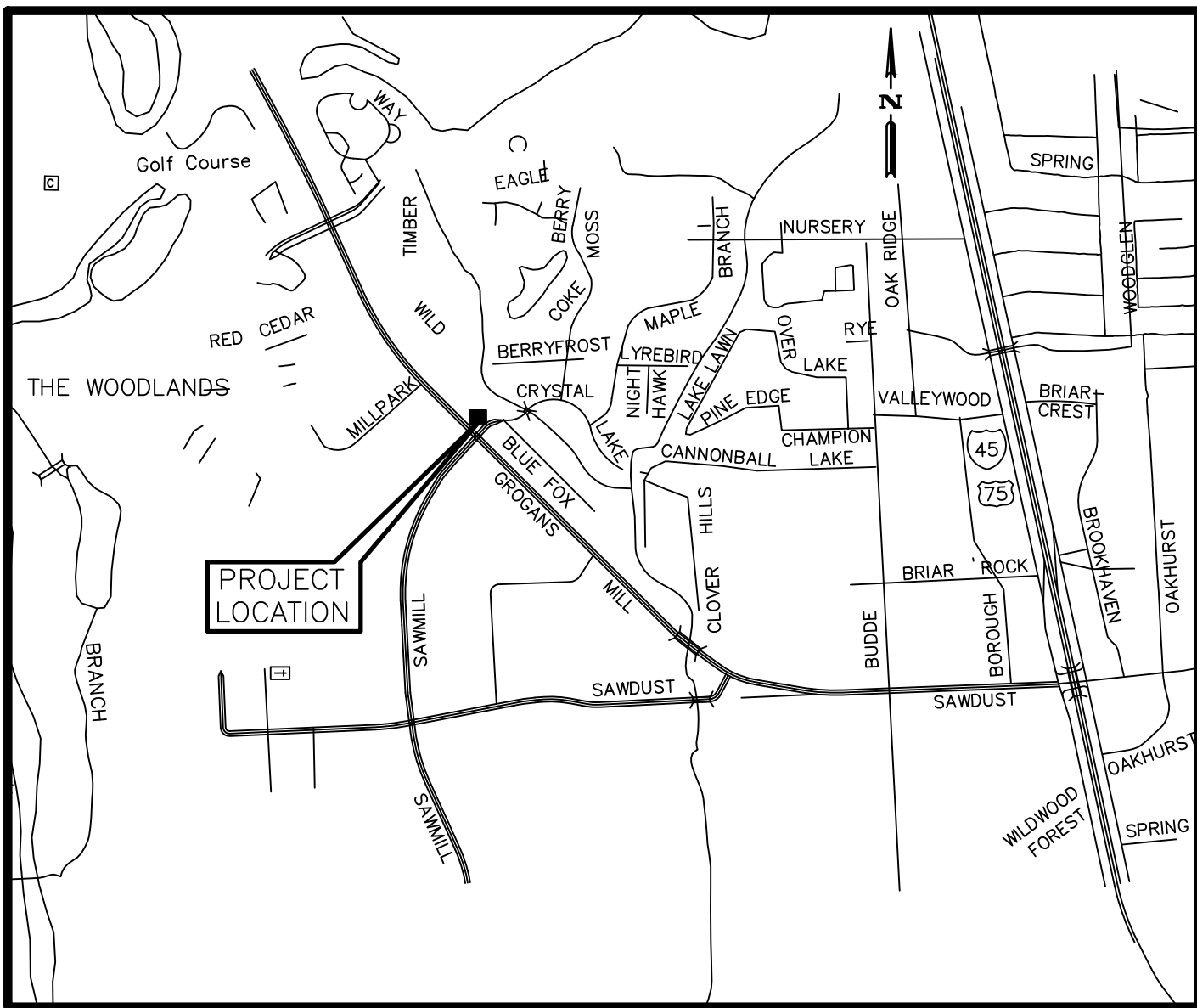


SJRA - WOODLANDS DIVISION
K:\POU\CA\04446228-SJRA Lift Station Rehab\5-DWG\Sheets\2019 Paving and Fencing Set\G-COVER-SUB-01.dwg Aug 29, 2019 - 3:05pm Justin Irton

SAN JACINTO RIVER AUTHORITY
WOODLANDS DIVISION
LIFT STATION NO. 4
PAVING AND GRADING PLAN
CSP NO. 17-015
CONTRACT NO. 17-073

INDEX OF SHEETS

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C1.1	COVER SHEET
C1.2	GENERAL NOTES
C1.3	TREE PROTECTION
C1.4	OVERALL SITE PLAN
C1.5	SITE AND GRADING PLAN
C1.6	CONSTRUCTION DETAILS



LOCATION MAP
N.T.S.
KEY MAP
#251-V

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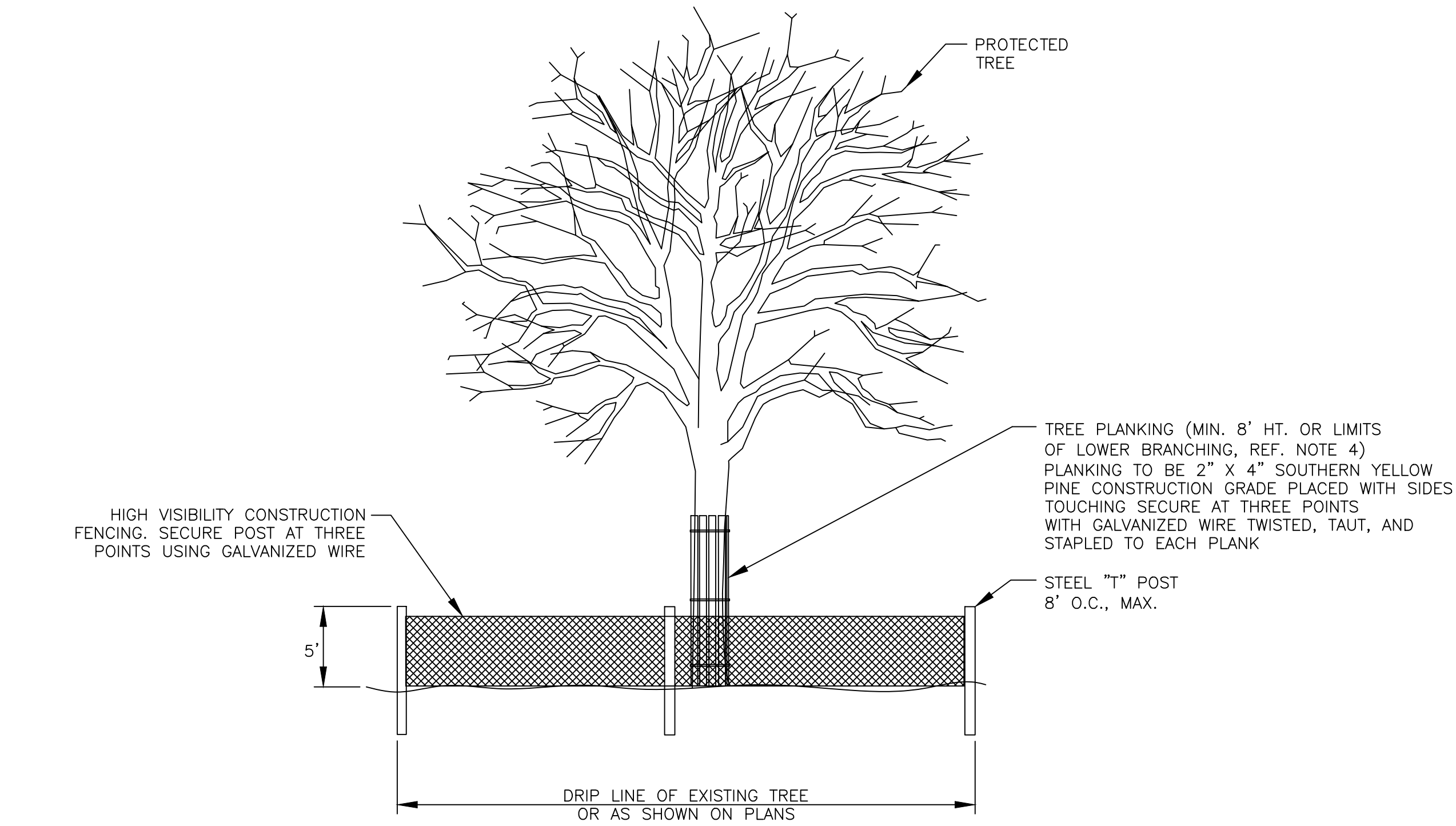
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COVER

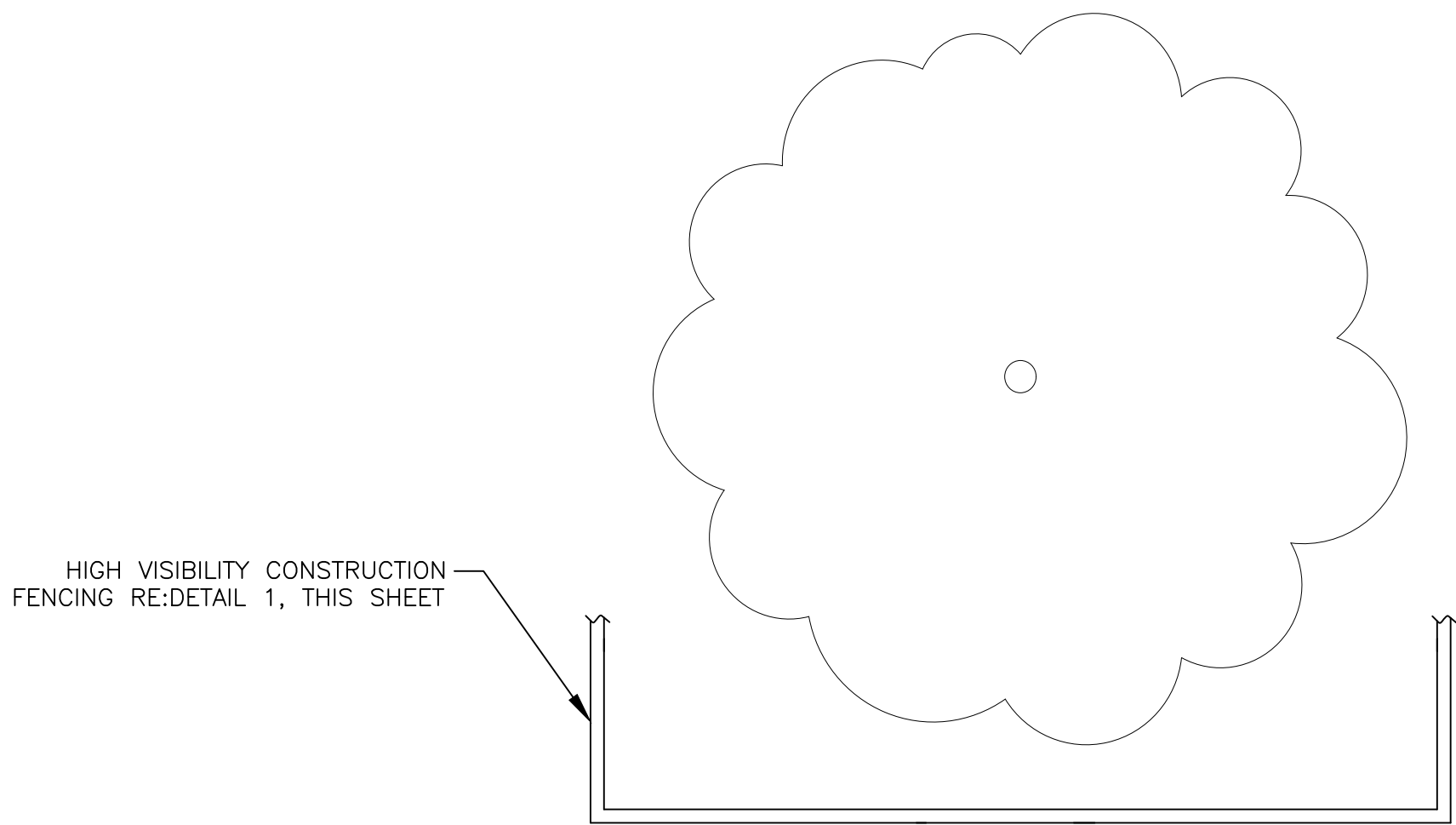
SHEET

C1.1

SJRA - WOODLANDS DIVISION
K:\YOU_Civil\064446208_SJRA Lift Station Rehab\5_DWG\Sheets\2019_Paving and Fencing Set\5-TREE P&F.dwg Aug 29, 2019--3:06pm Justin.Linton



1 TREE PROTECTION DETAIL



2 TREE PROTECTION DETAIL

NOTES:

- ALL TREES WITHIN THE PROPOSED TEMPORARY CONSTRUCTION EASEMENTS OR PERMANENT LIFT STATION EASEMENT OR LIFT STATION PROPERTY SHALL BE PROTECTED THROUGHOUT CONSTRUCTION WITH TREE PROTECTION.
- TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO MOBILIZATION.
- FENCING SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES AND WILL BE LOCATED AT THE OUTERMOST LIMITS OF THE TREE BRANCHES (DRIPLINE). WHEN THE DRIPLINE IS LOCATED ENTIRELY WITHIN THE PROJECT TEMPORARY CONSTRUCTION EASEMENT (TCE). WHEN THE DRIPLINE IS LOCATED PARTIALLY OUTSIDE THE TCE LIMITS, FENCING SHALL ONLY BE INSTALLED AT THOSE PORTIONS OF THE DRIPLINE LOCATED WITHIN THE TCE. NO FENCING SHALL BE INSTALLED OUTSIDE THE TCE. THE DRIPLINE DEFINES THE 'ROOT ZONE'. WITHIN THE LIMITS OF FENCING, THE CONTRACTOR SHALL PREVENT THE FOLLOWING FROM OCCURRING WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OWNER'S REPRESENTATIVE:
 - SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIALS.
 - ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN 3" CUT OR FILL) OR TRENCHING NOT REVIEWED OR AUTHORIZED.
 - WOUNDS TO EXPOSED ROOTS, TRUNK, OR LIMBS BY MECHANICAL EQUIPMENT.
 - OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CONCRETE TRUCK CLEANING, AND FIRES.
- WHERE EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN 4 FEET TO A TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF 8' (OR TO THE LIMITS OF THE LOWER BRANCHING) AS INDICATED ON TREE PROTECTION DETAILS.
- ALL GRADING WITHIN PROTECTED ROOT ZONE AREAS SHALL BE DONE BY HAND TO MINIMIZE ROOT DAMAGE AND SOIL COMPACTION. PRIOR TO GRADING, RELOCATE PROTECTIVE FENCING TO 2 FEET BEHIND THE GRADE CHANGE AREA. GRADE SHALL REMAIN UNCHANGED WHERE POSSIBLE.
- ANY ROOT SEVERED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN 2 DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES DRYING OF THE ROOT DUE TO EVAPORATION.
- TREES IMPACTED BY CONSTRUCTION ACTIVITIES SHALL BE WATERED THOROUGHLY ONCE A WEEK DURING PERIODS OF HOT AND/OR DRY WEATHER. TREE CROWNS SHALL BE SPRAYED WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
- NO LANDSCAPE TOPSOIL DRESSING GREATER THAN 3" MAXIMUM SHALL BE PERMITTED WITHIN THE DRIPLINE OF TREES. NO PERMANENT SOIL OR MULCH IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
- PRUNING SHALL BE PERFORMED BY THE CONTRACTOR TO PROVIDE CLEARANCE FOR STRUCTURES OR CONSTRUCTION ACTIVITIES. PRUNING SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS, ONLY WITH PRIOR APPROVAL FROM AUTHORITY'S ENGINEER. ALL PRUNING MUST BE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE NAA PRUNING STANDARDS), AND BY AN EXPERIENCED AND QUALIFIED ARBORIST WHOSE PRIMARY BUSINESS IS TREE CARE.
- PROVIDE CORRECTIVE PRUNING AT THE COMPLETION OF CONSTRUCTION TO REMOVE ANY BROKEN OR DAMAGED LIMBS, UNDER THE DIRECTION OF THE AUTHORITY'S ENGINEER.
- IF REQUIRED, ROOT PRUNE BY TRENCHING A CLEAN 4" WIDE X 24" DEEP CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH IRRIGATION TRENCHER TO MINIMIZE DAMAGE TO REMAINING ROOTS. MARK AND REVIEW TRENCH LINE WITH AUTHORITY'S ENGINEER PRIOR TO TRENCHING.
- AS SOON AS 4" WIDE X 24" DEEP TRENCH IS CUT, EXPOSED ROOTS SHALL BE HAND CUT TO CREATE CLEAN ROOT CUTS. AS SOON AS HAND CUTS ARE COMPLETE, BACKFILL TRENCH WITH A SANDY LOAM TOPSOIL PLACED IN 6" LIFTS, AND COMPACTED AS REQUIRED BY SPECIFICATIONS.
- IN AREAS WHERE LIME STABILIZATION ABUTS OR ENCROACHES UPON ROOT ZONES, AND WHERE ROOT PRUNING IS CALLED FOR, INSTALL 10-MIL. PLASTIC SHEETING TO FULL DEPTH OF ROOT PRUNING TRENCH AND 6" OVER TOP. CUT AND REMOVE EXPOSED PLASTIC AT COMPLETION OF WORK.

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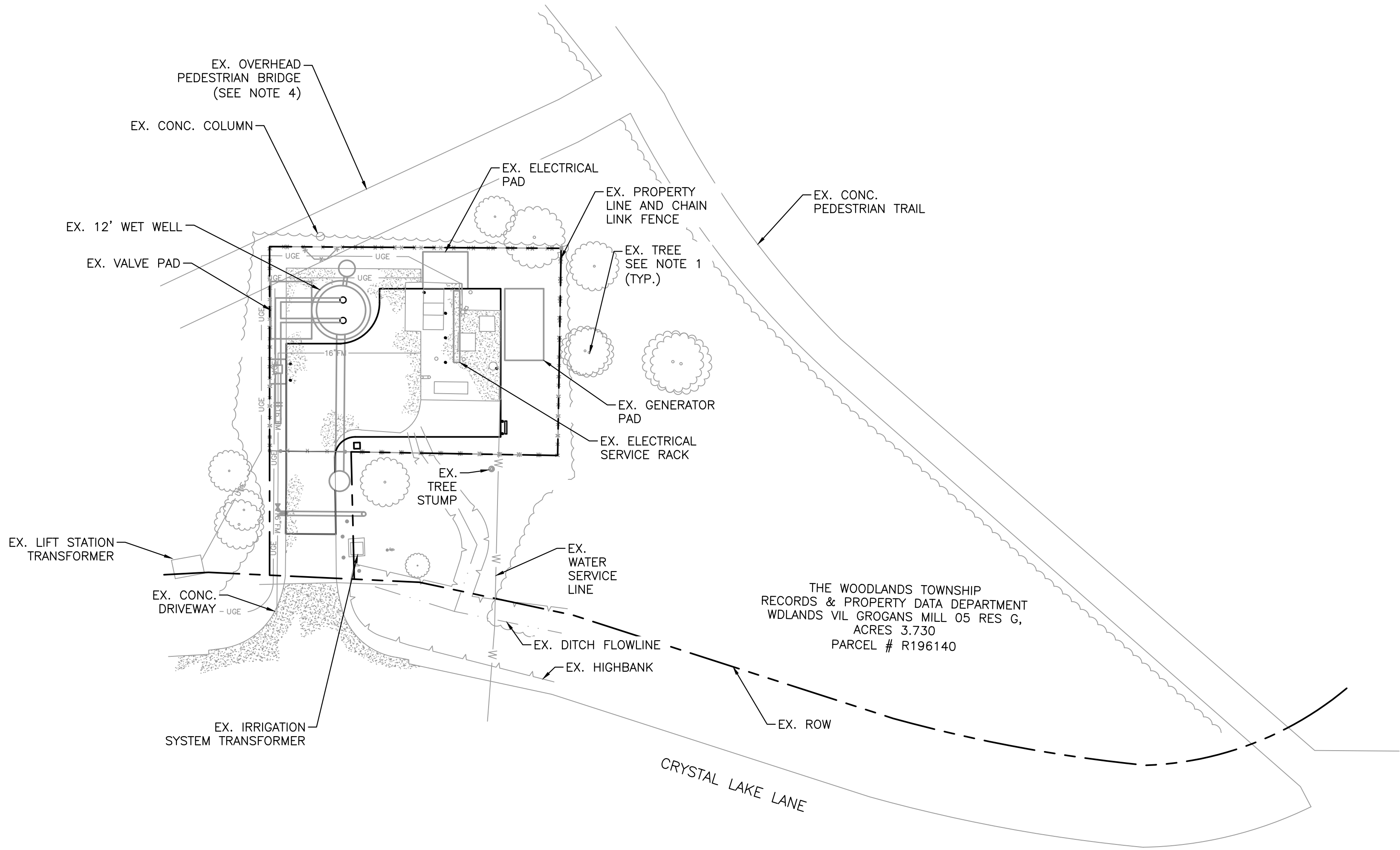
SJRA LIFT STATION NO. 4
PAVING AND GRADING
PLAN

ISSUE	DATE	DESCRIPTION
SJRA PROJECT NO: WDP0084.1016.2N001		
KH PROJECT NO: 064446211		
DRAWN BY: JUL		
CHECKED BY: CCC		
SCALE: AS NOTED		

TREE PROTECTION DETAILS

SHEET
C1.3

SJRA - WOODLANDS DIVISION
K:\000_Lm\064446211_SJRA Lift Station Rehab\5_DWG\Sheets\2019_Paving and Fencing Set\C-PL-OVER-01_PAF.dwg Aug 29, 2019-3:07pm Justin Jinton



LEGEND

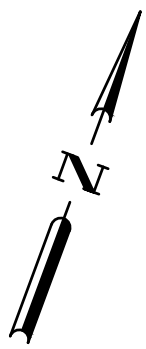
—X" W—	EXISTING WATER LINE
—X" WW—	EXISTING WASTEWATER LINE
—X" FM—	EXISTING WASTEWATER FORCE MAIN
—X" SD—	EXISTING STORM SEWER LINE
—GAS—	EXISTING GAS LINE
—UGE—	EXISTING UNDERGROUND ELECTRIC
—X—X—X—	EXISTING CHAIN LINK FENCE
—X—X—X—	EXISTING BRUSH LINE
SS	EXISTING SANITARY SEWER MANHOLE
(Tree Symbol)	EXISTING TREE
---	PROPOSED TEMPORARY CONSTRUCTION SECURITY FENCE
---	TEMPORARY CONSTRUCTION EASEMENT
---	EX. ROW
---	EX. PROPERTY LINE

NOTES

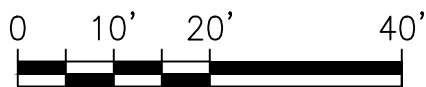
1. NO TREE SHALL BE REMOVED WITHOUT PRIOR APPROVAL FROM THE INSPECTOR AND SJRA. TREES SHALL BE PROTECTED ACCORDING TO THE TREE PROTECTION DETAILS ON SHEET C1.3.
2. IF EXISTING FENCING OR BARRIERS ARE BREACHED OR REMOVED FOR PURPOSES OF CONSTRUCTION, CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY SECURITY FENCING EQUAL TO EXISTING THROUGHOUT CONSTRUCTION.
3. ANY DAMAGE TO EXISTING ROADS, SIDEWALKS, OVERHEAD PEDESTRIAN BRIDGE, OR TRAILS/WALKWAYS SHALL BE REPAIRED AND RESTORED, TO PRE-CONSTRUCTION CONDITIONS OR BETTER, BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE SJRA OR THE WOODLANDS TOWNSHIP.
4. EXISTING OVERHEAD PEDESTRIAN BRIDGE IS OWNED AND MAINTAINED BY THE WOODLANDS TOWNSHIP. CONTRACTOR SHALL NOTIFY THE WOODLANDS TOWNSHIP A MINIMUM OF 48 HOURS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
5. EXISTING ELEVATION OF OVERHEAD PEDESTRIAN BRIDGE IN THE AREA OF THE PROPOSED TEMPORARY CONSTRUCTION EASEMENT, 6' MINIMUM EXISTING CLEARANCE FROM NATURAL GROUND TO BOTTOM OF OVERHEAD PEDESTRIAN BRIDGE.
6. CONTRACTOR MUST MAINTAIN FULL SITE ACCESS FOR SJRA PERSONNEL THROUGHOUT THE DURATION OF CONSTRUCTION.
7. EXISTING TRAILS/WALKWAYS CANNOT BE CANNOT BE BLOCKED DURING TYPICAL SCHOOL ZONE HOURS (7:15 AM – 9:00 AM AND 2:45 PM – 4:15 PM).
8. EXISTING TRAILS/WALKWAYS MAY ONLY BE BLOCKED OUTSIDE OF SCHOOL ZONE HOURS FOR SHORT PERIODS (LESS THAN AN HOUR) TO ALLOW FOR EQUIPMENT AND MATERIALS TO BE MOVED TO AND FROM THE SITE. WARNING SIGNS AND BARRICADES, ADVANCED NOTICE OF CLOSURE, MAINTENANCE OF ALTERNATE ROUTES, ETC. SHALL BE PLACED AND MAINTAINED PER TEXAS MUTCD, 2011 EDITION, REVISION 2.

CAUTION!!

THE UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND FOR INFORMATION ONLY. ADDITIONAL UTILITIES MAY EXIST WITHIN THE WORK AREA AND MAY NOT BE INDICATED ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL & VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ALL UTILITIES CAUSED BY THE CONTRACTOR'S OPERATION.



SCALE: 1" = 20'
(PLOTING 22"x34")



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WOODLANDS DIVISION**



**SJRA LIFT STATION NO. 4
PAVING AND GRADING
PLAN**

ISSUE	DATE	DESCRIPTION
SJRA PROJECT NO: WDP0084.1016.2N001		

KH PROJECT NO: 064446211

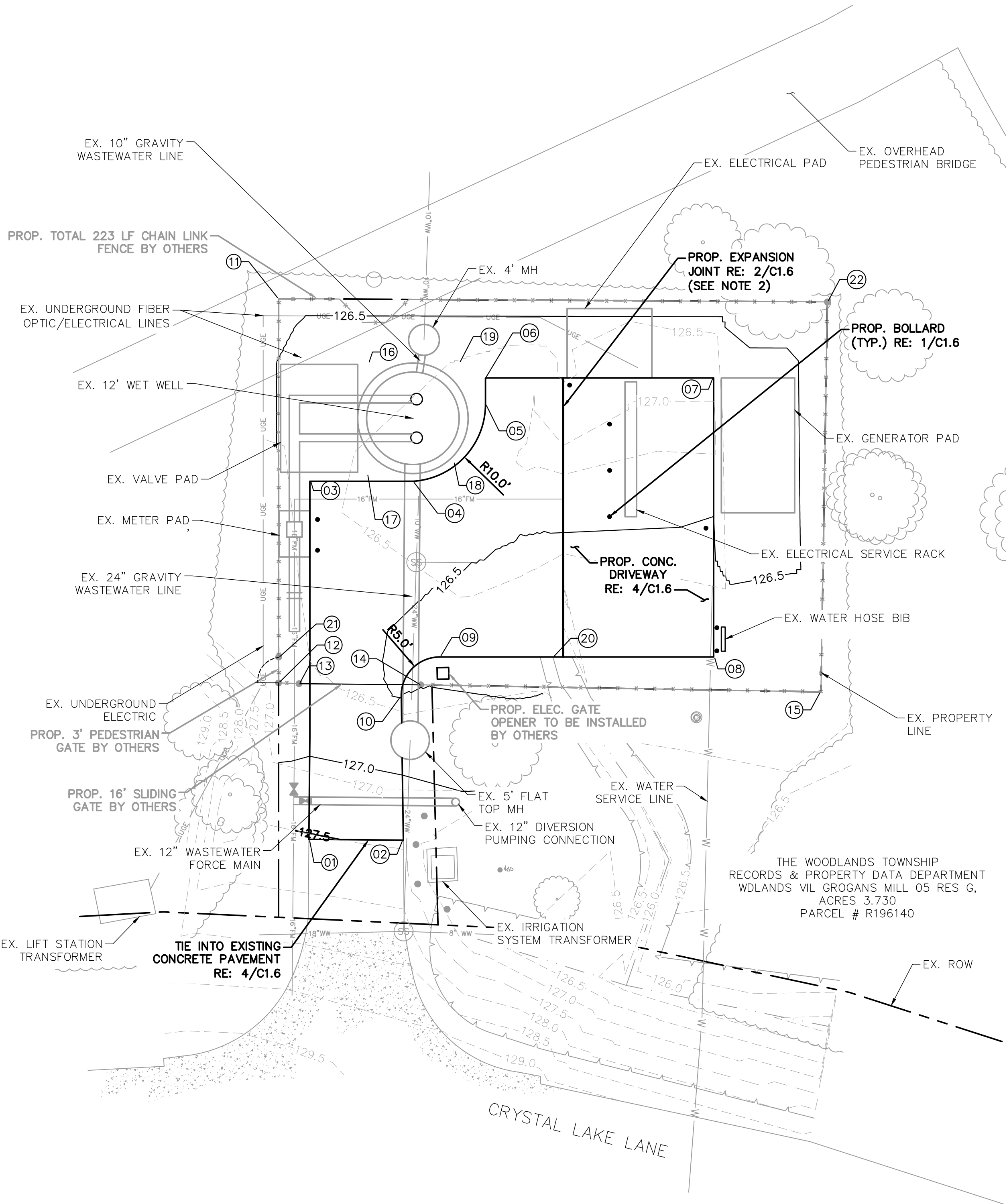
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CHECKED BY: CCC
SCALE: AS NOTED

OVERALL SITE PLAN

SHEET

C1.4

SJRA - WOODLANDS DIVISION
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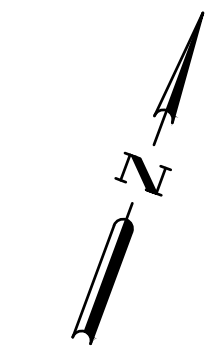


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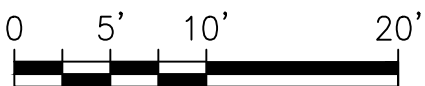
- ELEVATIONS SHOWN AT PROPOSED NATURAL GROUND OR PROPOSED TOP OF PAVEMENT UNLESS OTHERWISE NOTED ON PLANS.
- INSTALL PROPOSED EXPANSION JOINT WHERE THE PROPOSED CONCRETE PAVEMENT MEETS THE EDGE OF THE ABANDONED DRY PIT/WET PIT STRUCTURE.
- FOR BENCHMARK INFORMATION, SEE SURVEY CONTROL MAP IN PROJECT MANUAL.

LEGEND

- TEMPORARY CONSTRUCTION EASEMENT
- EX. ROW
- EX. PROPERTY LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING WASTEWATER FORCE MAIN
- EXISTING UNDERGROUND ELECTRIC
- EXISTING BRUSH LINE
- PROPOSED CHAIN LINK FENCE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING TREE
- PROPOSED VALVE
- EXISTING CONTOUR
- PROP. CONTOUR
- C/L OF EX. DITCH



SCALE: 1" = 10'
(PLOTING 22"x34")



POINTS TABLE				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
01	10046628.0757	3835875.3107	127.5±	PAVEMENT TIE-IN
02	10046632.2193	3835886.8406	127.4±	PAVEMENT TIE-IN
03	10046671.6814	3835859.3161	126.68	PAVEMENT CORNER
04	10046676.3212	3835871.8637	126.63	PAVEMENT PC
05	10046688.9646	3835857.2226	126.67	PAVEMENT PT
06	10046692.1636	3835876.0397	126.68	PAVEMENT CORNER
07	10046702.4337	3835903.8131	126.67	PAVEMENT CORNER
08	10046668.4767	3835916.3698	126.33	PAVEMENT CORNER
09	10046656.1511	3835883.0377	126.41	PAVEMENT PT
10	10046649.6608	3835880.1074	126.49	PAVEMENT PC
11	10046692.4962	3835847.2883	126.13	FENCE CORNER POST (NG)
12	10046645.7443	3835864.5762	126.81	FENCE CORNER POST/ GATE POST (NG)
13	10046646.5711	3835867.1043	126.68	GATE POST (NG)
14	10046651.9055	3835881.9659	126.48	GATE POST (NG)
15	10046669.0571	3835930.9957	126.31	FENCE CORNER POST (NG)
16	10046688.6838	3835861.0724	126.69	NG
17	10046675.2031	3835865.9607	126.66	NG
18	10046680.5427	3835875.9102	126.63	NG
19	10046692.7910	3835872.1706	126.68	NG
20	10046661.2427	3835896.8070	126.23	PAVEMENT LOW POINT
21	10046648.8340	3835863.4337	126.77	GATE POST (NG)
22	10046716.8070	3835914.2349	126.11	FENCE CORNER POST (NG)

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SJRA LIFT STATION NO. 4
PAVING AND GRADING
PLAN

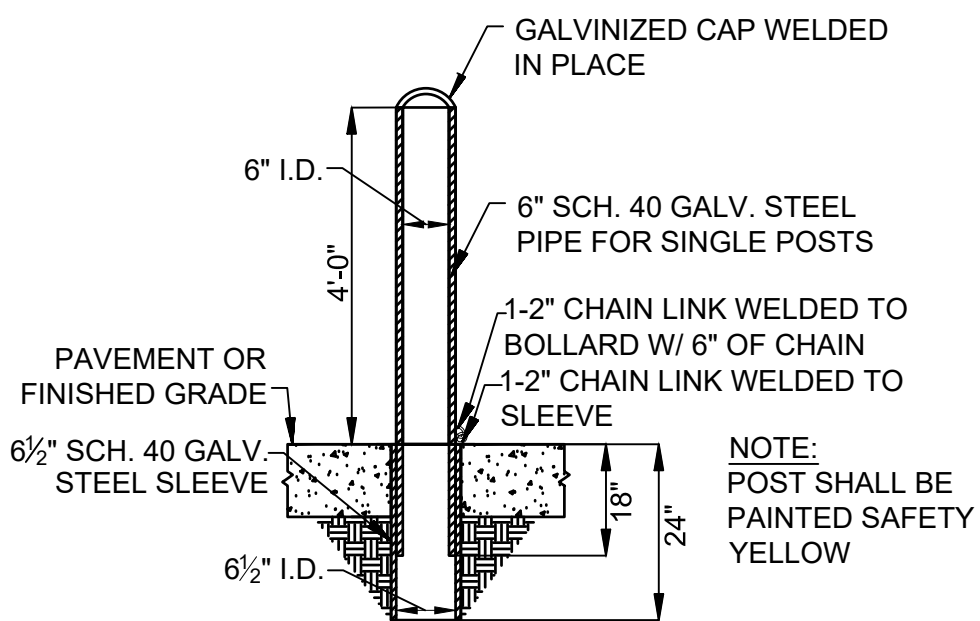
ISSUE	DATE	DESCRIPTION
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KH PROJECT NO: 064446211		
DRAWN BY: JUL		
CHECKED BY: CCC		
SCALE: AS NOTED		

SITE AND GRADING PLAN

SHEET

C1.5

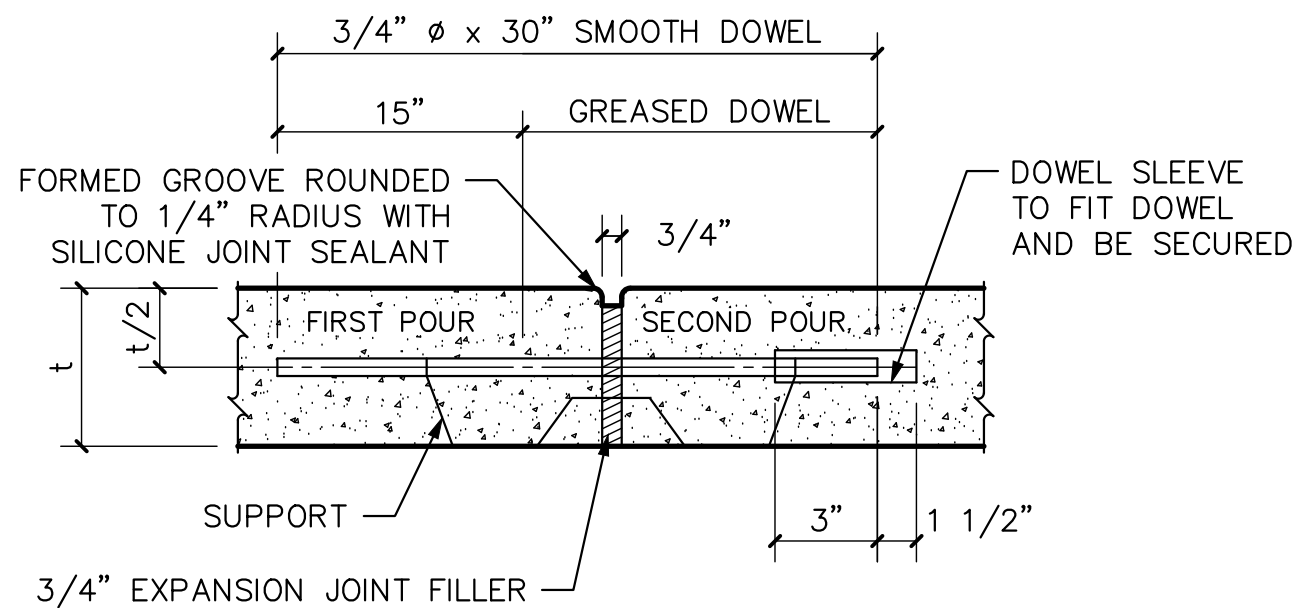
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Removable Bollard
DETAIL

1
C1.6

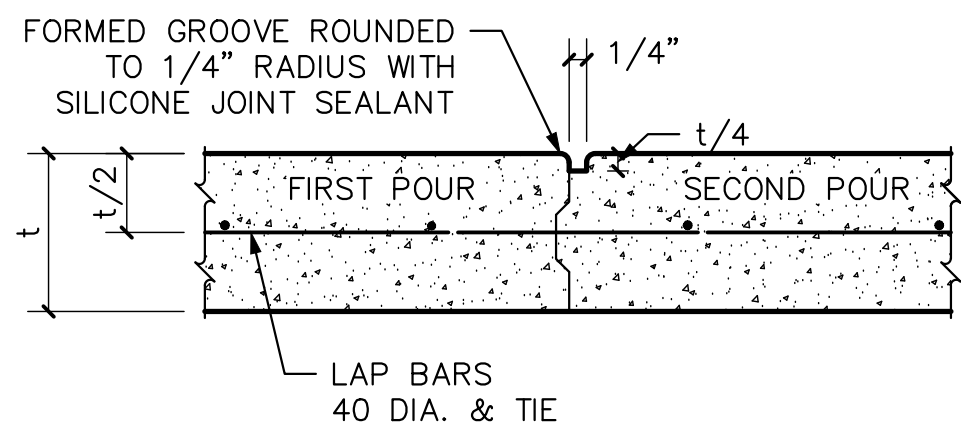
SCALE: NOT TO SCALE



EXPANSION JOINT

NOTES:

1. ALL DOWEL BARS SHALL BE INSTALLED PERPENDICULAR TO JOINT @ 18" SPACING.
2. SILICONE JOINT SEALANT SHALL BE DOW CORNING 890 SL OR APPROVED EQUAL.
3. HOT-POURED RUBBER MAY BE USED AS A SUBSTITUTE FOR SILICONE JOINT SEALANT WITH THE APPROVAL OF THE CITY ENGINEER.

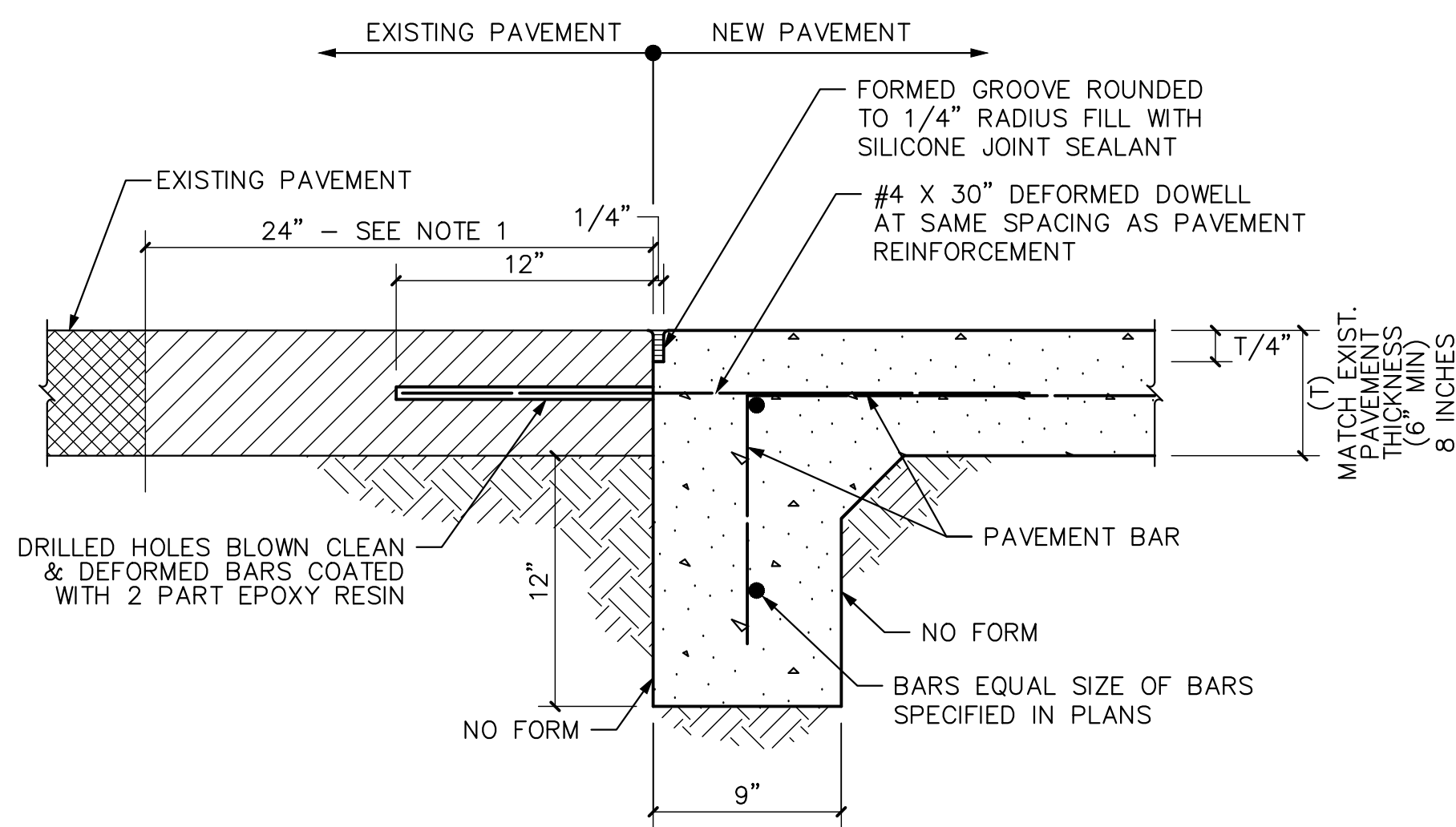


CONSTRUCTION JOINT

Expansion Joint
DETAIL

2
C1.6

SCALE: NOT TO SCALE



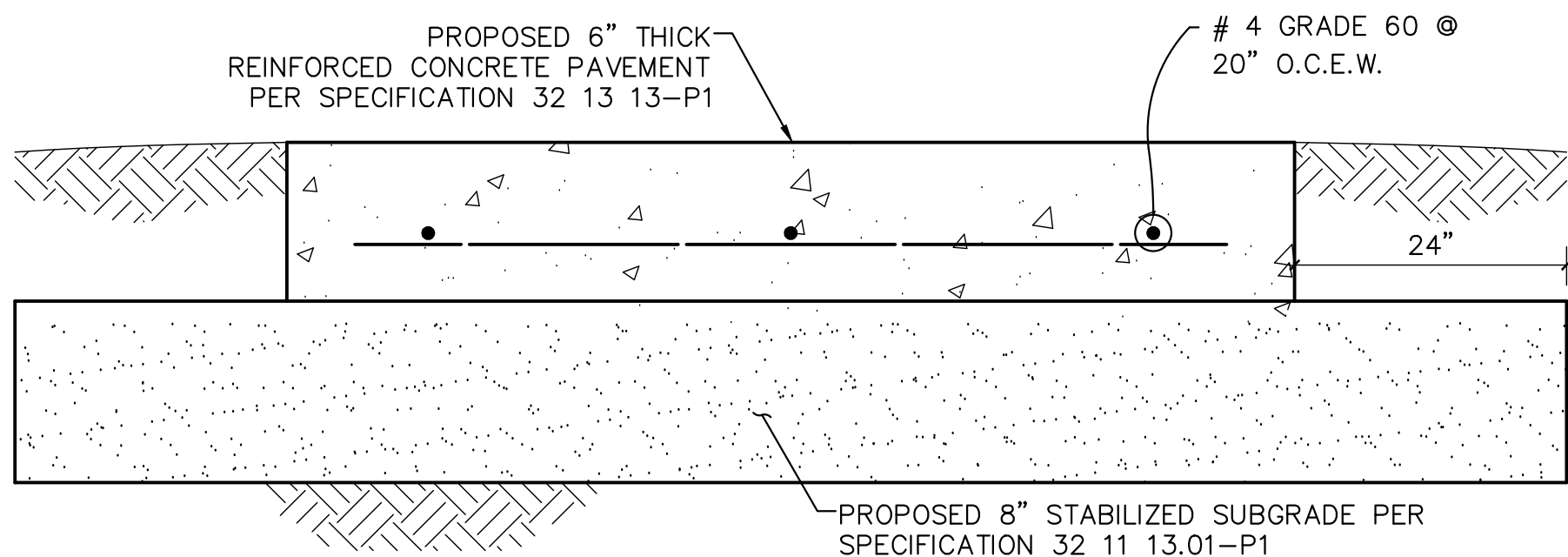
NOTES:

1. WHERE EXISTING PAVEMENT SECTION IS ASPHALT OR FLEX BASE, CONTRACTOR SHALL SAW CUT PAVEMENT 24" BEFORE TRANSITION TO NEW PAVEMENT AND SHALL PLACE 5" THICK SECTION OF NEW HOT MIX ASPHALT PAVEMENT AT HEADER.
2. ELIMINATE DEFORMED DOWEL WHERE EXISTING PAVEMENT SECTION IS ASPHALT.
3. ALL SAWCUTS SHALL BE FULL DEPTH CUTS. CONTRACTOR SHALL MAKE EFFORTS TO PROTECT CONCRETE EDGES. ANY LARGE SPALLED OR BROKEN EDGES SHALL BE REMOVED BY SAWCUTTING PAVEMENT PRIOR TO REPLACEMENT. COST FOR SAWCUTS SHALL BE INCIDENTAL TO PAVEMENT REMOVAL.
4. COST FOR INSTALLATION OF ALL JOINTS SHALL BE INCIDENTAL TO CONCRETE PAVEMENT CONSTRUCTION. CONCRETE PAVING EXPANSION JOINTS SHALL BE CONSTRUCTED AT 400 FOOT INTERVALS. SAWN JOINT SPACING SHALL NOT EXCEED 20 FEET FOR CONCRETE VEHICLE PAVEMENT. JOINTS SHALL BE SAWN AS SOON AS PRACTICAL AFTER CONCRETE IS PLACED (COMPRESSIVE STRENGTH SHALL REACH APPROXIMATELY 1000 PSI), BUT NOT EXCEEDING 18 HOURS AFTER CONCRETE PLACEMENT. ALL CONCRETE VEHICLE PAVEMENT JOINTS SHALL BE SEALED IN ACCORDANCE WITH THE STANDARD DETAILS. CONTRACTOR SHALL MATCH NEW PAVEMENT JOINTS WITH EXISTING ADJOINING PAVEMENT WHERE APPLICABLE.

Pavement Header At Existing Pavement
DETAIL

3
C1.6

SCALE: NOT TO SCALE



NOTE:

1. REFER TO REPORT #G107-17 TITLED "GEOTECHNICAL INVESTIGATION -SJRA LIFT STATION #4 REPLACEMENT CRYSTAL LAKE LANE AT GROGRAN'S MILL ROAD THE WOODLANDS, TEXAS" BY AVILES ENGINEERING CORPORATION DATED MAY 2017

Concrete Driveway
SECTION

4
C1.6

SCALE: NOT TO SCALE

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CONSTRUCTION DETAILS

SHEET
C1.6