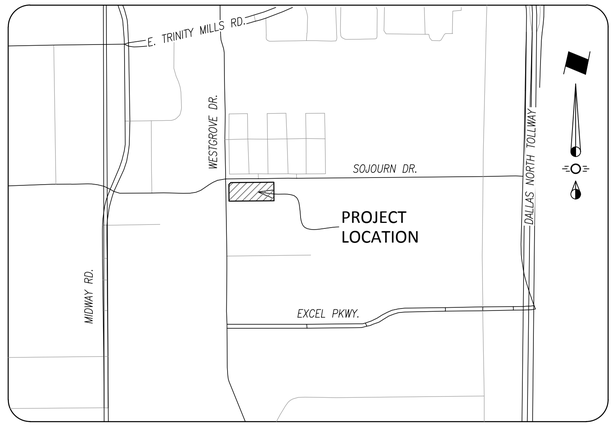
Paving, Drainage and Utility Plans
KNIGHT RENOVATIONS
Lot 2R, Block A - Westgrove and Airborn Addn.
Town of Addison, Texas



Vicinity Map
NTS

Index Of Drawings

Notes:

1. Prior to beginning any construction or construction staking, it shall be the Contractor's responsibility to contact the civil engineer to ensure that all parties are in possession of the most current set of CD's.
2. All construction within Town of Addison R.O.W. or easements shall conform to Town Details available from Town of Addision Development Services Department.

Prepared By:

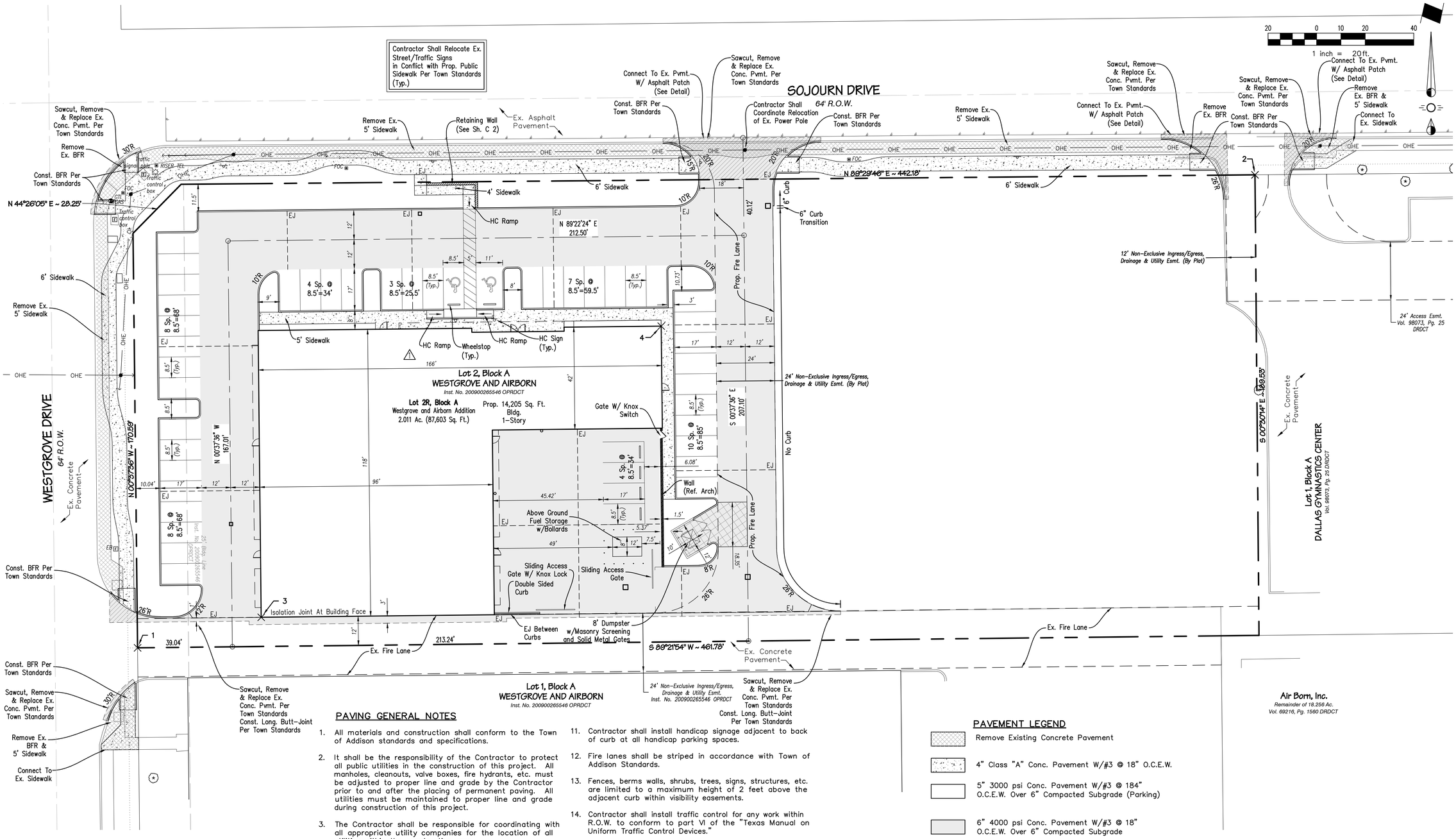
SPIARS ENGINEERING
765 Custer Road, Suite 100 • Plano, TX 75075 • (972) 422-0077
TBPE No. F-2121 • TBPLS No. F-10043100

STATE OF TEXAS
DAVID J. BOND
122081
LICENSED
PROFESSIONAL ENGINEER
4/5/18

RECORD DRAWINGS

NOTE:
THESE PLANS HAVE BEEN REVISED TO CONFORM WITH CONSTRUCTION RECORDS PROVIDED BY THE CONTRACTOR.

Prepared For:
Squire Properties, LLC
901 Waterfall Way Richardson, TX 75080
Telephone (469) 330-7838
Contact: John De Tiberiis



PAVING GENERAL NOTES

1. All materials and construction shall conform to the Town of Addison standards and specifications.
2. It shall be the responsibility of the Contractor to protect all public utilities in the construction of this project. All manholes, cleanouts, valve boxes, fire hydrants, etc. must be adjusted to proper line and grade by the Contractor prior to and after the placing of permanent paving. All utilities must be maintained to proper line and grade during construction of this project.
3. The Contractor shall be responsible for coordinating with all appropriate utility companies for the location of all utilities within the construction area.
4. The Paving Contractor shall coordinate with the Utility Contractor to insure all sleeving for irrigation has been installed prior to placement of permanent pavement.
5. All curbs shall be 6" standard except where otherwise noted on plans.
6. All paving and earthwork operations shall conform to the recommendations in the Geotechnical Investigation Report. (Report No. 21233, Reed Engineering, July, 2016)
7. All dimensions are to the face of curb, or the edge of building.
8. See Architectural Plans for exact building and related sidewalk dimensions.
10. All curb radii are 2' unless noted otherwise.
11. All parking spaces are 8.5' x 17' unless noted otherwise.
11. Contractor shall install handicap signage adjacent to back of curb at all handicap parking spaces.
12. Fire lanes shall be striped in accordance with Town of Addison Standards.
13. Fences, berms walls, shrubs, trees, signs, structures, etc. are limited to a maximum height of 2 feet above the adjacent curb within visibility easements.
14. Contractor shall install traffic control for any work within R.O.W. to conform to part VI of the "Texas Manual on Uniform Traffic Control Devices."

Coordinate Table		
Point #	Northing	Easting
1	7044493.20	2477854.12
2	7044687.85	2478314.20
3	7044505.78	2477905.02
4	7044625.59	2478069.72

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PAVEMENT LEGEND

- Remove Existing Concrete Pavement
- 4" Class "A" Conc. Pavement W/#3 @ 18" O.C.E.W.
- 5" 3000 psi Conc. Pavement W/#3 @ 184" O.C.E.W. Over 6" Compacted Subgrade (Parking)
- 6" 4000 psi Conc. Pavement W/#3 @ 18" O.C.E.W. Over 6" Compacted Subgrade
- 7" 4000 psi Conc. Pavement W/#3 @ 18" O.C.E.W. Over 6" Compacted Subgrade
- 8" 4000 psi Conc. Pavement W/#3 @ 18" O.C.E.W. Over 6" Compacted Subgrade (Town R.O.W.)
- Curb & Gutter
- No Curb
- BFR Const. Barrier Free Ramp
- X Coordinate
- EJ Expansion Joint
- Fence

RECORD DRAWINGS

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BENCHMARKS:

1: "X" cut found in concrete ramp at southeast corner of the intersection of Westgrove and Sojourn. Elev.=661.09'

2: "X" cut found for southwest property corner. Elev.=661.15'

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STATE OF TEXAS
DAVID J. BOND
122081
LICENSED PROFESSIONAL ENGINEER
4/5/18

KNIGHT RENOVATIONS
LOT 2R, BLOCK A
TOWN OF ADDISON
DALLAS COUNTY, TEXAS

PAVING & HORIZONTAL CONTROL PLAN

Issue Dates:
September 16, 2016

Revisions	Date
Plan Revisions (Ex. WL Location)	04-05-17

Scale: As Shown
Drawn By: BLM
Checked By: JWS

Sheet C 1 of 10

SEI No. 16-036

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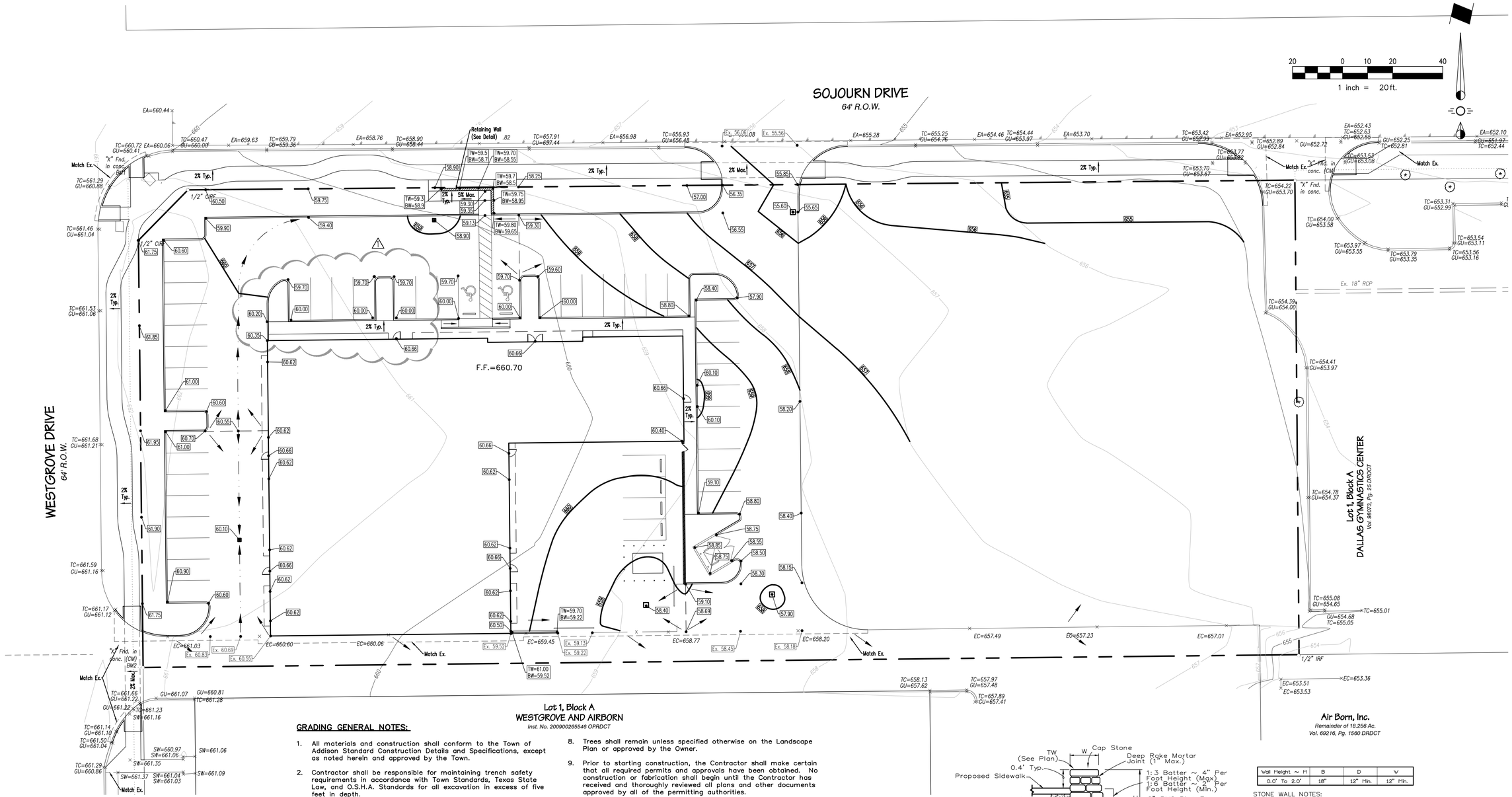

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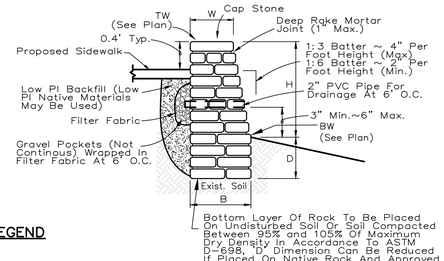
GRADING GENERAL NOTES:

1. All materials and construction shall conform to the Town of Addison Standard Construction Details and Specifications, except as noted herein and approved by the Town.
2. Contractor shall be responsible for maintaining trench safety requirements in accordance with Town Standards, Texas State Law, and O.S.H.A. Standards for all excavation in excess of five feet in depth.
3. The location of all utilities located on these plans are taken from existing public records. The exact location and elevation of all public utilities must be determined by the Contractor. It shall be the duty of the Contractor to ascertain whether any additional facilities other than those shown on the plans may be present.
4. It shall be the responsibility of the Contractor to protect all public utilities in the construction of this project. All manholes, clean-outs, valve boxes, fire hydrants, etc. must be adjusted to proper line and grade by the Contractor prior to and after the placing of permanent paving. Utilities must be maintained to proper line and grade during construction of the paving for this development.
5. Care should be taken that fill materials and areas to receive fill are relatively free of vegetation, roots, debris, large rocks or other objectionable material. Prior to placing any fill, soil subgrades should be scarified to a minimum depth of 8 inches, and recompacted to a minimum of 92 percent of ASTM D 698, at a minimum of +1 to +5 percent above the optimum moisture content as determined by that test. Clay fill materials should then be spread in loose lifts, maximum 8 inches thick, and uniformly compacted to the same criteria. Processed limestone should be compacted to a minimum of 92 percent of ASTM D 698, at a minimum of +1 to +5 percent above optimum moisture.
6. Drainage should be maintained away from the foundations, both during and after construction.
7. All earthwork operations, pavement installation, etc. shall conform to the Geotechnical Investigation. (Report No. 21233, Reed Engineering, July, 2016)
8. Trees shall remain unless specified otherwise on the Landscape Plan or approved by the Owner.
9. Prior to starting construction, the Contractor shall make certain that all required permits and approvals have been obtained. No construction or fabrication shall begin until the Contractor has received and thoroughly reviewed all plans and other documents approved by all of the permitting authorities.
10. In the event an item is not covered in the Town's specifications, the Town Engineer's decision shall apply.
11. The Contractor shall verify the suitability of all existing and proposed site conditions, including grades and dimensions before commencement of any construction. In the event of any conflict, and prior to commencement of any construction, immediately notify Engineer. Minor adjustments of finish grade to accomplish spot drainage are acceptable if necessary, upon prior approval of Engineer. All paving installed shall "flush out" at any juncture with existing paving.
12. Proposed spot elevations are finished grade elevations (Top of pavement, top of sod, etc.)
13. Erosion control shall be in place prior to the disturbance of any existing surface.
14. All sidewalk and crosswalk slopes shall conform to ADA requirements as follows:
    1:20 longitudinal (along the walk) max.
    1:50 transverse (across the walk) max.

GRADING LEGEND

- 57.00 — Proposed Gutter Spot Elevation
- 657 — Proposed Contour
- 657 — Existing Contour
- TC=657.50 GU=657.00 — Existing Spot Elevation
- Direction Of Flow
- TW=57.00 — Proposed Top of Wall Elevation
- BW=57.00 — Proposed Bottom of Wall Elevation

STONE RETAINING WALL DETAIL
NTS



Wall Height ~ H	B	D	W
0.0' To 2.0'	18"	12" Min.	12" Min.

STONE WALL NOTES:
1. ALL STONE TO BE TAN MILSAP STONE OR LIMESTONE.
2. WALL CONTRACTOR TO PROVIDE STONE SAMPLE FOR OWNER'S APPROVAL.
3. ADJACENT VERTICAL JOINTS SHALL BE 3" APART MINIMUM.
4. STEEL SCHEDULE:
   9 GAGE, 12" WIDE LADEER WIRE ON BOTTOM TWO COURSES, EVERY THIRD COURSE AFTER THAT.
5. ONLY LOW PI (PI < 15) MATERIAL SHALL BE USED AS BACKFILL BEHIND WALL. LOW PI NATIVE SOILS MAY BE USED.
6. BOTTOM OF WALL TO BE PLACED ON UNDISTURBED SUBGRADE WHERE POSSIBLE SUBGRADE TO BE COMPACTED TO BETWEEN 95 AND 105 PERCENT OF MAXIMUM DRY DENSITY IN ACCORDANCE TO ASTM D 698.
7. SHOULD ANY SITE CONDITIONS ARISE THAT WOULD WARRANT ANY DEVIATION FROM THESE DESIGN SPECIFICATIONS, CONTRACTOR MUST NOTIFY ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

BENCHMARKS:

1: "X" cut found in concrete ramp at southeast corner of the intersection of Westgrove and Sojourn. Elev.=661.09'

2: "X" cut found for southwest property corner. Elev.=661.15'

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122081
LICENSED PROFESSIONAL ENGINEER
4/5/18

KNIGHT RENOVATIONS
LOT 2R, BLOCK A
TOWN OF ADDISON
DALLAS COUNTY, TEXAS
GRADING PLAN

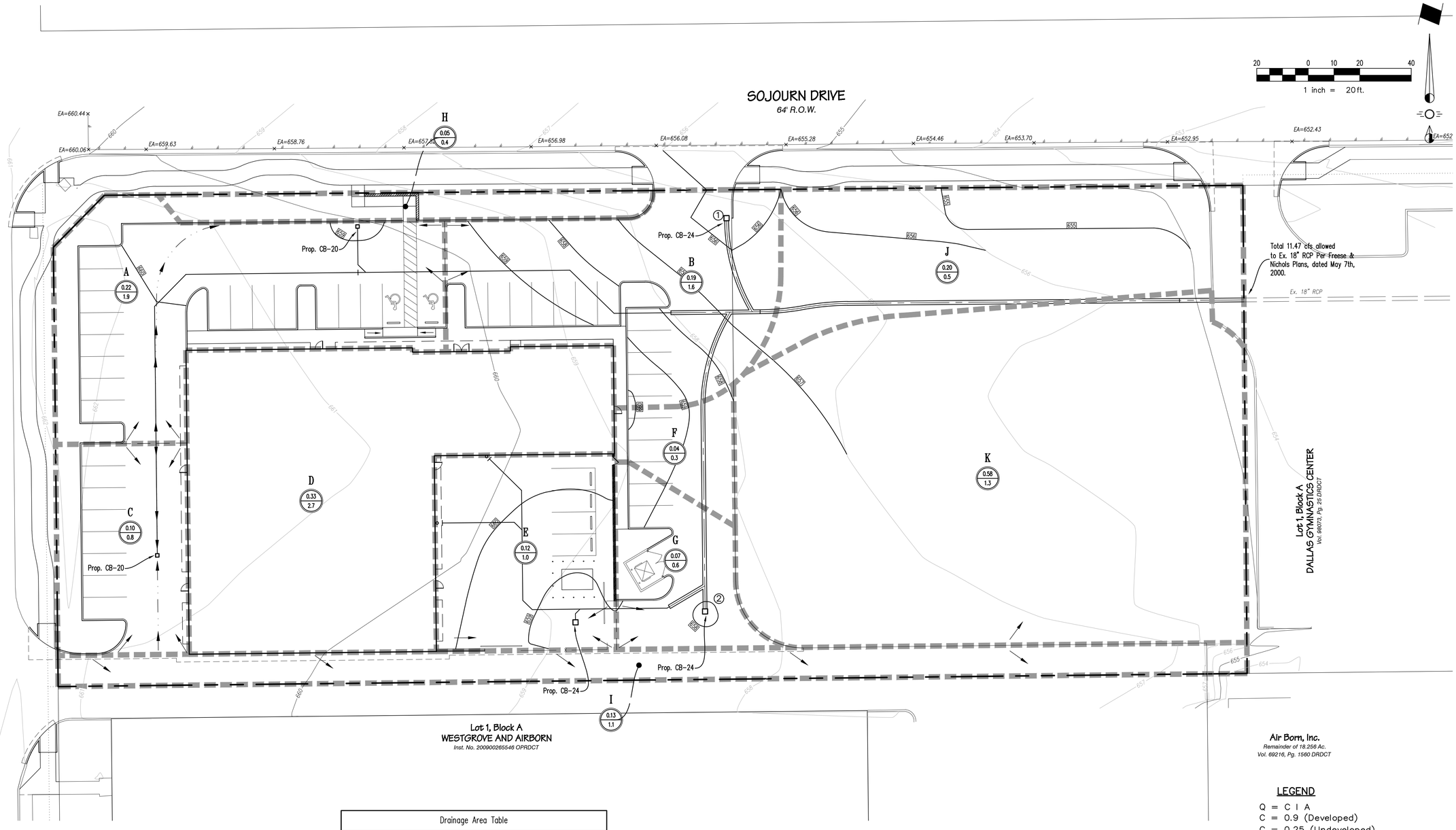
Issue Dates:
September 16, 2016

Revisions (Ex. WL Location)	Date
Plan Revisions	04-05-17

Scale: As Shown
Drawn By: BLM
Checked By: JWS

Sheet C 2 of 10

SEI No. 16-036



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Drainage Area Table

Drainage Area No.	Drainage Area (Acres)	C	tc (Min.)	I100 (in./hr.)	Q100 (cfs)	Comments
A	0.22	0.90	10	9.27	1.9	TO PROP. CB-20
B	0.19	0.90	10	9.27	1.6	TO PROP. CB-24 #1
C	0.10	0.90	10	9.27	0.8	TO PROP. CB-20
D	0.33	0.90	10	9.27	2.7	TO PROP. BLDG ROOFDRAINS
E	0.12	0.90	10	9.27	1.0	TO PROP. CB-24
F	0.04	0.90	10	9.27	0.3	SHEET FLOW TO EAST
G	0.07	0.90	10	9.27	0.6	TO PROP. CB-24 #2
H	0.05	0.90	10	9.27	0.4	SHEET FLOW TO SOJOURN DRIVE
I	0.13	0.90	10	9.27	1.1	SHEET FLOW TO EAST
* J	0.20	0.25	10	9.27	0.5	SHEET FLOW TO EAST
* K	0.58	0.25	10	9.27	1.3	SHEET FLOW TO EAST

* Undeveloped Flow

Notes:
1. No portion of site lies within floodplain.
2. Offsite drainage areas prepared by Freese & Nichols for Sojourn Office Center, dated May 7th, 2000 (Sh. 3a).
3. Since total flow (Developed & Undeveloped) is less than the allowable 11.47 cfs, no onsite detention will be required at this time.
4. Detention for undeveloped portion of lot shall be provided at time of development per Town of Addison Standards.

INLET DESIGN CALCULATIONS

INLET		Design Storm	AREA RUNOFF Q = CIA					Carry-Over From Upstream Inlet (c.f.s.)	Total Gutter Flow (c.f.s.)	Gutter Capacity (c.f.s.)	Gutter Slope (ft./100ft.)	Crown Type	SELECTED INLET		Carry-Over To Downstream Inlet (c.f.s.)	Inlet Capacity (c.f.s.)
No.	Location	Frequency (yrs.)	Time of Conc. (min.)	Intensity I (in./hr.)	Runoff Coeff. "C"	Area (ac.)	"Q" (c.f.s.)						Length "L" (Feet)	Type		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	B	100	10	9.27	0.9	0.19	1.5	–	1.6	–	–	Sag	–	CB-24	–	4.7
2	G	100	10	9.27	0.9	0.07	0.6	–	0.6	–	–	Sag	–	CB-24	–	5.1

LEGEND

Q = C I A
C = 0.9 (Developed)
C = 0.25 (Undeveloped)
I_{100} = 9.27 (Developed)
I_{100} = 7.99 (Undeveloped)
tc = 10 min. (Developed)
tc = 15 min. (Undeveloped)

A ← Drainage Area Number
X.XX ← Acres
XX.X ← Q_{100} (cfs)

Drainage Divide Line
① Inlet Number

BENCHMARKS:

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KNIGHT RETAIL RENOVATIONS
LOT 2R, BLOCK A
TOWN OF ADDISON
DALLAS COUNTY, TEXAS

DRAINAGE AREA MAP

Issue Dates:
September 16, 2016

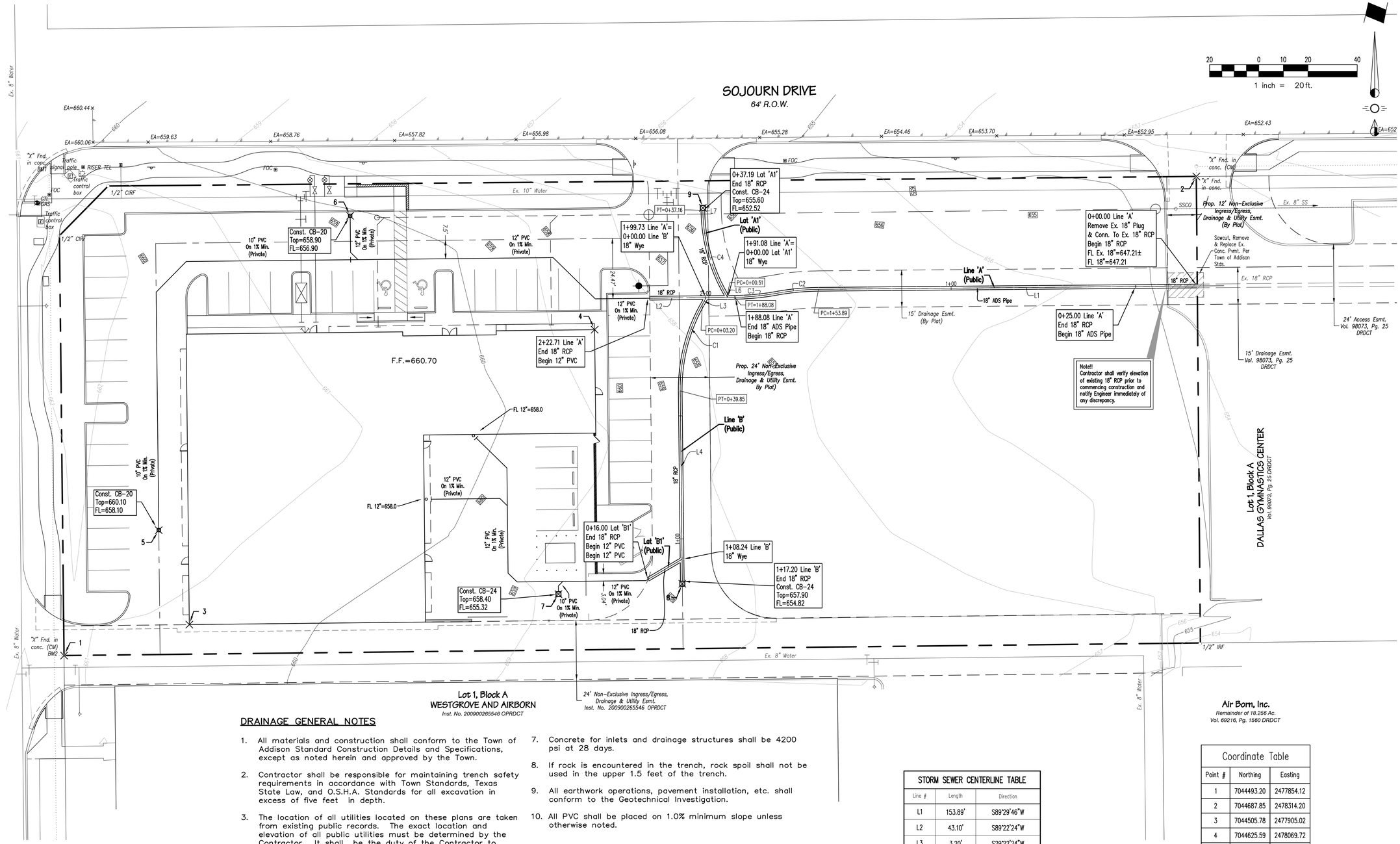
Date
Revisions

Scale: As Shown
Drawn By: BLM
Checked By: JWS

Sheet C 3 of 10

SEI No. 16-036

Drawing: G:\2016_JOBS\16-036 4200 Sojourn\16-036 Drainage Area Map.dwg Saved By: Thornett Save Time: 1/26/2018 12:32:26 PM
Plotted by: thornett Plot Date: 4/4/2018 8:04 AM



DRAINAGE GENERAL NOTES

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5. Drainage should be maintained away from the foundations, both during and after construction.
6. Backfill for utility lines should be carefully placed so that they will be stable. Where utility lines pass through the parking lot, the top 6" should be compacted similarly to the remainder of the lot. Utility ditches should be visually inspected during the excavation process to ensure that undesirable fill is not used.
7. Concrete for inlets and drainage structures shall be 4200 psi at 28 days.
8. If rock is encountered in the trench, rock spoil shall not be used in the upper 1.5 feet of the trench.
9. All earthwork operations, pavement installation, etc. shall conform to the Geotechnical Investigation.
10. All PVC shall be placed on 1.0% minimum slope unless otherwise noted.

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RECORD DRAWINGS

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STORM SEWER CENTERLINE TABLE

Line #	Length	Direction
L1	153.89'	S89°29'46"W
L2	43.10'	S89°22'24"W
L3	3.20'	S29°22'24"W
L4	77.35'	S00°37'36"E
L6	0.51'	N30°37'36"W
L7	0.03'	N00°37'36"W

STORM SEWER CENTERLINE CURVE TABLE

Curve #	Radius	Delta	Tangent	Length	Chord Bearing	Chord Length
C1	70.00'	30°00'00"	18.76'	36.65'	S14°22'24"W	36.23'
C2	100.00'	9°51'16"	8.62'	17.20'	S84°34'08"W	17.18'
C3	100.00'	9°43'54"	8.51'	16.98'	S84°30'27"W	16.96'
C4	70.00'	30°00'00"	18.76'	36.65'	N15°37'36"W	36.23'

Coordinate Table

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4	7044625.59	2478069.72
5	7044544.15	2477892.60
6	7044671.85	2477970.37
7	7044518.16	2478055.03
8	7044522.38	2478105.35
9	7044675.07	2478113.68

BENCHMARKS:

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LOT 2R, BLOCK A
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DALLAS COUNTY, TEXAS
DRAINAGE PLAN

Issue Dates:
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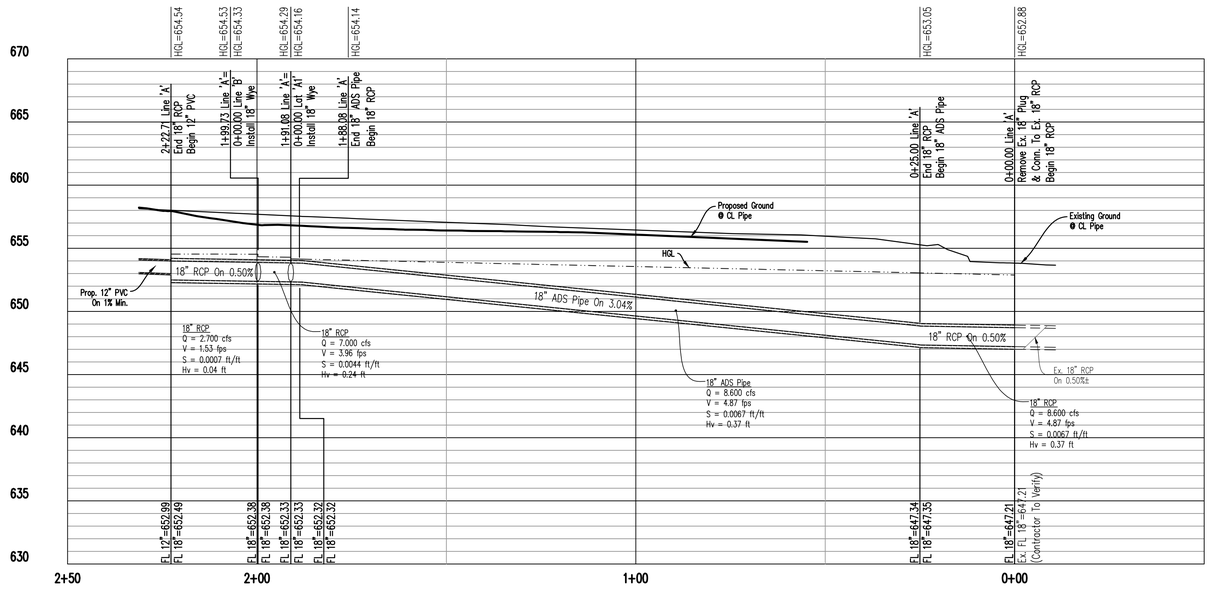
Revisions

Scale: As Shown
Drawn By: BLM
Checked By: JWS

Sheet C 4 of 10

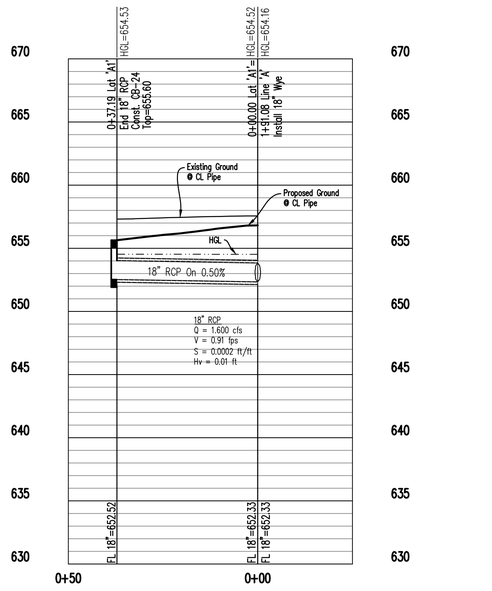
SEI No. 16-036

Drawing: G:\2016_JOBS\16-036 4200 Sojourn\16-036 Drainage Plan.dwg Saved By: Thornett Save Time: 1/26/2018 11:46:46 AM
Plotted by: Thornett Plot Date: 4/4/2018 8:04 AM



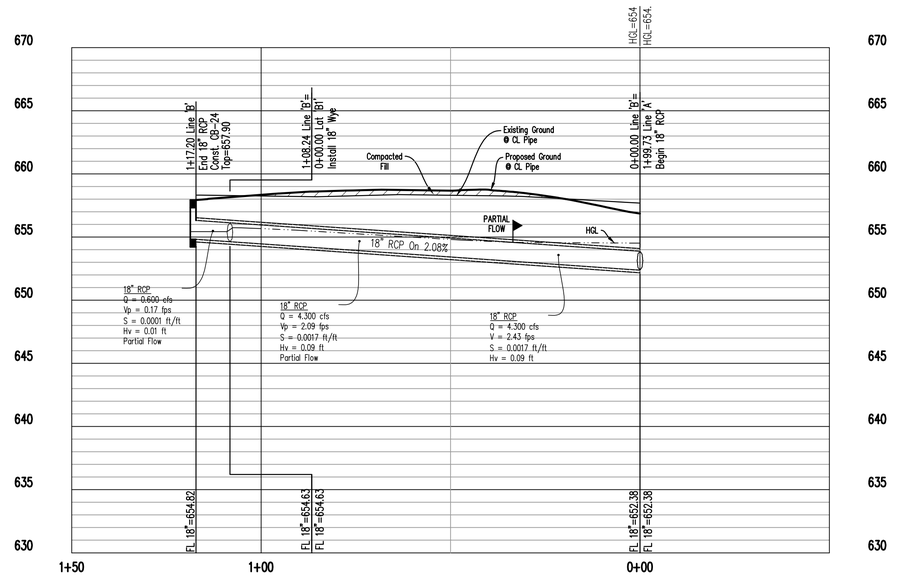
Storm Line 'A' (PUBLIC)

1"=20': H
1"=6': V



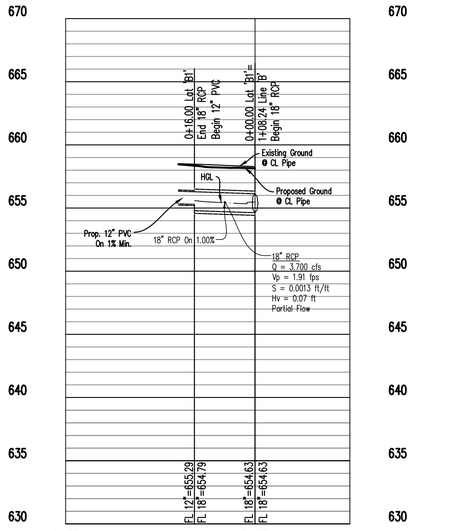
Storm Lat 'A1' (PUBLIC)

1"=20': H
1"=6': V



Storm Line 'B' (PUBLIC)

1"=20': H
1"=6': V



Storm Lat 'B1' (PUBLIC)

1"=20': H
1"=6': V

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KNIGHT RENOVATIONS
LOT 2R, BLOCK A
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DALLAS COUNTY, TEXAS

STORM SEWER PROFILES

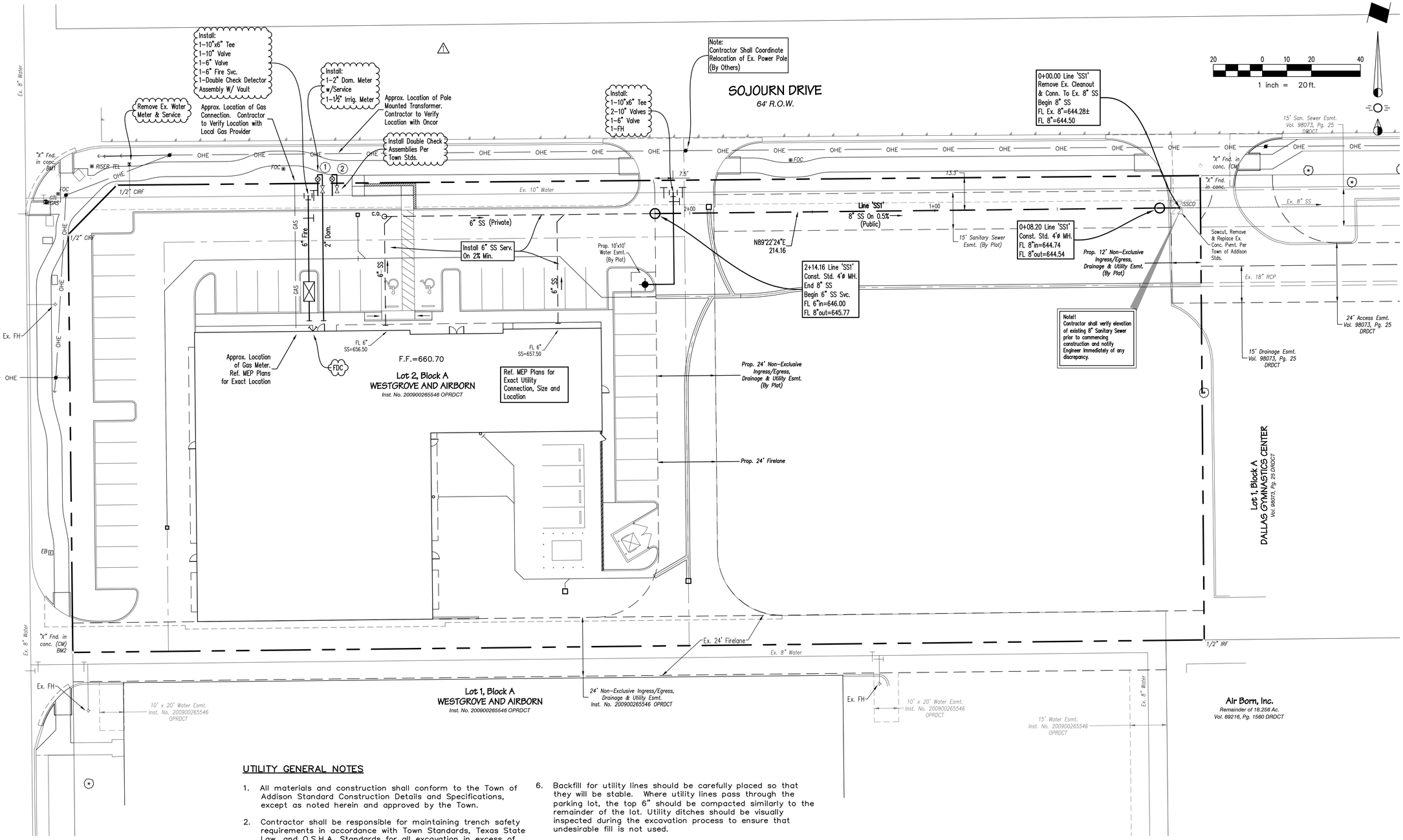
Issue Dates:
September 16, 2016

Revisions	Date

Scale: As Shown
Drawn By: BLM
Checked By: JWS

Sheet C 5
of 10

SEI No. 16-036



CAUTION !!!
EXISTING UTILITIES

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CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATION SERVICES 48 HOURS PRIOR TO CONSTRUCTION ACTIVITY. SPIARS ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

UTILITY GENERAL NOTES

1. All materials and construction shall conform to the Town of Addison Standard Construction Details and Specifications, except as noted herein and approved by the Town.
2. Contractor shall be responsible for maintaining trench safety requirements in accordance with Town Standards, Texas State Law, and O.S.H.A. Standards for all excavation in excess of five feet in depth.
3. The location of all utilities located on these plans are taken from existing public records. The exact location and elevation of all public utilities must be determined by the Contractor. It shall be the duty of the Contractor to ascertain whether any additional facilities other than those shown on the plans may be present.
4. It shall be the responsibility of the Contractor to protect all public utilities in the construction of this project. All manholes, clean-outs, valve boxes, fire hydrants, etc. must be adjusted to proper line and grade by the Contractor prior to and after the placing of permanent paving. Utilities must be maintained to proper line and grade during construction of the paving for this development.
5. Drainage should be maintained away from the foundations, both during and after construction.
6. Backfill for utility lines should be carefully placed so that they will be stable. Where utility lines pass through the parking lot, the top 6" should be compacted similarly to the remainder of the lot. Utility ditches should be visually inspected during the excavation process to ensure that undesirable fill is not used.
7. Concrete for inlets and drainage structures shall be 4200 psi at 28 days.
8. If rock is encountered in the trench, rock spoil shall not be used in the upper 1.5 feet of the trench.
9. All earthwork operations, pavement installation, etc. shall conform to the Geotechnical Investigation.

Water Meter & Sewer Schedule				
I.D.	Type	Size	No.	Sewer
1	Domestic	2"	1	6"
2	Irrig.	1 1/2"	1	–

RECORD DRAWINGS

NOTE:
THESE PLANS HAVE BEEN REVISED TO CONFORM WITH CONSTRUCTION RECORDS PROVIDED BY THE CONTRACTOR.

BENCHMARKS:

1: "X" cut found in concrete ramp at southeast corner of the intersection of Westgrove and Sojourn. Elev.=661.09'

2: "X" cut found for southwest property corner. Elev.=661.15'

SPIARS ENGINEERING
765 Custer Road, Suite 100 • Plano, TX 75075 • (972) 422-0077
TBPE No. F-2121 • TBPLS No. F-10043100

STATE OF TEXAS
DAVID J. BOND
122081
LICENSED PROFESSIONAL ENGINEER
4/5/18

KNIGHT RENOVATIONS
LOT 2R, BLOCK A
TOWN OF ADDISON
DALLAS COUNTY, TEXAS

UTILITY PLAN

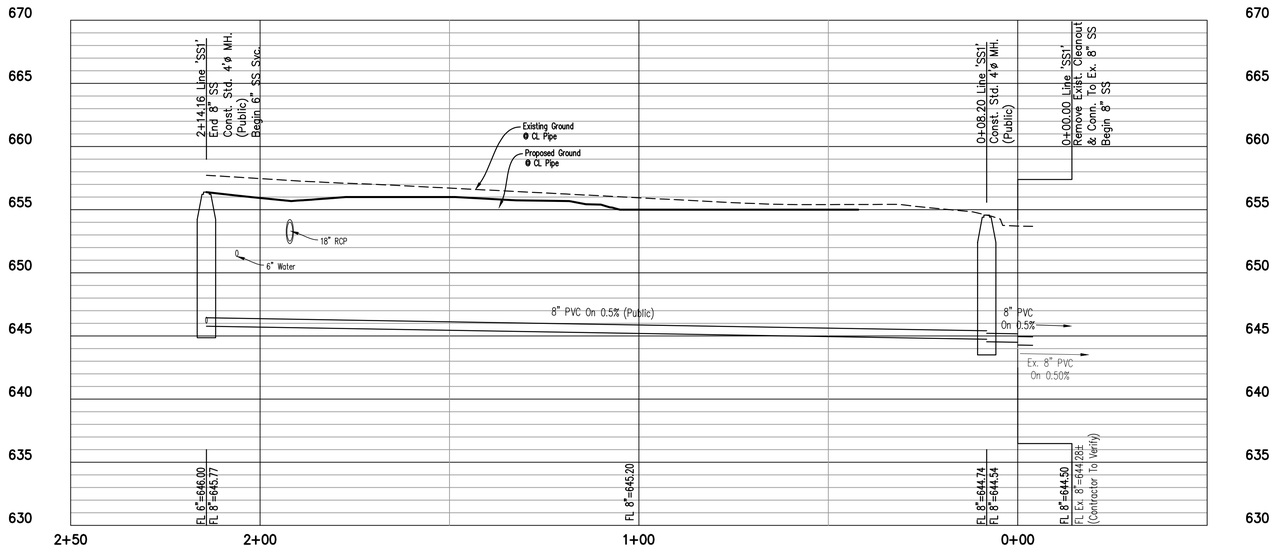
Issue Dates:
September 16, 2016

Revisions	Date
Plan Revisions (Ex. W. Location)	04-05-17

Scale: As Shown
Drawn By: BLM
Checked By: JWS

Sheet C 6 of 10

SEI No. 16-036



Line 'SS1'

1"=20': H
1"=6': V

RECORD DRAWINGS

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STATE OF TEXAS
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KNIGHT RENOVATIONS
LOT 2R, BLOCK A
TOWN OF ADDISON
DALLAS COUNTY, TEXAS

SANITARY SEWER PROFILE

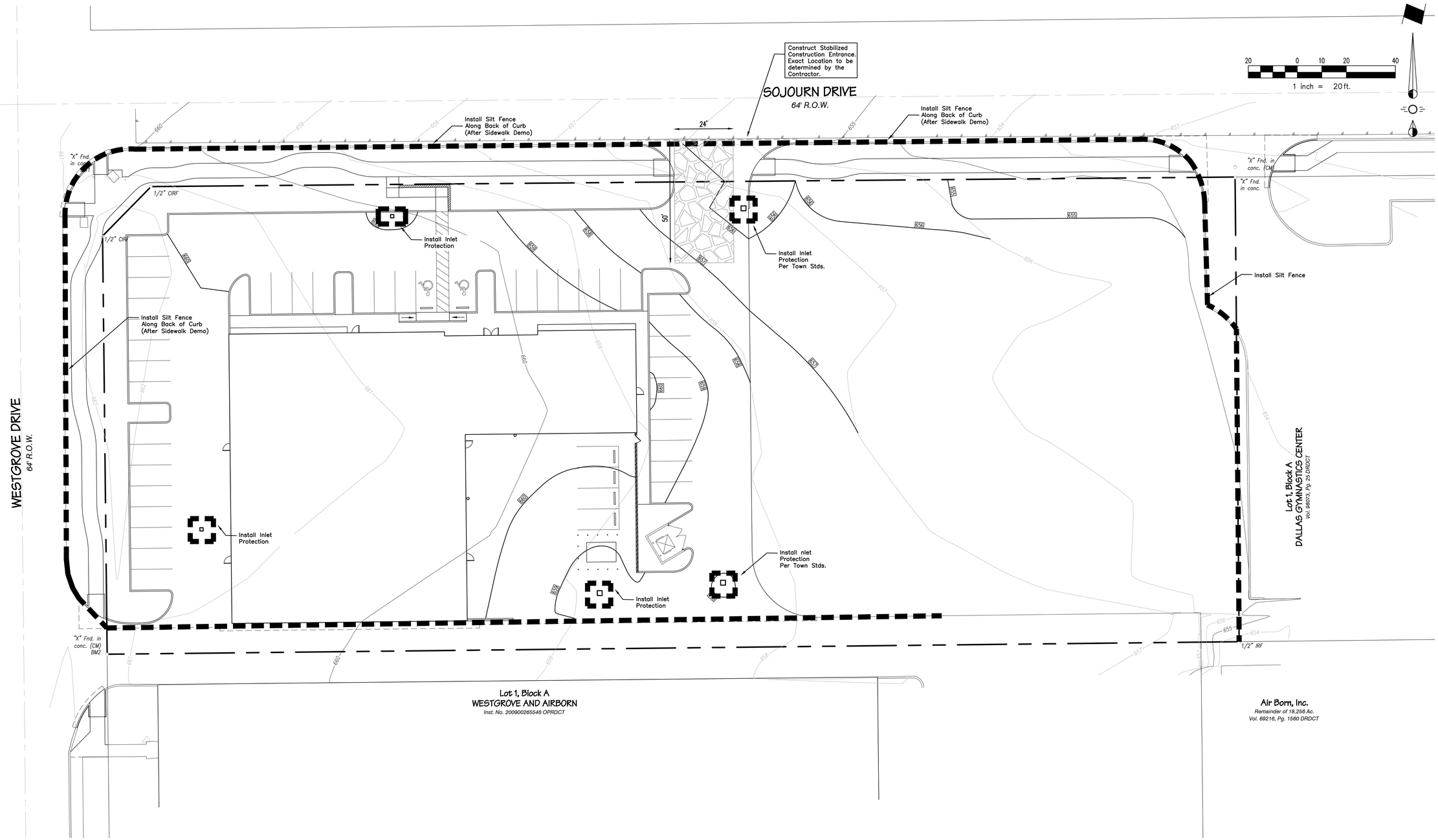
Issue Dates:
September 16, 2016

Revisions | Date

Scale: As Shown
Drawn By: BLM
Checked By: JWS

Sheet C 7
of 10

SEI No. 16-036



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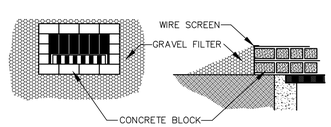
Note:

'The Grate Bag' or Town-approved equal shall be installed as inlet protection post pavement installation.



PRIVATE DROP INLET PROTECTION

RECORD DRAWINGS

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KNIGHT RENOVATIONS
LOT 2R, BLOCK A
TOWN OF ADDISON
DALLAS COUNTY, TEXAS

EROSION CONTROL PLAN

Issue Dates:
September 16, 2016

Revisions	Date

Scale: As Shown
Drawn By: BLM
Checked By: JWS

Sheet C 8 of 10

SEI No. 16-036

Plotted by: Bennett Plot Date: 4/4/2018 8:05 AM
Drawing: G:\2016_JOBS\16-036 4300 Sojourn\16-036 Erosion Control Plan.dwg Saved By: Bennett Save Time: 1/26/2018 11:48:55 AM

SANDBLASTING WASTE MANAGEMENT

DESCRIPTION

The objective of the management program is to minimize the potential of storm water quality degradation from sandblasting activities at construction sites. The key issues in this program are prudent handling and storage of sandblast media, dust suppression, and proper collection and disposal of spent media. It is not the intent of this program to outline all of the worker safety issues pertinent to this practice. Safety issues should be addressed by construction safety programs as well as local, state, and and federal regulation. utilized at sites in which Sandblasting waste is present.

INSTALLATION/APPLICATION CRITERIA

Since the media consists of fine abrasive granules, it can be easily transported by running water. Sandblasting activities typically create a significant dust problem which must be contained and collected to prevent off-site migration problem which must be contained and collected to to prevent off-site migration or fines.

Operational Procedures

Use only inert, non-degradable sandblast media.
Use appropriate equipment for the job, do not over-blast.
Wherever possible, blast in a downward direction.
Install a wind sock or other wind direction instrument.
Cease blasting activities in high winds or if wind direction could transport grit to drainage facilities.
Install dust shielding around sandblasting areas.
Collect and dispose of all spent sandblast grit, use dust containment fabrics and dust collection hoppers and barrels.
Non-hazardous sandblast grit may be disposed in permitted construction debris landfills or permitted sanitary landfills.
If sandblast media cannot be fully contained, construct sediment traps downstream from blasting area where appropriate.
Use sand fencing where appropriate in areas where blast media cannot be fully contained.
If necessary, install misting equipment to remove sandblast grit from the air - prevent runoff from misting operations from entering drainage systems.
Use vacuum grit collection systems where possible.
Keep records of sandblasting materials, procedures, and weather conditions on a daily basis.
Take all reasonable precautions to ensure that sandblasting grit is contained and kept away from drainage structures.

Educational Issues

Educate all on-site employees of potential dangers to humans and the environment from sandblast grit.
Instruct all on-site employees of the potential hazardous nature of sandblast grit and possible symptoms of overexposure to sandblast grit.
Instruct operators of sandblasting equipment on safety procedures and personal protection equipment.
Instruct operators on proper procedures regarding storage, handling, and containment of sandblast grit.
Instruct operators to recognize unfavorable weather conditions regarding sandblasting activities.
Instruct operators and supervisors on current local, state, and federal federal regulations regarding fugitive dust and hazardous waste from sandblast grit.
Have weekly meetings with operators to discuss and reinforce proper operational procedures.
Establish a continuing education program to indoctrinate new employees.

Material Handling Recommendations

Sandblast media should always be stored under cover away from drainage structures.
Ensure that stored media or grit is not subject to transport by wind.
Ensure that all sandblasting equipment as well as storage containers comply with local, state, and federal regulations.
Refer to Hazardous Waste BMP fact sheet if sandblast grit is known or or suspected to contain hazardous components.
Capture and treat runoff which comes into contact with sandblasting material or waste.
Foreman and/or construction supervisor should monitor all sandblasting activities and safety procedures.

Quality Assurance

Educate, and if necessary, discipline workers who violate procedures.
Take all reasonable precautions to ensure that sandblast grit is not transported off-site or into drainage facilities.

Requirements

Education and awareness program for all employees regarding control of sandblasting and potential dangers to humans and the environment.
Operator and supervisor education program for those directly involved in sandblasting activities - instructions on material handling, proper equipment operation, personal protective equipment, fugitive dust control, record keeping and reporting, fugitive dust control, record keeping and reporting.
Proper sandblast equipment for the job.
Site-specific fugitive dust control and containment equipment.
Site-specific fugitive dust control procedure.
Compliance by supervisors and workers.

Costs

Minimal cost for training and monitoring.
Potential for significant cost for containment procedures on large jobs.
Potential for significant costs associated with cleanup, correction and remediation if containment occurs.

LIMITATIONS

Site specific solutions to sandblasting problems may be required.
Sandblasting operations on structures known to contain hazardous materials require special procedures not specifically outlined above including professional hazardous waste specialists.
Where hazardous materials are known or suspected, a site assessment and remediation plan may be necessary.
This management program is one part of a comprehensive construction site waste management program.

HAZARDOUS WASTE MANAGEMENT

DESCRIPTION

The hazardous waste management BMP addresses the problem of storm water Polluted with hazardous waste through spills or other forms of contact. The Objective of the Management Program is to minimize the potential of Storm water contamination from common construction site hazardous wastes Through appropriate recognition, handling, storage, and disposal practices.

It is not the intent of this Management Program to supersede or replace normal site assessment and remediation procedures. Significant spills and/or contamination warrant immediate response by trained professionals. Suspected job-site contamination should be immediately reported to regulatory Authorities and protective actions taken. The General Permit requires reporting Of significant spills to the National Response Center (NRC) at (800)424-8802.

PRIMARY USE

These management practices along with applicable OSHA and EPA guidelines Should be incorporated at all construction sites which use or generate Hazardous wastes. Many wastes such as fuel, oil, grease, fertilizer, and pesticide Are present at most construction sites.

INSTALLATION, APPLICATION AND DISPOSAL CRITERIA

The hazardous waste management techniques presented here are based on Proper recognition, handling, and disposal practices by construction workers And supervisors. Key elements of the management program are education, Proper disposal practices, as well as provisions for safe storage and disposal. Following are lists describing the targeted materials and recommended procedures:

Targeted Hazardous Waste Materials

Paints
Solvents
Stains
Wood preservatives
Cutting oils
Greases
Roofing tar
Pesticides
Fuel and lube oils
Lead based paints (Demolition)

Storage Procedures

Wherever possible, minimize use of hazardous materials.
Minimize generation of hazardous wastes on the job-site.
Segregate potentially hazardous waste from non-hazardous Construction site debris.
Designate a foreman or supervisor to oversee hazardous materials Handling procedures.
Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.
Other enclosed trash container that limits contact with rain and.
Store waste materials away from drainage ditches, swales, and catch basins.
Use containment berms in fueling and maintenance areas and where the potential for spills is high.
Ensure that adequate hazardous waste storage volume is available.
Ensure that hazardous waste collection containers are conveniently located.
Do not allow potentially hazardous waste materials to accumulate on the ground.
Enforce Hazardous waste handling and storage procedures.
Clearly mark on all hazardous waste containers which materials are acceptable for the container.

Disposal Procedures

Regularly schedule hazardous waste removal to minimize on-site storage.
Use only reputable, licensed hazardous waste haulers.

Education

Instruct workers in identification of hazardous waste
Educate workers of potential dangers to humans and the environment from hazardous wastes
Instruct workers on safety procedures for common construction site hazardous wastes
Educate all workers on hazardous waste storage and disposal procedures
Have regular meetings to discuss and reinforce identification, handling and disposal procedures (incorporate in regular safety seminars).
Establish a continuing education program to indoctrinate new employees

Quality Assurance

Foreman and/or construction supervisor shall monitor on-site hazardous waste storage and disposal procedures.
Educate, and if necessary, discipline workers who violate procedures.
Ensure that the hazardous waste disposal contractor is reputable and licensed.

Requirements

Job-site waste handling and disposal education and awareness program
Commitment by management to implement hazardous waste management practices.
Compliance by workers.
Sufficient and appropriate hazardous waste storage containers.
Timely removal of stored hazardous waste materials.

Costs

Possible modest cost impact for additional hazardous storage containers.
Small cost impact for training and monitoring
Potential cost impact for hazardous waste collection and disposal by licensed hauler - actual cost depends
on type of material and volume.

LIMITATIONS

This practice is not intended to address site-assessments and pre-existing contamination.
Major contamination, large spills and other serious hazardous waste incidents require immediate response from specialists.
Demolition activities and potential pre-existing materials, such as asbestos, are not addressed by this program. Site specific information on plans is necessary.
Contaminated soils are not addressed.
One part of a comprehensive construction site waste management program.

SOLID WASTE MANAGEMENT

DESCRIPTION

Large volumes of solid waste are often generated at construction sites including: packaging, pallets, wood waste, concrete waste, soil, electrical wiring, cuttings, and a variety of other rnaterials. The solid waste management practice lists techniques to minimize the potential of storm water contamination from solid waste through appropriate storage and disposal practices.

PRIMARY USE

These practices should be a part of all construction practices. By limiting the trash and debris on site, storm water quality is improved along with reduced clean up requirements at the completion of the project.

APPLICATIONS

The solid waste management practice for construction sites is based on proper storage and disposal practices by construction workers and supervisors. Key elements of the program are education and modification of improper disposal habits. Cooperation and vigilance is required on the part of supervisors and workers to ensure that the recommendations and procedures are followed. Following are lists describing the targeted materials and recommended procedures:

Targeted Solid Waste Materials

Paper and cardboard containers
Plastic packaging
Styrofoam packing and forms
Insulation materials (non-hazardous)
Wood pallets
Wood cuttings
Pipe and electrical cuttings
Concrete, brick, and mortar waste
Shingle cuttings and waste
Roofing tar
Steel (cuttings, nails, rust residue)
Gypsum board cuttings and waste
Sheathing cuttings and waste
Miscellaneous cutting and waste
Food waste
Demolition waste

Storage Procedures

Wherever possible, minimize production of solid waste materials.
Designate a foreman or supervisor to oversee and enforce proper solid waste procedures.
Instruct construction workers in proper solid waste procedures.
Segregate potentially hazardous waste from non-hazardous construction site debris.
Keep solid waste materials under cover in either a closed dumpster or other enclosed trash container that limits contact with rain and runoff.
Store waste materials away from drainage ditches, swales and catch basins.
Do not allow trash containers to overflow.
Do not allow waste materials to accumulate on the ground.
Prohibit littering by workers and visitors.
Police site daily for litter and debris.
Enforce solid waste handling and storage procedures.

Disposal Procedures

If feasible, segregate recyclable wastes from non-recyclable waste materials and dispose of properly.
General construction debris may be hauled to a licensed construction debris landfill (typically less expensive than a sanitary landfill).
Use waste facilities approved by local jurisdiction.
Runoff which comes into contact with unprotected waste shall be directed into structural treatment such as silt fence to remove debris.

Education

Educate all workers on solid waste storage and disposal procedures.
Instruct workers in identification of solid waste and hazardous waste.
Have regular meetings to discuss and reinforce disposal procedures (incorporate in regular safety seminars).
Clearly mark on all solid waste containers which materials are acceptable.

Quality Control

Foreman and/or construction supervisor shall monitor on-site solid waste storage and disposal procedures.
Discipline workers who repeatedly violate procedures.

Requirements

Jobsite waste handling and disposal education and awareness program
Commitment by management to implement and enforce Solid Waste Management Program.
Compliance by workers.
Sufficient and appropriate waste storage containers.
Timely removal of stored solid waste materials.
Possible modest cost impact for additional waste storage containers.
Small cost impact for training and monitoring
Minimal overall cost impact.

LIMITATIONS

Only addresses non-hazardous solid waste.
One part of a comprehensive construction site management program.

CONCRETE WASTE MANAGEMENT

DESCRIPTION

Concrete waste at construction sites comes in two forms; 1) excess fresh concrete mix including truck and equipment washing, and 2) concrete dust and concrete debris resulting from demolition. Both forms have the potential to impact water quality through storm water runoff contact with the waste.

PRIMARY USE

Concrete waste is present at most construction sites. This BMP should be utilized at sites in which concrete waste is present

APPLICATIONS

A number of water quality parameters can be affected by introduction of concrete - especially fresh concrete. Concrete affects the pH of runoff, causing significant chemical changes in water bodies and harming aquatic life.
Suspended solids in the form of both cement and aggregate dust are also Generated from both fresh and demolished concrete waste:

Current Unacceptable Waste Concrete Disposal Practices

Dumping in vacant areas on the job-site
Illicit dumping off-jobsite
Dumping into ditches or drainage facilities

Recommended Disposal Practices

Avoid unacceptable dumping practices listed above.
Develop predetermined, safe concrete disposal areas
Provide a washout area with a minimum of 6 cubic feet of containment area volume for every 10 cubic yards of concrete poured.
Never dump waste concrete illicitly or without property owners knowledge and consent.
Treat runoff from storage area through the use of structural controls as required.

Education

Drivers and equipment operators should be instructed on proper disposal and equipment washing practices (see above).
Supervisors must be made aware of the potential environmental consequences of improperly handling concrete waste.

Enforcement

The construction site manager or foreman must ensure that employees and pre-mix companies follow proper procedures for concrete disposal and equipment washing.
Employees violating disposal or equipment cleaning directives must be reeducated or disciplined if necessary.

Demolition Practices

Monitor weather and wind direction to ensure concrete dust is not entering drainage structures and surface waters.
Where appropriate, construct sediment traps or other types of sediment detention devices downstream of demolition activities.

Requirements

Use predetermined disposal for waste concrete.
Prohibit dumping waste concrete anywhere but predetermined areas.
Assign predetermined truck and equipment washing areas.
Educate drivers and operators on proper disposal and equipment cleaning procedures.

Costs

Minimal cost impact for training and monitoring.
Concrete disposal cost depends on availability and distance to suitable disposal areas.
Additional costs involved in equipment washing could be significant.

LIMITATIONS

This concrete waste management program is one part of a comprehensive construction
site management program.

RECORD DRAWINGS

NOTE:
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4/5/18

KNIGHT RENOVATIONS
LOT 2R, BLOCK A
TOWN OF ADDISON
DALLAS COUNTY, TEXAS

STORMWATER POLLUTION PREVENTION GUIDELINES

Issue Dates:
September 16, 2016

Revisions	Date

Scale: As Shown
Drawn By: BLM
Checked By: JWS

Sheet C 9 of 10

SEI No. 16-036

COLORS:
LETTERS AND BORDER – GREEN
SYMBOL ON BLUE BACKGROUND
SIGN BACKGROUND – WHITE

NOTES:
1. SPACING BETWEEN LETTERS, COLORS, AND PROCESSES SHALL CONFORM STANDARD HIGHWAY AND SIGN DESIGNS FOR TEXAS.
2. INSTALL WHERE INDICATED ON PLANS.

TYPICAL SIGNAGE DETAIL TYPE I

N.T.S.

COLORS:
LETTERS AND BORDER – GREEN
SYMBOL ON BLUE BACKGROUND
SIGN BACKGROUND – WHITE

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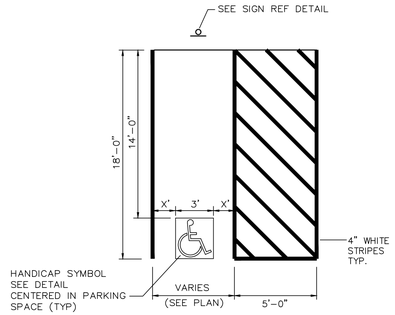
2. INSTALL WHERE INDICATED ON PLANS.
3. VAN-ACCESSIBLE SIGNAGE ON VAN SPACES ONLY.

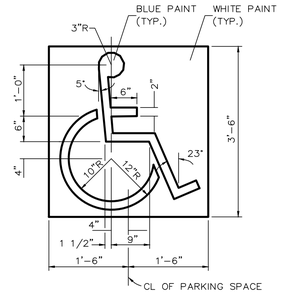
TYPICAL SIGNAGE DETAIL TYPE II

N.T.S.



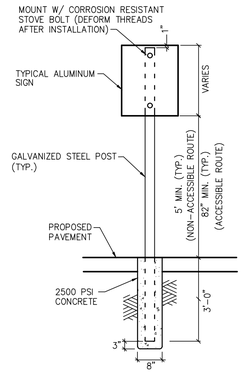
HANDICAP STRIPING DETAIL

N.T.S.



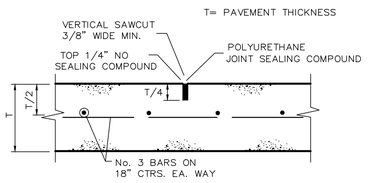
HANDICAP SYMBOL DETAIL

N.T.S.



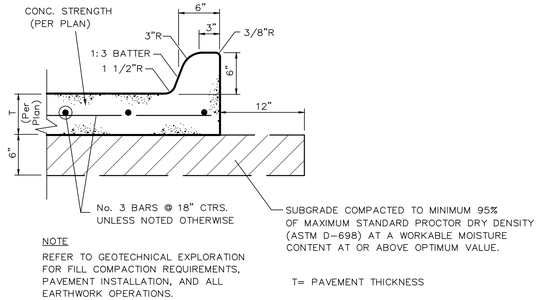
TYPICAL SIGNAGE MOUNTING DETAIL

N.T.S.



SAWED DUMMY (CONTROL) JOINT

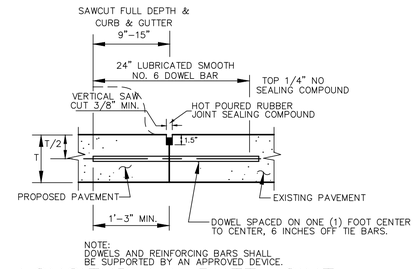
N.T.S. MAXIMUM SPACING IS 15' CTRS. (TYP.)



NOTE
REFER TO GEOTECHNICAL EXPLORATION FOR FILL COMPACTION REQUIREMENTS, PAVEMENT INSTALLATION, AND ALL EARTHWORK OPERATIONS.

CONCRETE PAVEMENT SECTION

N.T.S.

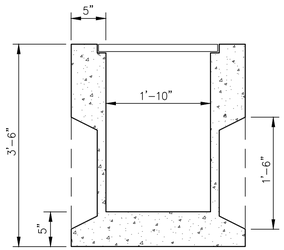


NOTE:
DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE.

LONGITUDINAL BUTT JOINT

N.T.S.

NOTES:
1. NO. 5 SMOOTH DOWEL BAR MAY BE USED IN 5 INCH AND 6 INCH PAVEMENT THICKNESS.
2. LONGITUDINAL BUT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG.
4. DRILLED BY HAND IS NOT ACCEPTABLE, PUSHING DOWEL BARS INTO GREEN CONCRETE NOT ACCEPTABLE.



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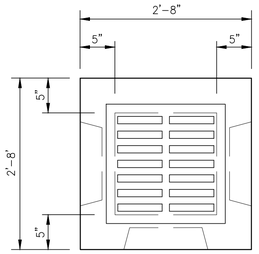


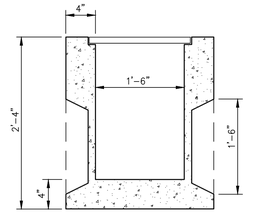
PLAN

CATCH BASIN NO. 24

NTS

AMERICAN INDUSTRIAL PRE-CAST
CATCH BASIN NO. 24
OR APPROVED EQUAL

CATCH BASIN NO. 24
FEATURES:
1. CAST IRON FRAME/GRATE VFG 24"x24"
2. 4000 PSI CONCRETE
3. GRADE 60 REBAR #3 ON 8" ocew
4. ACCOMMODATES 18" I.D. OR SMALLER PIPE
5. 2 OR 3 WAY THIN WALL K.O.'S



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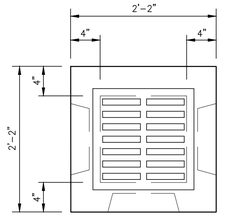


PLAN

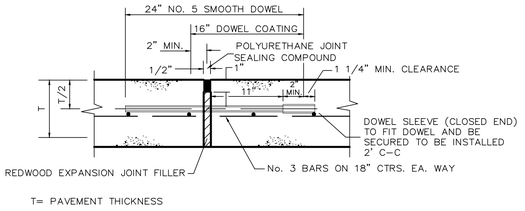
AMERICAN INDUSTRIAL PRE-CAST
CATCH BASIN NO. 20
OR APPROVED EQUAL

CATCH BASIN NO. 20
FEATURES:
1. CONCRETE: 4500 PSI
2. REINF.: GRADE 60
3. MAX. PIPE SIZE 12" I.D. R.C.P.
4. 4 THIN WALL K.O.'S

CATCH BASIN NO. 20

NTS

NOTE:
DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE.



EXPANSION JOINT

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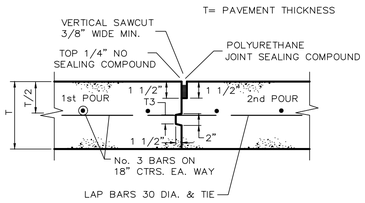
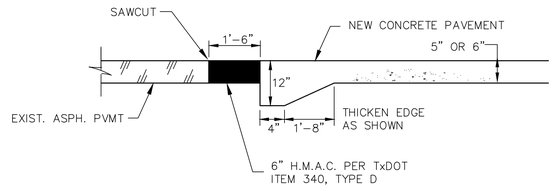


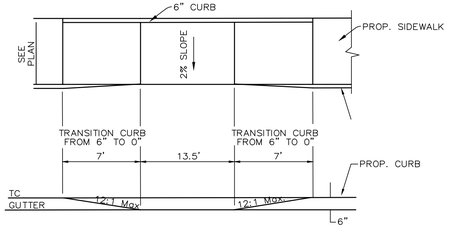
CONSTRUCTION JOINT

N.T.S.



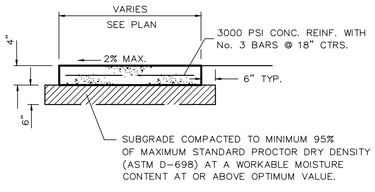
ASPHALT PATCH DETAIL

N.T.S.



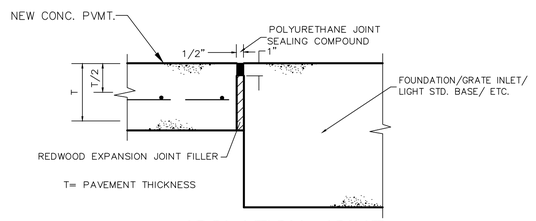
TYPICAL HC RAMP DETAIL

N.T.S.



SITE SIDEWALK DETAIL

N.T.S.



ISOLATION JOINT

N.T.S.

RECORD DRAWINGS

NOTE:
THESE PLANS HAVE BEEN REVISED TO CONFORM WITH CONSTRUCTION RECORDS PROVIDED BY THE CONTRACTOR.

SPIARS ENGINEERING
765 Custer Road, Suite 100 • Plano, TX 75075 • (972) 422-0077
TBPE No. F-2121 • TBPLS No. F-10043100

STATE OF TEXAS
DAVID J. BOND
122081
LICENSED PROFESSIONAL ENGINEER
4/5/18

KNIGHT RENOVATIONS
LOT 2R, BLOCK A
TOWN OF ADDISON
DALLAS COUNTY, TEXAS

PRIVATE SITE DETAILS

Issue Dates:
September 16, 2016

Date
Revisions

Scale: As Shown
Drawn By: BLM
Checked By: JWS

Sheet C10 of 10

SEI No. 16-036

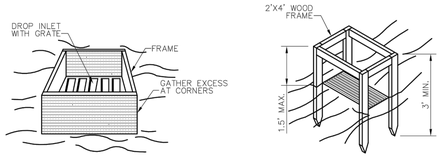
EROSION CONTROL PLAN NOTES

1. ALL OPERATORS AND/OR CONTRACTORS SHALL CONFORM TO THE TERMS AND CONDITIONS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ), TPDES GENERAL PERMIT NO. TXR 150000 ISSUED AND DATED MARCH 5, 2003.
2. THE NOTICE OF INTENT (NOI), AS REQUIRED BY THE GENERAL PERMIT, MUST BE PROPERLY DISPLAYED ON SITE AT ALL TIMES BY EACH OPERATOR.
3. ALL RELEASES OF THE REPORTABLE QUANTITIES OF HAZARDOUS SUBSTANCES SHALL BE REPORTED IMMEDIATELY TO THE FACILITY OPERATOR, EPA AND TCEQ.
4. QUALIFIED OPERATOR PERSONNEL MUST INSPECT THE SITE AT LEAST ONCE EVERY 14 DAYS AND WITHIN 24 HOURS OF A STORM EVENT OF 0.5 INCHES OR GREATER. AS AN ALTERNATIVE, AN INSPECTION CAN BE CONDUCTED ONCE EVERY SEVEN (7) CALENDAR DAYS ON A DEFINED DAY. A DECISION ON WHICH METHOD TO USE MUST BE DECIDED BEFORE WORK BEGINS AND MUST BE FOLLOWED THROUGHOUT THE PROJECT.
5. MODIFICATIONS TO THE STORM WATER POLLUTION PREVENTION PLAN SHALL BE IMPLEMENTED AND BE IN-PLACE WITHIN A SEVEN CALENDAR DAY PERIOD.
6. IF ANY CONTRACTOR SEES A VIOLATION BY AN OPERATOR OR ANOTHER CONTRACTOR, THAT OPERATOR OR CONTRACTOR IN VIOLATION SHALL BE NOTIFIED AS WELL AS THE FACILITY OPERATOR.
7. EROSION CONTROL SHALL BE INSTALLED PRIOR TO GRADING.
8. ACCUMULATED SILT DEPOSITS SHALL BE REMOVED FROM SILT FENCES AND HAY BALE DIKES WHEN SILT DEPTH REACHES THREE INCHES OR 25%.
9. THE CONTRACTOR SHALL ADD OR DELETE EROSION PROTECTION AT THE REQUEST AND DIRECTION OF THE OPERATOR OR TOWN.
10. AFTER INSTALLATION OF PAVEMENT, FINAL LOT BENCHING AND GENERAL CLEANUP, THE CONTRACTOR SHALL ESTABLISH GRASS GROUNDCOVER IN ALL STREET PARKWAYS, LOT AND ALL OTHER DISTURBED AREAS. SODDING SHALL BE DONE AS SPECIFIED BY SECTION 202.5 AND SEEDING AS SPECIFIED BY SECTION 202.6 OF THE OCTOBER 2004 OR LATEST EDITION OF NCTCOG STANDARD SPECIFICATION.
11. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTROL AND LIMIT SILT AND SEDIMENT LEAVING THE SITE. SPECIFICALLY, THE CONTRACTOR SHALL PROTECT ALL PUBLIC STREETS, ALLEYS, STREAMS AND STORM DRAINAGE SYSTEMS FROM EROSION DEPOSITS.
12. A DRAINAGE AREA MAP WILL BE INCLUDED WITH THE EROSION CONTROL PLAN.
13. CONSTRUCTION WASTE DISPOSAL CONTAINERS SHALL BE PROVIDED ON THE SITE FOR DISPOSAL OF ALL NON-HAZARDOUS CONSTRUCTION WASTE MATERIALS. THE CONTAINERS SHALL BE HAULED TO LANDFILL BY THE CONTRACTOR.
14. ALL HAZARDOUS MATERIALS SHALL BE HANDLED AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SILT FENCE NOTES

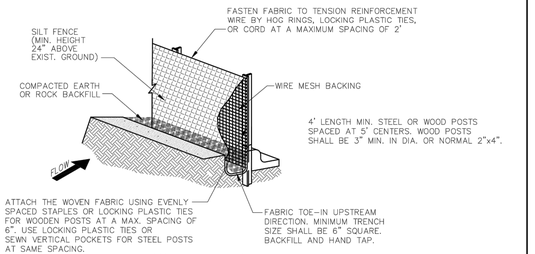
1. POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. THE POST MUST BE EMBEDDED A MINIMUM OF 18 INCHES.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT), WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON THE UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 8 INCHES DEEP AND 8 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHALL BE SECURELY FASTENED TO EACH SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE SUPPORT POST. THERE SHALL BE A 6 INCH DOUBLE OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE MADE EVERY TWO WEEKS OR AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 3 INCHES. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

PUBLIC WORKS DEPARTMENT	EROSION CONTROL & SILT FENCE NOTES	STANDARD CONSTRUCTION DETAILS EROSION CONTROL		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-EC01

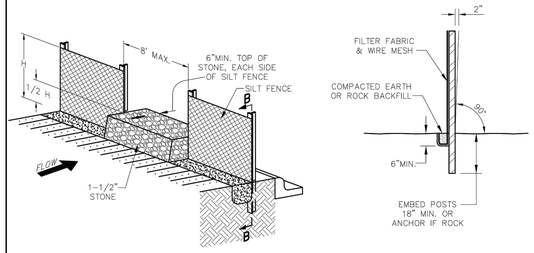


SPECIFIC APPLICATION
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVER-LAND FLOWS (NOT TO EXCEED 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS SUCH AS IN STREETS OR HIGHWAY MEDIANS.

PUBLIC WORKS DEPARTMENT	GRATE AND WYE INLET PROTECTION	STANDARD CONSTRUCTION DETAILS EROSION CONTROL		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-EC04

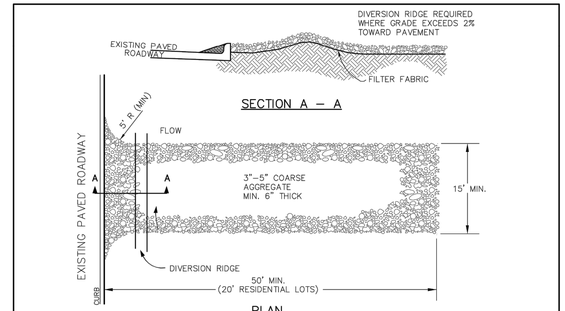


ISOMETRIC PLAN VIEW
N.T.S.



SILT FENCE
STONE OVERFLOW STRUCTURE
N.T.S.

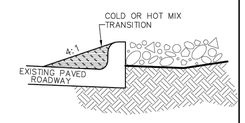
PUBLIC WORKS DEPARTMENT	SILT FENCE DETAIL	STANDARD CONSTRUCTION DETAILS EROSION CONTROL		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-EC02



TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT
N.T.S.

STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:

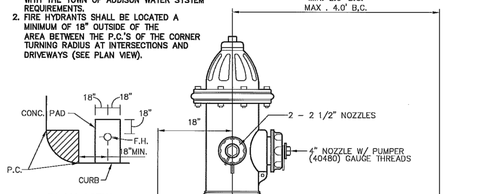
1. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
3. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
4. WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA BETWEEN THE ROCKS, THE AGGREGATE MAT MUST BE WASHED DOWN OR REPLACED, PERIODIC RE-GRADING AND TOP DRESSING WITH ADDITIONAL STONE MUST BE DONE TO KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING.



TRANSITION

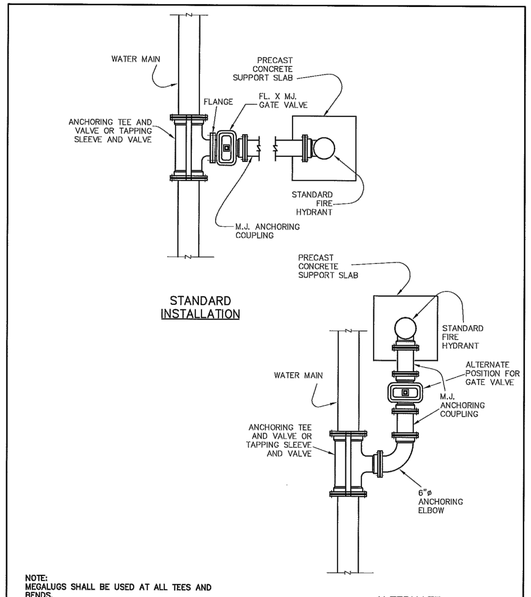
PUBLIC WORKS DEPARTMENT	TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT	STANDARD CONSTRUCTION DETAILS EROSION CONTROL		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-EC03

NOTE:
1. DESIGN, SITE REQUIREMENTS, THE GENERAL OPERATION, PAINTING AND DELIVERY OF ALL FIRE HYDRANTS SHALL BE IN ACCORDANCE WITH THE TOWN OF ADDISON WATER SYSTEM REQUIREMENTS.
2. FIRE HYDRANTS SHALL BE LOCATED A MINIMUM OF 18" OUTSIDE OF THE AREA BETWEEN THE P.C.'S OF THE CORNER TURNING RADIUS AT INTERSECTIONS AND DRIVEWAYS (SEE PLAN VIEW).



TYPICAL FIRE HYDRANT INSTALLATION

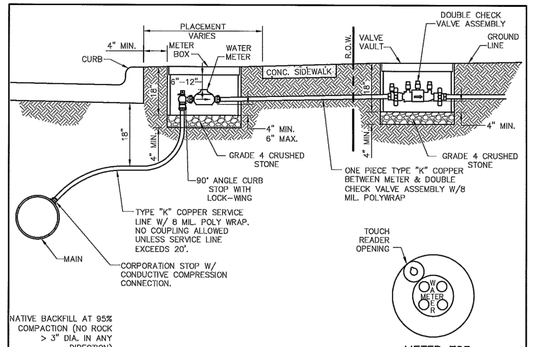
PUBLIC WORKS DEPARTMENT	TYPICAL FIRE HYDRANT INSTALLATION	STANDARD CONSTRUCTION DETAILS WATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-W16



NOTE:
MEGALUGS SHALL BE USED AT ALL TEES AND BENDS.

ALTERNATE INSTALLATION

PUBLIC WORKS DEPARTMENT	TYPICAL FIRE HYDRANT INSTALLATION	STANDARD CONSTRUCTION DETAILS WATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-W17

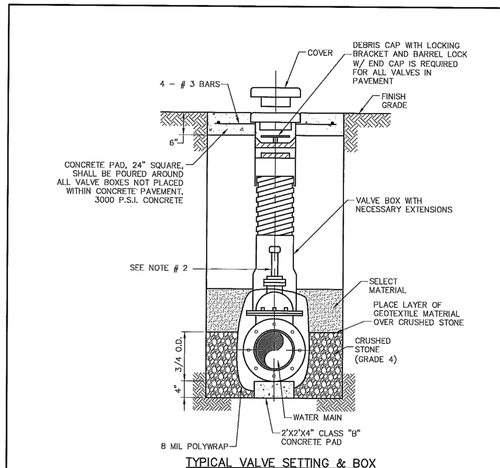


GENERAL INSTALLATION NOTES:
1. WATER METER SHALL BE PLACED IN CENTER OF LOT WITH THE SANITARY SEWER SERVICE TO BE LOCATED 10' DOWNSTREAM.
2. METER AND BOX SHALL BE SET BY THE CONTRACTOR TO ADDISON STANDARDS IN ALL CASES.
3. THE METER BOX SHALL BE SET WITHIN THE R.O.W. OR A DEDICATED UTILITY EASEMENT, IN ALL CASES, THE METER BOX SHALL BE PROTECTED FROM VEHICULAR TRAFFIC.
4. WATER SERVICES SHALL NOT BE CONNECTED TO DEAD END LINES OR FIRE HYDRANT LEADS.
5. ALL MATERIALS SHALL CONFORM TO THE TOWN OF ADDISON WATER SYSTEM REQUIREMENTS.

Type "K" Copper Service Pipe.	Double Strap Bronze Service Saddle with C.C. Threads	East Jordan Iron Works Galvanized Meter Box With Iron Ring & Cover				
		Min. Dia.	Covers & Rigns	Min. Ht.	Min. Con Weight	Min. Total Weight
3/4 Inch	3/4 Inch	18 Inches	12⅜ Inches	18 Inches	13 lbs.	42 lbs.
1 Inch	1 Inch	24 Inches	20⅜ Inches	18 Inches	17 lbs.	98 lbs.
1 1/2 Inch	1 1/2 Inch	28 Inches	20⅜ Inches	18 Inches	20 lbs.	127 lbs.
2 Inch	2 Inch	28 Inches	20⅜ Inches	18 Inches	20 lbs.	127 lbs.

SERVICE CONNECTION WITH METER BOX

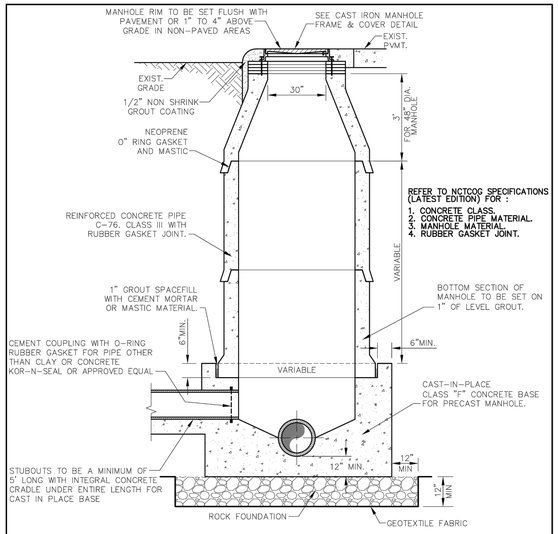
PUBLIC WORKS DEPARTMENT		STANDARD CONSTRUCTION DETAILS WATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-W20



TYPICAL VALVE SETTING & BOX

NOTE:
1. 4"–12" R.S. GATE VALVES SHALL BE IN ACCORDANCE WITH TOWN OF ADDISON WATER SYSTEM REQUIREMENTS.
2. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE WHERE THE OPERATING NUT IS LOCATED IN EXCESS OF 5 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT ITS TOP IS WITHIN 5 FEET OF VALVE BOX LID.
3. BLUE "V" (3") CUT INTO FACE OF NEAREST CURB AND POINTING TOWARD THE VALVE.
4. ALL IRON MATERIALS SHALL BE DOMESTIC. (MADE IN USA)
5. CRUSHED STONE SHALL BE 3/4", PASSING #4 SIEVE.

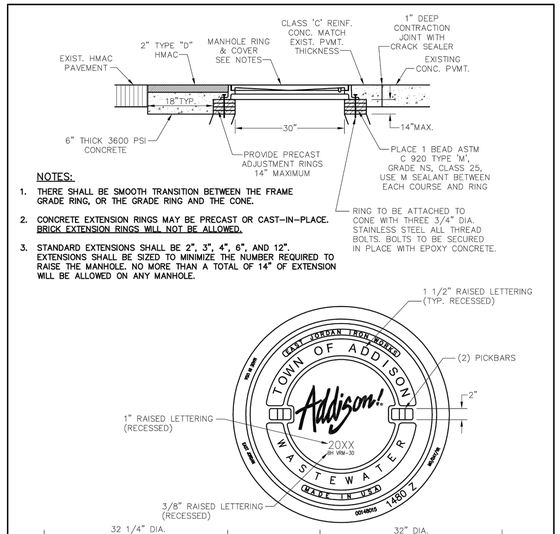
PUBLIC WORKS DEPARTMENT	VALVE SETTING BOX	STANDARD CONSTRUCTION DETAILS WATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-W09



NOTES:

1. IF FALSE MANHOLE BOTTOMS ARE REQUIRED, THEY SHALL BE CONSTRUCTED, INSTALLED, AND REMOVED PER WASTEWATER MANHOLE FALSE BOTTOM STD. DETAIL.
2. WHERE MANHOLE'S ARE OUTSIDE OF PAVEMENT, FRAME & COVER SHALL BE CENTERED IN 5'x5' CONCRETE PAD CLASS 'A' CONCRETE, 4" THICK
3. ALL MANHOLES SHALL PASS VACUUM TEST AS PER NCTCOG SPECIFICATIONS

PUBLIC WORKS DEPARTMENT	PRECAST CONCRETE PIPE MANHOLE ALTERNATE "A"	STANDARD CONSTRUCTION DETAILS WASTEWATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-WW06

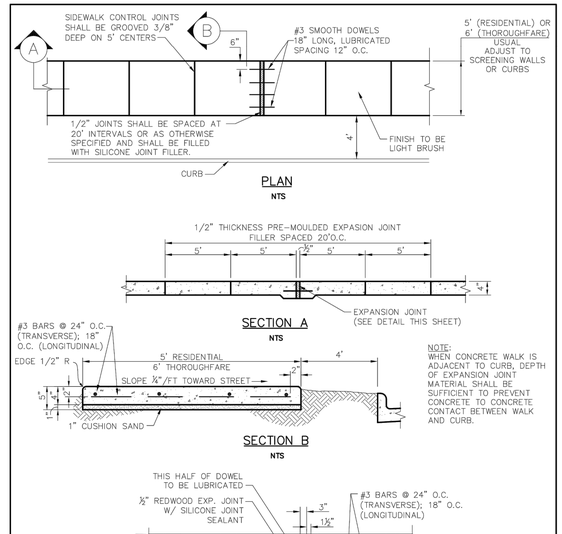


NOTES:

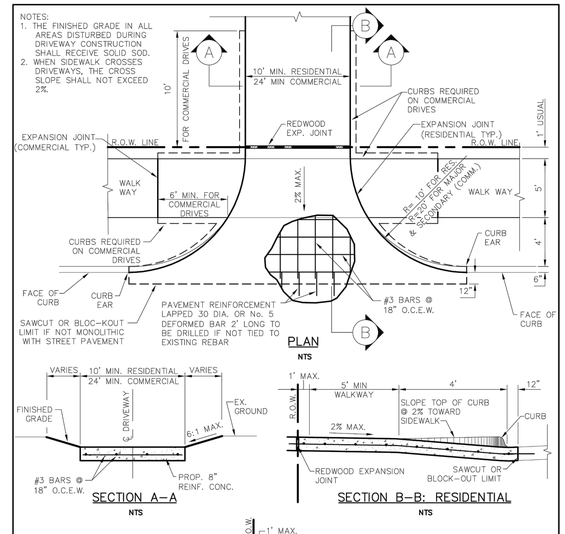
1. THERE SHALL BE SMOOTH TRANSITION BETWEEN THE FRAME GRADE RING, OR THE GRADE RING AND THE CONE.
2. CONCRETE EXTENSION RINGS MAY BE PRECAST OR CAST-IN-PLACE. BRICK EXTENSION RINGS WILL NOT BE ALLOWED.
3. STANDARD EXTENSIONS SHALL BE 2", 3", 4", 6", AND 12". EXTENSIONS SHALL BE SIZED TO MINIMIZE THE NUMBER REQUIRED TO RAISE THE MANHOLE. NO MORE THAN A TOTAL OF 14" OF EXTENSION WILL BE ALLOWED ON ANY MANHOLE.

√ DESIGNATES MACHINE SURFACE

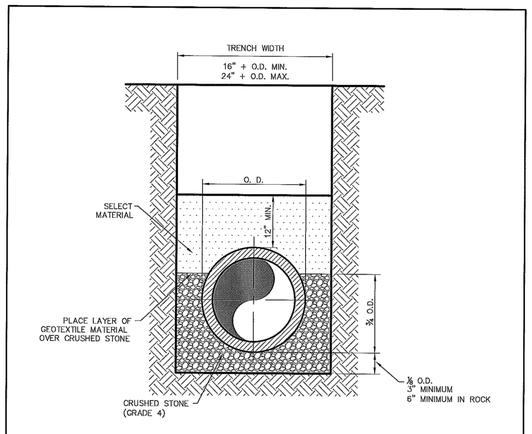
PUBLIC WORKS DEPARTMENT	CAST IRON MANHOLE FRAME AND COVER	STANDARD CONSTRUCTION DETAILS WASTEWATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-WW11



PUBLIC WORKS DEPARTMENT	CONCRETE SIDEWALK	STANDARD CONSTRUCTION DETAILS PAVING		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-P26



PUBLIC WORKS DEPARTMENT	DRIVEWAY RETURN DETAILS	STANDARD CONSTRUCTION DETAILS PAVING		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-P35

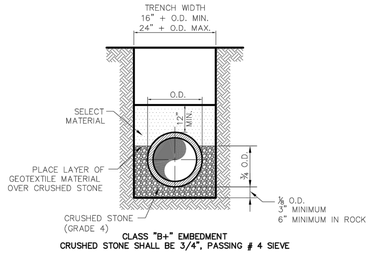


CLASS "B+" EMBEDMENT

CRUSHED STONE SHALL BE 3/4", PASSING # 4 SIEVE

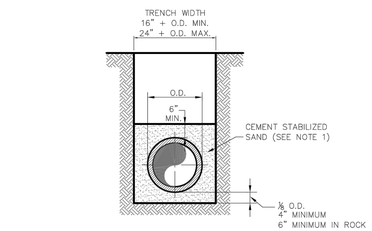
TYPICAL P.V.C. WATER MAIN EMBEDMENT

PUBLIC WORKS DEPARTMENT	P.V.C. WATER MAIN EMBEDMENT	STANDARD CONSTRUCTION DETAILS WATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-W01



CLASS "B+" EMBEDMENT
CRUSHED STONE SHALL BE 3/4", PASSING # 4 SIEVE

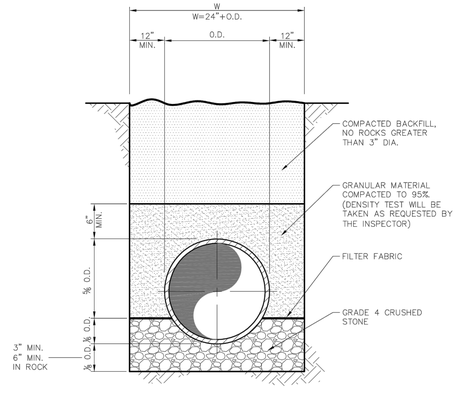
TYPICAL P.V.C. WASTEWATER MAIN EMBEDMENT



NOTE:
1. CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND IS REQUIRED FOR PRESSURE RATED WASTEWATER MAIN AND LATERAL BEDDING.

P.V.C. WASTEWATER MAIN CEMENT STABILIZED SAND EMBEDMENT

PUBLIC WORKS DEPARTMENT	P.V.C. WASTEWATER MAIN EMBEDMENT	STANDARD CONSTRUCTION DETAILS WASTEWATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-WW01



RCP STORM SEWER PIPE BEDDING
NTS

NOTE:
1. THE DEPTH OF TRENCH BELOW THE PROPOSED CONDUIT SHALL BE AS FOLLOWS:
   - 3" MIN. FOR 27" PIPE & SMALLER.
   - 4" MIN. FOR 30" TO 60" PIPE.
   - 6" MIN. FOR 66" PIPE OR LARGER.

PUBLIC WORKS DEPARTMENT	RCP STORM SEWER PIPE BEDDING	STANDARD CONSTRUCTION DETAILS STORM DRAINAGE		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-D03

STORM SEWER – GENERAL NOTES:

1. ALL CONCRETE DRAINAGE STRUCTURES SHALL BE CLASS C CONCRETE MINIMUM.
2. ALL CRUSHED STONE SHALL BE 3/4", PASSING #4 SIEVE (GRADE 4).
3. ALL FIELD JOINTS WILL BE APPROVED BY THE TOWN ENGINEER IF NECESSARY. FIELD JOINTS SHALL BE WIPED ON THE INSIDE AND OUTSIDE TO PROVIDE FOR SMOOTH FLOW OF WATER.
4. RAMNECK COMPOUND OR APPROVED EQUAL SHALL BE USED FOR JOINT SEALS.
5. ALL STORM SEWER PIPE SHALL BE CAMERA INSPECTED AFTER THE INSTALLATION OF ALL PAVING AND UTILITIES AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

PUBLIC WORKS DEPARTMENT	STORM SEWER GENERAL NOTES	STANDARD CONSTRUCTION DETAILS STORM DRAINAGE		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-D01

MAINTENANCE NOTES

1. *The Owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of all landscape.*
2. *All landscape shall be maintained in a neat and orderly manner at all times. This shall include mowing, edging, pruning, fertilizing, watering, weeding and other such activities common to landscape maintenance.*
3. *All landscape areas shall be kept free of trash, litter, weeds and other such material or plants not part of this plan.*
4. *All plant material shall be maintained in a healthy and growing condition as is appropriate for the season of the year.*
5. *All plant material which dies shall be replaced with plant material of equal or better value.*
6. *Contractor shall provide separate bid proposal for one year's maintenance to begin after final acceptance.*

LANDSCAPE NOTES

1. *Contractor shall verify all existing and proposed site elements and notify Architect of any discrepancies. Survey data of existing conditions was supplied by others.*
2. *Contractor shall locate all existing underground utilities and notify Architect of any conflicts. Contractor shall exercise caution when working in the vicinity of underground utilities.*
3. *Contractor is responsible for obtaining all required landscape and irrigation permits.*
4. *Contractor to provide a minimum 2% slope away from all structures.*
5. *All planting beds and lawn areas to be separated by steel edging. No steel to be installed adjacent to sidewalks or curbs.*
6. *All landscape areas to be 100% irrigated with an underground automatic irrigation system and shall include rain and freeze sensors.*
7. *All lawn areas to be Solid Sod Bermudagrass, unless otherwise noted on the drawings.*

GENERAL LAWN NOTES

1. *Fine grade areas to achieve final contours indicated on civil plans.*
2. *Adjust contours to achieve positive drainage away from buildings. Provide uniform rounding at top and bottom of slopes and other breaks in grade. Correct irregularities and areas where water may stand.*
3. *All lawn areas to receive solid sod shall be left in a maximum of 1" below final finish grade. Contractor to coordinate operations with on-site Construction Manager.*
4. *Imported topsoil shall be natural, friable soil from the region, known as bottom and soil, free from lumps, clay, toxic substances, roots, debris, vegetation, stones, containing no salt and black to brown in color.*
5. *All lawn areas to be fine graded, irrigation trenches completely settled, and finish grade approved by the Owner's Construction Manager or Architect prior to installation.*
6. *All rocks 3/4" diameter and larger, dirt clods, sticks, concrete spoils, etc. shall be removed prior to placing topsoil and any lawn installation*
7. *Contractor shall provide (1") one inch of imported topsoil on all areas to receive lawn.*

HIGHWAY MIX LAWN NOTES

1. *Installation of native grasses to be performed by hydro-seeding.*
2. *Provide a hydromulch cap per Hydromulch Notes.*
3. *Final grades to be smooth and level free of debris, rocks over 1" and shall have no ruts or depressions.*
4. *Install the following mix at the specified rate:*
   - *Sideoats Gramma* — *5 lbs / acre*
   - *Blue Gramma Grass* — *5 lbs / acre*
   - *Buffalo Grass* — *40 lbs / acre*
   - *Green Sprangletop* — *5 lbs / acre*
   - *Lovegrass* — *6 lbs / acre*

SOLID SOD NOTES

1. *Fine grade areas to achieve final contours indicated. Leave areas to receive topsoil 3" below final desired grade in planting areas and 1" below final grade in turf areas.*
2. *Adjust contours to achieve positive drainage away from buildings. Provide uniform rounding at top and bottom of slopes and other breaks in grade. Correct irregularities and areas where water may stand.*
3. *All lawn areas to receive solid sod shall be left in a maximum of 1" below final finish grade. Contractor to coordinate operations with on-site Construction Manager.*
4. *Contractor to coordinate with on-site Construction Manager for availability of existing topsoil.*
5. *Plant sod by hand to cover indicated area completely. Insure edges of sod are touching. Top dress joints by hand with topsoil to fill voids.*
6. *Roll grass areas to achieve a smooth, even surface, free from unnatural undulations.*
7. *Water sod thoroughly as sod operation progresses.*
8. *Contractor shall maintain all lawn areas until final acceptance. This shall include, but not limited to: mowing, watering, weeding, cultivating, cleaning and replacing dead or bare areas to keep plants in a vigorous, healthy condition.*
9. *Contractor shall guarantee establishment of an acceptable turf area and shall provide replacement from local supply if necessary.*
10. *If installation occurs between September 1 and March 1, all sod areas to be over-seeded with Winter Ryegrass, at a rate of (4) pounds per one thousand (1000) square feet.*

PLANT LIST

TREES

QTY.	TYPE	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
8	BC	Bald Cypress	*Taxodium distichum*	4" cal.	B&B, 15' ht., 5' spread min.
8	CE	Cedar Elm	*Ulmus crassifolia*	4" cal.	B&B, 15' ht., 5' spread min.
12	HLO	High Rise Live Oak	*Quercus virginiana 'High Rise'*	4" cal.	B&B, 15' ht., 5' spread min.
5	RO	Red Oak 'Shumard'	*Quercus shumardii*	4" cal.	B&B, 15' ht., 5' spread min.

SHRUBS

QTY.	TYPE	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
34	IH	Indian Hawthorne 'Clara'	*Raphiolepis indica 'Clara'*	5 gal.	container, full plant specimen
31	MFG	Mexican Feather Grass	*Nasella tenuissima*	5 gal.	container, full plant specimen
11	MIS	Miscanthus	*Miscanthus sinensis 'Gracillimus'*	5 gal.	container, full plant specimen
23	NRS6	Nellie R. Stevens Holly	*Ilex sp. 'Nellie R. Stevens'*	6' ht.	container, full plant specimen
550	NPH	Needlepoint Holly	*Ilex cornuta 'Needlepoint'*	36" ht.	container, full plant specimen
11	SKYP	Skypencil Holly	*Ilex crenata 'Skypencil'*	10 gal.	container, full plant specimen
14	DA	Dwarf Abelia 'Edward Goucher'	*Abelia sp. 'Edward Goucher'*	5 gal.	container, full plant specimen

GROUNDCOVERS

QTY.	TYPE	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
101	LG	Giant Liriope	*Liriope gigantea*	1 gal.	container, full plant
583	WC	Wintercreeper Common Bermudagrass	*Euonymus fortunei coloratus* *Cynodon dactylon*	4" pots	container, (3) 12" runners min. 12" o.c. solid sod, refer to notes

NOTE: Plant list is an aid to bidders only. Contractor shall verify all quantities on plan. All heights and spreads are minimums. All plant material shall meet or exceed remarks as indicated. All trees to have straight trunks and be matching within varieties.

LANDSCAPE TABULATIONS

SITE REQUIREMENTS
Requirements: 20% of gross site to be landscape
Total Site: 47,668 s.f. (1.09 acres)

Required	Provided
9,533 s.f. (20%)	5,708 s.f. (13.4%) / ROW: 3,846 s.f. = 9,554 s.f.

STREET FRONTAGE
Requirements: 20' buffer along street frontage including street ROW
(1) tree 4" cal. per 30 l.f., (8) shrubs per 20 l.f.

WESTGROVE: 170.59 l.f.

Required	Provided
(6) trees, 4" cal.	(7) trees, 4" cal.
(70) shrubs, 5 gal.	(165) shrubs, 5 gal.

SOJOURN DRIVE: 259.75 l.f.

Required	Provided
(8) trees, 4" cal.	(6) trees, 4" cal.
(104) shrubs, 5 gal.	(212) shrubs, 5 gal.

PARKING LOT PERIMETER LANDSCAPE
Requirements: 5' wide buffer, (1) 4" cal. tree per 35 l.f. and (1) shrub per 3 l.f.

East Property Line: 124 l.f.

Required	Provided
(4) trees, 4" cal.	(4) tree, 4" cal.
(42) shrubs, 5 gal.	(59) shrubs, 5 gal.

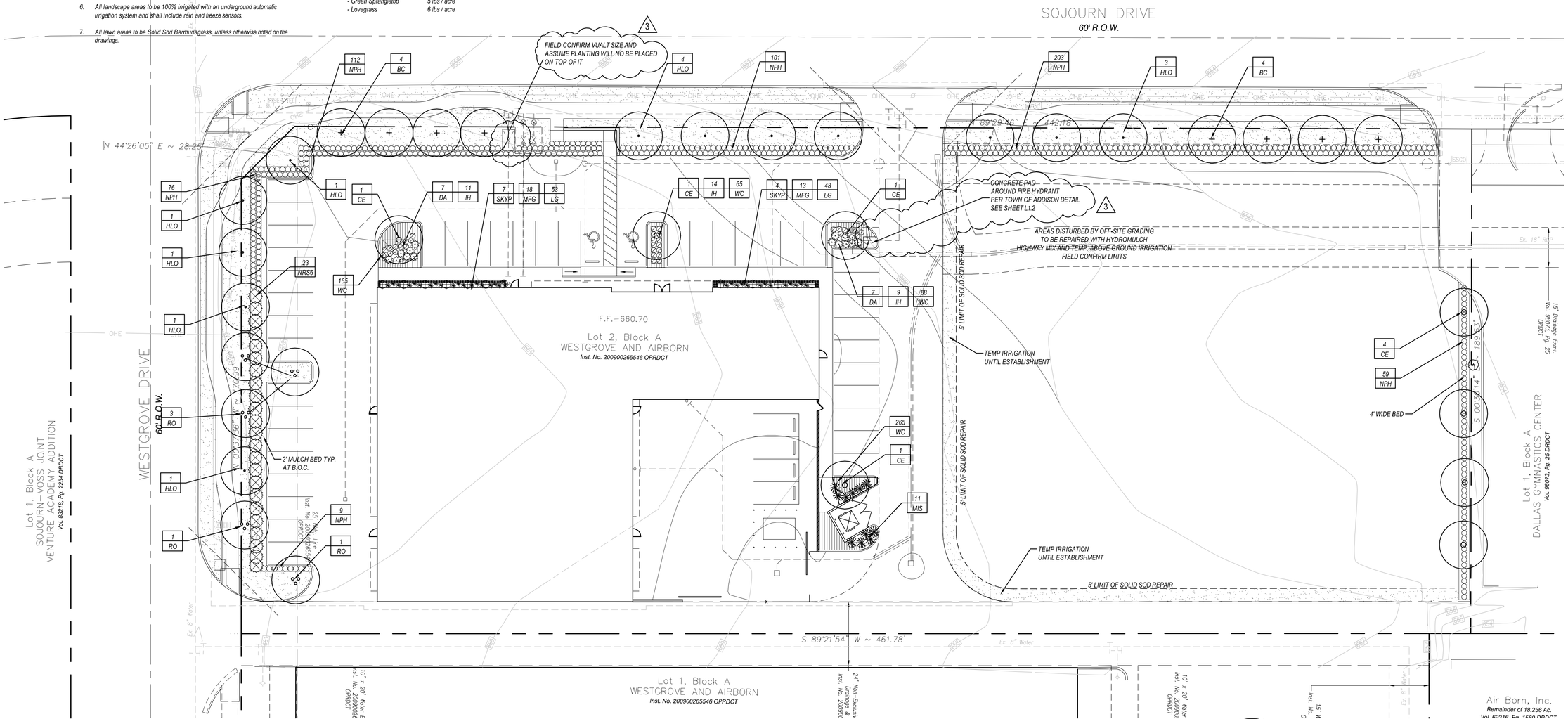
PARKING LOT SCREEN
Requirements: 36" ht., 3' o.c.,
Provided: 36" ht., 2' o.c. double linear row

PARKING LOT - INTERIOR LANDSCAPE
Requirement: 8% of the parking area must be landscape
Parking lot: 14,098 s.f.

Required	Provided
1,127 s.f. (8%)	1,158 s.f. (8.2%)

PARKING LOT
Requirement: (1) tree per 10 regular spaces
Total Parking: 42 spaces

Required	Provided
(4) trees	(6) trees, 4" cal.



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9660 Audelia Road
Suite 123-66
Dallas, Texas 75238
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KNIGHT SERVICES CORPORATE OFFICES & WAREHOUSE

4200 SOJOURN, ADDISON, TX

2206

1	10.03.16	SUP SUBMITTAL
2	12.29.16	REVISED SITE PLAN
3	01.19.17	TOWN COMMENTS
4		
5		
6		
7		
8		
9		

REGISTERED LANDSCAPE ARCHITECT — BRIAN D. ADAMS — 2176 — STATE OF TEXAS — 1.19.17

SHEET CONTENTS:

LANDSCAPE PLAN

DATE: Dec. 29, 2016

SHEET: L1.1

CALL BEFORE YOU DIG 1-800-245-4545 TEXAS ONE CALL SYSTEM

01 LANDSCAPE PLAN
SCALE: 1" = 20'-0"

0 10 20 40

smr
landscape architects, inc.
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Dallas, Texas 75202
Tel 214.871.0083
Fax 214.871.0545
Email smr@smr-la.com

SECTION 02900 - LANDSCAPE

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS

Refer to bidding requirements, special provisions, and schedules for additional requirements.

1.2 DESCRIPTION OF WORK

Work included: Furnish all supervision, labor, materials, services, equipment and appliances required to complete the work covered in conjunction with the landscaping covered in these specifications and landscaping plans, including:

1. Planting (trees, shrubs, and grass)
2. Bed preparation and fertilization
3. Notification of sources
4. Water and Maintenance until final acceptance
5. Guarantee

1.3 REFERENCE STANDARDS

A. American Standard for Nursery Stock published by American Association of Nurserymen: 27 October 1980, Edition; by American National Standards Institute, Inc. (Z60.1) – plant material.

B. American Joint Committee on Horticultural Nomenclature: 1942 Edition of Standardized Plant Names.

C. Texas Association of Nurserymen, Grades and Standards.

D. Hortis Third, 1976 - Cornell University

1.4 NOTIFICATION OF SOURCES AND SUBMITTALS

A. The Contractor shall, within ten (10) days following acceptance of bid, notify the Architect/Owner of the sources of plant materials and bed preparation required for the project.

B. Samples: Provide representative quantities of sandy loam soil, mulch, bed mix material, gravel, and crushed stone. Samples shall be approved by Architect before use on project.

C. Product Data: Submit complete product data and specifications on all other specified materials.

D. Submit three representative samples of each variety of ornamental trees, shrubs, and groundcover plants for Architect's approval. When approved, tag, install, and maintain as representative samples for final installed plant materials.

E. File Certificates of Inspection of plant material by state, county, and federal authorities with Architect, if required.

F. Soil Analysis: Provide sandy loam soil analysis if requested by the Architect.

JOB CONDITIONS

A. General Contractor to complete the following punch list: Prior to Landscape Contractor initiating any portion of landscape installation, General Contractor shall leave planting bed areas three (3') inches below finish grade of sidewalks, drives and curbs as shown on the drawings. All lawn areas to receive solid sod shall be left one (1") inch below the finish grade of sidewalks, drives, and curbs. All construction debris shall be removed prior to Landscape Contractor beginning any work.

B. General Contractor shall provide topsoil as described in Section 02200 - Earthwork.

C. Storage of materials and equipment at the job site will be at the risk of the Landscape Contractor. The Owner cannot be held responsible for theft or damage.

1.6 MAINTENANCE AND GUARANTEE

A. Maintenance:

1. The Landscape Contractor will be held responsible for the maintenance of all work from the time of planting until final acceptance by the Owner. No trees, shrubs, groundcover or grass will be accepted unless they show a healthy growth and satisfactory foliage conditions.
2. Maintenance shall include watering of trees and plants, cultivation, weeding spraying, edging, pruning of trees, mowing of grass, cleaning up and all other work necessary of maintenance.
3. A written notice requesting final inspection and acceptance should be submitted to the Owner at least seven (7) days prior to completion. An on-site inspection by Owner and Landscape Contractor will be completed prior to written acceptance.
4. After final acceptance of installation, the Landscape Contractor will not be required to do any of the above listed work.

B. Guarantee:

1. Trees shall be guaranteed for a twelve (12) month period after acceptance. Shrubs and groundcover shall be guaranteed for twelve (12) months. The Contractor shall replace all dead materials as soon as weather permits and upon notification of the Owner. Plants, including trees, which have partially died so that shape, size, or symmetry has been damaged, shall be considered subject to replacement. In such cases, the opinion of the Owner shall be final.
   a. Plants used for replacement shall be of the same size and kind as those originally planted and shall be planted as originally specified. All work, including materials, labor and equipment used in replacements, shall carry a twelve (12) month guarantee. Any damage, including ruts in lawn or bed areas, incurred as a result of making replacements shall be immediately repaired.
   b. At the direction of the Owner, plants may be replaced at the start of the next year's planting season. In such cases, dead plants shall be removed from the premises immediately.
   c. When plant replacements are made, plants, soil mix, fertilizer and mulch are to be utilized as originally specified and reinspected for full compliance with Contract requirements. All replacements are to be included under "Work" of this section.
2. The Owner agrees that for the guarantee to be effective, he will water plants at least twice a week during dry periods and cultivate beds once a month after final acceptance.
3. The above guarantee shall not apply where plants die after acceptance because of injury from storms, hail, freeze, insects, diseases, injury by humans, machines or theft.
4. Acceptance for all landscape work shall be given after final inspection by the Owner provided the job is in a completed, undamaged condition, and there is a stand of grass in all lawn areas. At this time, the Owner will assume maintenance on the accepted work.

C. Repairs: Any necessary repairs under the Guarantee must be made within ten (10) days after receiving notice, weather permitting, and in the event the Landscape Contractor does not make repairs accordingly, the Owner, without further notice to Contractor, may provide materials and men to make such repairs at the expense of the Landscape Contractor.

1.7 QUALITY ASSURANCE

A. General: Comply with applicable Federal, State, County and Local regulations governing landscape materials and work

B. Personnel: Employ only experienced personnel who are familiar with the required work. Provide full time supervision by a qualified foreman acceptable to Landscape Architect.

C. Selection of Plant Material:

1. Make contact with suppliers immediately upon obtaining notice of contract acceptance to select and book materials. Develop a program of maintenance (pruning and fertilization) which will insure the purchased materials will meet and/or exceed project specifications.
2. Landscape Architect will provide a key identifying each tree location on site. Written verification will be required to document material selection, source and delivery schedules to site.
3. Owner and/or Architect shall inspect all plant materials when reasonable at place of growth for compliance with requirements for genus, species, cultivar/variety, size and quality.
4. Owner and/or Architect retains the right to further inspect all plant material upon arrival at the site and during installation for size and condition of root balls, limbs, branching habit, insects, injuries, and latent defects.
5. Owner and/or Architect may reject unsatisfactory or defective material at any time during the process of work. Remove rejected materials from the site immediately. Plants damaged in transit or at job site shall be rejected.

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Preparation:

1. Balled and Burlapped (B&B) Plants: Dig and prepare shipment in a manner that will not damage roots, branches, shape, and future development.
2. Container Grown Plants: Deliver plants in rigid container to hold ball shape and protect root mass.

A. Delivery:

1. Deliver packaged materials in sealed containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.
2. Deliver only plant materials that can be planted in one day unless adequate storage and watering facilities are available on job site.
3. Protect root balls by heeling in with sawdust or other approved moisture retaining material if not planted within 24 hours of delivery.
4. Protect plants during delivery to prevent damage to root balls or desiccation of leaves. Keep plants moist at all times. Cover all materials during transport.
5. Notify Architect of delivery schedule 72 hours in advance so plant material may be observed upon arrival at job site.
6. Remove rejected plant material immediately from site.
7. To avoid damage or stress, do not lift, move, adjust to plumb, or otherwise manipulate plants by trunk or stems.

PART 2 - PRODUCTS

2.1 PLANTS

A. General: Well-formed No. 1 grade or better nursery grown stock. Listed plant heights are from tops of root balls to nominal tops of plants. Plant spread refers to nominal outer width of the plant, not to the outer leaf tips. Plants will be individually approved by the Architect and his decision as to their acceptability shall be final.

B. Quantities: The drawings and specifications are complimentary. Anything called for on one and not the other is as binding as if shown and called for on both. The plant schedule is an aid to bidders only. Confirm all quantities on plan.

C. Quality and size: Plant materials shall conform to the size given on the plan, and shall be healthy, symmetrical, well-shaped, full branched, and well rooted. The plants shall be free from injurious insects, diseases, injuries to the bark or roots, broken branches, objectionable disfigurements, insect eggs and larvae and are to be of specimen quality.

D. Approval: All plant materials shall be subject to the approval of the Owner. All plants which are found unsuitable in growth, or in any unhealthy, badly shaped, or undersized condition, will be rejected by the Landscape Architect, either before or after planting, and shall be removed at the expense of the Landscape Contractor and replaced with acceptable plants as specified.

E. Trees shall be healthy, full-branched, well-shaped and shall meet the trunk diameter and height requirements of the plant schedule. Balls shall be firm, neat, slightly tapered, and well wrapped in burlap. Any tree loose in the ball or with broken ball at time of planting will be rejected. Balls shall be ten (10") inched in diameter for each one (1") inch of trunk diameter, Measured six (6") inched above ball.
   Nomenclature conforms to the customary nursery usage: for clarification, the term "multi-trunk" defines a plant having three (3) or more trunks of nearly equal diameter.

F. Pruning: All pruning of trees and shrubs, as directed by the Landscape Architect, shall be executed by the Landscape Contractor at no additional cost to the Owner.

2.2 SOIL PREPARATION MATERIALS

A. Sandy Loam:

1. Friable, fertile, dark, loamy soil, free of clay lumps, subsoil, stones and other extraneous material and reasonably free of weeds and foreign grasses. Loam containing Dallasgrass or Nutgrass shall be rejected.
2. Physical properties as follows:
   Clay – between 7-27 percent
   Silt – between 15-25 percent
   Sand – less than 52 percent
3. Organic matter shall be 3%-10% of total dry weight.
4. If requested, provide a certified soil analysis conducted by an approved soil testing laboratory verifying that sandy loam meets the above requirements.

B. Organic Material: Compost with a mixture of 80% vegetative matter and 20% animal waste. Ingredients should be a mix of course and fine textured material.

C. Premixed Bedding Soil as supplied by Vital Earth Resources, Gladewater, Texas; Professional Bedding Soil as supplied by Living Earth Technology, Dallas, Texas or Acid Gro Municipal Mix as supplied by Soil Building Systems, Dallas, Texas or approved equal.

D. Sharp Sand: Sharp sand must be free of seeds, soil particles and weeds.

E. Mulch: Double Shredded Hardwood Mulch, partially decomposed, dark brown. Living Earth Technologies or approved equal.

F. Organic Fertilizer: Fertilaid, Sustane, or Green Sense or equal as recommended for required applications. Fertilizer shall be delivered to the site in original unopened containers, each bearing the manufacturer's guaranteed statement of analysis.

A. Commercial Fertilizer: 10-20-10 or similar analysis. Nitrogen source to be a minimum 50% slow release organic Nitrogen (SCU or UF) with a minimum 8% sulphur and 4% iron, plus micronutrients.

B. Peat: Commercial sphagnum peat moss or partially decomposed shredded pine bark or other approved organic material.

2.3 MISCELLANEOUS MATERIALS

A. Steel Edging: Shall be Ryerson "Estate Curbing", 1/8" x 4" with stakes 4' on center.

B. Staking Material for Shade Trees:

1. Post: Studded T-Post, #1 Armco with anchor plate; 6'-0" length; paint green.
2. Wire: 12 gauge, single strand, galvanized wire.
3. Rubber hose: 2 ply, fiber reinforced hose, minimum ½ inch inside diameter. Color: Black.

C. Gravel: Washed native pea gravel, graded 1 in. to 1-1/2 in.

D. Filter Fabric: Mirafi 140N by Celanese Fibers Marketing Company, available at Loftland Co., (214) 631-5250 or approved equal.

PART 3 - EXECUTION

3.1 BED PREPARATION & FERTILIZATION

A. Landscape Contractor to inspect all existing conditions and report any deficiencies to the Owner.

B. All planting areas shall be conditioned as follows:

1. Prepare new planting beds by scraping away existing grass and weeds as necessary. Till existing soil to a depth of six (6") inches prior to placing compost and fertilizer. Apply fertilizer as per manufacturers recommendations. Add six (6") inches of compost and till into a depth of six (6") inches of the topsoil. Apply organic fertilizer such as Sustane or Green Sense at the rate of twenty (20) pounds per one thousand (1,000) square feet.
2. All planting areas shall receive a two (2") inch layer of specified mulch.
3. Backfill for tree pits shall be as follows: Use existing top soil on site (use imported topsoil as needed) free from large clumps, rocks, debris, caliche, subsoils, etc., placed in nine (9") inch layers and watered in thoroughly.

C. Grass Areas:

1. Areas to be Solid Sod Bermudagrass: Blocks of sod should be laid joint to joint, (staggered joints) after fertilizing the ground first. Roll grass areas to achieve a smooth, even surface. The joints between the blocks of sod should be filled with topsoil where they are evidently gaped open, then watered thoroughly.
2. Areas to be Hydromulch Common Bermudagrass: Hydromulch with bermudagrass seed at a rate of two (2) pounds per one thousand (1,000) square feet. Use a 4' x 8' batter board against the bed areas.

3.2 INSTALLATION

A. Maintenance of plant materials shall begin immediately after each plant is delivered to the site and shall continue until all construction has been satisfactorily accomplished.

B. Plant materials shall be delivered to the site only after the beds are prepared and area ready for planting. All shipments of nursery materials shall be thoroughly protected from the drying winds during transit. All plants which cannot be planted at once, after delivery to the site, shall be well protected against the possibility of drying by wind and sun. Balls of earth of B & B plants shall be kept covered with soil or other acceptable material. All plants remain the property of the Contractor until final acceptance.

C. Position the trees and shrubs in their intended location as per plan.

D. Notify the Landscape Architect for inspection and approval of all positioning of plant materials.

E. Excavate pits with vertical sides and horizontal bottom. Tree pits shall be large enough to permit handling and planting without injury to balls of earth or roots and shall be of such depth that, when planted and settled, the crown of the plant shall bear the same relationship to the finish grade as it did to soil surface in original place of growth.

F. Shrub and tree pits shall be no less than two (2) feet, twenty-four (24") inches, wider than the lateral dimension of earth ball and six (6") inches deeper than it's vertical dimension. Remove and haul from site all rocks and stones over one (1") inch in diameter. Plants should be thoroughly moist before removing containers.

G. Dig a wide, rough sided hole exactly the same depth as the height of the ball, especially at the surface of the ground. The sides of the hole should be rough and jagged, never slick or glazed.

H. Percolation Test: Fill the hole with water. If the water level does not percolate within 24 hours, the tree needs to move to another location or have drainage added. Install a PVC stand pipe per tree planting detail as approved by the Landscape Architect.

I. Backfill only with 5 parts existing soil or sandy loam and 1 part bed preparation. When the hole is dug in solid rock, topsoil from the same area should not be used. Carefully settle by watering to prevent air pockets. Remove the burlap from the top 1/3 of the ball, as well as all nylon, plastic string and wire mesh. Container trees will usually be pot bound, if so follow standard nursery practice of 'root scoring'.

J. Do not wrap trees.

K. Do not over prune.

L. Mulch the top of the ball. Do not plant grass all the way to the trunk of the tree. Leave the area above the top of the ball and mulch with at least two (2") inches of specified mulch.

M. All plant beds and trees to be mulched with a minimum settled thickness of two (2") inches over the entire bed or pit.

N. Obstruction below ground: In the event that rock, or underground construction work or obstructions are encountered in any plant pit excavation work to be done under this section, alternate locations may be selected by the Owner. Where locations cannot be changed, the obstructions shall be removed to a depth of not less than three (3') feet below grade and no less than six (6") inches below the bottom of ball when plant is properly set at the required grade. The work of this section shall include the removal from the site of such rock or underground obstructions encountered at the cost of the Landscape Contractor.

O. Trees and large shrubs shall be staked as site conditions require. Position stakes to secure tree against seasonal prevailing winds.

P. Pruning and Mulching: Pruning shall be directed by the Architect and shall be pruned in accordance with standard horticultural practice following Fine Pruning, Class I pruning standards provided by National Arborist Association.

1. Dead wood or suckers and broken badly bruised branches shall be removed. General tipping of the branched is not permitted. Do not cut terminal branches.
2. Pruning shall be done with clean, sharp tools.
3. Immediately after planting operations are completed, all tree pits shall be covered with a layer of organic material two (2") inches in depth. This limit of the organic material

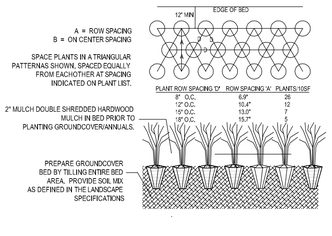
Q. Steel Curbing Installation:

1. Curbing shall be aligned as indicated on plans. Stake out limits of steel curbing and obtain Owners approval prior to installation.
2. All steel curbing shall be free of kinks and abrupt bends.
3. Top of curbing shall be 3/4" maximum height above grade.
1. Stakes are to be installed on the planting bed side of the curbing, as opposed to the grass side.
2. Do not install steel edging along sidewalks.
3. Cut steel edging at 45 degree angle where edging meets sidewalk.

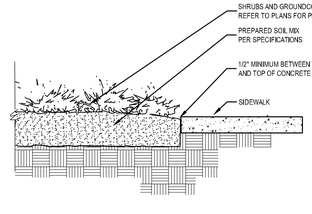
3.3 CLEANUP AND ACCEPTANCE

A. Cleanup: During the work, the premises shall be kept neat and orderly at all times. Storage areas for all materials shall be so organized that they, too, are neat and orderly. All trash and debris shall be removed from the site as work progresses. Keep paved areas clean by sweeping or hosing at end of each days work.

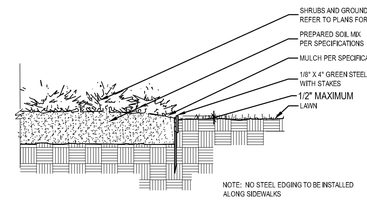
END OF SECTION



02 GROUNDCOVER PLANTING DETAIL — NOT TO SCALE

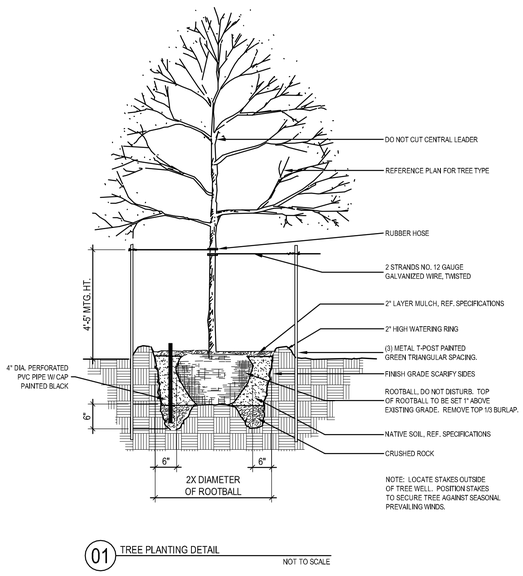


03 SIDEWALK / MULCH DETAIL — no steel along sidewalks — NOT TO SCALE

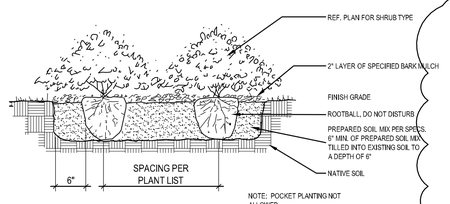


NOTE: NO STEEL EDGING TO BE INSTALLED ALONG SIDEWALKS

04 STEEL EDGING DETAIL — NOT TO SCALE



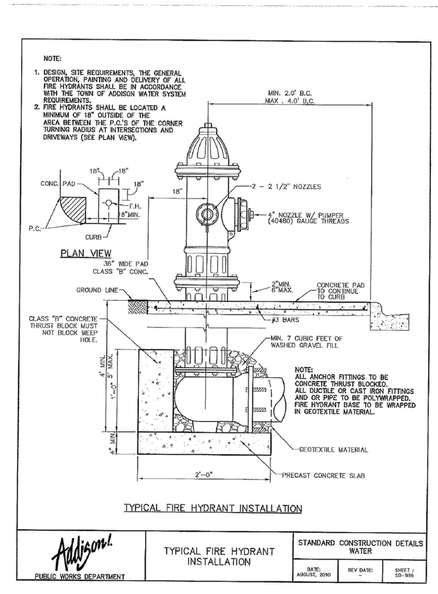
01 TREE PLANTING DETAIL — NOT TO SCALE



NOTE: POCKET PLANTING NOT ALLOWED

05 SHRUB PLANTING DETAIL — NOT TO SCALE

3



TYPICAL FIRE HYDRANT INSTALLATION

Addison PUBLIC WORKS DEPARTMENT | TYPICAL FIRE HYDRANT INSTALLATION | STANDARD CONSTRUCTION DETAILS WATER | DATE: ADDISON, 2000 | REV DATE: – | SHEET: SD-W08

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WAREHOUSE
4200 SOJOURN, ADDISON, TX

2206

1	10.03.16	SUP SUBMITTAL
2	12.29.16	REVISED SITE PLAN
3	01.19.17	TOWN COMMENTS
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REGISTERED LANDSCAPE ARCHITECT BRIAN D. ADAMS 2376 STATE OF TEXAS
1.19.17

SHEET CONTENTS:

LANDSCAPE SPECIFICATIONS

DATE: Dec. 29, 2016

SHEET:

L1.2

IRRIGATION LEGEND

- Hunter PROS-04 4" Pop-up Spray Head with a Plastic MPR Nozzle
- Hunter PROS-12 12" Pop-up Spray Head with a Plastic MPR Nozzle
- Hunter PGJ-04 Rotors for spacing under 30'
  Hunter PGP-04 Rotors for spacing over 30'
- Multi-Stream Bubbler Nozzle on Hunter SRS-06 Pop-up Spray head
- Turf-Hunter PGV-S series Control Valves
  Drip-Hunter PCZ-101-40 Drip Zone Control Kit with Valve, Basket Filter, and Pressure Regulator
- Hunter I-Core series Controller with Hunter Solar Sync Sensor
- WATER METER, SIZE AS INDICATED
  D.C.A., SIZE AS INDICATED
  to Include Wye Strainer, Isolation Valve, Master Valve, and Pressure Regulator
- PVC CLASS 200 LATERAL LINE
- PVC CLASS 200 MAINLINE
- PVC SCHEDULE 40 SLEEVING
- VALVE SIZE
  GPM
- HUNTER PLD0612
  (18" LATERAL SPACING, 12" EMITTER SPACING)
  PVC LATERAL PIPING SIZED AS REQUIRED
  INSTALL ALL EQUIPMENT ACCORDING TO
  MANUFACTURERS SPECIFICATIONS
- PCZ / ICZ HUNTER
  Drip Zones 20 gallon and less
  Drip-Hunter PCZ-101-40 Drip Zone Control Kit with Valve, Basket Filter, and Pressure Regulator
  Drip Zones 20 gallon and or more
  Drip-Hunter ICZ-151-40 Drip Zone Control Kit with Valve, Basket Filter, and Pressure Regulator

2" Master Valve
2" PRV
2" Backflow per City code
2" "Y" Strainer
2" Ball Valve
Copper Pipe between Meter and Ball Valve
Dedicated Irrigation Water Meter
Verify size and location per Civil Plans

IRRIGATION NOTES

1. *All sprinkler equipment numbers reference the HUNTER equipment catalog unless otherwise indicated.*
2. *LAWN SPRAY HEADS are SRS-04 installed as per detail shown.*
3. *SHRUB SPRAY HEADS are SRS-12 installed as per detail shown.*
4. *ELECTRIC CONTROL VALVES shall be HUNTER PGV-S SERIES installed per detail shown. Size valves as sown on plan. Valves shall be installed in value boxes large enough to permit manual operation, removal of solenoid and/or valve cover without any earth excavation.*
5. *QUICK COUPLING VALVES shall be HQ-44-LRC-AW installed per detail shown. Swing joints shall be constructed using 1" Schedule 80 elbows. Contractor shall supply owner with three (3) HK couplers and three (3) #10 swivel hose ells as part of this contract.*
6. *AUTOMATIC CONTROLLER shall be installed at location shown. Power (120V) shall be located in a junction box within five (5') feet of controller location by other trades.*
7. *All 24 volt valve wiring is to be UF 14 single conductor. All wire splices are to be permanent and waterproof.*
8. *SLEEVES shall be installed by General Contractor. Sleeve material shall be Schedule 40. Size as indicated on plan.*
9. *Ten days prior to start of construction, Landscape or Irrigation Contractor shall verify static water pressure. If static pressure is less than 65 P.S.I., do not work until notified to do so by Owner.*
10. *All main line and lateral piping to a minimum of 12 inches of cover. All piping under paving shall have a minimum of 18" of cover.*
11. *The Irrigation Contractor shall coordinate installation of the system with the Landscape Contractor so that all plant material will be watered in accordance with the intent of the plans and specifications.*
12. *The Irrigation Contractor shall select the proper arc and radius for each nozzle to insure 100% and proper coverage of all lawn areas and plant material. All nozzles in parking lot islands and planting beds shall be low angle to minimize over spray on pavement surfaces. No water will be allowed to spray on building.*

DRIP IRRIGATION NOTES

1. *Drip Irrigation Equipment numbers reference Rainbird Equipment Catalog unless otherwise noted.*
2. *Landscape Contractor shall be required to supply Owner's Construction Manager with all equipment specifications and maintenance guidelines.*
3. *Landscape Contractor shall be required to follow Manufacturer's Specifications and Installation guidelines for drip system.*
4. *PRESSURE COMPENSATING EMITTERS shall be: Multioutlet Rain Bug EM6-M101, Multi outlet Shrub Bug EMT6-M101 or approved equal. (1 PER EVERY 6 - 4" POTS)*
5. *SINGLE OUTLET PRESSURE COMPENSATING EMITTERS shall be: Rain Bug Emitters EM-Mo5, -M10, -M20 and Shrub Bug Emitters EMT-M10, -M20 or approved equal. (1 PER EACH 1 OR 5 GAL PLANT)*
6. *DRIP PRESSURE REGULATORS shall be: PSI-HLA-15, PSI-HLA-20, PSI-HMB-20, PSI-HMB-25 or approved equal.*
7. *Y-FILTERS shall be: RBY-075-200, RBY-100-200 or approved equal.*
8. *MAIN IRRIGATION TUBING shall be:RBT-150P,RBT-160V or approved equal.*
9. *EMITTER DISTRIBUTION TUBING shall be: RBT-150P, RBT-160V or approved equal.*
10. *SUBTERRANEAN EMITTER BOX shall be: SEB-6 or approved equal.*
11. *Drip system piping only occurs within shrub / groundcover beds and rock mulch areas. Piping shall be a maximum 4" depth and a minimum 2" depth.*
12. *Contractor shall verify that all drip system valves and spray system valves are sectioned separately on controller.*

TCEQ 2009 NOTES

- *All irrigation equipment to be located no closer than 4" to any pavement and / or structure*
- *Electrical splices at each valve and controller only.*
- *Irrigation in Texas is regulated by the Texas Commission on Environmental Quality (TECQ) MC-178 / P.O. BOX 13087 Austn, Texas 78711-3087 www.teceq.state.tx.us*

BUBBLER PIPING CHART

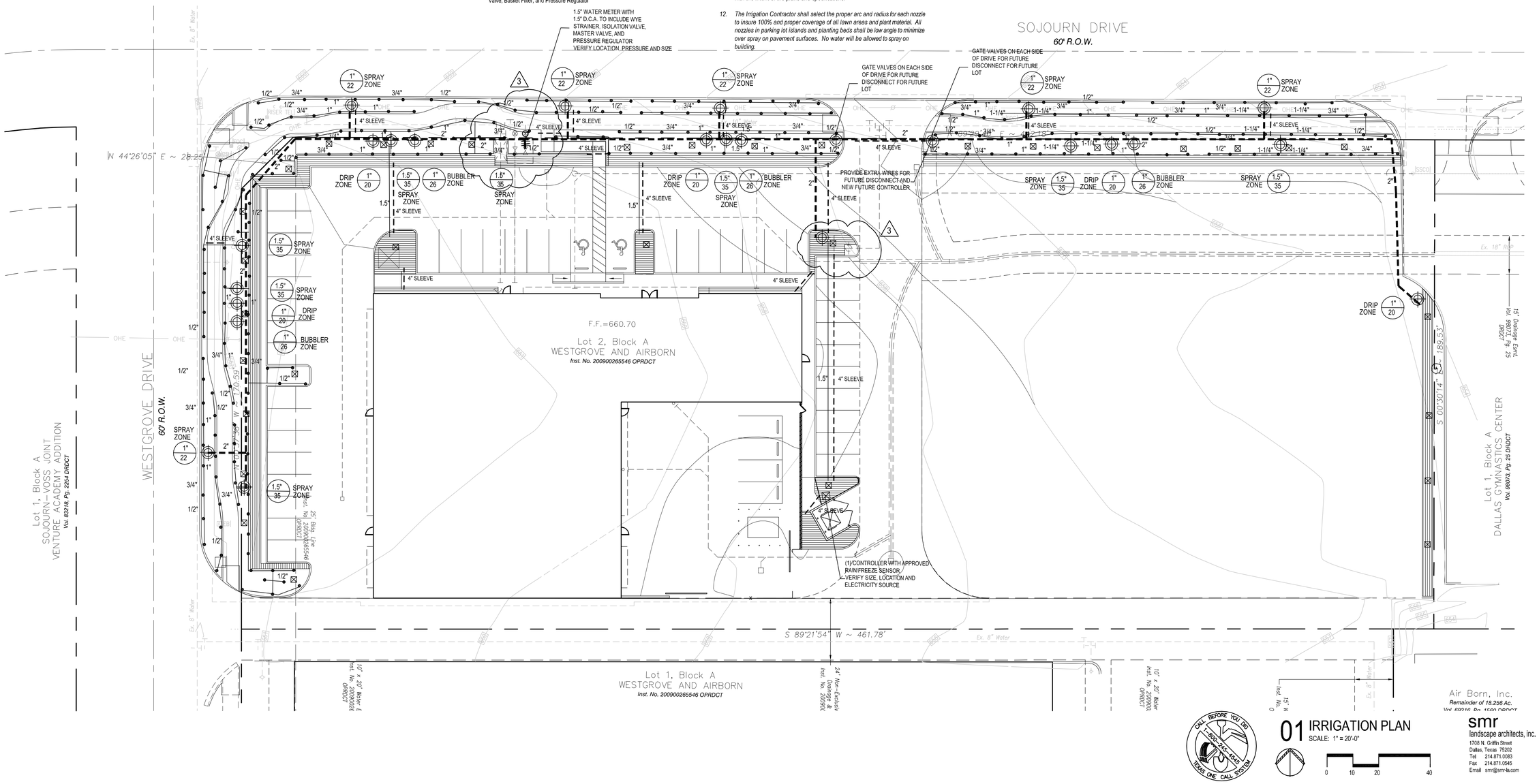
1-5 BUBBLERS - 1/2" PIPE
6-10 BUBBLERS - 3/4" PIPE
11-20 BUBBLERS - 1" PIPE
21-30 BUBBLERS - 1 1/4" PIPE
31-40 BUBBLERS - 1 1/2" PIPE

DONT PLACE IRRIGATION HEADS OR LATERAL LINESON TOP ANY UTILITY BOXES OR VAULTS

3

SLEEVING NOTES

1. *Contractor shall lay sleeves and conduits at twenty-four (24") inches below finish grade of the top of pavement.*
2. *Contractor shall extend sleeves one (1') foot beyond edge of all pavement.*
3. *Contractor shall cap pipe ends using PVC caps.*
4. *All sleeves shall be Schedule 40 PVC pipe.*
5. *Contractor shall furnish Owner and Irrigation Contractor with an 'as-built' drawing showing all sleeve locations.*



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STATE OF TEXAS
JON TUCK
15636
LICENSED IRRIGATOR
1.19.17

SHEET CONTENTS:
IRRIGATION PLAN

DATE: Dec. 29, 2016
SHEET: L2.1

01 IRRIGATION PLAN
SCALE: 1" = 20'-0"
0 10 20 40

CALL BEFORE YOU DIG 1-800-245-4545 TEXAS ONE CALL SYSTEM

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Fax 214.871.0545
Email smr@smr-la.com

SECTION 02810 - IRRIGATION

PART 1 - GENERAL

1.1 SCOPE

A. Provide complete sprinkler installation as detailed and specified herein, includes furnishing all labor, materials, and equipment for the proper installation. Work includes but is not limited to:

1. Trenching and backfill
2. Automatic controlled system.
3. Upon completion of installation, supply drawings showing details of construction including location of mainline piping, manual and automatic valves, electrical supply to valves, and specifically exact location of automatic valves.

B. All sleeves as shown on plans will be furnished by General Contractor. Meter and power source to be provided by General Contractor.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. See Irrigation Plans. See plans for controller, heads, and valves.

B. Section 02900-Landscape

C. Section 02811-Underground Irrigation Sleeve and Utility Conduits

1.3 APPLICABLE STANDARDS

A. America Standard for Testing and Materials (ASTM) – Latest edition.

1. D2241 Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
2. D2464 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Thread, Schedule 80
3. D2455 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
4. D2467 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Socket Type, Schedule 80
5. D2564 Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
6. D2287 Flexible Poly Vinyl Chloride (PVC) Plastic Pipe
7. F656 Poly Vinyl Chloride (PVC) Solvent Weld Primer
8. D2855 Making Solvent – Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings

1.4 MAINTENANCE AND GUARANTEE

A. Materials and workmanship shall be fully guaranteed for one (1) year after final acceptance.

B. Provide maintenance of system, including raising and lowering of heads to compensate for lawn growth, cleaning and adjustment of heads, raising and lowering of shrub heads to compensate for shrub growth, for one (1) year after completion of installation.

C. Guarantee is limited to repair and replacement of defective materials or workmanship, including repair of backfill settlement.

1.5 SUBMITTALS

A. Procedure: Comply with Division I requirements.

B. Product Data: Submit (5) copies of equipment manufacturer's specifications and literature for approval by Landscape Architect prior to installation.

C. Project Record Documents

1. Comply with Division I requirements.
2. Locate by written dimension, routing of mainline piping, remote control valves and quick coupling valves. Locate mainlines by single dimensions from permanent site features provided they run parallel to these elements. Locate valves, intermediate electrical connections, and quick couplers by two dimensions from a permanent site feature at approximately 70 degrees to each other.
3. When dimensioning is complete, transpose work to mylar reproducible tracings.
4. Submit completed tracings prior to final acceptance. Mark tracings "Record Prints Showing Significant Changes". Date and sign drawings.
5. Provide three complete operation manuals and equipment brochures neatly bound in a hard back three-ring binder. Include product data on all installed materials. Include warranties and guarantees extended to the Owner by the manufacturer of all equipment.

D. Quick Coupler Keys: Provide 3 coupler keys with boiler drains attached using brass reducer.

E. Controller Keys: Provide three sets of keys to controller enclosure(s).

F. Use of materials differing in quality, size, or performance from those specified will only be allowed upon written approval of the Landscape Architect. The decision will be based on comparative ability of material or article to perform fully all purposes of mechanics and general design considered to be possessed by item specified.

G. Bidders desiring to make a substitution for specified sprinklers shall submit manufacturer's catalog sheet showing full specification of each type sprinkler proposed as a substitute, including discharge in GPM maximum allowable operating pressure at sprinkler.

H. Approval of substitute sprinkler shall not relieve Irrigation Contractor of his responsibility to demonstrate that final installed sprinkler system will operate according to intent of originally designed and specified system.

I. It is the responsibility of the Irrigation Contractor to demonstrate that final installed sprinkler system will operate according to intent of originally designed and specified system. If Irrigation Contractor notes any problems in head spacing or potential coverage, it is his responsibility to notify the Landscape Architect in writing, before proceeding with work. Irrigation Contractor guarantees 100% coverage of all areas to be irrigated.

1.6 TESTING

A. Perform testing required with other trades, including earthwork, paving, plumbing, electrical, etc. to avoid unnecessary cutting, patching and boring.

B. Wire Connectors: Waterproof splice kit connectors. Type DBY by 3M.

2.6 SCHEDULE 80 PVC NIPPLES

A. Composed of Standard Schedule 40 PVC Fittings and PVC meeting noted standards. No clamps or wires may be used. Nipples for heads and shrub risers to be nominal one-half inch diameter by eight inches long, where applicable.

B. Polyethylene nipples six (6") inches long to be used on all pop-up spray heads.

2.7 MATERIALS - See Irrigation Plan

A. Sprinkler heads in lawn area as specified on plan.

B. PVC Pipe: Class 200, SPR 21
Copper Tubing (City Connection): Type "M"
24V Wire: Size 14, Type U.F.

C. Electric valves to be all plastic construction as indicated on plans.

D. Refer to drawing for backflow prevention requirements and flow valve.

PART 3 - EXECUTION

3.1 INSTALLATION - GENERAL

A. Staking: Before installation is started, place a stake where each sprinkler is to be located, in accordance with drawing. Staking shall be approved by Landscape Architect before proceeding.

B. Excavations: Excavations are unclassified and include earth, loose rock, rock or any combination thereof, in wet or dry state. Backfill trenches with material that is suitable for compaction and contains no lumps, clods rock, debris, etc. Special backfill specifications, if furnished take preference over this general specification.

C. Backfill: Flood or hand-tamp to prevent after settling. Hand rake trenches and adjoining area to leave grade in as good or better condition than before installation.

D. Piping Layout: Piping layout is diagrammatic. Route piping around trees and shrubs in such a manner as to avoid damage to plantings. Do not dig within ball of newly planted trees or shrubs.

3.2 PIPE INSTALLATION

A. Sprinkler Mains: Install a four (4") inch minimum trench with a minimum of eighteen (18") inches of cover.

B. Lateral Piping: Install a four (4") inch wide minimum trench deep enough to allow for installation of sprinkler heads and valves, but in no case, with less than twelve (12") of cover.

C. Trenching: Remove lumber, rubbish, and large rocks from trenches. Provide firm, uniform bearing for entire length of each pipe line to prevent uneven settlement. Wedging or blocking of pipe will not be permitted. Remove foreign matter or dirt from inside of pipe before welding, and keep piping clean by approved means during and after laying of pipe.

3.3 PVC PIPE AND FITTING ASSEMBLY

A. Solvent: Use only solvent recommended by manufacturer to make solvent-welded joints. Thoroughly clean pipe and fittings of dirt, dust and moisture before applying solvent.

B. PVC to metal connection: Work metal connections first. Use a non-hardening pipe dope such as Permatex No. 2 on threaded PVC adapters into which pipe may be welded.

3.4 COPPER TUBING AND FITTING ASSEMBLY

Clean pipe and fitting thoroughly and lightly sand pipe connections to remove residue from pipe. Attach fittings to tubing in an approved manner using 50-50 soft solid core solder.

3.5 POP-UP SPRAY HEADS

Supply pop-up spray heads in accordance with materials list and plan. Attach sprinkler to lateral piping with a semi-flexible polyethylene nipple not less than three (3") inches or more than six (6") inches long.

3.6 VALVES

Supply valves in accordance with materials list and sized according to drawings. Install valves in a level position in accordance with Manufacturer's Specifications. See plan for typical installation of electric valve, valve box.

3.7 WIRING

A. Supply wire from the automatic sprinkler controls to the valves. No conduit will be required for U.F. wire unless otherwise noted on the plan. Wire shall be tucked under the piping.

B. A separate wire is required from the control to each electric valve. A common neutral wire is also required from each control to each of the valves served by each particular control.

C. Bundle multiple wires and tape them together at ten (10') foot intervals. Install ten (10") inch expansion coil at not more than one hundred (100') foot intervals. Make splices waterproof.

3.8 AUTOMATIC SPRINKLER CONTROLS

Supply in accordance with Irrigation Plan. Install according to manufacturer's recommendations.

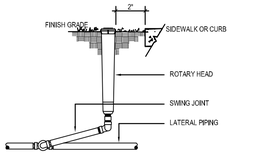
3.9 TESTING

A. Sprinkler Mains: Test sprinkler main only for a period of twelve (12) to fourteen (14) hours under normal pressure. If leaks occur, replace joint or joints and repeat test.
B. Complete tests prior to backfilling. Sufficient backfill material may be placed in trenches between fittings to insure stability of line under pressure. In each case, leave fittings and couplings open to visual inspection for full period of test.

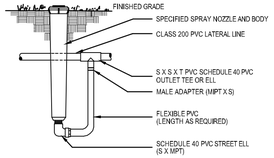
3.10 FINAL ADJUSTMENT

After installation has been completed, make final adjustment of sprinkler system in preparation for Landscape Architect's final inspection. Completely flush system to remove debris from lines and turning on system. Check sprinklers for proper operation and proper alignment for direction of flow. Check each section of spray heads for operating pressure and balance to other sections by use of flow adjustment and top of each valve. Check nozzling for proper coverage. Prevailing wind conditions may indicate that arch of angle of spray should be other than shown on drawings. In this case, change nozzles to provide correct coverage.

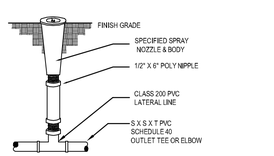
END OF SECTION



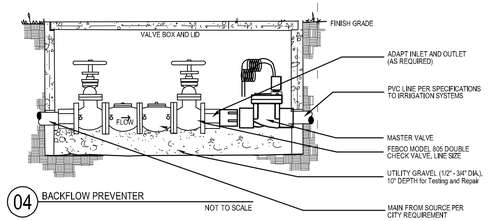
01 ROTARY HEAD — NOT TO SCALE



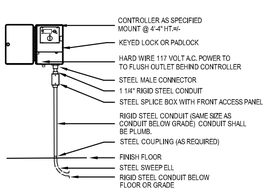
02 HIGH POP-UP SPRAY ASSEMBLY — NOT TO SCALE



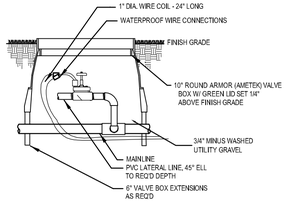
03 POP-UP LAWN SPRAY ASSEMBLY — NOT TO SCALE



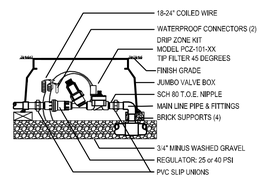
04 BACKFLOW PREVENTER — NOT TO SCALE



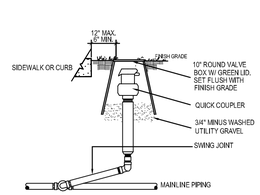
05 WALL MOUNTED CONTROLLER — NOT TO SCALE



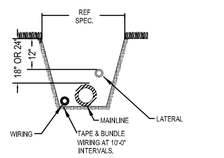
06 REMOTE CONTROL VALVE — NOT TO SCALE



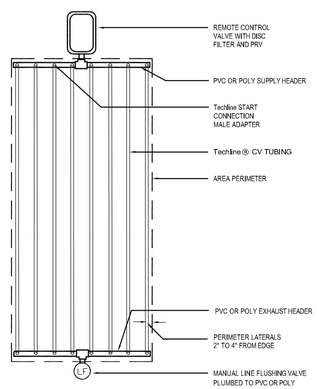
07 DRIP CONTROL VALVE — NOT TO SCALE



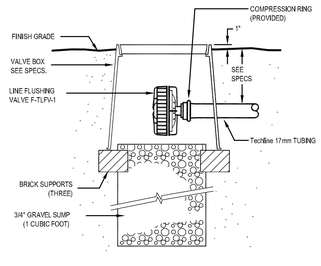
08 QUICK COUPLER — NOT TO SCALE



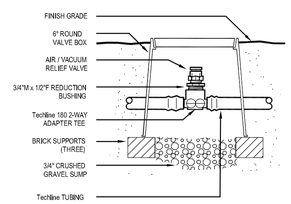
09 TRENCH DETAIL — NOT TO SCALE



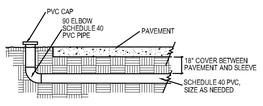
10 TechLine CV END FEED LAYOUT — NOT TO SCALE



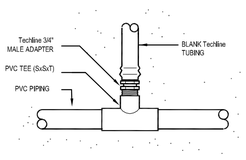
11 TechLine LINE FLUSHING VALVE — NOT TO SCALE



12 TechLine AIR/VACUUM RELIEF — NOT TO SCALE



13 SLEEVE DETAIL — NOT TO SCALE



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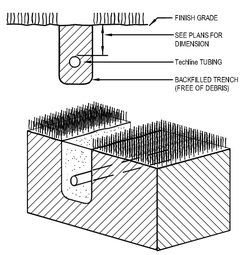

15 TechLine TRENCHING — NOT TO SCALE

DONT PLACE IRRIGATION HEADS OR LATERAL LINESON TOP ANY UTILITY BOXES OR VAULTS

3

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REGISTERED LANDSCAPE ARCHITECT BRIAN D. ADAMS 1761 STATE OF TEXAS 1.19.17

SHEET CONTENTS:

IRRIGATION SPECIFICATIONS

DATE: Dec. 29, 2016

SHEET:

L2.2