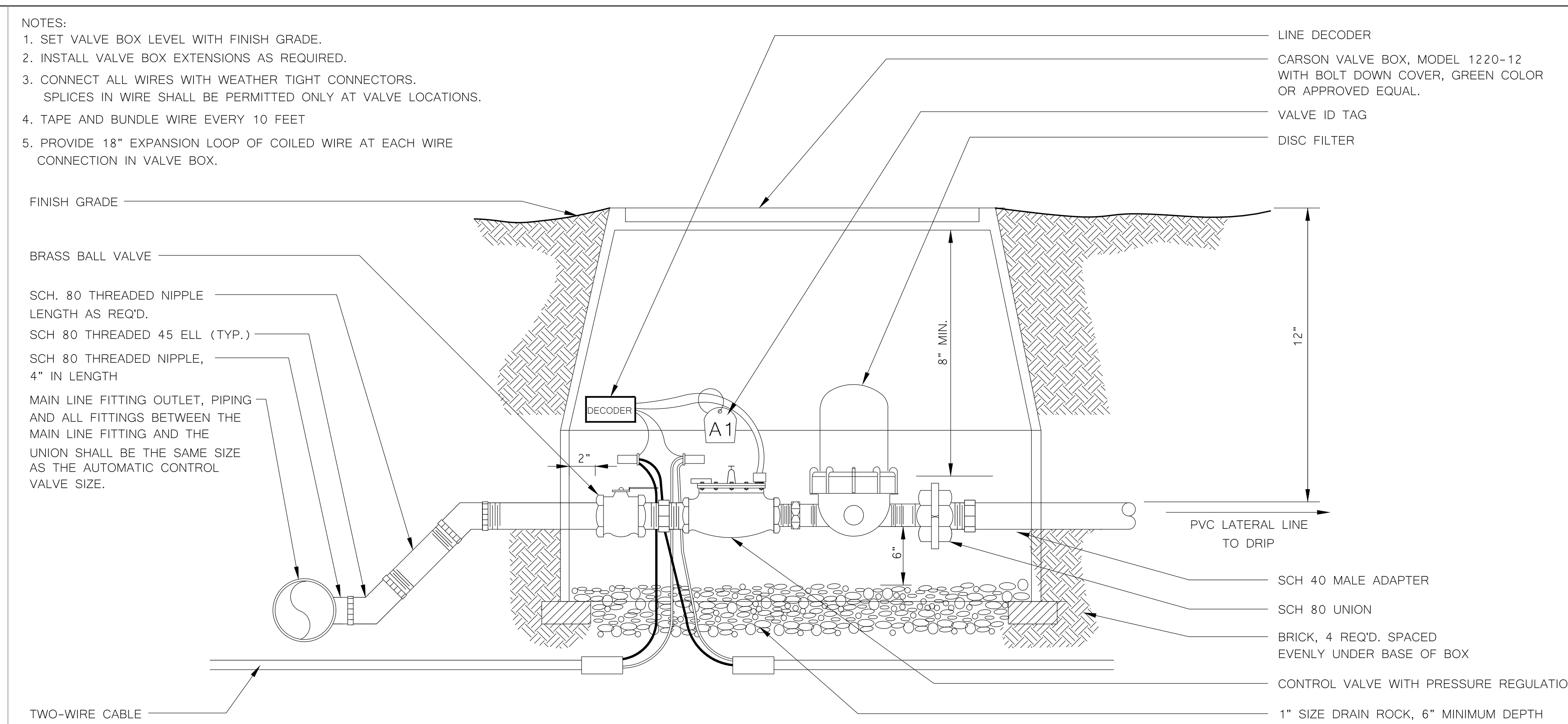
VALVE BOX, SETTINGS, AND CLEARANCES



COMPONENTS INSTALLATION

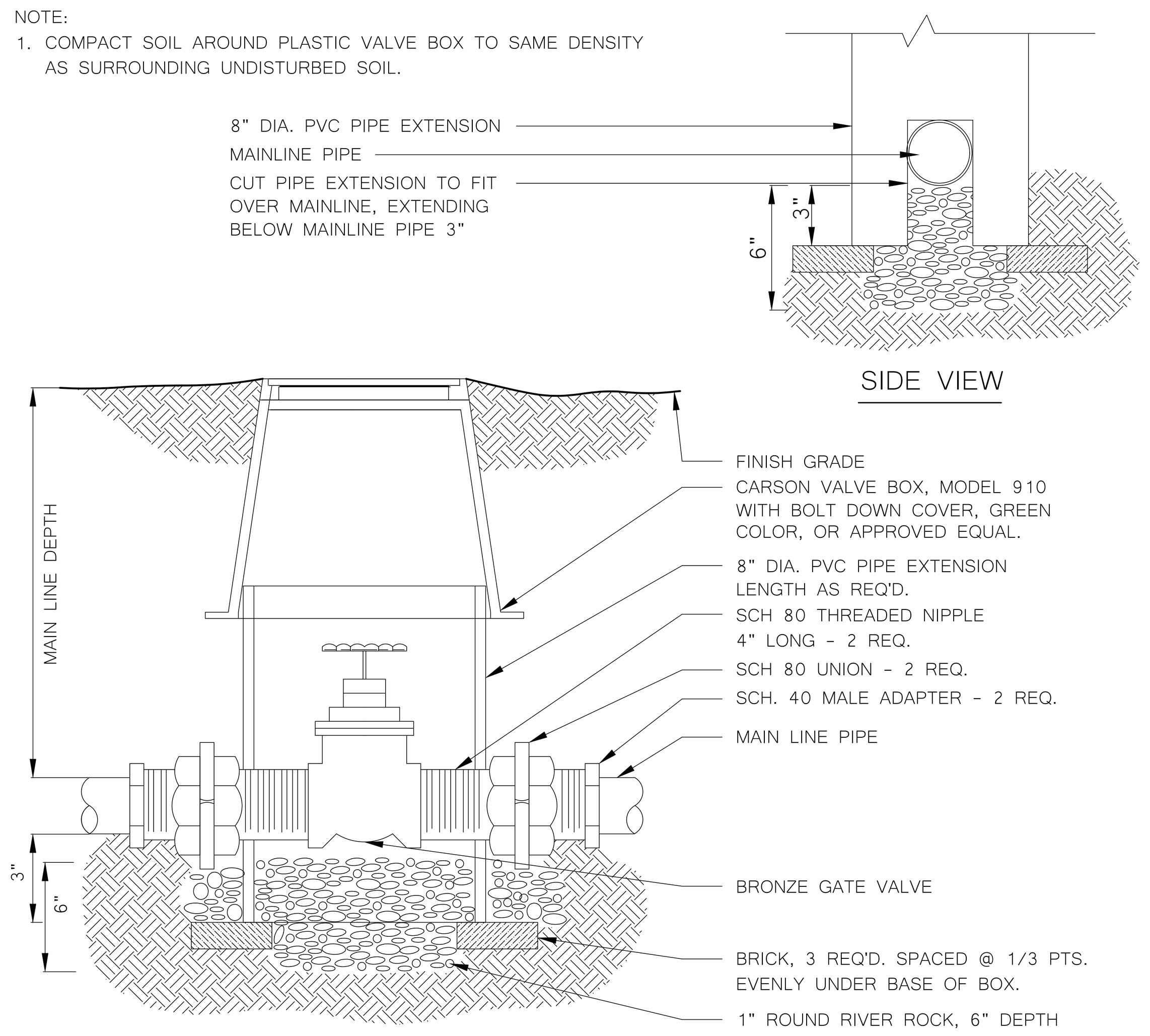
1 AUTOMATIC CONTROL VALVE/BALL VALVE WITH LINE DECODER DETAIL

NOTES:
1. SET VALVE BOX LEVEL WITH FINISH GRADE.
2. INSTALL VALVE BOX EXTENSIONS AS REQUIRED.
3. CONNECT ALL WIRES WITH WEATHER TIGHT CONNECTORS. SPLICES IN WIRE SHALL BE PERMITTED ONLY AT VALVE LOCATIONS.
4. TAPE AND BUNDLE WIRE EVERY 10 FEET
5. PROVIDE 18" EXPANSION LOOP OF COILED WIRE AT EACH WIRE CONNECTION IN VALVE BOX.



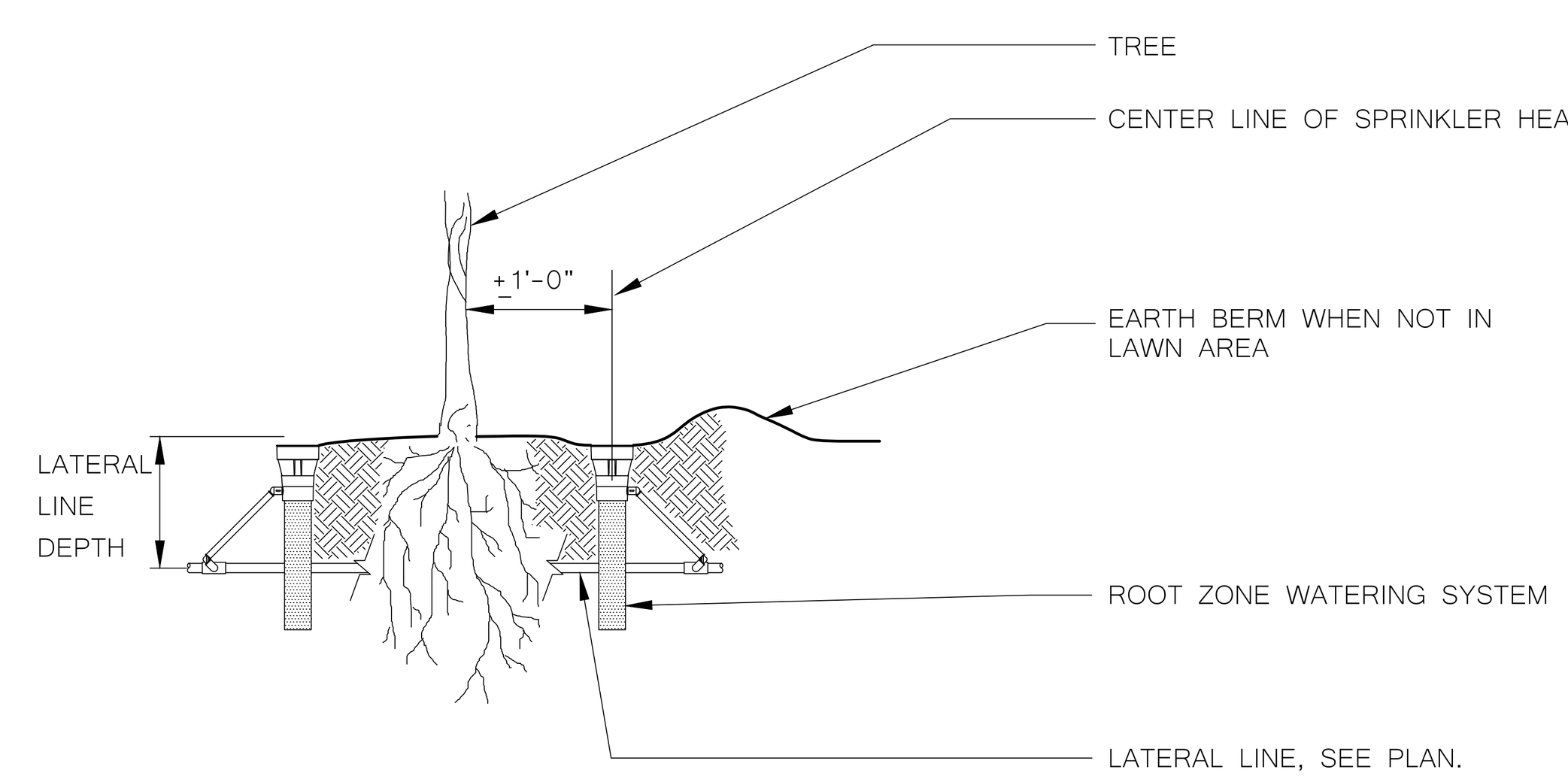
2 PRESSURE REGULATOR DRIP IRRIGATION VALVE DETAIL

NOTE:
1. COMPACT SOIL AROUND PLASTIC VALVE BOX TO SAME DENSITY AS SURROUNDING UNDISTURBED SOIL.



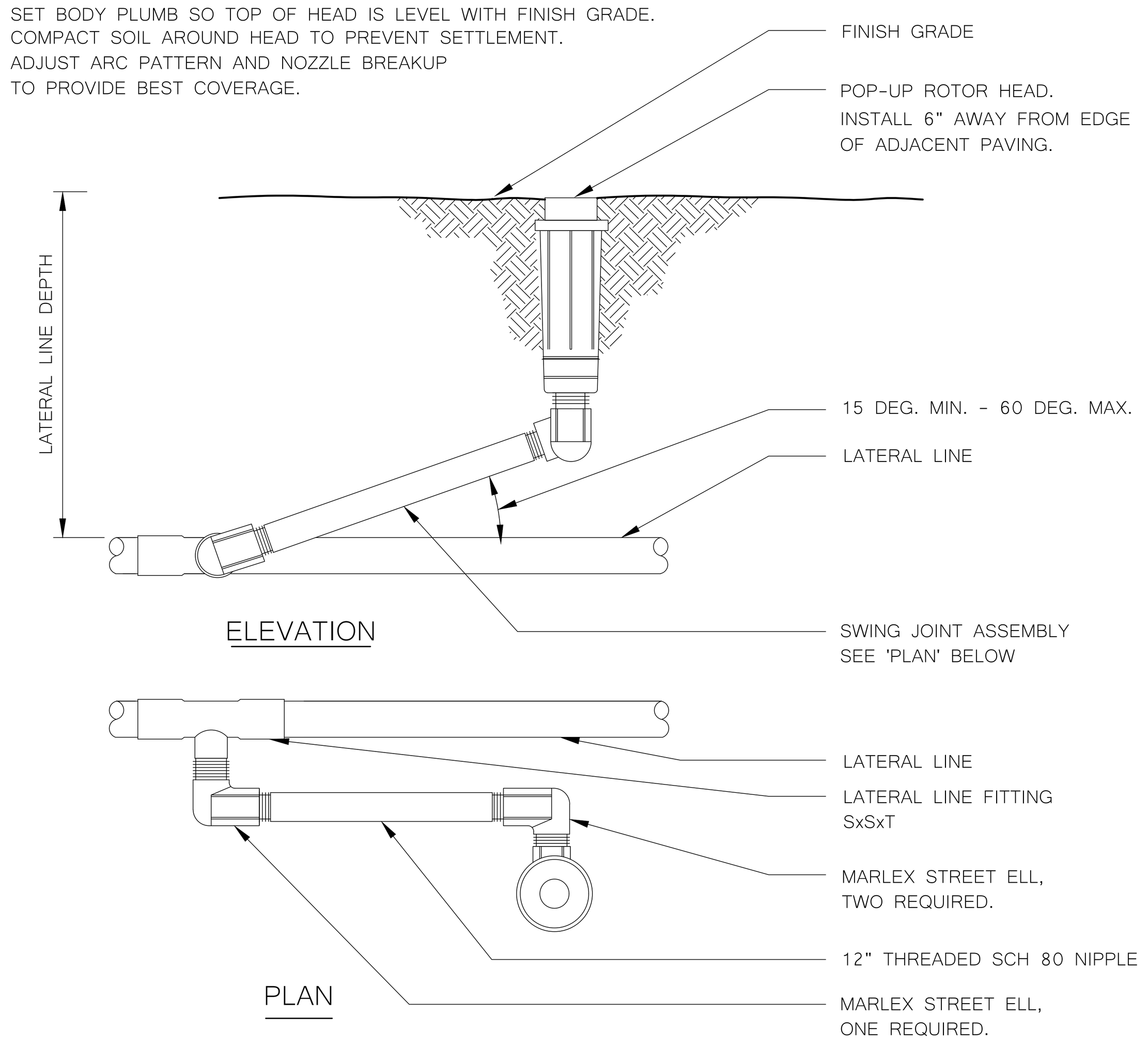
3 GATE VALVE DETAIL, 3" SIZE AND SMALLER

NOTES:
1. SEE TREE PLANTING DETAIL FOR ADDITIONAL INFORMATION.
2. INSTALL RZWS SLEEVE OVER TUBE TO HELP PREVENT SOIL INTRUSION.



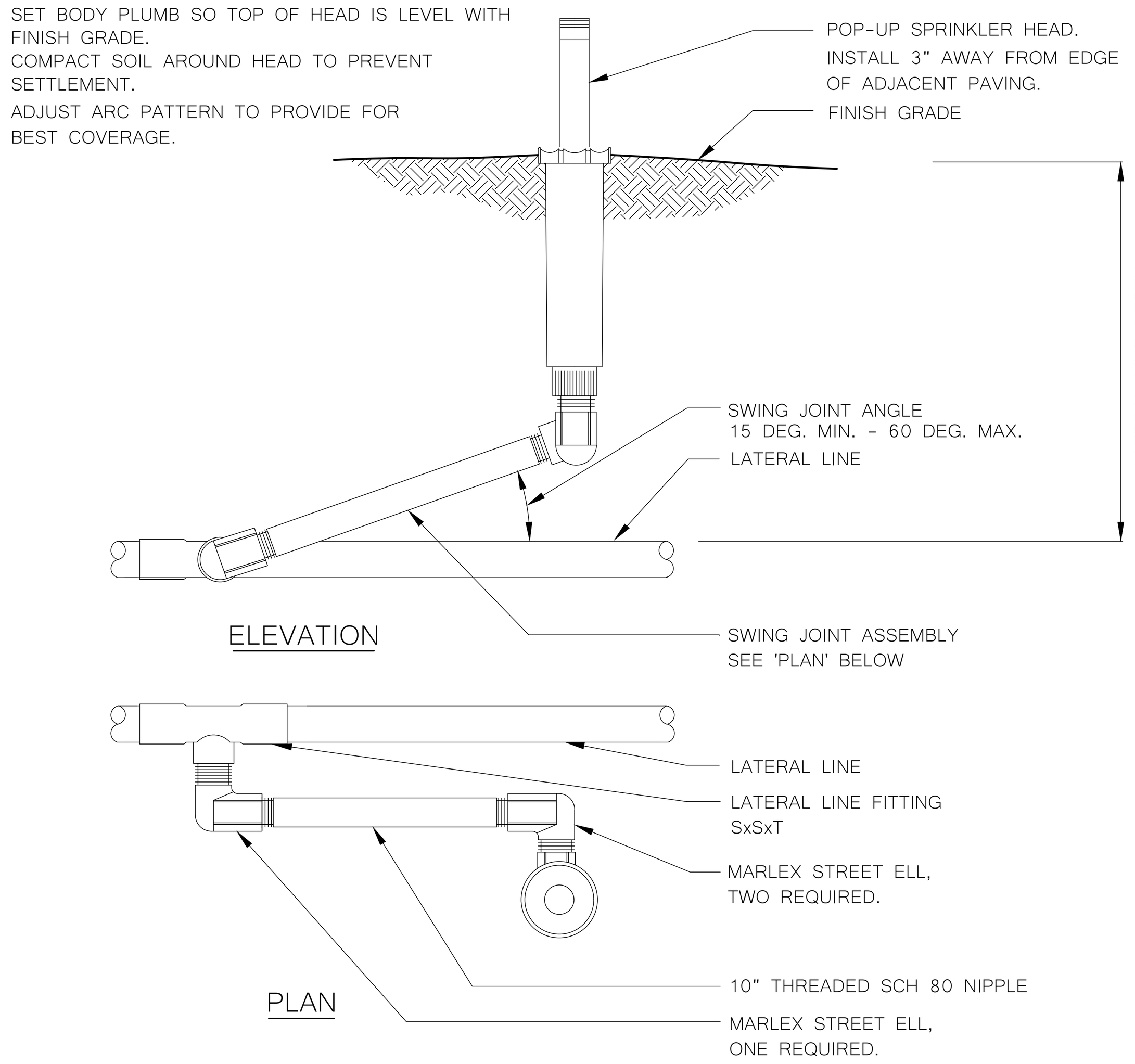
4 TREE BUBBLER HEAD DETAIL

NOTES:
1. SET BODY PLUMB SO TOP OF HEAD IS LEVEL WITH FINISH GRADE.
2. COMPACT SOIL AROUND HEAD TO PREVENT SETTLEMENT.
3. ADJUST ARC PATTERN AND NOZZLE BREAKUP TO PROVIDE BEST COVERAGE.

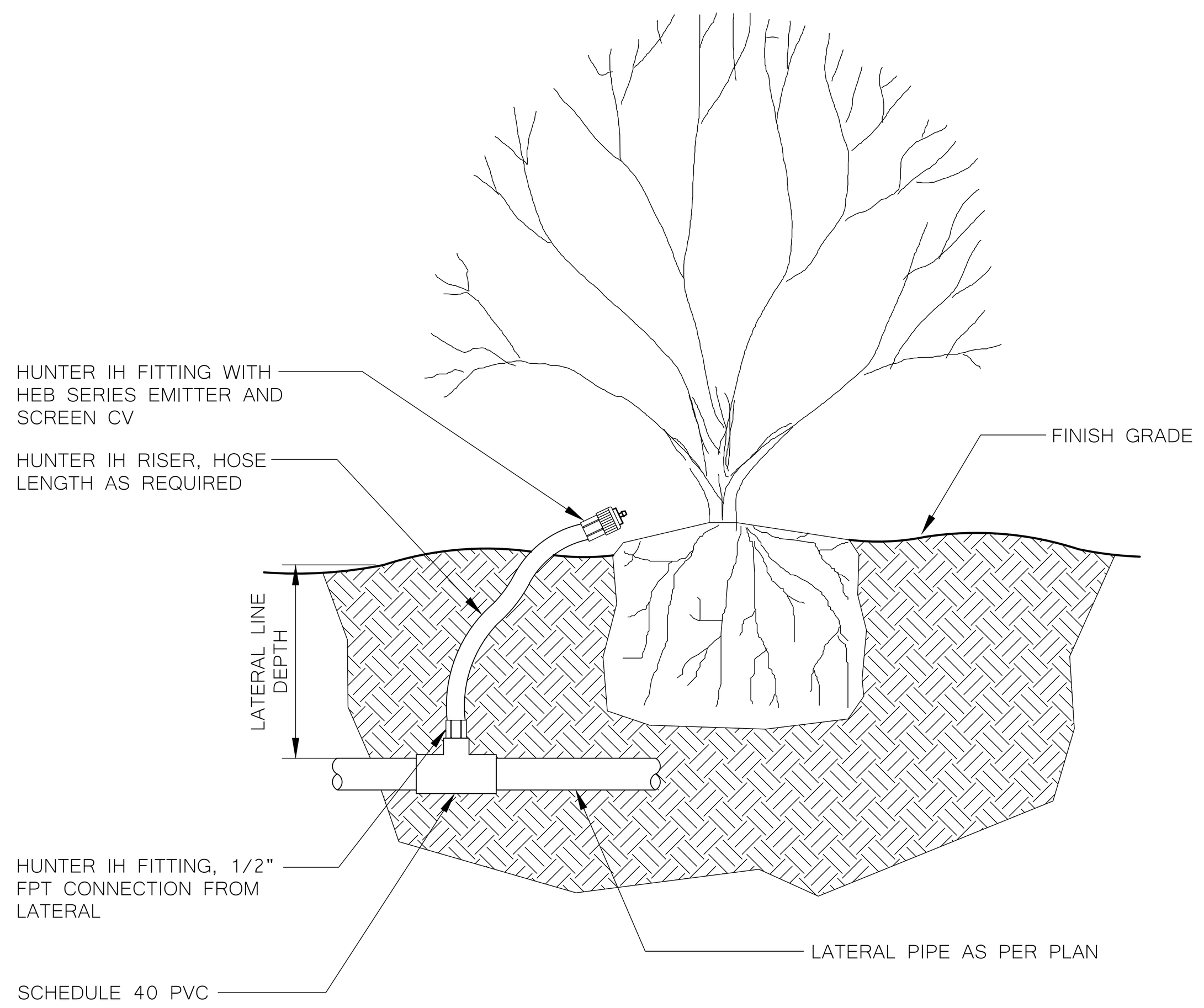


5 POP-UP ROTOR HEAD DETAIL

NOTES:
1. SET BODY PLUMB SO TOP OF HEAD IS LEVEL WITH FINISH GRADE.
2. COMPACT SOIL AROUND HEAD TO PREVENT SETTLEMENT.
3. ADJUST ARC PATTERN TO PROVIDE FOR BEST COVERAGE.

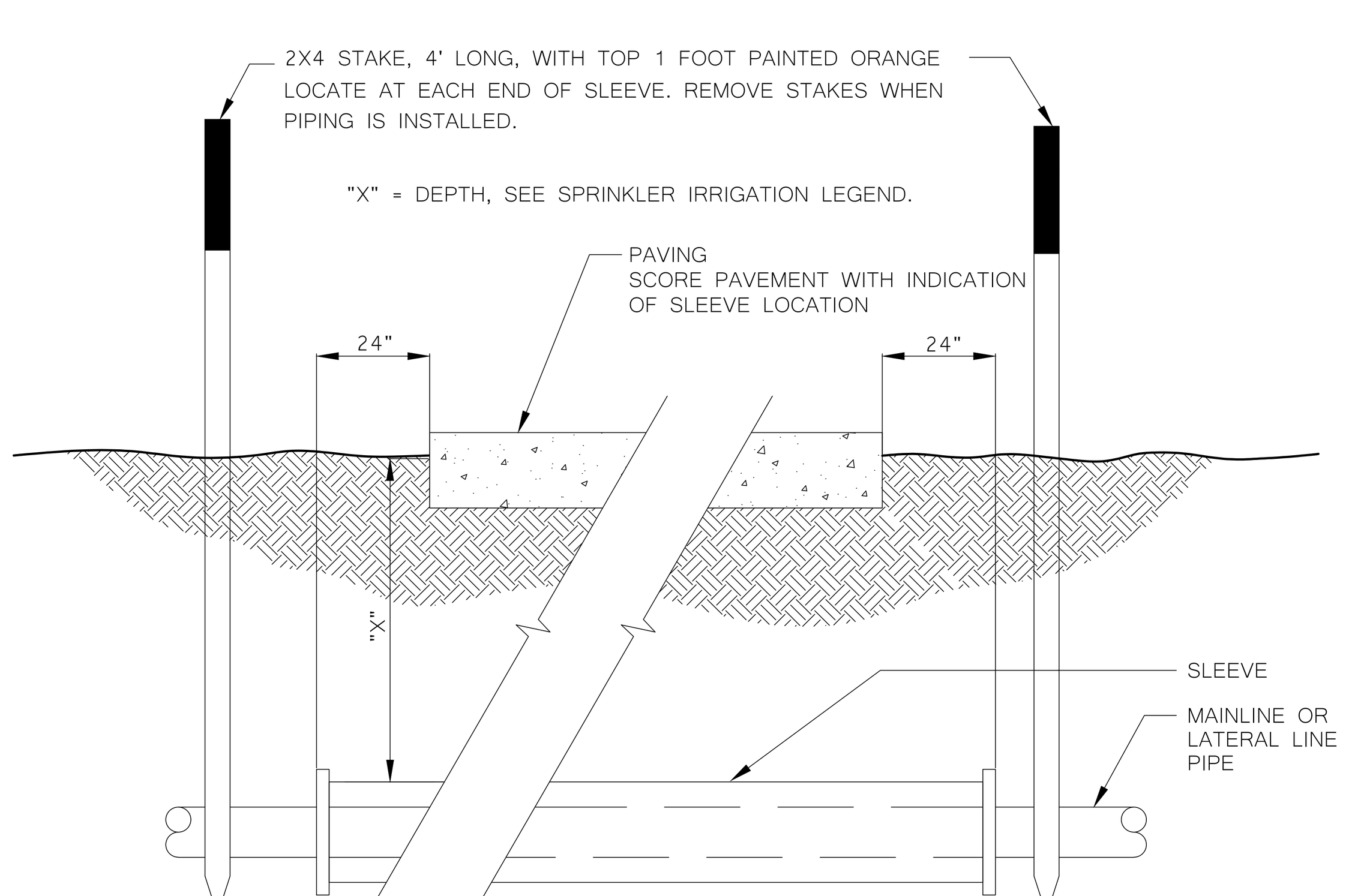


6 POP-UP SPRINKLER HEAD DETAIL



7 SHRUB BUBBLER DETAIL

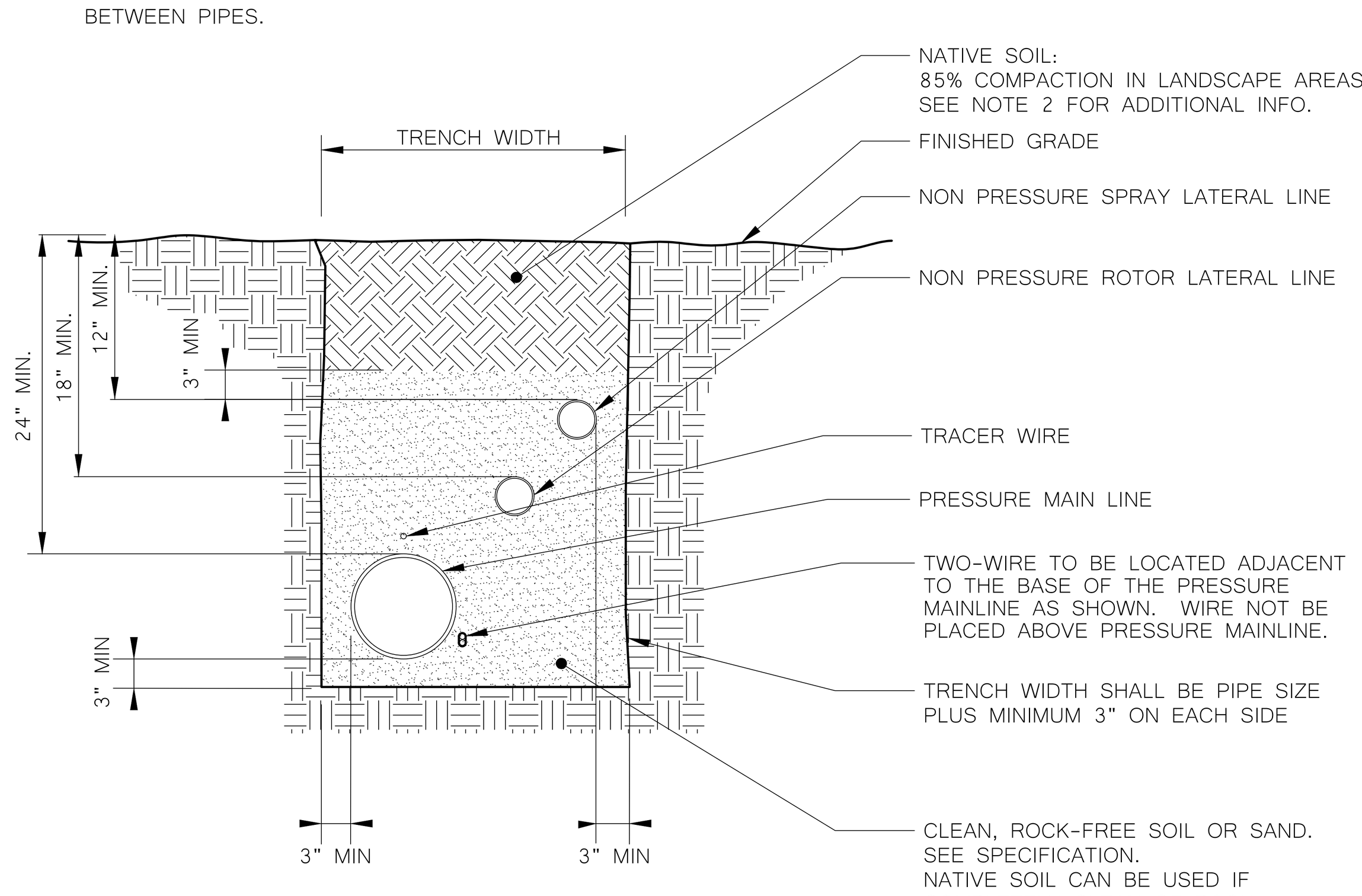
NOTES:
1. ALL PIPE AND FITTINGS TO BE SCHEDULE 40, P.V.C. SEE PLAN FOR LOCATION.
2. SLEEVES TO BE LARGE ENOUGH TO ACCEPT THE PIPE AND FITTINGS TO BE ENCASED.
3. PROVIDE A SEPARATE SLEEVE FOR EACH LATERAL OR MAIN CROSSING.
4. PROVIDE A SEPARATE SLEEVE FOR CONTROL WIRE.
5. TAPE ALL ENDS WITH DUCT TAPE TO PREVENT ENTRY OF SOIL.



SECTION

8 SLEEVE DETAIL

NOTES:
1. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.
2. WHEN TRENCHES ARE LOCATED UNDER PAVEMENT, COMPACTION RATE FOR THE BACKFILL SHALL COMPLY WITH THE COMPACTION RATES REQUIRED FOR THOSE PAVING SECTIONS.
3. PIPES TO HAVE A MINIMUM OF 6" HORIZONTAL SEPARATION WHEN PLACED IN THE SAME TRENCH ALONG WITH A MINIMUM OF 6" VERTICAL SEPARATION BETWEEN PIPES.



9 PIPE TRENCH DETAIL

rga+ A studio of HMC Architects

22-58

MTW group
LANDSCAPE ARCHITECTURE AND PLANNING
2707 K Street, Suite 201
Sacramento, CA 95816
916 369-3990

JOHN F. KENNEDY HS PARKING LOT

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT
SACRAMENTO, CA

2 ADDENUDUM #2 - 3/22/23

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LANDSCAPE IRRIGATION DETAILS

PROJECT NO.	3186-067-000
DATE:	12/20/2022
SHEET	L4.2 2

SHEET NOTES

1. SEE OVERALL SITE PLAN FOR (E) PANEL LOCATION(S).
2. PROVIDE TRAFFIC RATED (H/20 LOAD) COVER AND BOXES FOR ALL PULL BOXES UNLESS SPECIFICALLY NOTED OTHERWISE.
3. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING OR CONDUITS, ETC, AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY AN OTHER CONTRACTS. CONTRACTOR SHALL PERFORM AN UNDERGROUND SURVEY PRIOR TO EXCAVATION. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
4. EXISTING UNDERGROUND UTILITIES ARE PRESENT, BUT THEIR EXACT LOCATION ARE NOT KNOWN. CONTRACTOR SHALL LOCATE AND PROTECT BEFORE TRENCHING OR EXCAVATING IN ANY AREA. CONSULT UTILITY COMPANIES, "AS-BUILT" DRAWINGS, AND SCHOOL MAINTENANCE PERSONNEL FOR LOCATION OF EXISTING UNDERGROUND WORK. IF EXISTING PIPING OR UTILITIES ARE DAMAGED DURING CONSTRUCTION, CONTRACTOR SHALL REPAIR IMMEDIATELY AT OWN EXPENSE. NEW UNDERGROUND SHALL BE MODIFIED AS NECESSARY TO CONFORM TO EXISTING CONDITIONS.
5. INFORMATION GIVEN, CONCERNING EXISTING ELECTRICAL INSTALLATION IS AS EXACT AS COULD BE SECURED, BUT EXTREME ACCURACY IS NOT GUARANTEED. CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BIDS TO CONFIRM CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED

NUMBERED NOTES

1. DEMOLISH (E) TIME CLOCK AND CONTACTOR. REPLACE WITH (N) TIME CLOCK FOR LED LIGHTS. FEED (N) LIGHTS THROUGH (N) TIME CLOCK. RECONNECT (E) 120-VOLT CIRCUIT FROM DEMOLISHED TIME CLOCK FOR INPUT TO CIRCUIT TO (N) TIME CLOCK.
2. REMOVE (E) 20-AMP, 2-POLE CIRCUIT BREAKER AT POLES 10/12. PROVIDE (N) 20-AMP, 1-POLE CIRCUIT BREAKER IN THE PLACE OF POLE 10, MATCH EXISTING SHORT CIRCUIT RATING. PROVIDE BLANK COVER ON SPACE 12 AFTER THE REMOVAL OF THE 2-POLE CIRCUIT BREAKER.
3. INTERCEPT AND EXTEND (E) CIRCUIT TO (N) DEVICE AS INDICATED. PROVIDE (N) N16 PULL BOX.
4. REMOVE (E) 20-AMP, 2-POLE CIRCUIT BREAKER AT POLES 27/29. PROVIDE (N) 20-AMP, 1-POLE CIRCUIT BREAKER IN THE PLACE OF POLE 27, MATCH EXISTING SHORT CIRCUIT RATING. PROVIDE BLANK COVER ON SPACE 29 AFTER THE REMOVAL OF THE 2-POLE CIRCUIT BREAKER.
5. PROVIDE (2) 4" MT SPARE CONDUITS.
6. PROVIDE (2) 1" MT SPARE CONDUITS.
7. PROVIDE (4) 4" MT SPARE CONDUITS.
8. PROVIDE (4) 2" MT SPARE CONDUITS.
9. PROVIDE (N) PULLBOX WITH "ELECTRICAL" LABEL ON LID.
10. PROVIDE (N) PULLBOX WITH "SIGNAL" LABEL ON LID.
11. PROVIDE (1) 1" MT SPARE CONDUIT.
12. PROVIDE (6) 1" MT SPARE CONDUITS.
13. PROVIDE (N) PULLBOX WITH "ELECTRICAL" LABEL ON LID. BOXES AND ASSOCIATED CONDUITS ARE PROVISIONED FOR FUTURE EV CHARGERS. AVAILABLE POWER FEED TO BE DETERMINES AT THE TIME OF EV CHARGER EQUIPMENT INSTALLATION.

(E) PANEL 'HM'

(E) PANEL 'HD'

(E) PANEL 'HE'

TYPICAL UNLESS OTHERWISE NOTED - EXISTING DEVICES SHOWN SOLID ARE EXISTING TO REMAIN.

TYPICAL UNLESS OTHERWISE NOTED - DEVICES SHOWN DASHED SHALL BE DEMOLISHED. REMOVE ALL ASSOCIATED J-BOXES, CONDUITS, & CONDUCTORS. MAINTAIN CIRCUIT CONTINUITY TO DEVICES THAT REMAIN.

2 PARTIAL SITE PLAN - WEST PARKING LOT - ELECTRICAL
SCALE: 1/32" = 1' - 0"

1 PARTIAL SITE PLAN - EAST PARKING LOT - ELECTRICAL
SCALE: 1/32" = 1' - 0"

Know what's below. Call before you dig.

rga + A studio of HMC Architects

EDGE ELECTRICAL CONSULTING
1801 7th Street, Suite 150, Sacramento, CA 95811, 916.256.2460
1151 Harbor Bay Pkwy, Suite 123A, Alameda, CA 94502, 510.634.7200

Project Number J542 Contact KARLI

REGISTERED PROFESSIONAL ENGINEER TIMOTHY DUNNE LEE No. E 017376 ELECTRICAL STATE OF CALIFORNIA

03/22/2023

JOHN F. KENNEDY HS PARKING LOT

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT
SACRAMENTO, CA

0	Revision
1	Revision #1
2	Revision #2

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PARTIAL SITE PLAN - ELECTRICAL

PROJECT NO.
DATE:
SHEET
E-102

WallaceKuhl & ASSOCIATES
A Universal Engineering Sciences Company

Corporate Office
3050 Industrial Boulevard
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August 30, 2022

Sacramento City Unified School District
c/o Mr. Wayne Sjolund
Premier Management Group
wsjolund@pmgcm.com

Pavement Design Recommendations
JOHN F. KENNEDY HIGH SCHOOL PARKING LOT REPLACEMENT
6715 Gloria Drive
Sacramento, California
WKA No. 4630.2200147.0016

As requested, we have prepared a geotechnical engineering report for the proposed parking lot replacement project on the John F. Kennedy High School campus located at 6715 Gloria Drive in Sacramento, California. The purposes of our work have been to explore the existing on-site pavement and soil conditions, determine the soil subgrade quality supporting the existing pavements, and to provide geotechnical engineering conclusions and recommendations for the design and construction of new pavements. Our study has been complete in general accordance with our *Geotechnical Engineering Services Proposal*, dated June 14, 2022.

Our scope of services included the following:

1. Site reconnaissance;
2. Measurement of the existing asphalt concrete pavement and aggregate base sections at seven core locations;
3. Perform subsurface explorations, including hand augering and sampling the near surface soil at the core locations to depths ranging from about 3½ feet to 4½ feet below the ground surface (bgs);
4. Collection of bulk samples of anticipated pavement subgrade soils;
5. Laboratory testing of selected soil samples;
6. Engineering analyses; and,
7. Preparation of this report.

Figures and Attachments

This report contains a Vicinity Map as Figure 1, a Site Plan showing approximate core and hand auger locations as Figure 2. The results of the Resistance value (R-value) testing performed on the near-surface subgrade soils is contained in Figure 3.

Proposed Development

We understand the project will consist of the removal and replacement of the existing drive isles and parking area pavements on the school campus. We understand the new pavements will be asphalt concrete and will be used to support traffic loading equivalent to Traffic Indices (TIs) of 4.5 to 6.0. Concrete pavements may also be constructed at the site.

Field Exploration, Sampling and Testing

On August 5, 2022, our representatives cored through the existing asphalt concrete pavements at seven locations as shown in Figure 2. At the core locations, hand auger borings (HA1 through HA7) were extended to depths of about 2½ to 4½ feet below existing grades to observe the subgrade soil conditions and collect representative samples. The borings were backfilled with auger cuttings and the core locations were patched with concrete cement.

Representative bulk samples of the pavement subgrade soils were collected during our field exploration and returned to our laboratory for additional classification and testing. Two representative bulk samples of the subgrade soil were tested in accordance with California Test Method (CTM) 301 to determine R-values of the existing subgrade; the results are presented in Figure 3.

FINDINGS

Site Description

The project site is located on the John F. Kennedy High School campus located at 6715 Gloria Drive in Sacramento, California. The proposed pavement improvement areas are located within the existing asphalt concrete drive isles and parking areas along the northeastern portion of the site, east of the existing school buildings, and in the northwestern portion of campus, north of the track and football stadium.

The existing pavements are relatively flat. According to the United States Geological Survey (USGS) *Topographic Map of the Sacramento West Quadrangle*, dated 2022, the average ground surface elevation across the site is approximately +5 feet relative to mean sea level (msl).

Existing Pavement Sections

On August 5, 2022, seven cores and hand augers (HA1 through HA7) were performed within the existing asphalt concrete drive isles, and parking area pavements at the approximate locations shown in Figure 2. Measurements of the pavement sections revealed the existing pavement sections varied from about three to five inches of asphalt concrete over about one to eight inches of aggregate base. A summary of the existing pavement structural sections encountered at the core locations is provided in Table 1 below.

Table 1
Existing Asphalt Concrete Pavement Sections

Core/Hand Auger Location	Approximate Core Location (See Figure 2)	Asphalt Concrete Thickness (inches)	Aggregate Base Thickness (inches)
HA1	Drive Isle	5	3
HA2	Parking Area	5	4
HA3	Drive Isle	3½	8
HA4	Parking Area	4½	1
HA5	Drive Isle	3	2
HA6	Drive Isle	3½	8
HA7	Parking Area	3½	2

Subsurface Soil Conditions

At the core locations, hand auger borings were advanced to depths of approximately 2½ to 4½ feet below the existing ground surface at the locations (HA1 through HA7) indicated in Figure 2. In general, the soil conditions encountered below the existing pavement section consists of light brown, yellowish brown, brown and/or gray silty lean clay to the explored depths of 2½ to 4½ feet below the ground surface. Hand Auger HA5 had some sand present within the upper 2½ feet of the ground surface, which may be associated with utility trench backfill.

Groundwater Conditions

We did not encounter groundwater during our subsurface explorations on August 5, 2022. Review of available groundwater information, including previous subsurface exploration on the John F. Kennedy campus, indicates groundwater may be as high as about five feet below the existing ground surface.

CONCLUSIONS

Pavement Subgrade Quality

Based on the laboratory test results, the existing pavement subgrade soils are considered relatively poor to moderate quality materials for supporting asphalt concrete pavements. Laboratory testing of anticipated pavement subgrade soils indicates that these materials possess equilibrium R-values of 11 and 35 when tested in accordance with California Test 301 as shown in Figure 3. Previous R-value testing performed on the John F. Kennedy campus resulted in an R-value of 10.

Based on the recent laboratory test results, our experience on the site and nearby projects with similar soil types, and the anticipated mixing of soils during earthwork construction, we have used an R-value of 10 for our pavement design.

Our experience in the vicinity of the site suggests that chemical treatment of the near-surface soils can result in a substantial improvement to the support characteristics of the soils and reduce the thickness of the required aggregate base material for pavement sections. The performance of chemically stabilized soils is dependent on uniform mixing of the chemical agent (lime and/or cement) into the subgrade soils and providing a proper curing period following compaction. An experienced soil stabilization contractor, combined with a comprehensive quality control program, is essential to achieve the best results with lime stabilized soils.

Based on our experience in the area with chemical treatment of similar soil conditions an R-value of 50 may be used for design of pavements to be supported on a treated subgrade. Therefore, an R-value of 50 is appropriate for design of pavements at the site supported on treated near-surface soils.

Based on the soil conditions encountered at the core locations, lime will be required to adequately treat the near-surface soils. Additional recommendations regarding lime-treatment of the pavement subgrade soils are provided in the Pavement Design section of this report.

Pavement Subgrade Support

The results of our field investigation indicate the undisturbed site soils are capable of providing adequate support for the proposed asphalt concrete pavements provided the recommendations of this report are followed. Clearing operations to remove existing pavements, underground utilities, and any other existing improvements will disturb the underlying materials and create loose and variable soil conditions. Disturbed soils must be excavated to expose a firm base and the excavations widened, as necessary to provide equipment access, and backfilled with engineered fill to provide uniform support for the planned improvements. Engineered fill that is properly placed and compacted as recommended in this report also will be capable of supporting the proposed improvements. Alternatively, the pavement subgrade soils may be lime-treated in accordance with the recommendations of this report.

Existing Pavement Conditions

During our field exploration, we observed longitudinal, transverse, and alligator cracking within the asphalt concrete pavements. In general, the asphalt concrete pavements appeared to be in a poor condition. Asphalt concrete crack sealer appeared to have been utilized to patch some of the larger cracks in the pavements. Multiple asphalt patches were also observed throughout the site. The types of cracks observed are typically associated with pavement fatigue and overuse, likely associated with an under designed pavement section, as well as infiltrating surface water, loose backfill, or other factors.

Based on the pavement sections encountered at the core locations, laboratory R-value testing of the pavement subgrade soils, and the required pavement sections needed to support the anticipated traffic, in our opinion the existing pavements are not considered capable of supporting the existing or anticipated traffic loading conditions at the site.

Therefore, we recommend the asphalt concrete pavements be removed and replaced as noted in this report. Asphalt concrete overlays were considered for this site; however, based on the variable existing asphalt concrete pavement sections, an overlay is not considered an appropriate repair option.

Soil Suitability for Engineered Fill Construction

The on-site soils encountered at the core locations are considered suitable for use in engineered fill construction, provided these materials are free of significant organics, concrete, rubble, and other deleterious material, and are at moisture contents capable of achieving the desired degree of compaction. Clean aggregate base materials recovered from pavement demolition also may be used in engineered fill construction. The existing asphalt concrete may

be pulverized and used as engineered fill and/or aggregate sub-base provided the material is pulverized to less than three inches in largest dimension and mixed to form a compactable mixture.

Effects of Groundwater on Site Development

Based upon the anticipated groundwater levels in the area, we conclude that a permanent groundwater level should not be a significant factor in the design or construction of new pavements.

Infiltrating surface run-off water from seasonal moisture during the winter and spring months will create saturated surface soil conditions. *Soils located beneath pavements also will be at elevated moisture contents regardless of the time of year of construction and also require drying.* It is probable that grading operations attempted following the onset of winter rains and prior to prolonged drying periods will be hampered by high soil moisture contents. Such soils, intended for use as engineered fill, will require a prolonged period of dry weather and/or considerable aeration to reach a moisture content suitable to achieve proper compaction. Wet soils should be anticipated and considered in the construction means and methods, and schedule for this project.

Excavation Conditions

The surface and near-surface soils at the site should be readily excavatable with conventional earthmoving and trenching equipment. Subsurface remnants from previous development of the site may be encountered and can be slow to excavate with a standard, rubber-tired backhoe; however, experience has shown that excavators can remove these materials with moderate effort.

Based on the soil conditions encountered at the boring locations, excavations less than five feet deep associated with the proposed construction, should stand vertically for short periods of time (i.e., less than one day) required for construction, unless cohesionless, saturated or disturbed soils are encountered. These unstable conditions may result in caving or sloughing; therefore, the contractor should be prepared to brace or shore the excavations, if necessary.

Excavations or trenches exceeding five feet in depth that will be entered by workers should be sloped, braced or shored to conform to current Occupational Safety and Health Administration (OSHA) requirements. The contractor must provide an adequately constructed and braced shoring system in accordance with federal, state and local safety regulations for individuals working in an excavation that may expose them to the danger of moving ground.

Temporarily sloped excavations should be constructed no steeper than a one horizontal to one vertical (1H:1V) inclination. Temporary slopes likely will stand at this inclination for the short-term duration of construction, provided significant pockets of loose and/or saturated granular soils are not encountered. Flatter slopes would be required if these conditions are encountered.

Excavated materials should not be stockpiled directly adjacent to an open excavation to prevent surcharge loading of the excavation sidewalls. Excessive truck and equipment traffic should be avoided near excavations. If material is stored or heavy equipment is stationed and/or operated near an excavation, a shoring system must be designed to resist the additional pressure due to the superimposed loads.

RECOMMENDATIONS

The recommendations presented below are appropriate for typical construction in the late spring through fall months. The on-site soils likely will be saturated by rainfall in the winter and early spring months and will not be compactable without drying by aeration or the addition of lime (or a similar product) to dry the soils. Should the construction schedule require work during wet conditions, additional recommendations can be provided, as conditions dictate.

Site preparation should be accomplished in accordance with the provisions of this report. A representative of the Geotechnical Engineer should be present during site grading to evaluate compliance with the recommendations provided in this report. The Geotechnical Engineer of Record referenced herein should be considered the Geotechnical Engineer that is retained to provide geotechnical engineering observation and testing services during construction.

Site Clearing

Initially, the proposed pavement areas should be cleared of existing pavements, below-grade structures (if any), landscaping, utilities designated for removal, vegetation, debris, and other deleterious materials to expose existing undisturbed native soils. Where practical, the clearing operations should extend at least two feet beyond the limits of the proposed pavement and building areas.

Existing asphalt concrete pavements can be pulverized and mixed with the underlying base materials and used as engineered fill, Class 2 aggregate base, or aggregate subbase depending on the quality of the material. Asphalt concrete pulverized to less than 1½ inches in largest dimension would be considered suitable for reuse as aggregate subbase. Pulverized asphalt concrete may be mixed with existing aggregate base to provide an aggregate subbase for use below the asphalt concrete section.

Any existing underground utilities designated to be removed or relocated should include removal of the trench backfill. As an alternate, abandoned utilities below proposed pavement areas may be left in place and fully grouted provided the abandoned utility is situated at least 2½ feet below the final subgrade level to reduce the potential for "hard spots". Since the condition of the backfill in existing utility trenches is unknown, the soils in existing utility trenches where the utility is abandoned and/or grouted in place should be evaluated to confirm these soils are adequate for support of engineered fill and/or pavements. Unsuitable and/or unstable existing trench backfill should be removed and replaced with engineered fill.

Existing tree roots (larger than about ½ inch in diameter) exposed following the removal of existing pavements should be removed from within the pavement areas and at least five feet beyond the pavement edge. If trees are located within 10 feet of the pavement edge (including curbs and gutters), a root barrier should be installed between the tree and pavement. A landscape architect should be consulted to determine the type and size of root barrier required for individual trees.

All trees and other vegetation designated for removal should include the rootballs and roots larger than ½ inch in diameter. Adequate removal of roots and other debris may require laborers and handpicking to clear the subgrade soils to the satisfaction of the Geotechnical Engineers representative.

Depressions resulting from clearing operations, as well as any disturbed, saturated, or organically contaminated soils, as identified by the Geotechnical Engineer's representative should be cleaned out to firm, undisturbed soils and the excavation widened as necessary to allow access with compaction equipment. Depressions should be backfilled with engineered fill in accordance with the recommendations in this report.

Subgrade Preparation

Following site clearing operations, areas to receive fill, achieved by excavation or remain at grade, should be scarified to a depth of six inches, thoroughly moisture conditioned to at least the optimum moisture content and uniformly compacted to at least 90 percent relative compaction. The relative compaction and moisture content should be based on the ASTM D1557 maximum dry unit weight and optimum moisture content. The upper six inches of final pavement subgrades should be compacted to at least 95 percent relative compaction.

Compaction should be performed using a heavy, self-propelled, sheepsfoot compactor capable of achieving the required compaction. Difficulty in achieving subgrade compaction may be an indication of loose, soft or unstable soil conditions associated with prior site activities. If these conditions exist, the loose, soft or unstable materials should be excavated to firm and stable soil

conditions. The resulting excavations should be backfilled with engineered fill as described in the Engineered Fill Construction section of this report.

Final pavement subgrade preparation and compaction should be performed just prior to placement of aggregate base, after underground utility construction is complete, if any. Final pavement subgrades should be stable under construction traffic prior to aggregate base placement, and be protected from disturbance or desiccation until covered by aggregate base.

To help identify unstable pavement subgrades, a proof-roll test should be performed on the exposed subgrades prior to placement of aggregate base with a fully-loaded, water truck. The proof-roll test should be observed by the Geotechnical Engineer's representative. Disturbed subgrade soils may require additional moisture conditioning, scarification and recompaction, depending on the level of disturbance.

Soils located beneath existing pavements will likely be at elevated moisture contents regardless of the time of year of construction and will require drying and/or chemical amendment to reach a moisture content suitable for proper compaction. Wet soils should be anticipated and considered in the construction schedule for the project.

Chemical Treatment Alternative

The on-site soils encountered at the site are anticipated to react well with the addition of quicklime (high-calcium or dolomitic). If chemical-treatment of the near-surface soils is selected, we recommend the final subgrade elevation beneath pavement areas be mixed with lime at a minimum spread rate of at least 4½ pounds of quicklime per square foot of treated soil, at a depth sufficient to produce a compacted chemically-treated layer 12 inches thick. Final subgrade for pavement is the surface in which aggregate base is placed.

Chemical treatment of the subgrade soils should be performed in general conformance with *Caltrans Standard Specifications*, latest edition. Chemically-treated soil for support of pavements should be moisture conditioned to at least two percent above the optimum moisture content and compacted to not less than 95 percent relative compaction and maintained in that condition until covered by aggregate base.

If undisturbed native soils are to be lime-treated, the scarification and compaction procedures outlined in the Subgrade Preparation section of this report are not required within the upper 12 inches of the final subgrade, prior to lime-treatment.

Subgrade Preparation in Unstable Soil Conditions

If unstable soil conditions are encountered during subgrade preparation, stabilizing the subgrade soils may be required to achieve a stable pavement subgrade. Typical recommendations for stabilizing unstable soil subgrades include: cross-rip, blade, and aerate; removal and replacement; geogrid stabilization; and/or, chemical treatment. Stabilization recommendations will depend on the actual conditions encountered at the time of construction and should be determined by the project team, including the Geotechnical engineer.

Cross-rip, Blade and Aerate

If unstable soils are encountered at the design subgrade elevations, we recommend that the exposed subgrade soils be thoroughly cross-ripped to a depth of at least 12 inches and allowed to dry back to a workable moisture content to allow proper compaction. The amount of aeration and cross-ripping will depend on the moisture content of the exposed soils and the prevailing weather conditions. Following drying and aeration, the subgrade should be compacted in accordance with the approved project plans and specifications to at least 90 percent of the ASTM D1557 maximum dry density and at least 95 percent within the upper six inches of the final pavement subgrade.

If waiting for the soil to dry naturally is not an acceptable option at the time of subgrade preparation, alternate stabilization techniques such as removal and replacement, geogrid stabilization, and/or chemical treatment may be explored as noted below.

Removal and Replacement and/or Geogrid Stabilization

Once the final subgrade level has been achieved, the subgrade has been observed and tested by our representative, and waiting for the soil to dry naturally is not an acceptable option, the unstable areas should be overexcavated to a firm, stable subgrade. The exposed soils should be compacted in accordance with the approved project plans and specifications.

If unstable soils are encountered at depths greater than 12 inches below the final subgrade, consideration may be given to using geogrid stabilization. Following the overexcavation of the upper 12 inches of unstable soils, the exposed subgrade should be statically rolled to smooth out the bottom of the excavation and a geogrid reinforcement (Tensar BX1100, Tensar TX140, Mirafi 5XT, or equivalent) should be placed directly on the exposed subgrade. Overlap of the geogrid reinforcement should be provided in accordance with the manufacturer's recommendations.

The excavation should be restored to subgrade elevation with Class 2 aggregate base or engineered fill placed directly on the compacted subgrade or geogrid reinforcement. The aggregate base and/or engineered fill should be compacted to at least 90 percent of the ASTM D1557 maximum dry density, using a heavy, self-propelled sheepsfoot compactor. The upper six inches of the final pavement subgrade should be compacted to at least 95 percent relative compaction.

Chemical Treatment

Alternatively, consideration may be given to stabilizing the subgrade using chemical treatment. Chemical treatment of unstable subgrade soils should consist of mixing, as a minimum, the upper 12 inches of subgrade soils with lime and/or cement, depending on the exposed soil conditions and level of instability observed during construction. Deeper mixing as well as increased lime/cement content will be necessary in areas of severely pumping soils. The exact depth of mixing and the amount of chemical required to dry and stabilize the subgrade will vary depending on the degree of saturation and instability of the soil. Therefore, it is crucial that an experienced stabilization contractor be involved in determining the proper amount of product to be added and the appropriate mixing depth to achieve the desired results.

After the materials have been thoroughly mixed, the treated mixture should be compacted to at least 95 percent relative compaction at a moisture content at least two percent over optimum conditions. Compaction should be achieved using a heavy, self-propelled sheepsfoot compactor (Rex or equivalent). Mixing and compaction should be in general accordance with the applicable sections of the *Caltrans Standard Specifications*, latest edition.

The performance of chemically stabilized soil is critically dependent on uniform mixing of the product into the subgrade soils and providing for a proper curing period following the amendment procedure. Heavy precipitation, equipment and/or product storage, and construction vehicle traffic will tend to de-stabilize the treated subgrade soils and affect its performance.

Engineered Fill Construction

On-site soils encountered in our subsurface explorations are suitable for use as engineered fill, provided they do not contain rubbish, rubble, other deleterious debris, and organics, and are at a moisture content capable of achieving the desired compaction. Soil clods larger than three inches in largest dimension should be broken down or excluded from the backfill material.

Imported fill materials, if required, should be compactable, granular soils with an Expansion Index of 50 or less when tested in accordance with ASTM D4829, an R-value of at least 10, and

contain no particles greater than three inches in maximum dimension. Imported soils that will be lime-treated should be clayey in nature and similar to the on-site soil conditions. In addition, we recommend the contractor supply certification for any imported fill materials (other than aggregate base) that designates the fill materials do not contain known contaminants per Department of Toxic Substances Control's (DTSC) guidelines for clean fill and have corrosion characteristics within acceptable limits. Imported soils should be approved by the Geotechnical Engineer prior to being transported to the site.

Imported fill soils (if required) should be placed in lifts not exceeding six inches in compacted thickness, with each lift being moisture conditioned to at least the optimum moisture content and uniformly compacted to at least 90 percent relative compaction, as defined above.

The upper six inches of final pavement subgrades should be uniformly moisture conditioned to at least the optimum moisture content, and uniformly compacted to at least 95 percent relative compaction, regardless of whether final grade is completed by excavation or engineered fill.

All earthwork operations should be accomplished in accordance with the recommendations contained within this report. It is essential that the Geotechnical Engineer's representative be present on a regular basis during earthwork operations to verify that the recommendations in this report and the project plans and specifications are satisfied.

Utility Trench Backfill

Bedding and initial backfill for utility construction should conform to the pipe manufacturer's recommendations and/or the applicable sections of the governing agency standards. General trench backfill should consist of native soils, or suitable fill material, backfilled in maximum 12-inch thick loose lifts, moisture conditioned to at least the optimum moisture content, and compacted to at least 90 percent of the maximum dry density as determined by ASTM D1557.

Within the upper six inches of final subgrade for pavements, trench backfill should be compacted to at least 95 percent relative compaction.

If the top 12 inches of the pavement subgrade consists of chemically-treated soils, the upper 12 inches of trench backfill should consist of controlled density fill (CDF) or aggregate base compacted to at least 95 percent relative compaction.

Pavement Design

The pavement sections presented below have been calculated based on the R-value test results, assumed TI's considered typical for the anticipated traffic loading conditions, and the procedures contained within Chapters 600 to 670 of the *California Highway Design Manual*, *Sixth Edition*. An R-value of 10 was used for design of asphalt concrete pavements at the site. The project civil engineer should determine the appropriate TI based on anticipated traffic conditions. We can provide additional pavement sections for other TI's as necessary.

Table 2a
Untreated Pavement Design Alternatives

Traffic Index (TI)	Pavement Use	R-value = 10		
		Type B Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)	Aggregate Subbase (inches)
4.5	Automobile Parking	2½*	9	--
		2½*	4	5
6.0	Light Truck Traffic, Entry/Exit Drives and Fire Lanes	2½	14	--
		2½	4	11
		3½*	12	--
		3½*	4	9

* = Asphalt concrete thickness contains the Caltrans safety factor.

If the subgrade is lime-treated in accordance with the recommendations of this report, an R-value of 50 may be used for design of asphalt concrete pavements at the site in accordance with the table below.

Table 2a
Chemically Treated Pavement Design Alternatives

Traffic Index (TI)	Pavement Use	R-value = 50		
		Type B Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)	Aggregate Subbase (inches)
4.5	Automobile Parking	2½*	4	--
		2½*	--	4
6.0	Light Truck Traffic, Entry/Exit Drives and Fire Lanes	2½	6	--
		2½	2	4
		3½*	4	--
		3½*	--	4

* = Asphalt concrete thickness contains the Caltrans safety factor.

We emphasize that the performance of the pavement is critically dependent upon uniform and adequate compaction of the soil subgrade, as well as all engineered fill and utility trench backfill within the limits of the pavements. We recommend that pavement subgrade preparation (i.e. scarification, moisture conditioning and compaction) be performed after underground utility construction is completed, if any, and just prior to aggregate base placement. All aggregate base should be moisture conditioned to the optimum moisture content and uniformly compacted to at least 95 percent of the maximum dry density.

In the summer heat, high axle loads coupled with shear stresses induced by sharply turning tire movements can lead to failure in asphalt concrete pavements. Therefore, we recommend that consideration be given to using the Portland cement concrete (PCC) pavements in areas subjected to concentrated heavy wheel loading, such as truck turning areas and in front of trash enclosures. These PCC pavements should be at least six inches thick, supported on at least six inches of compacted Class 2 aggregate base or subbase if the subgrade is not treated and at least four inches of Class 2 aggregate base or subbase if the subgrade is lime-treated.

We suggest the concrete slabs be constructed with thickened edges in accordance with American Concrete Institute (ACI) design standards. Reinforcing for crack control, if desired, should consist of No. 4 reinforcing bars placed on maximum 24-inch centers each way throughout the slab. Reinforcement must be located at mid-slab depth to be effective. Joint spacing and details should conform with the current Portland Cement Association (PCA) or ACI guidelines. Portland cement concrete should achieve a minimum compressive strength of 3500 pounds per square inch at 28 days.

Pavement subgrades must be stable and unyielding under heavy wheel loads of construction equipment. A proof-roll test using a fully loaded water truck should be performed prior to placement of aggregate base to help identify areas that are unstable, as observed by our representative. Areas that are found to be unstable should be excavated to firm, undisturbed materials and restored to grade with compacted aggregate base. Material quality and construction of the structural section should conform to the applicable provisions of the *Caltrans Standard Specifications*, latest edition.

Site Drainage

Final pavement grading should be accomplished to provide positive drainage of surface water away from the pavements and structures, prevent ponding of water adjacent to the pavements and structures, and channel runoff water to appropriate drainage facilities. Where possible, a positive surface gradient of at least two percent sloping away from the pavements and structures should be provided for a distance of at least 10 feet away from the edge of the pavements and structures.

Efficient drainage of all surface water to avoid infiltration and saturation of the supporting aggregate base and subgrade soils is important to pavement performance. Weep holes could be provided at drainage inlets, located at the subgrade-base interface, to allow accumulated water to drain from beneath the pavements.

Geotechnical Engineering Observation and Testing During Earthwork

Site preparation should be accomplished in accordance with the recommendations of this report. Geotechnical testing and observation during construction is considered a continuation of our geotechnical engineering investigation. Wallace-Kuhl & Associates should be retained to provide testing and observation services during site preparation and earthwork construction at the project to verify compliance with this geotechnical report and the project plans and specifications, and to provide consultation as required during construction. These services are beyond the scope of work authorized for this investigation.

In the event that Wallace-Kuhl & Associates is not retained to provide geotechnical engineering observation and testing services during construction, the Geotechnical Engineer retained to provide these services should indicate in writing that they agree with the recommendations of this report, or prepare supplemental recommendations as necessary. A final report by the "Geotechnical Engineer" should be prepared upon completion of the project.

LIMITATIONS

Our recommendations are based upon the information provided regarding the proposed project, combined with our analysis of site conditions revealed by the field exploration and laboratory testing programs. We have used our best engineering judgment based upon the information provided and the data generated from our investigation. This report has been prepared in substantial compliance with generally accepted geotechnical engineering practices that exist in the area of the project at the time the report was prepared. No warranty, either expressed or implied, is provided.

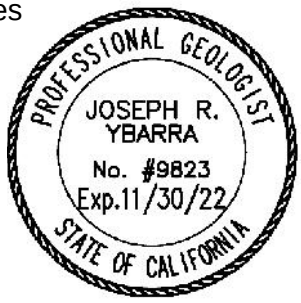
If the proposed construction is modified or re-sited; or, if it is found during construction that subsurface conditions differ from those we encountered at the core/hand auger locations, we should be afforded the opportunity to review the new information or changed conditions to determine if our conclusions and recommendations must be modified.

We emphasize that this report is applicable only to the proposed construction and the investigated site, and should not be utilized for construction on any other site.

The conclusions and recommendations of this report are considered valid for a period of three years. If design is not completed and construction has not started within three years of the date of this report, the report must be reviewed and updated if necessary.

We appreciate the opportunity to provide our services. Please contact me if you have any questions.

Wallace-Kuhl & Associates



Joseph R. Ybarra
Project Geologist

Matthew S. Moyneur
Senior Engineer

Attachments: Figure 1 – Vicinity Map
Figure 2 – Site Plan
Figure 3 – Resistance Value Test Results

Spatial Data provided by Esri, NOAA, and USGS.
Projection: NAD 1983 2011 StatePlane California II FIPS 0402 Ft US

WallaceKuhl & ASSOCIATES
A Universal Engineering Sciences Company

VICINITY MAP

JOHN F. KENNEDY HIGH SCHOOL
PARKING LOT REPLACEMENT

Sacramento, California

FIGURE	1
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MSM
DATE	08/2022
4630.2200147.0016	

▲ Approximate Hand Auger Location

Approximate Site Boundary

N

0 100 200

Feet

Aerial imagery provided by Esri.
Projection: NAD 1983 2011 StatePlane California II FIPS 0402 Ft US

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SITE PLAN

JOHN F. KENNEDY HIGH SCHOOL
PARKING LOT REPLACEMENT

Sacramento, California

FIGURE	2
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MSM
DATE	08/2022
4630.2200147.0016	

RESISTANCE VALUE TEST RESULTS

(California Test 301)

MATERIAL DESCRIPTION: Yellowish brown to gray brown, silty clay

LOCATION: HA1 (1' - 3')

Specimen No.	Dry Unit Weight (pcf)	Moisture @ Compaction (%)	Exudation Pressure (psi)	Expansion (dial, inches x 1000)	Expansion (psf)	R Value
1	114	16.5	597	1	4	9
2	112	17.2	445	0	0	24
3	111	18.0	279	0	0	47

R-Value at 300 psi exudation pressure = 11

MATERIAL DESCRIPTION: Yellowish brown to brown, silty sandy clay

LOCATION: HA5 (1' - 3')

Specimen No.	Dry Unit Weight (pcf)	Moisture @ Compaction (%)	Exudation Pressure (psi)	Expansion (dial, inches x 1000)	Expansion (psf)	R Value
1	112	16.5	335	16	69	40
2	114	16.8	272	2	9	29
3	114	16.0	446	29	126	48

R-Value at 300 psi exudation pressure = 35