

### PLAN LEGEND

***************************************	PROJECT BOUNDARY LINE		ADJACENT SUBDIVISION BOUNDARIES
	EXISTING LOT LINES	· · · · · · · · · · · · · · · · · · ·	PROPOSED RIGHT-OF-WAY LINES
	FORMER LOT LINES		PROPOSED LOT LINES
	EXISTING R.O.W. CENTERLINE		PROPOSED R.O.W. CENTERLINE
o I.R.F.	IRON ROD FOUND	O <sub>I.R.S.</sub>	1/2 INCH IRON ROD WITH YELLOW CAP MARKED RPLS 3989 SET
entities and another extent where the winter and another anoth	EXISTING EASEMENTS		PROPOSED EASEMENTS
OHE	EXISTING ELECTRIC LINE	Managements & makes apply a makes applying a	EXISTING BUILDING SETBACK LINES
<del>gPP</del>	EXISTING POWER POLE & GUY		PROPOSED BUILDING SETBACK LINES
UGTEL	EX. UNDERGROUND TELEPHONE EXISTING GAS LINE	( PECAN	TREE, TYPE & DIAMETER
<u></u>	EXISTING GAS METER	.BLRD	EXISTING PIPE BOLLARD
O LIGHT	EXISTING STREET OR FLOOD LIGHT	CM	CONTROLLING MONUMENT
8"5S	EX. SANITARY SEWER LINE	-8"SS	PROPOSED SANITARY SEWER
SSMH ——	EX. SANITARY SEWER MANHOLE	——————————————————————————————————————	PROPOSED SANITARY SEWER MANHOLE
18"RCP	EX. STORM SEWER LINE	mri	PROPOSED SANITARY SEWER SERVICE
620	EXISTING CONTOUR LINES		PROPOSED STORM SEWER
×642.13	EXISTING SPOT ELEVATION	620-	PROPOSED CONTOUR LINE
111	EXISTING ASPHALT PAVING	625.10	PROPOSED SPOT GRADE
	EXISTING CONCRETE PAVING		PROPOSED DRAINAGE SWALE
	EXISTING CURB	HPLP	PROPOSED HIGH & LOW POINT
<b>V</b> FH	EXISTING FIRE HYDRANT		PROPOSED CURB
12"W	EXISTING WATER LINE	<b>⋈</b> FH	PROPOSED FIRE HYDRANT
W	EXISTING WATER METER	8"WATER	PROPOSED WATER LINE
• • • • • • • • • • • • • • • • • • •	EXISTING WATER VALVE	8	PROPOSED WATER METER
T	UNDERGROUND TELEPHONE LINE	<del></del>	PROPOSED WATER VALVE
Ouci	UNDERGROUND CABLE MARKER		PROPOSED WATER SERVICE
	EXISTING DITCH CENTERLINE		PROPOSED SAWCUT LINE
<del>X</del> X	EXISTING FENCE	<b>*</b>	BENCHMARK

# STANDARD ARREVIATIONS

		<u>5</u>	IANUARU	ABBREVIA HONS		
	AC	ACRES / AIR CONDITIONING	FL	FLOW LINE	PVI	POINT OF VERTICAL INTERSECTION
	APP	APPROXIMATE	FT	FEET	PVMT	PAVEMENT
•	ARCH	ARCHITECTURAL	FUT	FUTURE	R	RADIUS
	ARV	AIR RELEASE VALVE	G	GAS	RC	REINFORCED CONCRETE
,	ASPH	ASPHALT	G	GRATE INLET	RCA	REINFORCED CONCRETE ARCH PIPE
٠	BC .	BACK OF CURB	GM	GAS METER	RCB	REINFORCED CONCRETE BOX
	B-B	BACK TO BACK OF CURB	GRAV	GRAVEL	RCI	RECESSED CURB INLET
	BLRD	BOLLARD -	GUT	GUTTER	RCP	REINFORCED CONCRETE PIPE
,	BM.	BENCHMARK	HDPE	HIGH DENSITY POLYETHYLENE PIPE	REINF	REINFORCED
	BW	BOTTOM OF WALL	HDWL	HEADWALL	RL	RIDGE LINE
er i Gest	CATY	CABLE TV	HGL	HYDRAULIC GRADE LINE	ROW	RIGHT OF WAY
•	CF	CUBIC FEET	HMAC	HOT MIX ASPHALTIC CONCRETE	RR	RAILROAD
. :	CFS	CUBIC FEET PER SECOND	HP	HIGH POINT / HIGH PRESSURE	RT	RIGHT
,	C&G	CURB & GUTTER	HVAC	HEATING, VENTILATION AND	SET	SAFETY END TREATMENT
	CI	CURB INLET		AIR CONDITIONING	SF	SQUARE FEET
, {	CL	CENTER LINE	HW	HEADWATER	SY	SQUARE YARD
	CM	CONTROLLING MONUMENT	icv	IRRIGATION CONTROL VALVE	SQ	SQUARE
	CMA	CORRUGATED METAL ARCH PIPE	: IN	INCHES	SS	SANITARY SEWER
	CMP	CORRUGATED METAL PIPE	IRR	IRRIGATION WATER	STA	STATION
	CO	CLEANOUT	IPF	IRON PIPE FOUND	STD	STANDARD
	CONC	CONCRETE	IRF '	IRON ROD FOUND	STM	STORM DRAIN
	CONST	CONSTRUCT	IRS	IRON ROD SET	SVC	SERVICE
· /	CPI	CURB POINT OF INTERSECTION	ĿF	LINEAR FEET	SW	SIDEWALK
;	CR	CURB RETURN	LP	LOW POINT / LOW PRESSURE	SWR	SEWER
. i	CY	CUBIC YARD	LS	LUMP SUM	SY	SQUARE YARD
1	DCO	DOUBLE CLEANOUT	LT	LEFT	T	TELEPHONE
:	DIA	DIAMETER	MEP	MECHANICAL, ELECTRICAL AND PLUMBING	TAN	TANGENT
, <sup>*</sup> ,	DI	DUCTILE IRON PIPE	MH	MANHOLE	TBD	TO BE DETERMINED
. :	DÓM	DOMESTIC WATER	MO	MIDDLE ORDINATE	TC	TOP OF CURB
,	EA	EACH	MON	MONUMENT	TMH	TELEPHONE MANHOLE
	ELEV	ELEVATION	N/A	NOT APPLICABLE	TOE	TOE OF SLOPE
	EMH	ELECTRIC MANHOLE	NG	NATURAL GROUND (EXISTING)	TOP	TOP OF PAVEMENT
	EOA	EDGE OF ASPHALT	oc	ON CENTER	TOS	TOP OF SLOPE
	EOC	EDGE OF CONCRETE	OCEW	ON CENTER EACH WAY	TW	TOP OF WALL / TAILWATER
	ESMT	EASEMENT	OHE	OVERHEAD ELECTRIC	TYP	TYPICAL
	EX	EXISTING	OHT	OVERHEAD TELEPHONE / CABLE	UGE	UNDERGROUND ELECTRIC
,	FC	FACE OF CURB	PC	POINT OF CURVATURE	UGT	UNDERGROUND TELEPHONE / CABLE
•	F-F	FACE TO FACE OF CURB	PCC	POINT OF COMPOUND CURVATURE	UNK	UNKNOWN
	FF	FINISHED FLOOR ELEVATION	PI.	POINT OF INTERSECTION	VCP	VITREOUS CLAY PIPE
٠.	FH	FIRE HYDRANT	PL	PROPERTY LINE	W	WATER
÷	FM	FORCE MAIN	PP	POWER POLE	WL.	WATER LINE
	FP	FINISHED PAD ELEVATION	PRC		WM	WATER METER
; .	FPS	FEET PER SECOND	PT	POINT OF REVERSE CURVATURE	WTR	WATER
	FL	FLOW LINE		POINT OF TANGENCY	₩	WATER VALVE
		**	PVC	POLYVINYL CHLORIDE PIPE		

## **GENERAL NOTES**

- 1. Prior to any construction, the Contractor shall be familiar with the plans including all notes, the standard specifications and standards for construction in the Town of ADDISON, and any other applicable standards or specifications relevant to the proper completion of the work specified. Failure on the part of the Contractor to be familiar with all Standards and Specifications pertaining to this work shall in no way relieve the Contractor of responsibility of performing the work in accordance with all such applicable Standards and Specifications.
- 4. It will be the responsibility of the Contractor to protect all public utilities in the construction of this project. All storm sewer inlets, valve boxes, cleanouts, manholes, fire hydrants, gas mains, meter boxes, electric and telephone duct banks, etc. must be adjusted to the proper line and grade by the Contractor prior to and/or during the placement of permanent paving. Any facilities damaged during construction shall be restored to a state as good or better than their condition prior to construction, at the sole expense of the Contractor.
- 5. It will be the responsibility of the Contractor to protect all existing paving, sidewalks, buildings and other structures that will remain in place during the construction. The Engineer is not responsible for any inaccuracies in the location, size, grade, or full extent of existing above—ground or underground facilities shown on these plans. The Contractor shall be responsible for reporting any inaccuracies in facility locations that may affect successful completion of the work as specified. Unless otherwise directed, the Contractor is responsible for maintaining said facilities in their present condition, and if they are damaged, they shall be restored to a state as good or better than their condition prior to construction, at the sole expense of the Contractor.
- 6. Contractor shall possess, prior to construction, all necessary permits, licenses, etc., and shall perform all work in compliance with any terms and conditions. All work shall be done in compliance with applicable state, federal, and local regulations.
- 7. The Contractor shall be responsible for inspecting the site and shall be familiar with the soil conditions to be encountered and any onsite conditions which may affect successful performance of the work, such as the availability of transportation and labor, access to public streets, access to utilities needed during construction, and unforseen weather conditions. Any failure by the Contractor to properly ascertain the onsite conditions will not relieve him from responsibility for properly estimating the difficulty or cost of successfully performing the
- 8. Any rock encountered during excavation, any pavement or structures required to be removed, and/or any contaminated materials encountered during construction shall be considered waste material and shall be disposed of as specified in Note #9.
- 9. Prior to commencing excavation operations, the Contractor shall consult with the Developer and/or the Engineer to determine how and where to dispose of waste materials. Waste materials shall be moved at the Contractor's expense and placed in a legally and environmentally sound manner at a location approved by the Developer and any applicable governing authorities and/or private property owners. Waste material disposal practices shall comply with all applicable state, federal and local regulations. At the conclusion of construction, the Contractor may not leave stockpiled waste materials onsite unless the Developer specifically authorizes this practice in writing.
- other assessments of subsurface conditions prepared by others. It shall be the responsibility of the Contractor to ascertain the existence of any unexpected subsurface conditions that may affect the work performed. The Engineer is not responsible for interpretation of subsurface report data by the Contractor, such as underground rock profiles, soil bearing values, soils stability and/or the presence, level and extent of underground water.
- 11. In the event that an item is not covered by the Specifications, the Engineer's decision shall apply.
- 12. The Contractor shall coordinate the placement of any necessary sleeving with the plumbing, electrical, and
- 13. The Contractor shall be responsible for trench safety plans and implementation. Plans shall be prepared and
- 14. The Contractor shall protect all property corner markers, monuments, and benchmarks. If any such items are in danger of being disturbed, they shall be properly referenced, and if disturbed, they shall be reset by a State of Texas registered professional land surveyor at the sole expense of the Contractor. The Contractor is responsible for coordinating with the Engineer and Surveyor at the appropriate time to set any new property corner markers or monuments required prior to acceptance of the project. The Contractor shall bear the entire cost of setting additional corner markers that are not addressed in the original contract documents.
- 15. It is the responsibility of the Contractor to maintain existing access routes to adjacent properties, or to provide alternate access routes to the satisfaction of the Developer, adjacent property owners and/or any applicable governing authorities. Public roads, alleys and/or other public access routes shall not be blocked or obstructed in any way unless permission is obtained from the Developer and the governing authorities. Furthermore, unless properly directed by all governing authorities, the Contractor shall not perform any action that may obstruct or impede the normal operation of public or private vehicles or transportation facilities located near the site, including but not limited to rail transportation and aircraft.
- 16. Unless otherwise indicated in these plans, the Contractor shall be responsible for providing traffic control plans. The cost of implementing these plans, including materials and labor, shall be borne by the Contractor.
- 17. It is the responsibility of the Contractor and/or the Developer to bear the cost of any required bonds, inspection and testing services, city or state inspection or permit fees, impact fees and/or any other miscellaneous fees or certifications required for successful completion of this project.
- 18. Unless otherwise specified, all fill to be placed under structures or pavement shall be compacted in 8-inch maximum lifts to 95% Standard Proctor density per ASTM D698 at optimum moisture. All excavation for utility placement shall be compacted in 6-inch lifts to 95% Standard Proctor density at optimum moisture as the utilities are backfilled. All other fill shall be compacted to 90% Standard Proctor density at optimum moisture. Refer to the soils report for more details.
- 19. Topographic contours, existing ground profile lines, and locations of existing above—ground improvements are based on survey data provided by VILBIG & ASSOCIATES, INC. on April 6, 2005. This information and any excavation quantities provided by the Engineer prior to construction are for informational purposes only. The Contractor shall be responsible for performing an independent quantity takeoff of excavation required for this project, and for verifying the accuracy and completeness of any topographical information or quantities shown on the plans or contract documents.
- The Engineer shall not be responsible for any unanticipated fill import or offsite fill disposal required to complete the project if any of the following conditions are met:
- (a) The Contractor fails to verify the accuracy of the topographical information on the plans prior to construction.
- (b) The Contractor fails to report any known changes to the site topography that occured after the date when the survey data was provided to the Engineer.
- (c) The Contractor fails to notify the Engineer immediately of any errors, discrepancies or omissions in the plans
- design changes made to the project during construction. If the Contractor does not provide enough information to complete as-built drawings and/or account for amendments to the original contract documents, the Contractor shall bear the entire cost of any additional field verification or investigation necessary to accurately summarize the changes.

- 2. Underground utility locations shown on these plans are based on as-built plans obtained from government agencies and/or private utility companies, and above-ground locations of objects related to the underground utilities, such as valves, inlets, manholes, and location markers. The Engineer cannot guarantee the accuracy of the underground utility locations shown on these plans. The Contractor shall field verify the location of all existing utilities prior to beginning any construction and notify the Engineer if locations and flowlines are different that those shown on the plans. As required by the "Texas Underground Facility Damage Prevention and Safety Act", the Texas One Call System must be contacted (800-245-4545) at least 48 hours prior to any excavation operations being performed. It is the contractor's responsibility to contact the Texas One Call System.
- Contractor shall be responsible for contacting all necessary public utilities prior to beginning permanent paving work to ensure that all proposed buried utilities are properly installed.

- 10. The Engineer and the Developer are not responsible for any inaccuracies in the soils report(s) and/or any
- sealed by a professional engineer, licensed in the State of Texas, for the implementation of safety control measures, and shall meet the requirements of the governing authorities in effect during the period of construction of the project.

- (d) The Contractor cannot accurately and thoroughly account for the source of the excavation quantity discrepancies in the plans or Engineer's quantities.
- 20. The Contractor is responsible for informing the Engineer and the Developer of any field adjustments and/or

# **BENCHMARKS**

1. Temporary Bench Mark: " " cut on northwest corner of Y inlet at the northeast corner of property Elev = 639.63' 2. Bench Mark: "" cut on inlet sw corner Sojourn & Addison Rd. Elev.=641.95

THE SEAL APPEARING ON THIS DRAWING IS AUTHORIZED BY DAVID 4. VILBIG, P.E., NO. 67207 ON 4/21 20P

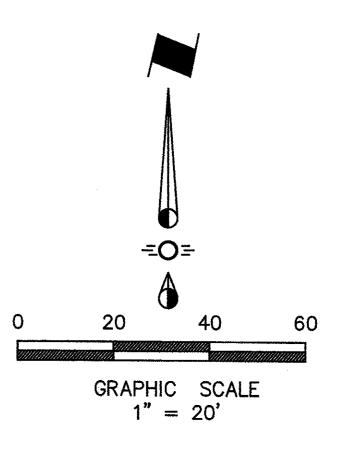
DAVID A. VILBIG

NOTES GENER

REVISIONS

### GRADING NOTES

- 1. Prior to commencing construction activities, the Contractor shall consult with the Engineer and/or the Developer to determine if any portions of the site are to be left undisturbed. The Contractor shall be entirely responsible for the protection of existing structures, trees, vegetation, and other items designated to remain. The Contractor shall comply with all provisions of the tree mitigation plan(s) or local tree preservation requirements, where applicable. The Contractor shall bear the entire cost of restoring, replacing, or otherwise compensating the Developer for any protected facilities or vegetation that are damaged or destroyed during earthwork or clearing operations.
- 2. All earthwork under buildings or pavement shall be free of organic materials, including stumps, roots, and other vegetation. The Contractor shall be reponsible for stripping organic material from the ground surface and disposing of it as specified in Note #9 in the General Notes, Sheet C1.0.
- 3. Landscaped areas shall receive 6" of topsoil unless otherwise noted elsewhere in the landscape or civil engineering plans. Stripped topsoil shall be stockpiled onsite at a location approved by the Developer. At the conclusion of construction, excess topsoil shall be considered waste material, and the Contractor is responsible for disposing of it as specified in Note #9 in the General Notes, Sheet C1.0.
- 4. Earthwork shall be inspected and tested on a continuing basis by the Geotechnical Engineer or an independent testing firm. The Contractor shall follow the Geotechnical Engineer's recommendations, and shall obtain approval before placement of fill containing significant numbers of rocks in excess of 4" in diameter.
- 5. All fill to be placed under structures or pavement shall consist of onsite soils compacted per Note #18, Sheet C1.0 and/or the geotechnical report.
- 6. All subgrade shall be proof-rolled prior to the placement of paving.
- 7. Final paving, curb, sidewalk and building pad elevations will be placed with an elevation tolerance of plus or minus 0.03 feet. Grades in landscaped areas will be placed with an elevation tolerance of plus or minus 0.10 feet.
- 8. Grades in paved areas are top of finished pavement unless noted. Grades along curb lines are to base of curb (gutter) unless denoted with "TC" to signify Top of Curb. All curbs are 0.50' (6") high unless noted otherwise on the plans. Finished floor elevations are to top of floor including thickness of flooring materials; consult architectural and/or structural plans for depth of excavation under building(s).
- 9. Landscaped areas designated as "Grade to Drain" shall have an absolute minimum slope of 1.5% unless otherwise indicated on the plans, and shall be sloped at 2% or greater whenever possible. Unless otherwise indicated, maximum slope of landscaped areas shall be 3:1 (H: V).
- 10. Unless otherwise indicated, grading of areas subject to pedestrian access shall comply with the latest revision of the Texas Accessibility Standards (T.A.S.) enacted by the Texas Department of Licensing and Regulation.
- 11. Ramps in excess of 0.50' (6") vertical rise require handrails per T.A.S. regulations. Refer to architectural plans for detail of handrails on ramps and stairs, where applicable.
- 12. All areas not covered by buildings, pavement or other erosion—resistant surfaces shall be stabilized in compliance with the SWPPP and/or landscape plan, where applicable.
- 13. Refer to street paving plans for proposed grades within proposed right—of—way.
- 14. Units of length are feet unless otherwise marked as inches ("), centimeters (cm), meters (m) or yards (yd).
- 15. Refer to Sheet C1.0 for other general notes applicable to grading.



# <u>BENCHMARKS</u>

- Temporary Bench Mark: "□" cut on northwest corner of Y inlet at the northeast corner of property Elev = 639.63'
- 2. Bench Mark: "□" cut on inlet sw corner Sojourn & Addison Rd. Elev.=641.95

VILBIG & ASSOCIATES, INC CONSULTING ENGINEERS & SURVEYORS 10132 MONROE DRIVE DALLAS, TEXAS 7522



THE SEAL APPEARING
ON THIS DRAWING IS
AUTHORIZED BY DAVID
A. VILBIG, P.E. NO.
67207 ON\_\_\_\_\_20\_

ARKING LOT EXPANSION
IN/COR. ADDISON RD. & SOJOURN DR

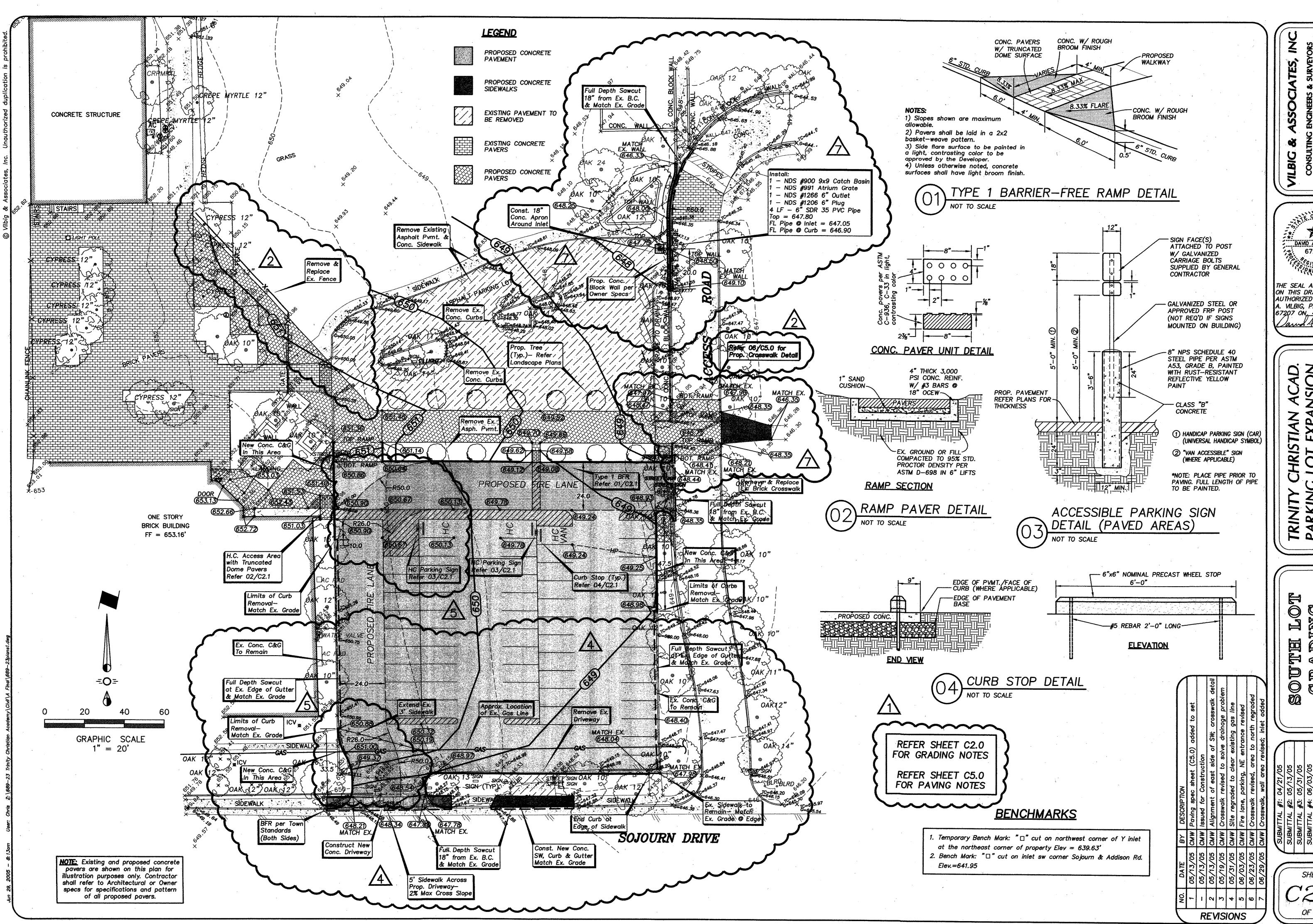
NORTH LOT GRADING DIAM

TAL #2: 05/13/05
TAL #3: 05/31/05
TAL #4: 06/03/05
CMW DRAWN: CMW
D: DAV

SUBMITT SUBMITT SUBMITT CHECKET

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**REVISIONS** 

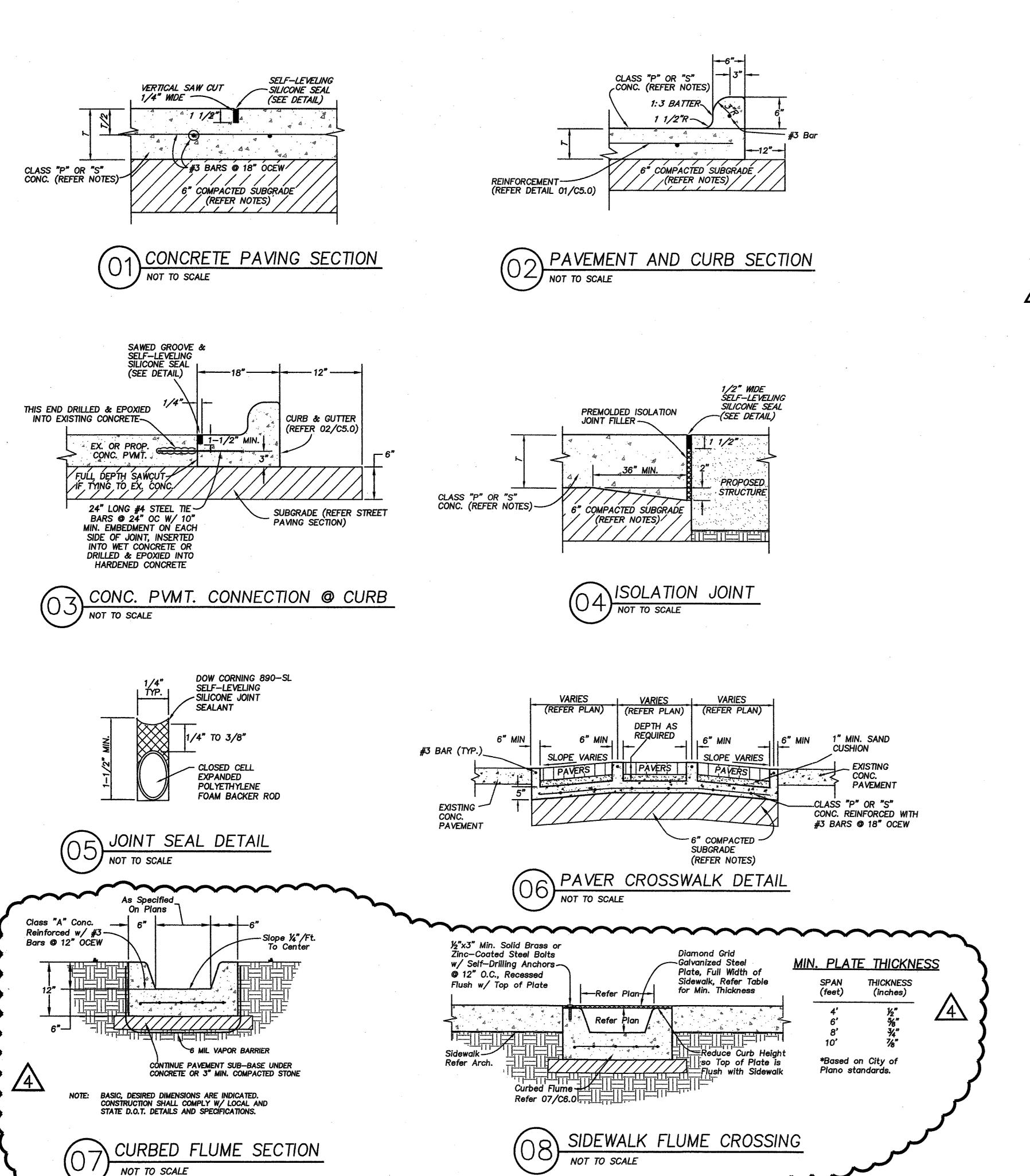


DAVID A. VILBIG 67207

THE SEAL APPEARING ON THIS DRAWING IS AUTHORIZED BY DAVID A. VILBIG, P.E. NO. 67207 ON 4 2 200

rading Plan SOUTH GRADI

SHEET



### PAVING NOTES

1. Final paving, curb and sidewalk elevations will be placed at ±0.03 foot. Paved areas shall have sawcut joints per details at spacing of 12.5' (12"-6") maximum and 10.0' minimum. Contractor is responsible for providing sawcut joint plan.

2. All reinforced concrete paving shall be placed in accordance with Item 360, 1993 Standard Specifications for Construction of Highways, Streets and Bridges, Texas Department of Transportation. The concrete specifications are as follows:



Vehicle Areas: Class "P", 555 psi Flexural Strength at 7 days or
Class "S", 3,500 psi Flexural Strength at 28 days
per TxDOT Item 421

Sidewalks, Curb Ramps & Other: Class "A", 3,500 psi Comp. Strength
at 28 days per TxDOT Item 421

3. Paving thickness shall be as follows:

Concrete Thickness "T":

Fire lanes & driveways - T=6"

Parking areas - T=5"

4. All curbs shall be integral curbs.



5. Subgrade shall consist of onsite soils compacted per Note #18, Sheet C1.0 and/or the geotechnical report.

6. Refer to City landscape specifications for seeding and sodding

7. Subgrade is to be proof-rolled prior to placement of pavement.

8. Contractor to remove and dispose of any and all material that is deemed unsuitable for base material by the Engineer.

9. Match existing curbs at ends of new curbs (where applicable).

10. All dimensions on this plan are to back of curb unless noted. Units of length are feet unless otherwise marked as inches ("), centimeters (cm), meters (m) or yards (yd).

11. Developer is responsible for specifying concrete paver color, shape, and layout pattern. Pavers shall be installed per manufacturer's recommendations.

12. Top of paver elevations will be placed within  $\pm 0.13$  foot ( $\pm \%$ ") of grades specified in plans and elevations of adjacent pavers. Top of pavers next to existing or proposed concrete or asphalt pavement shall be placed 0.13 foot (%") to 0.25 foot (%") above adjacent pavement grade.

13. Pavers shall be 60mm ( $2\frac{3}{8}$ ") minimum thickness, and shall meet the following requirements set forth in ASTM C 936, Standard Specification for Interlocking Concrete Paving Units:

a) Average compressive strength of 8,000 psi (55 MPa) with no individual unit under 7,200 psi (50 MPa).

b) Average absorption of 5% with no unit greater than 7% when tested in accordance with ASTM C 140.

c) Resistance to 50 freeze—thaw cycles when tested in accordance with ASTM C 67.

d) Pigment in concrete pavers shall conform to ASTM C 979.

14. Paver bedding sand shall conform to ASTM C 33. Bedding sand shall be screeded and compacted with a vibratory compactor per paver manufacturer's recommendations.

15. Paver jointing sand shall conform to ASTM C 144. Jointing sand shall be swept into the joints and compacted with a vibratory compactor per paver manufacturer's recommendations.

16. Refer to Sheet C1.0 for other general notes applicable to paving.

82-4

VILBIG & ASSOCIATES, INCCONSULTING ENGINEERS & SURVEYORS
10132 MONROE DRIVE DALLAS, TEXAS 752



THE SEAL APPEARING
ON THIS DRAWING IS
AUTHORIZED BY DAVID
A. VILBIG, P.E. NO.
67207 ON \_\_\_\_\_20\_

TRINITY CHRISTIAN ACAD.

PARKING LOT EXPANSION

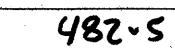
NW/COR, ADDISON RD. & SOJOURN DR.
TOWN OF ADDISON, TEXAS

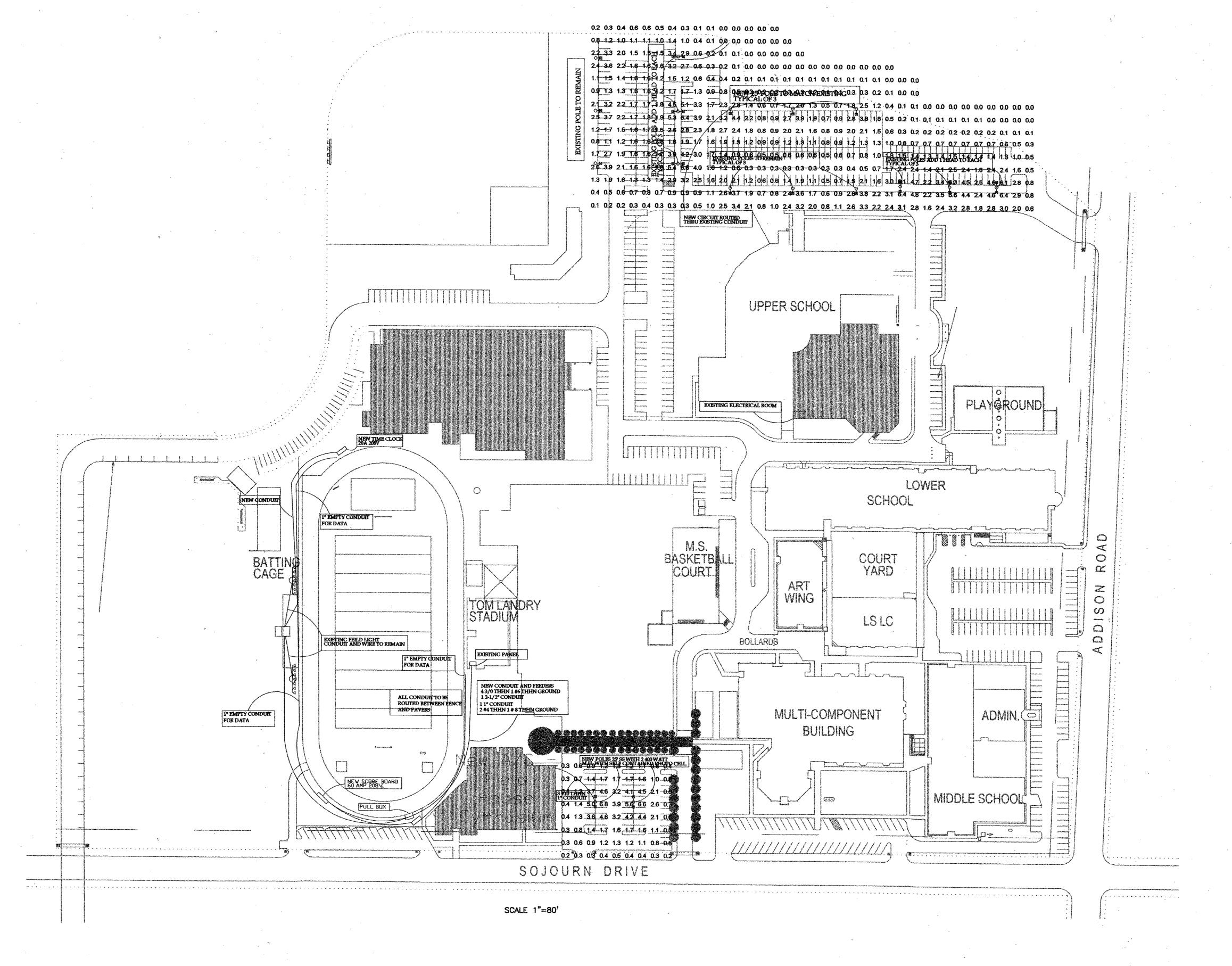
PAVING NOTES & DETAILS

BMITTAL #2: 05/13/05
BMITTAL #3: 05/31/05
BMITTAL #4: 06/03/05
SIGN: CMW DRAWN: CMW
ECKED: DAV

SHEET 1 C5.0

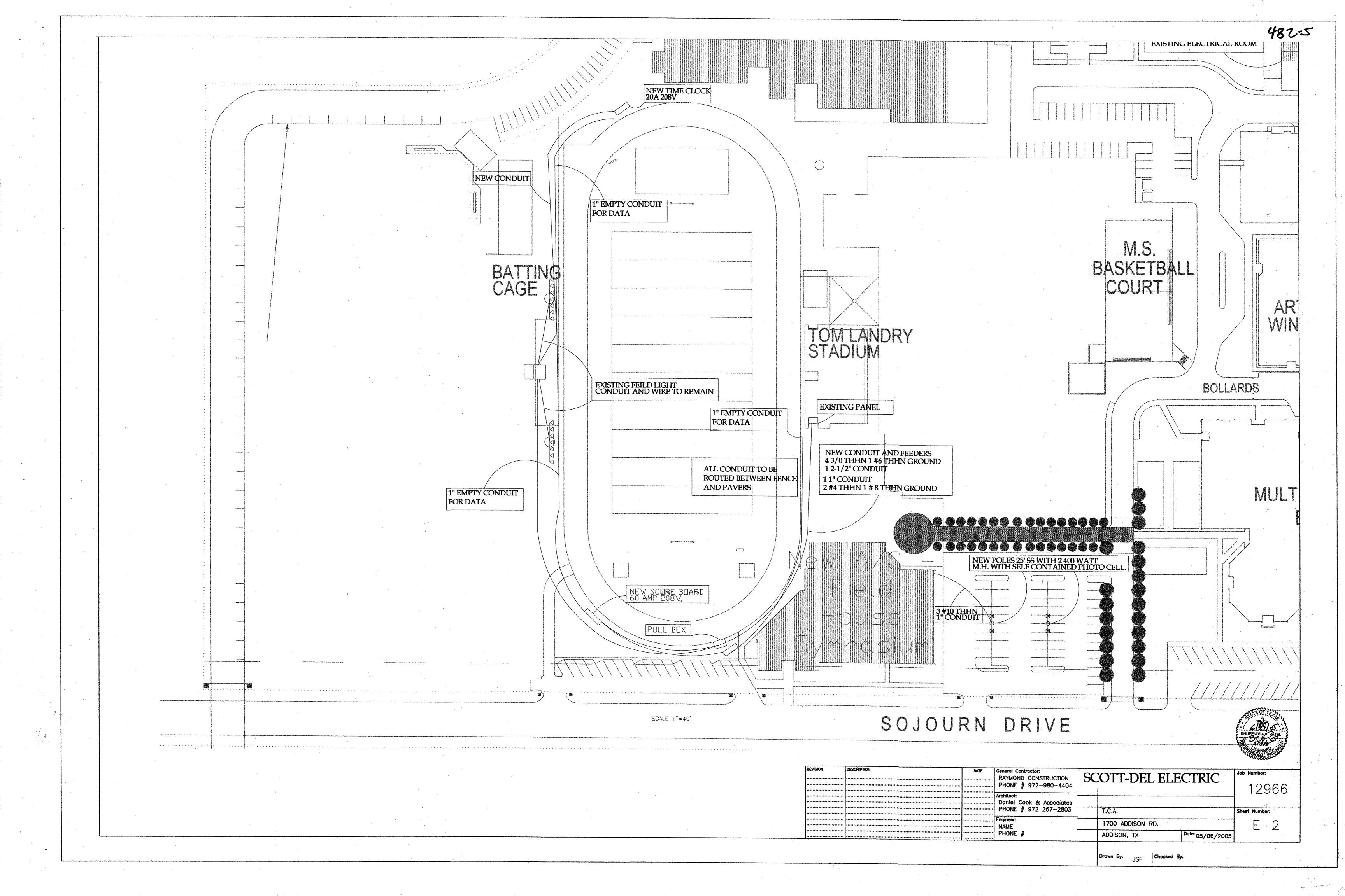
REVISIONS

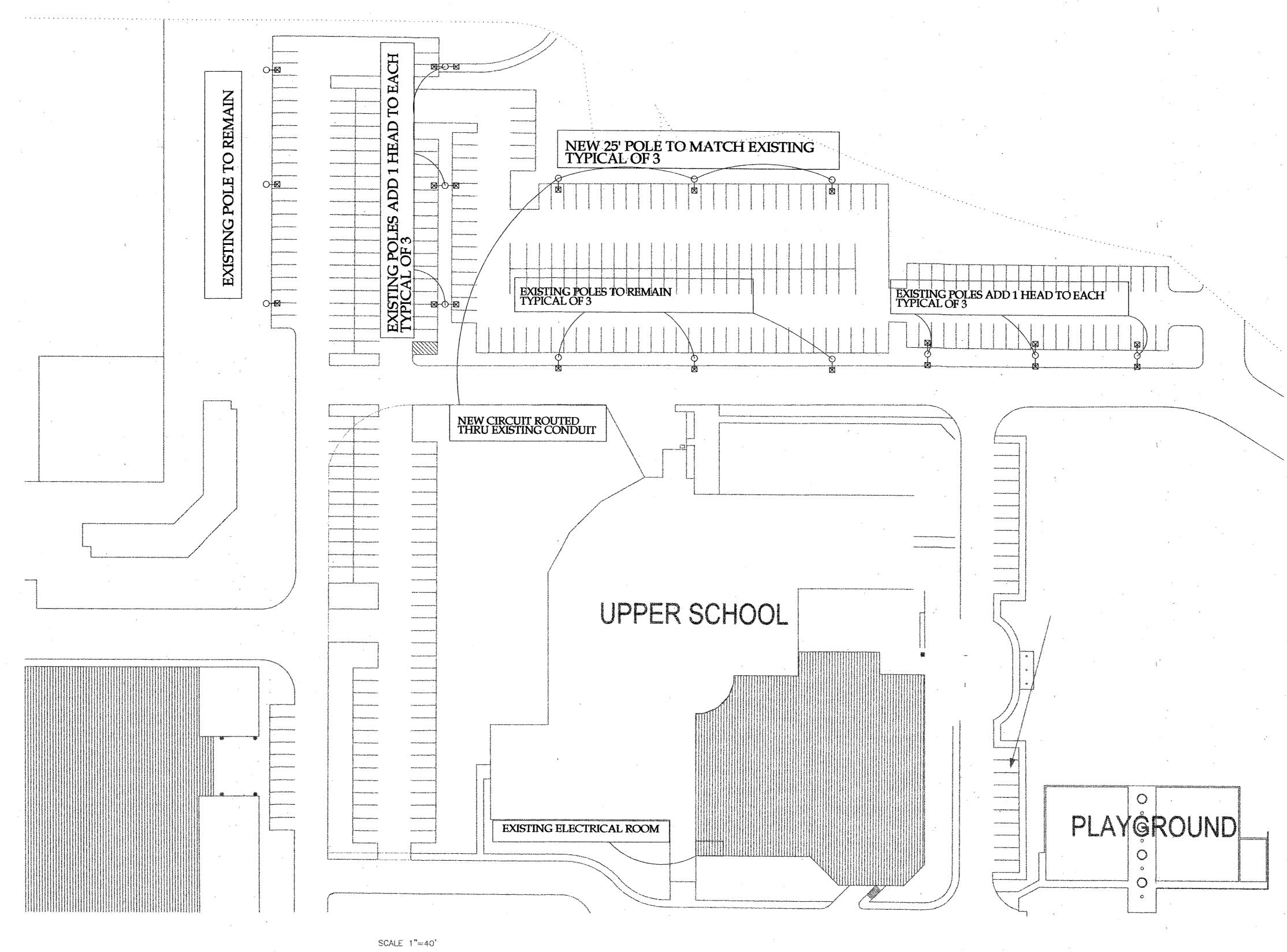






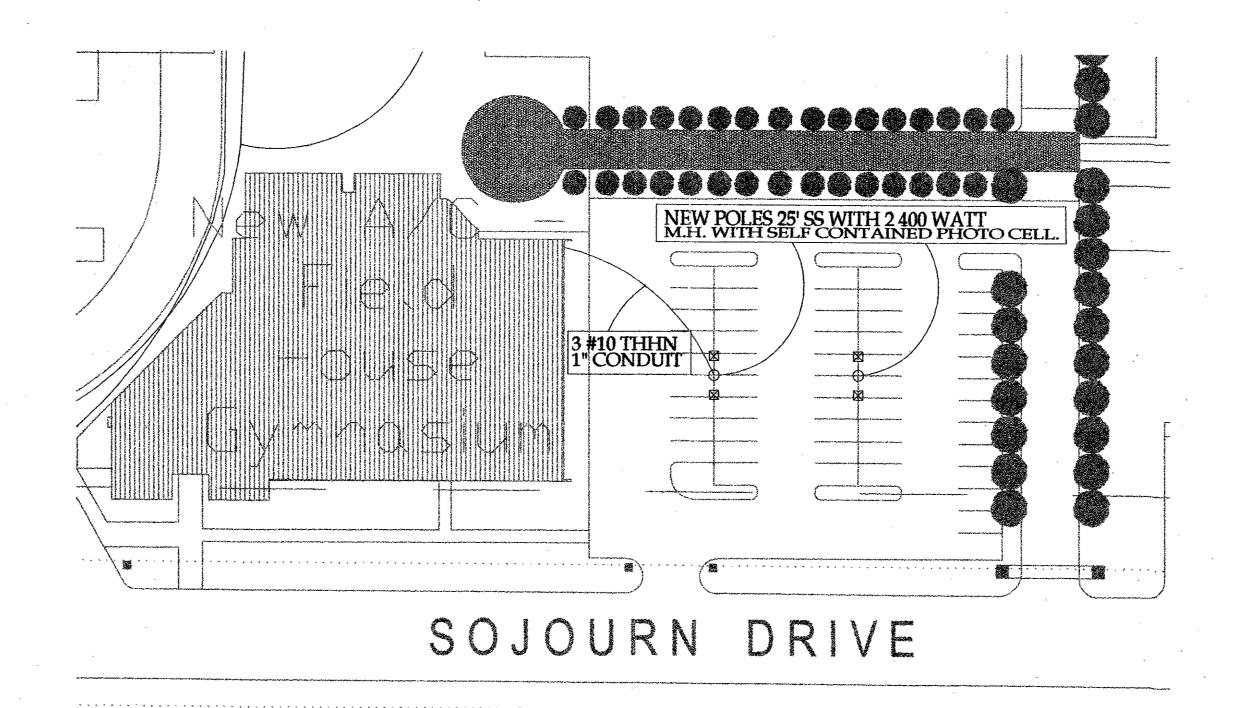
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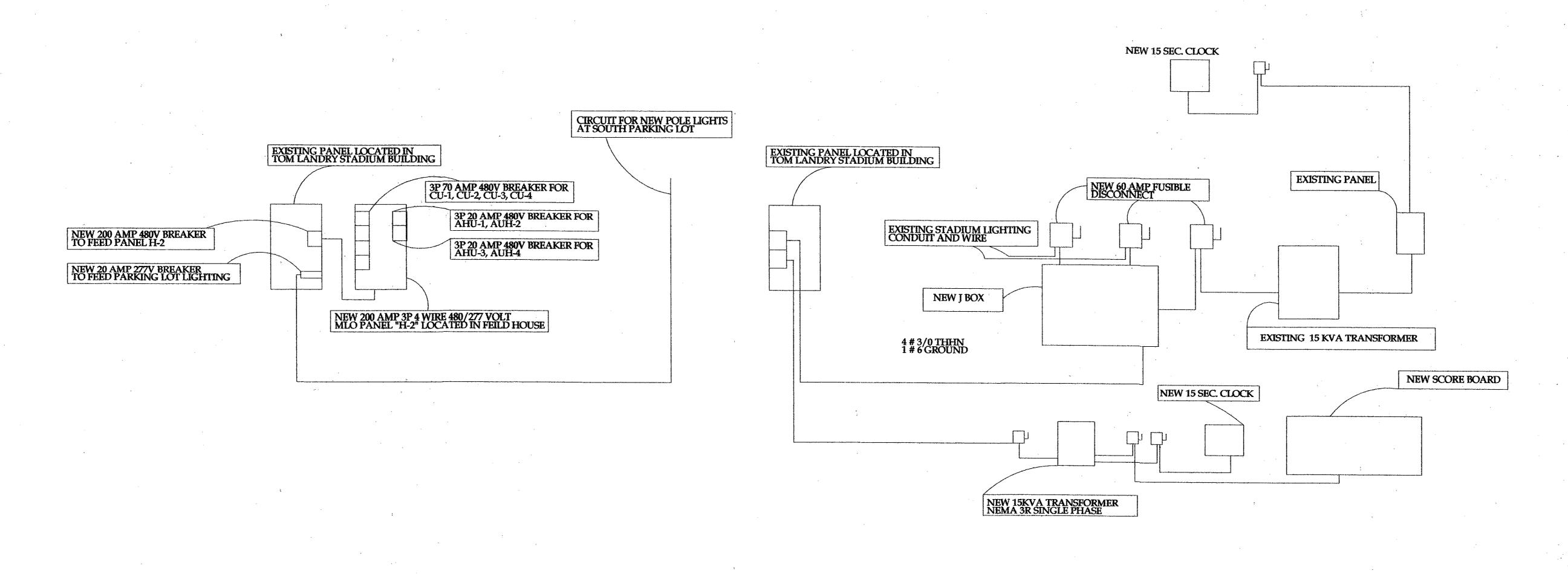




REVISION	DESCRIPTION	DATE	General Contractor:	CCC		ו דיד דיד	COUDIC	Job Number:
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***********	***************************************	*************	Daniel Cook & Associates				•	,
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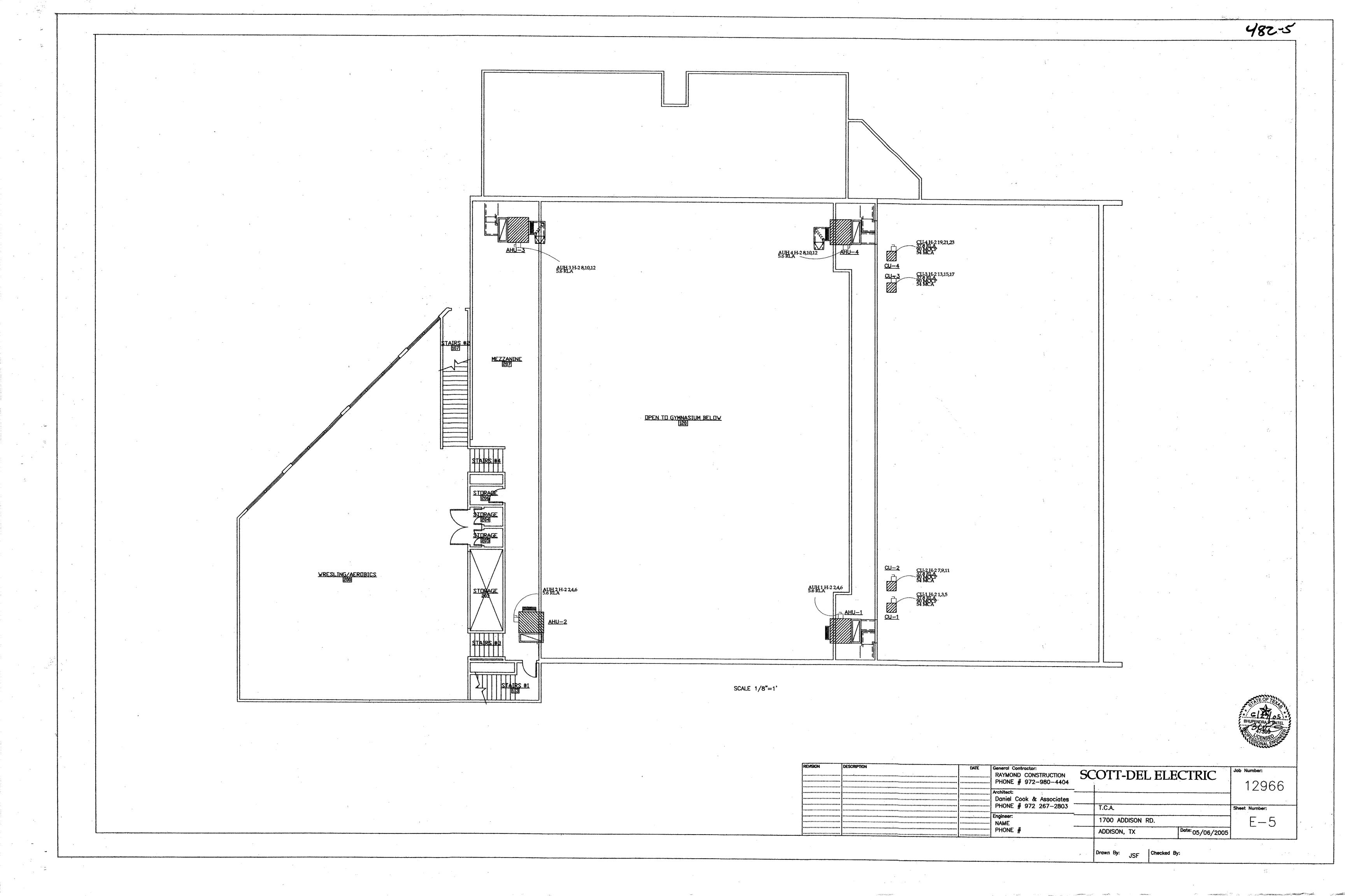


SCALE 1"=40'





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SHEET INDEX

GENERAL NOTES & LEGEND

E-4 ELECTRICAL ONE LINE SCHEMATICS

E-5 | FIELD HOUSE ELECTRICAL PLAN

C5.0 PAVING NOTES & DETAILS

M-1 MECHANICAL PLANS

# Site Development - Phase 1A TRINITY CHRISTIAN ACADEMY

17001 ADDISON RD. ADDISON, TEXAS 75001

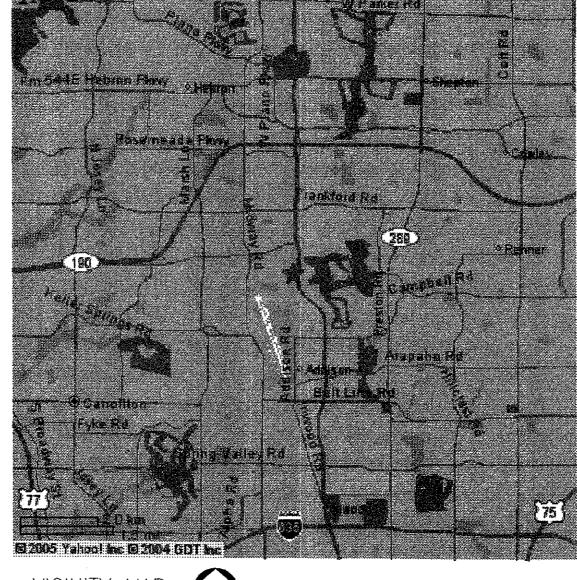
BUILDING CODES AND ENFORCEMENT AGENCIES. FURTHE DE ENFORCEMENT OFFICER AT NO EXTRA COST TO TH

HITECT ANY SUCH DEFICIENCIES PRIOR TO THEIR FINAL

PARTICULAR TRADE. INDICATE CLEARLY AND CORRECTLY ALL WORK INSTALLED DIFFERENTLY FROM THAT SHOWN ON THE CONTRACT DRAWINGS AND WORK WHICH MAY BE ADDED TO OR DELETED FROM THE CONTRACT KEEP RECORD DRAWINGS UP TO DATE AS WORK PROGRESSES. LOCATE ALL STUB OUTS, SERVICE OR FEEDER CONDUITS IN OR BELOW SLABS OF GRADE, BY PLAN DIMENSION AND ELEVATION. SHOW INVERT ELEVATIONS I ALL BREAKS IN GRADE AND PIPE SIZES FOR ALL WATER AND GAS LINES. SHOW ALL MAIN SHUT OFF VALVES PLAINLY. ALL CHANGES ARE TO BE SHOWN ON BLUE PRINTS AND TRANSMITTED TO THE ARCHITECT VIA THI GENERAL CONTRACTOR. GENERAL AND MAJOR SUBCONTRACTORS SHALL PROVIDE TO OWNER A MANUAL OF ALL REOLIRED MAINTENANCE INSTRUCTIONS FOR THIS PRODUCT OR FOURMENT ALONG WITH THE SUPPLIER OR SUBCONTRACTOR NAME, ETC. THE RECORD DRAWINGS AN MAINTENANCE MANUALS ARE REQUIRED PRIOR TO FINAL PAYMENT TO THE GENERAL CONTRACTOR OR HIS SUB-CONTRACTORS.

<u>CHANGES IN WORK - NOTE TO ALL CONTRACTORS:</u> CONTRACTOR SHALL BEAR ALL RESPONSIBILITY FOR MODIFICATIONS REQUIRED IN ARCHITECTURAL, STRUCTURAL, ELECTRICAL, OR PLUMBING SYSTEMS DUE TO SUBSTITUTION OF EQUIPMENT.

A WORD ABOUT BUILDING GOD'S WAY AND HOW THE CONSTRUCTION IS BEING COMPLETED: THIS PROJECT IS BEING COMPLETED WITH DONATED FUNDS AND GIFT IN KIND FROM THE CONSTRUCTION COMMUNITY. NATIONAL SUPPLIERS AR HELPING ON THIS MATTER BY REDUCING THEIR COSTS SIGNIFICANTLY O MANY OF THE MATERIALS. THESE MATERIALS WILL BE SOLD DIRECTLY TO THE OWNER AND ARE SHOWN IN THIS SET OF DRAWINGS AS SUPPLIED BY OWNER. MANY FIRMS IN THE CONSTRUCTION INDUSTRY ARE HELPING WITH THIS PROJECT BY REDUCING THEIR FEES SUBSTANTIALLY. BY DOING THIS, THESE FIRMS ARE GIVING THIS SCHOOL OR CHURCH A CHANCE TO CONSTRUCT THIS BUILDING WITHIN THE AVAILABLE FUNDS.



### PROJECT TEAM

**OWNER** 

TRINITY CHRISTIAN ACADEMY 17001 ADDISON RD. **ADDISON, TEXAS 75001-5096** 

**ARCHITECT** 

DANIEL COOK AND ASSOCIATES 2909 WASHINGTON BLVD. OGDEN UTAH 84404

CIVIL ENGINEER

VILBIG ASSOCIATES 10132 MONROE DRIVE DALLAS, TX 75229

LANDSCAPE ARCHITECT Yellow Rose Landscape Services, Inc. 7755 McCallum Blvd Dallas, TX 75252

MECHANICAL/PLUMBING **ENGINEER** VENTURE MECHANICAL

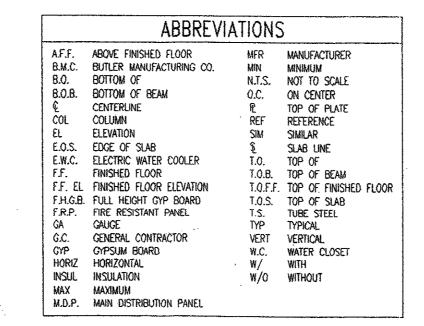
2222 CENTURY CIRCLE IRVING, TX 75062

**ELECTRICAL ENGINEER** SCOTT-DEL ELECTRIC INC PO BOX 29535 **DALLAS, TX 75229** 

GENERAL CONTRACTOR RAYMOND CONSTRUCTION 4407 NORTH BELTWOOD PARKWAY DALLAS, TEXAS 75244

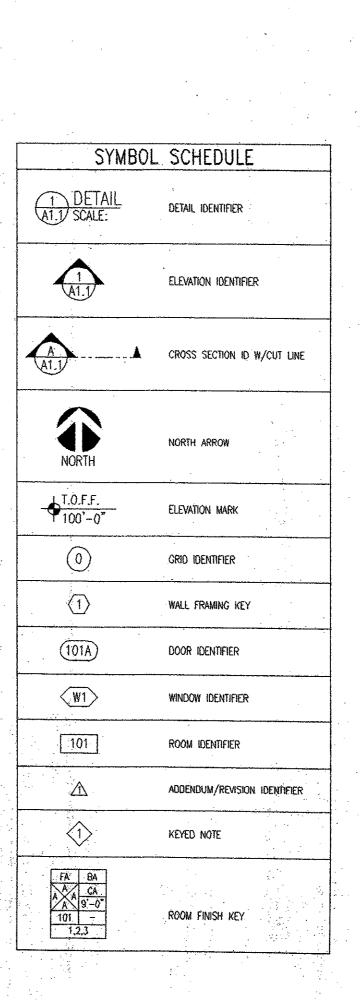
NOTE FOR GENERAL, MECHANICAL, ELECTRICAL, PLUMBING AND ALL OTHER SUBCONTRACTORS:

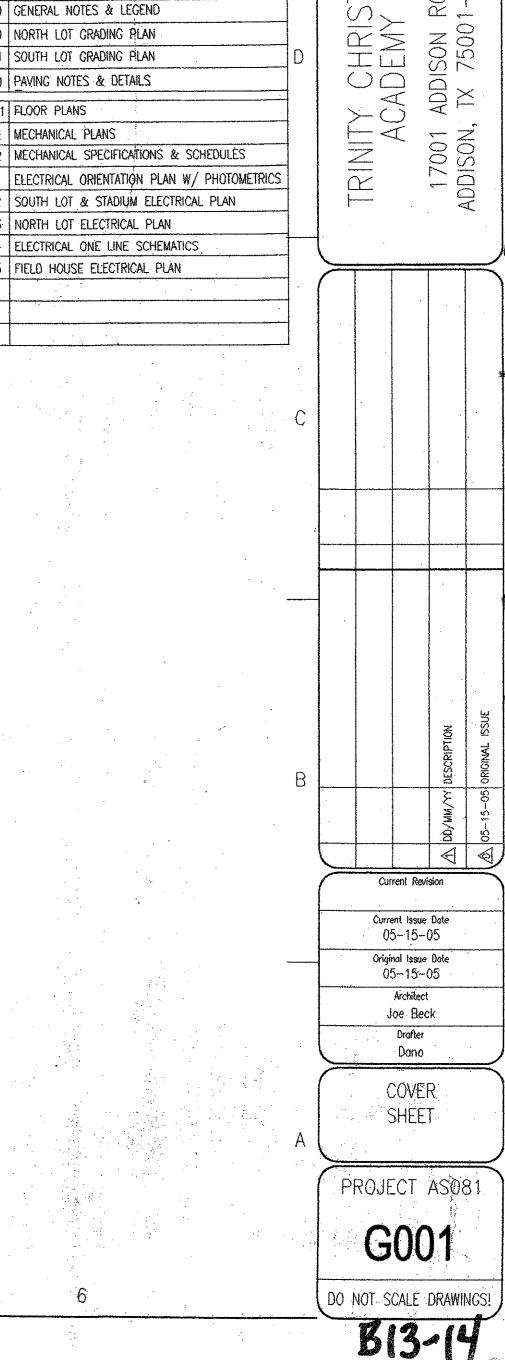
ALL CONTRACTORS ARE REQUIRED TO REVIEW ALL SHEETS OF THESE DRAWINGS AND ALL SECTIONS OF THE PROJECT MANUAL AND INCLUDE THEIR PROVISIONS IN THEIR ESTIMATE. THIS SHALL INCLUDE THIS COVER SHEET. ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL



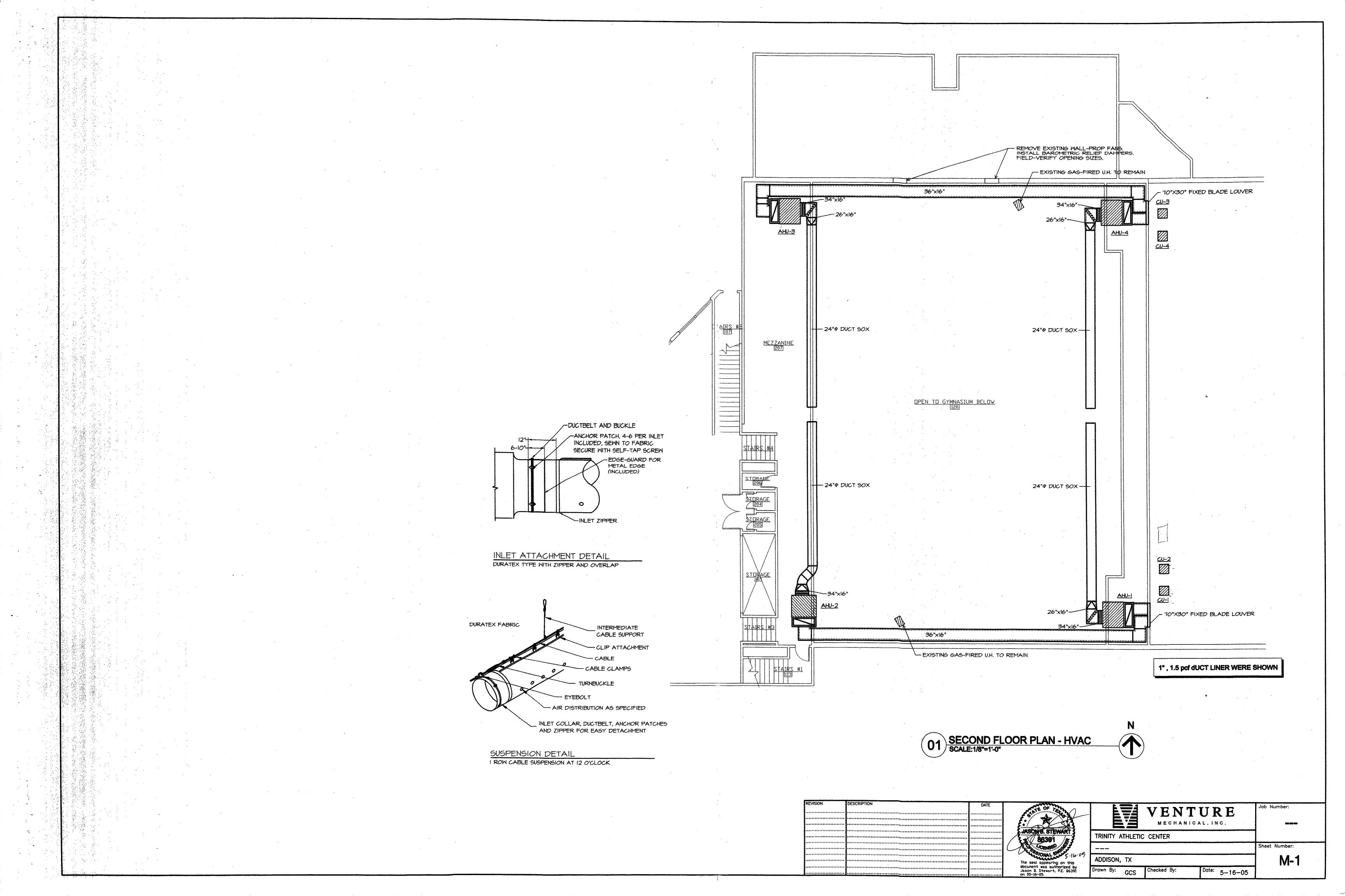


www.BuildingGodsWay.com Phone: 800-552-7137 - Fax: 801-622-8812 Email: dca@dcagroup.com





482-6



### DIVISION IS SPECIFICATIONS

GENERAL REQUIREMENTS FOR MECHANICAL WORK

1.01 RELATED DOCUMENTS - PROVISIONS OF THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS AND DIVISION I - GENERAL REQUIREMENTS, AND APPLICABLE PROVISIONS ELSEWHERE IN THE CONTRACT DOCUMENTS APPLY TO WORK OF DIVISION IS

1:02 SUMMARY OF WORK - PROVIDE ALL LABOR, MATERIALS, SUPERVISION, TOOLS, SERVICES, EQUIPMENT AND INCIDENTALS NECESSARY FOR COMPLETE AND OPERATIONAL SYSTEMS AS SPECIFIED UNDER THIS DIVISION AND AS SHOWN ON THE CONTRACT

### 1.03 CODES AND STANDARDS

A. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF APPLICABLE CODES AS SET FORTH BY THE LOCAL, STATE, AND FEDERAL JURISDICTIONS HAVING AUTHORITY. B. ALL WORK SHALL CONFORM TO THE APPLICABLE PROVISIONS AND RECOMMENDATIONS SET FORTH IN STANDARDS ISSUED BY THE

1. AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE). . AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM). 3. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). 4. SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA).

5. UNDERWRITERS LABORATORY (UL). 6. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

A. PRODUCT DATA SHEETS - SUBMIT PRODUCT DATA SHEETS FOR ALL EQUIPMENT AND MAJOR MATERIALS SHOWING DIMENSIONAL INFORMATION, PERFORMANCE DATA, AND UTILITY REQUIREMENTS SUCH AS BUT NOT LIMITED TO NATURAL GAS CONSUMPTION RATES. ELECTRICAL SERVICE REQUIREMENTS, DOMESTIC WATER REQUIREMENTS, AND ASSOCIATED CONNECTION SIZES. B. SHOP DRAWINGS - SUBMIT DRAWINGS APPROPRIATE FOR USE BY SHEET METAL MANUFACTURERS IN FABRICATING DUCTWORK, BY THE MECHANICAL CONTRACTOR'S FIELD PERSONNEL IN INSTALLATION OF MATERIALS AND EQUIPMENT, AND BY OTHER TRADESMEN

IN COORDINATING PLACEMENT OF COINCIDENTAL OR AFFECTED MATERIALS AND EQUIPMENT. C. OPERATION AND MAINTENANCE MANUALS - SUBMIT MANUALS FOR USE BY THE OWNER IN PERFORMING ROUTINE MAINTENANCE AND SERVICE ON ALL EQUIPMENT.

### PART 3 - EXECUTION

3.01 COORDINATION - COORDINATE AND DIRECT WORK UNDER THIS DIVISION WITH WORK UNDER THE OTHER DIVISIONS AND WITH THE GENERAL CONTRACTOR IN SUCH A MANNER AS TO AVOID DELAYS IN THE PROJECT SCHEDULE OR DAMAGE TO OR REMOVAL AND RELOCATION OF WORK IN PLACE.

### SHEETMETAL DUCTWORK

### PART I - GENERAL

A. CONTRACT DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION I SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION. B. RELATED SECTIONS

SECTION BASIC MECHANICAL REQUIREMENTS 2. SECTION TESTING, ADJUSTING AND BALANCING HVAC SYSTEMS

C. THIS SECTION SPECIFIES SHEETMETAL DUCTWORK.

A. PROVIDE PERFORMANCE DATA AT CONDITIONS SPECIFIED IN THE CONTRACT DRAWINGS. B. PROVIDE SCALABLE DRAWINGS SHOWING LOCATION AND SIZES OF ALL DUCTS INCLUDING ELEVATIONS AND NECESSARY OFFSETS

REQUIRED TO ROUTE AROUND WORK OF OTHER TRADES. C. SUBMIT AS-BUILT DRAWINGS DOCUMENTING ANY CHANGES IN LOCATIONS AND/OR SIZES

### PART 2 - PRODUCTS

2.02 SHEETMETAL DUCT

A. CONCEALED RECTANGULAR SHEET METAL TO BE CONSTRUCTED FROM ZINC-COATED STEEL SHEETS WITH A MINIMUM G-90

B. EXPOSED RECTANGULAR SHEET METAL TO BE CONSTRUCTED FROM GALVANNEAL (PAINTABLE) SHEETS.

C. LOW-PRESSURE RECTANGULAR DUCT FOR THE CONSTANT VOLUME SUPPLY TO BE CONSTRUCTED PER 1" E.S.P. TABLES AS

PUBLISHED IN 1995 S.M.A.C.N.A. MANUAL, INCLUDING ADDENDUM 1. D. LOW-PRESSURE RECTANGULAR DUCT FOR ALL OTHER LOW PRESSURE, INCLUDING BUT NOT LIMITED TO THE CONSTANT VOLUME RETURN AIR, EXHAUST AIR, AND SUPPLY AIR DOWNSTREAM OF THE TERMINAL BOXES, TO BE CONSTRUCTED PER 1º E.S.P. TABLES

AS PUBLISHED IN 1995 S.M.A.C.N.A. MANUAL, INCLUDING ADDENDUM I TRANSVERSE CONNECTORS ARE TO BE PER THE 1995 S.M.A.C.N.A. STANDARDS TURNING VANES INCLUDED FOR ALL SUPPLY AIR SQUARE THROAT SQUARE HEEL 90-DEGREE ELBOWS. 6. NEOPRENE FLEX CONNECTORS PROVIDED FOR ALL FAN UNIT CONNECTIONS.

H. ALL RECTANGULAR SUPPLY AIR AND RETURN AIR DUCT ASSOCIATED WITH AND 1-4 TO BE LINED WITH I" JOHNS-MANVILLE LINEACOUSTIC RC LINER

METAL NOSINGS INCLUDED FOR LINED DUCT AT THE UNIT DISCHARGE. J. ALL FITTINGS TO BE ASSEMBLED. ALL STRAIGHT DUCT TO BE IN "L" SECTIONS.

### K. NOS TO BEAD DUCT IN LIEU OF CROSS-BREAKING. PART 3 - EXECUTION

### 3.01 INSTALLATION

### A. SHEETMETAL DUCT

A. ALL SUPPLY AND RETURN AIR DUCTS SHALL BE INTERNALLY INSULATED WITH I", 15 PCF FIBERGLASS DUCT LINER. ALL OTHER LON-PRESSURE DUCTS SHALL BE UNLINED AND EXTERNALLY INSULATED INHERE APPLICABLE AND AS SPECIFIED ELSEWHERE HEREIN B. ALL EXHAUST DUCTWORK TO BE UNINSULATED.

A. VERIFY THAT DUCTWORK IS SEALED AIR TIGHT AT OPERATING CONDITIONS. B. VERIFY THAT THERE ARE NO OBSTRUCTIONS IN DUCTWORK PRIOR TO OPERATING ANY FANS. G. VERIFY THAT ALL DUCTWORK IS INSTALLED STRAIGHT AND PLUMB. D. VERIFY THAT ALL DUCTWORK SCHEDULED TO BE PAINTED IS CLEAN AND READY TO ACCEPT PAINT.

### DUCTSOX FABRIC DUCT SYSTEM

### PART I-GENERAL

1.01 DESCRIPTION OF WORK: A, EXTENT OF NON-METAL DUCTWORK IS INDICATED ON DRAWINGS AND BY REQUIREMENTS OF THIS SECTION. B. TYPES OF NON-METAL DUCTIMORK REGUIRED FOR THIS PROJECT INCLUDE THE FOLLOWING: I. FABRIC AIR DISPERSION PRODUCTS.

### 1.02 QUALITY ASSURANCE:

A. BUILDING CODES AND STANDARDS: 1. PRODUCT MUST BE CLASSIFIED BY UNDERWRITER'S LABORATORIES IN ACCORDANCE WITH THE 25/50 FLAME SPREAD / SMOKE DEVELOPED REGUIREMENTS OF NFPA 90-A AND ARE ALSO CLASSIFIED IN ACCORDANCE WITH ICC EVALUATION SERVICE

2. ALL PRODUCT SECTIONS MUST BE LABELED WITH THE LOGO AND CLASSIFICATION MARKING OF UNDERWRITER'S LABORATORIES.

B. DESIGN & QUALITY CONTRO I. MANUFACTURER MUST HAVE DOCUMENTED DESIGN SUPPORT INFORMATION INCLUDING DUCT SIZING, VENT AND ORIFICE LOCATION, VENT AND ORIFICE SIZING, LENGTH, AND SUSPENSION, PARAMETERS FOR DESIGN, INCLUDING MAXIMUM AIR TEMPERATURE, VELOCITY, PRESSURE AND FABRIC PERMEABILITY, SHALL BE CONSIDERED AND DOCUMENTED.

A. PRODUCT DATA: SUBMIT MANUFACTURER'S SPECIFICATIONS ON MATERIALS AND MANUFACTURED PRODUCTS USED FOR

### B. BUILDING CODE DATA: SUBMIT U. FILE NUMBER UNDER WHICH PRODUCT IS CLASGIFIED BY UNDERWRITER'S LABORATORIES,

# A. MANUFACTURER MUST PROVIDE A 5 YEAR WARRANTY PROGRAM FOR PRODUCTS SUPPLIED FOR THE FABRIC PORTION

### OF THIS SYSTEM.

STORE ABOVE GRADE AND ENCLOSE WITH A VENTED WATERPROOF WRAPPING

1.05 DELIVERY, STORAGE AND HANDLING: A. PROTECT FABRIC AIR DISPERSION SYSTEMS FROM DAMAGE DURING SHIPPING, STORAGE AND HANDLING. B. WHERE POSSIBLE, STORE PRODUCTS INSIDE AND PROTECT FROM WEATHER. WHERE NECESSARY TO STORE OUTSIDE,

### PART 2 - PRODUCTS

2.01 MANUFACTURER SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS MANUFACTURED IN THE UNITED STATES, CHOOSE ONE OF THE

A. DUCTSOX CORPORATION

2.02 FABRIC AIR DISPERSION SYSTEM: A. DURATEX FABRIC: AIR DIFFUSERS SHALL BE CONSTRUCTED OF A COATED MOVEN FIRE RETARDANT FABRIC COMPLYING WITH THE FOLLOWING PHYSICAL CHARACTERISTICS:

FABRIC CONSTRUCTION: 100% POLYESTER COATING: NON-AIR PERMEABLE COATING WEIGHT: 5.2 OZ /YD2 PER ASTM D3776

COLOR: (MUST SPECIFY-WHITE, CHARCOAL, OR TAUPE) AIR PERMEABILITY: O CFM/FT2 PER ASTM D131, FRAZIER

TEMPERATURE RANGE: O DEGREES F TO 180 DEGREES F FIRE RETARDANCY: CLASSIFIED BY UNDERWRITERS LABORATORIES IN ACCORDANCE WITH THE FLAME SPREAD/SMOKE DEVELOPED REQUIREMENTS OF NFPA 90-A.

B. SYSTEMS FABRICATION REGUIREMENTS

DISPERSION ORIFICE SIZING, UP TO 5 INCH DIAMETER (DESIGN DEPENDANT). SIZE, QUANTITY, AND LOCATION OF ORIFICES TO BE SPECIFIED AND APPROVED BY MANUFACTURER.

INLET CONNECTION TO METAL DUCT VIA FABRIC DRAW BAND WITH ANCHOR PATCHES AS SUPPLIED BY MANUFACTURER, ANCHOR PATCHES TO BE SECURED TO METAL DUCT VIA, ZIP SCREW FASTENER - SUPPLIED BY CONTRACTOR.

LENGTHS TO INCLUDE REQUIRED ZIPPERS AS SPECIFIED BY MANUFACTURER. SYSTEM TO INCLUDE ADJUSTABLE FLOW DEVICES TO BALANCE TURBULENCE, AIRFLOW AND DISTRIBUTION AS NEEDED. FLOW RESTRICTION DEVICE SHALL INCLUDE ABILITY TO ADJUST THE AIRFLOW RESISTANCE FROM 0.06 - 0.60 IN W.G. STATIC FABRIC SYSTEM SHALL INCLUDE CONNECTORS TO ACCOMMODATE SUSPENSION SYSTEM LISTED BELOW

ANY DEVIATION FROM A STRAIGHT RUN SHALL BE MADE USING A GORED ELBOW OR AN EFFICIENCY TEE. NORMAL 90 DEGREE ELBOWS ARE 5 GORES AND THE RADIUS OF THE ELBOW IS 15 TIMES THE DIAMETER OF THE DUCTSOX.

FABRIC AIR DIFFUSERS SHALL BE DESIGNED FROM 0.25" WATER GAGE MINIMUM TO 3.1" MAXIMUM, WITH 0.5" AS THE FABRIC AIR DIFFUSERS SHALL BE LIMITED TO DESIGN TEMPERATURES BETWEEN O DEGREES F AND 180 DEGREES F

(-IT.8 DEGREES C AND 82 DEGREES C). DESIGN CFM, STATIC PRESSURE AND DIFFUSER LENGTH SHALL BE DESIGNED OR APPROVED BY THE MANUFACTURER.

DO NOT USE FABRIC DIFFUSERS IN CONCEALED LOCATIONS USE FABRIC DIFFUSERS ONLY FOR POSITIVE PRESSURE AIR DISTRIBUTION COMPONENTS OF THE MECHANICAL VENTILATION SYSTEM.

D. SUSPENSION HARDWARE: (ONE OF FOLLOWING) TENSION CABLE: SYSTEM SHALL BE INSTALLED USING A TENSION CABLE SYSTEM INCLUDING A SINGLE (I ROW) OF CABLE LOCATED 3" ABOVE TOP-DEAD-CENTER OF THE FABRIC DUCT. HARDWARE TO INCLUDE CABLE, EYE BOLTS, CABLE CLAMPS AND TURNBUCKLE(S) AS REQUIRED. SYSTEM ATTACHMENT SHALL BE MADE USING NYLON SNAP CLIPS SPACED 24 INCHES. COMPONENT OPTIONS INCLUDE STANDARD GALVANIZED STEEL CABLE

### PART 3 - INSTALLATION

3.01 INSTALLATION OF FABRIC AIR DISPERSION SYSTEM:

A. INSTALL CHOSEN SUSPENSION SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER. INSTRUCTIONS FOR INSTALLATION SHALL BE PROVIDED BY THE MANUFACTURER WITH PRODUCT.

### 3.02 CLEANING AND PROTECTION:

A. CLEAN AIR HANDLING UNIT AND DUCTWORK PRIOR TO THE DUCTSOX SYSTEM UNIT-BY-UNIT AS IT IS INSTALLED. CLEAN EXTERNAL SURFACES OF FOREIGN SUBSTANCE WHICH MAY CAUSE CORROSIVE DETERIORATION OF FACING. B. TEMPORARY CLOSURE: AT ENDS OF DUCTS WHICH ARE NOT CONNECTED TO EQUIPMENT OR DISTRIBUTION DEVICES AT

TIME OF DUCTWORK INSTALLATION, COVER WITH POLYETHYLENE FILM OR OTHER COVERING WHICH WILL KEEP THE SYSTEM CLEAN UNTIL INSTALLATION IS COMPLETED. C. IF DUCTSOX SYSTEMS BECOME SOILED DURING INSTALLATION, THEY SHOULD BE REMOVED AND CLEANED FOLLOWING THE MANUFACTURERS STANDARD TERMS OF LAUNDRY.

### SPLIT SYSTEM AIR-CONDITIONING UNITS

### PART I - GENERAL

A. CONTRACT DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION I SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION. RELATED SECTIONS

3. SECTION BASIC MECHANICAL REGUIREMENTS

4. SECTION TESTING, ADJUSTING AND BALANCING HVAC SYSTEMS C. THIS SECTION SPECIFIES DIRECT-EXPANSION (DX) SPLIT SYSTEM AIR-CONDITIONING UNITS

### 1.07 SUBMITTALS

A. PROVIDE PERFORMANCE DATA AT CONDITIONS SPECIFIED IN THE CONTRACT DRAWINGS. B. PROVIDE DIMENSIONAL DATA FOR UNITS AND ASSOCIATED ACCESSORIES, INCLUDING INSTALLED OPERATING WEIGHT.

C. PROVIDE ELECTRICAL SERVICE REQUIREMENTS AT SPECIFIED VOLTAGE INCLUDING MINIMUM CIRCUIT AMPACITY (MCA) AND MAXIMUM OVERCURRENT PROTECTION (MOCP).

D. PROVIDE, AT PROJECT COMPLETION, OPERATION AND MAINTENANCE MANUALS.

1.03 SPECIAL WARRANTY - THE COMPRESSORS SHALL BE WARRANTED BY THE UNIT MANUFACTURER FOR A PERIOD OF 4 YEARS BEYOND THE INITIAL ONE-YEAR WARRANTY PERIOD FOR THE PROJECT. THIS WARRANTY SHALL NOT INCLUDE LABOR REQUIRED FOR

### PART 2 - PRODUCTS

### 2.03 MANUFACTURERS

D. LENNOX INDUSTRIES

F. CARRIER COOPERATION

2.02 PRODUCT DESCRIPTION

A. THE MECHANICAL CONTRACTOR SHALL PROVIDE THE SYSTEM(S) AS SPECIFIED ON THE DRAWINGS, INCLUDING ALL LISTED ACCESSORIES.

B. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS AND ACCESSORIES INCIDENTAL TO PROPER INSTALLATION AND OPERATION OF THE SYSTEMS AT ANTICIPATED CONDITIONS, WHETHER SHOWN ON THE DRAWINGS OR NOT. C. THE MECHANICAL CONTRACTOR SHALL FURNISH ALL ACCESSORIES NECESSARY TO COMPLY WITH THE INTERNATIONAL ENERGY CONSERVATION CODE (2001). PART 3 EXECUTION

A. VERIFY THAT THE SPACE IS READY TO RECEIVE WORK AND SERVICE CLEARANCES ARE AS INDICATED ON SHOP DRAWINGS

B. VERIFY THAT PROPER POWER SUPPLY IS AVAILABLE

### 3.02 INSTALLATION

A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. SUSPEND AIR-HANDLING UNITS FROM THE STRUCTURE USING ANGLE IRON SUPPORTS SUSPENDED FROM 5/16" DIAMETER THREADED ROD ATTACHED AT THE TOP IN A MANNER APPROVED BY THE ARCHITECT AND STRUCTURAL ENGINEER, AND ATTACHED AT THE ANGLE IRON USING SPRING VIBRATION ISOLATORS.

A. THE MECHANICAL CONTRACTOR SHALL EMPLOY THE SERVICES OF A QUALIFIED TECHNICIAN TO COMPLETE ALL ITEMS AND RECORD ALL NECESSARY DATA IN ACCORDANCE WITH THE MANUFACTURER'S STARTUP PROCEDURES.

B. THE MECHANICAL CONTRACTOR SHALL MAKE ADJUSTMENTS TO THE FAN SPEED IN ORDER TO ESTABLISH THE SUPPLY AIRFLOW WITHIN TOLERANCES SPECIFIED IN SECTION 15990 TESTING, ADJUSTING AND BALANCING HAVE SYSTEMS.

C. THE MECHANICAL CONTRACTOR SHALL ADJUST THE ECONOMIZER DAMPER MINIMUM POSITION SETTING IN ORDER TO ESTABLISH OUTSIDE AIR INTAKE FLOW RATES WITHIN TOLERANCES SPECIFIED IN SECTION 15990 TESTING, ADJUSTING AND BALANCING HVAC

### EXTRUDED ALUMINUM STATIONARY LOWERS

### PART I GENERAL

I.I SECTION INCLUDES

A. EXTRUDED ALUMINUM STATIONARY LOWERS WITH DRAINABLE BLADES.

1.2 RELATED SECTIONS

A. SECTION CAST-IN-PLACE CONCRETE.

B. SECTION MASONRY UNITS.

C. SECTION STRUCTURAL METAL FRAMING. D. SECTION ROUGH CARPENTRY

E. SECTION METAL WALL PANELS.

F. SECTION FLASHING AND SHEET METAL

G. SECTION JOINT SEALANTS.

H. SECTION PAINTS. I, SECTION AIR OUTLETS AND INLETS.

A. AAMA 605.2 - HIGH PERFORMANCE ORGANIC COATINGS ON ARCHITECTURAL EXTRUSIONS AND

B. AMCA 500 - TEST METHODS FOR LOWERS, DAMPERS AND SHUTTERS.

C. AMCA 511 - CERTIFIED RATINGS PROGRAM FOR AIR CONTROL DEVICES.

A. COMPLY WITH CONTRACT REQUIREMENTS FOR SUBMITTAL PROCEDURES.

B. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA INCLUDING PERFORMANCE DATA.

C. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIALS, CONSTRUCTION, DIMENSIONS, ACCESSORIES, AND INSTALLATION DETAILS.

### 1.5 QUALITY ASSURANCE

A. LOUVERS LICENSED TO BEAR AMCA CERTIFIED RATINGS SEAL. RATINGS BASED ON TESTS AND PROCEDURES PERFORMED IN ACCORDANCE WITH AMCA 511 AND COMPLY WITH AMCA CERTIFIED RATINGS PROGRAM. AMCA CERTIFIED RATINGS SEAL APPLIES TO AIR PERFORMANCE AND WATER PENETRATION RATINGS.

A. DELIVERY: DELIVER MATERIALS TO SITE IN MANUFACTURER'S ORIGINAL, UNOPENED CONTAINERS AND PACKAGING, WITH LABELS CLEARLY INDICATING MANUFACTURER AND MATERIAL.

B. STORAGE: STORE MATERIALS IN A DRY AREA INDOORS, PROTECTED FROM DAMAGE AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

C. HANDLING: PROTECT MATERIALS AND FINISHES DURING HANDLING AND INSTALLATION TO PREVENT DAMAGE.

### PART 2 PRODUCTS

21 MANUFACTURER

A. RUSKIN MANUFACTURING

2.2 EXTRUDED ALUMINUM STATIONARY LOWERS

### A. FABRICATION:

. MODEL: ELF6375DX. . PERFORMANCE RATINGS: AMCA LICENGED.

A. MATERIAL: EXTRUDED ALIMINUM, ALLOY 6063-T5.

B. WALL THICKNESS: O.OBI INCH (2.1 MM), NOMINAL. C. DEPTH: 6 INCHES (152 MM). D. DOWNSPOUTS AND CAULKING SURFACES. 4. BLADES:

A. STYLE: DRAINABLE. B. MATERIAL: EXTRUDED ALUMINUM, ALLOY 6063-T5.

. WALL THICKNESS: 0.081 INCH (2.1 MM), NOMINAL. ANGLE: 31.5 DEGREES. . CENTERS: 5-29/32 INCHES (150 MM), NOMINAL.

. BIRD SCREEN: A. MATERIAL: ALUMINUM, [3/4 INCH X 0.051 INCH (19 MM X 1.3 MM), EXPANDED, FLATTENED] [1/2 INCH MESH X 0.063 INCH (13 MM MESH X 1.6 MM), INTERCRIMP]. 3. FRAME: REMOVABLE RENIREABLE

6. GUTTERS: DRAIN GUTTER IN HEAD FRAME AND EACH BLADE. 1. DOWNSPOUTS: DOWNSPOUTS IN JAMBS TO DRAIN WATER FROM LOUVER FOR MINIMUM WATER CASCADE FROM BLADE TO BLADE. 8. VERTICAL SUPPORTS: HIDDEN VERTICAL SUPPORTS TO ALLOW CONTINUOUS LINE APPEARANCE UP TO 120 INCHES (3,048 MM).

9. SILL: STEEPLY ANGLED INTEGRAL SILL ELIMINATING AREAS OF STANDING OR TRAPPED MOISTURE WHERE MOLD OR MILDEW MAY THRIVE AND EFFECT INDOOR AIR QUALITY. IO. ASSEMBLY: FACTORY ASSEMBLE LOWER COMPONENTS. ALL WELDED CONSTRUCTION,

B. PERFORMANCE DATA: 1. BASED ON TESTING 48 INCH X 48 INCH (1219 MM X 1219 MM) SIZE UNIT IN ACCORDANCE WITH AMCA 500.

3. FREE AREA SIZE: 9.08 SQUARE FEET (0.84 M2). 4. MAXIMUM RECOMMENDED AIR FLOW THRU FREE AREA: 1,023 FEET PER MINUTE (312 M/MIN). 5. AIR FLOW: 9,289 CUBIC FEET PER MINUTE (263 M3/MIN). MAXIMUM PRESSURE DROP: 0.15 INCHES W.G. (3.8 MM W.G.). 1. WATER PENETRATION: MAXIMUM OF O.OI OUNCES PER SQUARE FOOT (3.1 G/M2) OF FREE

AREA AT AN AIR FLOW OF 1,023 FEET PER MINUTE (312 M/MIN) FREE AREA VELOCITY WHEN

TESTED FOR 15 MINUTES. C. DESIGN LOAD: INCORPORATE STRUCTURAL SUPPORTS REQUIRED TO WITHSTAND WIND LOAD OF 20 POUNDS PER SQUARE FOOT

23 ACCESSORIES A. BIRD SCREENS:

2. FREE AREA: 57 PERCENT, NOMINAL

### 2.4 FACTORY FINISH

A. MODIFIED FLUOROPOLYMER (50 PERCENT KYNAR) COATING: I. CONFORM TO AAMA 605.2. 2. APPLY COATING FOLLOWING CLEANING AND PRETREATMENT. 3. CLEANING: AA-CI2C42RIX.

4. DRY LOWERS BEFORE FINAL FINISH APPLICATION. 5. TOTAL DRY FILM THICKNESS: APPROXIMATELY I.2 MILS (0.03 MM), WHEN BAKED AT 450 DEGREES F (232 DEGREES C) FOR 10 MINUTES.

### PART 3 EXECUTION

A. INSPECT AREAS TO RECEIVE LOWERS. NOTIFY THE ARCHITECT OF CONDITIONS THAT WOULD ADVERSELY AFFECT THE INSTALLATION OR SUBSEQUENT UTILIZATION OF THE LOWERS. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

A. INSTALL LOWERS AT LOCATIONS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. INSTALL LOUVERS PLUMB, LEVEL, IN PLANE OF WALL, AND IN ALIGNMENT WITH ADJACENT WORK.

C. INSTALL JOINT SEALANTS AS SPECIFIED IN SECTION 07920.

A. CLEAN LOWER SURFACES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. REPAIR MINOR DAMAGED SURFACES AS DIRECTED BY ARCHITECT.

### TESTING, ADJUSTING AND BALANCING HVAC SYSTEMS

### PART I - GENERAL

1.01 RELATED DOCUMENTS - PROVISIONS OF THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS AND DIVISION I - GENERAL REGUIREMENTS, AND APPLICABLE PROVISIONS ELSEWHERE IN THE CONTRACT DOCUMENTS APPLY TO WORK OF DIVISION IS

1.02 SUMMARY OF WORK - PROVIDE LABOR AND MATERIAL NECESSARY FOR THE COMPLETE OPERATIONAL TESTING OF THE HVAC SYSTEMS INCLUDING STARTUP BASED ON SPECIFIC MANUFACTURER'S STARTUP PROCEDURES, AS WELL AS ADJUSTING ALL AIRSIDE SYSTEM COMPONENTS TO ESTABLISH DESIGN AIRFLONS AS SHOWN ON THE CONTRACT DRAWINGS AND WITHIN TOLERANCES AS

A. ALL PERSONNEL PERFORMING INITIAL STARTUP OF EQUIPMENT SHALL BE TRAINED IN THE SPECIFIC PROCEDURES PRESCRIBED BY THE MANUFACTURERS OF SAID EQUIPMENT.

B. ALL PERSONNEL PERFORMING AIR BALANCE WORK SHALL BE UNDER THE DIRECT SUPERVISION OF A PERSON POSSESSING A CERTIFICATION FOR AIR-SIDE SYSTEMS ISSUED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).

1.04 SUBMITTALS - AT PROJECT COMPLETION, THE MECHANICAL CONTRACTOR SHALL FURNISH A REPORT TABULATING AIRFLOW READINGS AT EACH AIR DEVICE, MAXIMUM AND MINIMUM AIRFLOWS AT EACH TERMINAL UNIT, AND ALL APPLICABLE OPERATIONAL DATA FOR HEATING AND COOLING EQUIPMENT, AS WELL AS DRAWINGS THAT CLEARLY IDENTIFY ALL DEVICES LISTED IN THE REPORT. THE REPORT SHALL BEAR THE SEAL OF THE NEBB CERTIFIED SUPERVISOR.

3.01 ALL WORK SHALL BE PERFORMED IN A MANNER CONSISTENT WITH THE NEBB STANDARDS AND GUIDELINES

### SPLIT SYSTEM SCHEDULE AIR-COOLED CONDENSING UNIT DESIGNATION MANUFACTURER LENNOX HS29-120-3Y OM. CAPACITY (TONS) 10 OUTSIDE AIR TEMP. (F) 100.0 TOTAL CAPACITY (MBH) 121.77 OLTAGE/PHASE/HZ. 208/230-3-60 MCA (AMPS) 54.0 MOCP (AMPS) 90 ACCESSORIES AIR-HANDLING UNIT ESIGNATION AHI-I THRU 4 **MANUFACTURER** LENNOX MODEL (GAS FURNACE) MODEL (COIL) CBHI7-135V-3 NOM. CAPACITY (TONS) TOTAL CAPACITY (MBH) 121.77 SENSIBLE CAPACITY (MBH) 95.05 OUTSIDE AIR TEMP. (F) 100.0 ENT. AIR TEMP., DB/MB (F) 79.6/65.8 3,910 SUPPLY AIR (CFM) E.S.P. (IN W.G.) 0.75 OUTSIDE AIR (CFM) 650 BLOWER MOTOR HP 1 1/2 VOLTAGE/PHASE/HZ 230-3-60 FLA (AMPS) 5.6 MOCP (AMPS) \_\_\_ **ACCESSORIES** \*\*\*\*\* ACCESSORIES: I. ECONOMIZER 7-DAY PROGRAMMABLE THERMOSTAT

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