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# CITY OF BRYAN

# **LEGENDS EVENT CENTER - EXTERIOR AMENITIES** CITY OF BRYAN CONTRACT NO. 20 - 020 - CO 01

2533 MIDTOWN PARK BLVD., BRYAN, TX 77801

# **ISSUE FOR CONSTRUCTION**

05/01/2023

ARCHITECTURAL SITE **PBK Sports** 11 Greenway Plaza, 15th Floor Houston, Texas, 77046 T 713-965-0608 Ed.Ramirez@PBK.com

STRUCTURAL SITE **KUBALA ENGINEERING** 11 Greenway Plaza, 15th Floor Houston, Texas, 77046 T 713-940-3309 john.kubala@kubalaengineers.com



THE ARKITEX STUDIO, INC 308 N. Bryan Ave. Bryan, Texas, 77803 T 979-821-2635 msr@arkitex.com

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MEP / TECHNOLOGY ENGINEER **CLEARY ZIMMERMANN** 300 West 26th Street Bryan, Texas, 77803 T 979-341-8180 RandyR@clearlyzimmermann.com







SITE PLAN

- EXCAVATION, INSTALLATION, BACKFILLING OF WATER AND/OR SEWER MAINS AND RELATED APPURTENANCES AS SHOWN ON THE PLANS AND/OR DESCRIBED IN THE SPECIFICATIONS. 27. THE CONTRACTOR SHALL COMPLY WITH O.S.H.A. REGULATIONS AND STATE OF TEXAS LAW CONCERNING EXCAVATION. CONTRACTOR SHALL PROVIDE SHEETING, SHORING AND BRACING AS NECESSARY TO PROTECT WORKMEN AND EXISTING UTILITIES DURING ALL
- 28. CONTRACTOR SHALL INCLUDE IN BASE PROPOSAL ALL COSTS ASSOCIATED WITH DE-WATERING WELL POINTING, STABILIZING, ETC. THAT MAY BE REQUIRED TO INSTALL ANY
- 29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SHIPPING AND STORING OF ALL WATER AND SEWER MATERIALS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE SUCH MATERIALS AT THE POINT OF DELIVERY AND TO REJECT ALL DEFECTIVE MATERIAL. THE CONTRACTOR SHALL REPLACE THE DEFECTIVE MATERIAL WITH SOUND MATERIAL AT
- 30. THE LOADING AND UNLOADING OF ALL PIPE, VALVES, HYDRANTS, MANHOLES AND OTHER ACCESSORIES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PRACTICES AND SHALL AT ALL TIMES BE PERFORMED WITH CARE TO AVOID ANY DAMAGE TO THE MATERIAL. THE CONTRACTOR SHALL LOCATE AND PROVIDE THE NECESSARY STORAGE
- 31. ALL STORM SEWER TO BE HIGH DENSITY POLYETHYLENE CORRUGATED EXTERIOR / SMOOTH INTERIOR PIPE WITH WATER TIGHT JOINTS PER ASTM D 3212 UNLESS OTHERWISE OR
- 32. HIGH DENSITY POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION OR THE PLANS / SPECIFICATIONS; WHICHEVER IS
- 33. ALL WATER MAINS TO HAVE A MINIMUM OF 4' (FOUR FEET) OF COVER FROM PROPOSED TOP OF CURB WHEN CONSTRUCTED IN STREET RIGHT-OF-WAY AND 4' (FOUR FEET) OF COVER FROM FINISHED GRADE WHEN CONSTRUCTED WITHIN EASEMENTS. WATER LINES 4" AND LARGER SHALL CONFORM TO ALL REQUIREMENTS OF AWWA C900 - DR 18, CLASS 150. 2", 2-1/2" AND 3" WATER LINES SHALL CONFORM TO ALL REQUIREMENTS OF ASTM D2241 FOR PVC PIPE AND SHALL BE PRESSURE RATED AT 200 P.S.I. WITH A STANDARD DIMENSION RATION (SDR) OF 21 FOR CLASS 200 FOR BOTH BARREL AND BELL DIMENSIONS. WATER
- 34. PIPE SLEEVES ARE TO BE 6" PVC, SCHEDULE 40 PIPE CAPPED AT EACH END. THE TOP OF THE PIPE SLEEVE SHALL BE 12" TO 18" BELOW THE BOTTOM OF CONCRETE PAVEMENT OR WALK. EACH END SHALL EXTEND A MINIMUM OF TWO (2) FEET BEYOND THE EDGE OF CONCRETE PAVEMENT OR WALK. LOCATION OF EACH END TO BE MARKED IN CURB OR PAVEMENT WITH
- 35. ROOF DRAIN AND DOWNSPOUT COLLECTOR LINES SHALL BE PVC, SDR-26 PIPE (ASTM D2241) OR SCHEDULE 40 PIPE, LAID AT A MINIMUM GRADE OF 0.50% UNLESS NOTED OTHERWISE. COLLECTOR LINES SHALL BE SIZE ON SIZE AND 6" MINIMUM FOR DOWNSPOUTS. ONCE TWO OR MORE ROOF DRAINS / DOWNSPOUTS ARE CONNECTED THE COLLECTOR LINE (RD AND/OR DS) SHALL BE 12" UNLESS NOTED OTHERWISE. NO 90° BENDS SHALL BE USED. ALL BENDS IN LINES SHALL BE MADE WITH EITHER "WYES" OR DOUBLE 45° BENDS. REFER TO THE
- ARE LOCATED IN PAVED AREAS, PROVIDE A 24"X24" BLOCK OUT AROUND PIPE. REFER TO 36. CONTRACTOR SHALL PROVIDE A MINIMUM OF 6" (SIX INCHES) VERTICAL CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS AND AT STORM SEWER AND SANITARY SEWER
- 37. MARK LOCATIONS OF ALL CABLE AND TELEPHONE LINES EXTENDING BENEATH PAVING BY
- 38. CONNECTION TO EXISTING MANHOLES / INLETS SHALL BE MADE IN A NEAT AND WORKMANLIKE MANNER. NON-SHRINK GROUT SHALL BE USED TO SEAL THE CONNECTION ON BOTH THE INSIDE AND OUTSIDE OF EXISTING MANHOLES / INLETS. ANY DAMAGE TO
- 39. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING PUBLIC OR PRIVATE UTILITY LINES. INCLUDING BUT NOT LIMITED TO WATER LINES. WASTEWATER COLLECTION SYSTEMS AND STORM SEWERS, DURING CONSTRUCTION. ALL DAMAGES SHALL BE REPAIRED AT HIS EXPENSE AND IN ACCORDANCE WITH THE AUTHORITY

UTILITY NOTES

- 40. EXISTING UTILITIES SHALL REMAIN IN SERVICE DURING THE CONSTRUCTION PERIOD UNTIL SUCH TIME THAT NEW UTILITIES CAN BE MADE OPERATIONAL. 41. REFER TO THE M.E.P. SHEETS FOR EXACT LOCATIONS OF WATER, FIRE, GAS AND SANITARY SEWER CONNECTIONS AT THE BUILDING. 42. REFERENCE M.E.P. SHEETS FOR REMOVAL AND/OR REROUTING OF ANY ELECTRICAL SERVICES OR ANY UTILITY LINE (ROOF DRAIN, SANITARY SEWER, ETC.) THAT LIES UNDER A PROPOSED STRUCTURE.
- 43. UTILITY CONTRACTOR SHALL PROVIDE TEMPORARY SILT BARRIER FENCE ON ALL NON-CURB INLETS WHICH WILL REMAIN IN PLACE AFTER UNDERGROUND CONTRACT IS COMPLETE.
- 44. CONTRACTOR SHALL PROVIDE SILT BARRIER FENCE ON ALL STAGE 1 CURB INLETS. 45. THE CONTRACTOR SHALL INCLUDE IN THE PROPOSAL AN INCIDENTAL AMOUNT FOR THE SAW CUTTING, REMOVAL AND REPLACEMENT OF PAVEMENT AT ALL LOCATIONS WHERE PROPOSED UTILITIES CROSS EXISTING PAVEMENT, WHETHER SHOWN ON THE DRAWINGS OR NOT. THE CONTRACTOR SHALL MATCH THE EXISTING PAVEMENT TYPE, THICKNESS AND GRADES.
- 46. WHEN CONNECTING TO EXISTING SANITARY SEWERS OR STORM DRAINAGE SYSTEMS, THE CONTRACTOR SHALL START AT THE DOWNSTREAM END AND WORK UPSTREAM. THE CONTRACTOR SHALL ALSO VERIFY THE ELEVATIONS OF THE UPSTREAM AND DOWNSTREAM CONNECTIONS PRIOR TO STARTING WORK. IF ELEVATIONS ARE NOT AS SHOWN ON THE DRAWINGS, CONTACT THE ENGINEER. UNDER NO CIRCUMSTANCES SHALL THE ONTRACTOR START UPSTREAM AND WORK DOWNSTREAM. PIPE SHALL BE INSTALLED WITH THE BELLS AT THE UPSTREAM END.
- 47. TELEPHONE COMPANY FACILITIES MAY EXIST ON THE PROPERTY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ALL DAMAGES WHICH MIGHT BE OCCASIONED BY A FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES. THE CONTRACTOR SHALL CALL (800) 344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF TELEPHONE FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING THE CONTRACTOR SHALL EXPOSE THE TELEPHONE FACILITIES. WHEN TELEPHONE FACILITIES ARE EXPOSED, THE CONTRACTOR SHOULD PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT
- 48. CAUTION: UNDERGROUND GAS FACILITIES GAS LINES (TO INCLUDE UNIT GAS TRANSMISSION AND/OR INDUSTRIAL GAS SUPPLY CORPORATION WHERE APPLICABLE) MAY EXIST ON THE PROPERTY. SERVICE LINES ARE USUALLY NOT SHOWN. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 811 OR (800) 669-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICES LINES FIELD LOCATED
- \* WHEN GAS LINE MARKINGS ARE NOT VISIBLE CALL (713) 967-8037 (7:00 AM-4:30 PM) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS. \* WHEN EXCAVATING WITHIN 18" OF THE INDICATED LOCATION OF GAS FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION
- PROCEDURES \* WHEN GAS FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.
- 49. WARNING: OVERHEAD ELECTRICAL FACILITIES OVERHEAD LINES MAY EXIST ON THE PROPERTY. THESE LINES ARE CLEARLY VISIBLE, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN 6' OF LIVE OVERHEAD HIGH VOLTAGE LINES. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL POWER COMPANY AT (713) 207-2222 (CENTERPOINT).
- WARNING: UNDERGROUND ELECTRICAL FACILITIES UNDERGROUND ELECTRICAL FACILITIES MAY EXIST ON THE PROPERTY. AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, CALL THE UCC AT 811, OR TOLL FREE AT (800) 669-8344, TO VERIFY THAT NO UNDERGROUND FACILITIES EXIST.
- 50. ALL UNDERGROUND PIPE SHALL HAVE A 12 GAUGE METALLIC TRACER WIRE RUNNING THE FULL LENGTH OF THE PIPE. TRACER WIRE SHALL BE TAPED TO THE PIPE AT INTERVALS NOT TO EXCEED 15 FEET USING DUCT TAPE.
- 52. EXPANSION JOINT MATERIAL SHALL CONCRETE PAVING. SEAL JOINT AS 53. UNLESS OTHERWISE SPECIFIED, ALL SILICONE JOINT SEALANT. (DOWSIL SILICONE PLUS™ PREMIUM SILICONE RU CONCRETE SEALANT - 5020, SIKASIL - 72 54. REFER TO STRUCTURAL FOR ANY DO AND ADJACENT CONCRETE PAVING T 55. SAWED JOINTS & TRANSVERSE JOINT JOINTS. 56. SAWING OF JOINTS MUST BEGIN AS TO AVOID EXCESSIVE RAVELING. REF 57. THE CONTRACTOR SHALL REPLACE PAVEMENT, CURB AND/OR WALK TO 58. THE CONTRACTOR SHALL GRADE TH DIRECTIONAL ARROWS AND ELEVAT UNIFORMLY BETWEEN ELEVATIONS 59. AT ALL DOORWAYS, THE LANDING SH DOORWAY FOR A MINIMUM OF 5 FEET DOORWAYS. 60. THE CONTRACTOR SHALL BE RESPO SQUARE HAY BALES AT ALL POINTS AT ALL STORM SEWER INLETS AND M THE EXISTING DRAINAGE ARTERIES OF THIS PROJECT. REFERENCE "STO 61. SITE TO BE CLEARED OF VEGETATION OR AS DIRECTED BY ENGINEER. STRI AS DRESSING FOR GRADING, OTHERV CONTRACTOR. 62. ALL EXCESS DEBRIS, TREES, AND/OR SITE AND DISPOSED OF PROPERLY. THE CONTRACTOR. 63. BACKFILL TO TOP OF NEW PAVEMENT DISTURBED AREAS AND AREAS REQU TRASH/DEBRIS AND PROVIDE A SMO HYDROMULCH DISTURBED AREAS NO ENGINEER. 64. WHERE NEW CONCRETE PAVING MEE DOWELS, (18" LONG AND 18" C-C), BY AND EMBEDDING WITH EPOXY. WHEI IMPREGNATED FIBER BOARD EXPANS 65. PAVEMENT GRADES SHALL VARY UNIF 66. SECURE PRECAST CONCRETE WHEEL PAVEMENT.
- 67. FILL AREAS NOTED ON PLANS SHALL EACH LAYER COMPACTED TO NOT L SHALL BE SEEDED AND FERTILIZED \ 68. CONTRACTOR SHALL INSTALL A GRAS
- DRIVES AND /OR WALKS. 69. MATCH ALL ELEVATIONS WHERE PRO 70. PRIOR TO ANY CHEMICAL STABILIZAT
- MATERIAL AS RECOMMENDED BY TH HAVE A THIRD PARTY TESTING LAB F TO A LIME SERIES TEST, TO CONFIRM USED FOR STABILIZATION.
- 71. TOPSOIL SHALL BE FERTILE, FRIABLE MINIMUM OF 4 PERCENT ORGANIC M IN ANY DIMENSION AND OTHER EXTR COMPLY WITH ASTM D 5268.
- 72. HYDROMULCH ALL DISTURBED AREA INSTALLED 90 DAYS PRIOR TO SUBS ORDER TO ESTABLISH GROW-IN PER PROVIDE SOLID SOD IN LIEU OF HYDR



PAVING AND GRADING NOTES	PROPOSED CONTOUR PROPOSED CATCH BASIN (C-1) PROPOSED "A" INLET (A-1)
51.       THE INLETS/MANHOLES SHALL BE COORDINATED WITH THE LOCATION OF PAVEMENT JOINT       III         51.       THE INLETS/MANHOLES SHALL BE COORDINATED WITH THE LOCATION OF PAVEMENT JOINT       III         52.       EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN THE BUILDING AND PERIMETER CONCRETE PAVING. SEAL JOINT AS REQUIRED FOR PAVING JOINTS.       III	PROPOSED CATCH BASIN (C-1) PROPOSED "A" INLET (A-1)
51.       Image: State of the bill of	PROPOSED "A" INLET (A-1)
52. EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN THE BUILDING AND PERIMETER CONCRETE PAVING. SEAL JOINT AS REQUIRED FOR PAVING JOINTS.	· /
CONCRETE PAVING. SEAL JOINT AS REQUIRED FOR PAVING JOINTS.	PROPOSED "E" INLET (E-1)
	PROPOSED STORM MANHOLE W/ GRATE TOP
53. UNLESS OTHERWISE SPECIFIED, ALL PAVEMENT JOINT SEALANT SHALL BE SELF-LEVELING SILICONE JOINT SEALANT. (DOWSIL / DOW CORNING 888 SILICONE JOINT SEALANT, DAP®	PROPOSED MANHOLE
SILICONE PLUS™ PREMIUM SILICONE RUBBER CONCRETE SEALANT, GE SILICONE II MASONRY & ⊡ CONCRETE SEALANT - 5020, SIKASIL - 728 SL, OR PRE-APPROVED EQUIVALENT. )	PROPOSED H-2 OR JUNCTION BOX INLET
54. REFER TO STRUCTURAL FOR ANY DOWELS REQUIRED TYING THE BUILDING FOUNDATION	GATE VALVE & BOX
AND ADJACENT CONCRETE PAVING TOGETHER.	PIPE SLEEVES
5. SAWED JOINTS & TRANSVERSE JOINTS ARE TO BE EQUALLY SPACED BETWEEN EXPANSION	PROP. 45° EL
	TAPPING SLEEVE & VALVE
TO AVOID EXCESSIVE RAVELING. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.	TOP OF CURB ELEVATION
THE CONTRACTOR SHALL REPLACE ANY DAMAGED AND/OR REMOVED CONCRETE	TOP OF PAVEMENT ELEVATION
PAVEMENT, CURB AND/OR WALK TO EQUAL OR BETTER THAN EXISTING CONDITION.	TOP OF GRATE ELEVATION
B. THE CONTRACTOR SHALL GRADE THE SITE AS INDICATED BY THE CONTOUR LINES, DIRECTIONAL ARROWS AND ELEVATIONS SHOWN ON DRAWINGS. ALL GRADING SHALL VARY	TOP OF RIM (MANHOLE)
UNIFORMLY BETWEEN ELEVATIONS SHOWN.	FINISH GRADE ELEVATION
AT ALL DOORWAYS, THE LANDING SHALL SLOPE AT A MAXIMUM OF 2% AWAY FROM DOORWAY FOR A MINIMUM OF 5 FEET, MATCH FINISH FLOOR FLEVATION AT FACE OF	MATCH EXISTING GRADE
DOORWAYS.	FLOWLINE ELEVATION
THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING SILT FENCE OR PLACING	SWALE
SQUARE HAY BALES AT ALL POINTS WHERE STORMWATER RUNOFF EXITS PROPERTY, AND       TFL         AT ALL STORM SEWER INLETS AND MANHOLES, TO PREVENT SEDIMENT CONTAMINATION OF       1	THROAT FLOWLINE ELEVATION ("E" INLET)
THE EXISTING DRAINAGE ARTERIES AND NEW STORM SEWERS DURING CONSTRUCTION OF OF THIS PROJECT. REFERENCE "STORM WATER POLLUTION PREVENTION PLAN".	FIRE HYDRANT
SITE TO BE CLEARED OF VEGETATION AND DEBRIS AS NECESSARY TO COMPLETE PROJECT	MANHOLE
OR AS DIRECTED BY ENGINEER. STRIPPINGS, IF CLEAN, ARE TO BE STOCKPILED AND USED	CLEAN OUT
CONTRACTOR.	
ALL EXCESS DEBRIS, TREES, AND/OR WASTE MATERIALS SHALL BE REMOVED FROM THE	DOWNSPOUT COLLECTOR
THE CONTRACTOR.	
BACKFILL TO TOP OF NEW PAVEMENT OR CURBS WITH CLEAN SOIL FREE OF CLODS. ALL	ROOF DRAIN COLLECTOR
DISTURBED AREAS AND AREAS REQUIRING GRADING SHALL BE FINE GRADED. REMOVE ALL TRASH/DEBRIS AND PROVIDE A SMOOTH SURFACE FOR PROPER TURF MANAGEMENT.	GATE VALVE
HYDROMULCH DISTURBED AREAS NOT NOTED TO BE SOLID SOD OR AS DIRECTED BY THE SIM ENGINEER.	STORM SEWER
WHERE NEW CONCRETE PAVING MEETS EXISTING CONCRETE PAVING. INSTALL 3/4" SMOOTH	
DOWELS, (18" LONG AND 18" C-C), BY DRILLING 8" INTO THE CENTER OF THE EXISTING SLAB	
IMPREGNATED FIBER BOARD EXPANSION MATERIAL WITH TOP PULL STRIP FOR CAULKING.	
PAVEMENT GRADES SHALL VARY UNIFORMLY BETWEEN ELEVATIONS SHOWN.	
SECURE PRECAST CONCRETE WHEEL STOPS BY DRILLING AND SETTING #4 DOWELS INTO	
FILL AREAS NOTED ON PLANS SHALL BE FILLED IN LAYERS NOT EXCEEDING 8" IN DEPTH AND       ^         EACH LAYER COMPACTED TO NOT LESS THAN 95% STANDARD PROCTOR DENSITY. FILL AREA	
SHALL BE SEEDED AND FERTILIZED WITHIN 10 WORKING DAYS.	
CONTRACTOR SHALL INSTALL A GRASS SOLID SOD ADJACENT TO ALL PROPOSED CURBS, DRIVES AND /OR WALKS.	
MATCH ALL ELEVATIONS WHERE PROPOSED PAVEMENT ADJOINS EXISTING PAVEMENT	SAWED PAVEMENT JOINT
PRIOR TO ANY CHEMICAL STABILIZATION OF SOIL WITH LIME FLY ASH OR ANY OTHER	UTILITY EASEMENT
MATERIAL AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER, CONTRACTOR SHALL HAVE A THIRD DARTY TESTING LAR DEDEORMA SOIL ANALYSIS INCLUDING BUT NOT LIMITED	SANITARY SEWER EASEMENT
TO A LIME SERIES TEST, TO CONFIRM THE REQUIRED APPLICATION RATE OF THE CHEMICAL	EDGE OF PAVEMENT
USED FOR STABILIZATION.	HIGH BANK OF DITCH
TOPSOIL SHALL BE FERTILE, FRIABLE, NATURAL SANDY LOAM SURFACE SOIL WITH A       Indiana         MINIMUM OF 4 PERCENT ORGANIC MATERIAL CONTENT FREE OF STONES 1 INCH OR LARGER       CI	CENTERLINE OF DITCH
IN ANY DIMENSION AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH.	POWER POLE
HYDROMULCH ALL DISTURBED AREAS, UNLESS OTHERWISE NOTED, HYDROMULICH TO BE	GUY WIRE
INSTALLED 90 DAYS PRIOR TO SUBSTANTIAL COMPLETION OR AS SOON AS POSSIBLE IN ORDER TO ESTABLISH GROW-IN PER SPEC. AL TERNATIVELY, GENERAL CONTRACTOR TO	GAS METER
PROVIDE SOLID SOD IN LIEU OF HYDROMULCH.	PHONE BOX
FC	FENCE CORNER
СВ	CABLE BOX
NG	NATURAL GROUND
ter *	EXISTING ELEVATION
-+ <sup>-</sup> + TP XX.XX	PROPOSED ELEVATION
	ATHLETIC LIGHTPOLE
	•

### **CIVIL LEGEND**

#### PROJECT NAME: **LEGENDS EVENT CENTER - EXTERIOR AMENITIES**

HOSE BIB

LEGAL DESCRIPTION: COUNTRY CLUB LAKE ADDN, BLOCK 1, LOT 2 (PT OF), ACRES 98.6

PHYSICAL ADDRESS 206 W VILLA MARIA RD BRYAN, TX

TOTAL ACREAGE OF EXISTING LOT: 98.6 ACRES

PLANNED DEVELOPMENT DISTRICT (PD)

SHEET	DESCRIPTION
CA 000 CA 001 CA 002 CA 003 CA 101 CA 102 CA 201 CA 202 CA 301 CA 302 CA 303 CA 401 CA 502 CA 503 CA 504 CA 505 CA 506 CA 507 CA 508	CIVIL COVER INDEX, NOTES, AND LEGENDS EXISTING CONDITIONS DEMOLITION PLAN SITE PLAN DIMENSIONAL CONTROL PLAN DRAINAGE AND UTILITY PLAN MITIGATION PLAN GRADING PLAN SUBGRADE GRADING PLAN PAVING AND GROUND COVER PLAN EROSION CONTROL PLAN PAVING DETAILS PAVING DETAILS WATER UTILITY DETAILS WATER UTILITY DETAILS DRAINAGE UTILITY DETAILS EROSION CONTROL DETAILS BEACH VOLLEYBALL DETAILS DETAILS
CIVIL IND	EX OF DRAWINGS





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0197SP\div8-dwgs\8a bim cad\Cns\\civil (pbk sports)\Dwgs\CA 102 - DIMENSIONAL CONTROL PLAN.dwg Last Saved: SG

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![](_page_8_Figure_0.jpeg)

0197SP\div8-dwgs\8a bim cad\Cns\\civil (pbk sports)\Dwgs\CA 301 - GRADING PLAN.dwg Last Saved: SGO

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0197SP\div8-dwgs\8a bim cad\Cnsl\civil (pbk sports)\Dwgs\CA 401 - EROSION CONTROL PLAN.dwg Last Saved: SGONZ

![](_page_12_Figure_0.jpeg)

20197SP\div8-dwgs\8a bim cad\Cnsl\civil (pbk sports)\Dwgs\CA 501 - PAVING DETAILS.dwg Last Saved: IGARCI

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![](_page_16_Figure_2.jpeg)

СНЕСКЕД ВҮ: ТС			NOTE:
I AILS.dwg Last Saved: IGARCIA SG			POST A SIGN READ OUT PIT" NEXT TO VERBALLY INSTRUC DRIVERS WHERE TI OUT THEIR TRUCKS WHERE ELSE. NO WASHING OF SWEE AGGREGATE CONC OPEN DITCHES, ST ALLOWED. EXCESS CONCRETE DUMPED ON-SITE, TEMPORARY CONC ON-SITE TEMPORAI AREAS WILL BE LO FROM STORM DRAI WATER BODIES AS FIELD. TEMPORARY CONC WILL BE CONSTRUC IN SUFFICIENT QUA CONTAIN ALL LIQU GENERATED BY WA WASHOUT FACILITI OR REPLACED ONC PLASTIC LINING MA 10 MIL POLYETHYL FREE OF HOLES, TE WHEN WASHOUT F. REQUIRED FOR WO CONCRETE WILL BI OF OFFSITE. MATE TEMPORARY CONC WILL BE REMOVED DISPOSED OF. BEL BE FILLED WITH CL COMPACTED TO IN
K sports)/Dwgs/CA 506 - EKUSIUN CUN I KUL DE DRAWN BY:			COMPACTED TO IN DIRECTED BY THE I CONSTRUCT ENTR WASHOUT AREA TO LOADINGS FROM TO
J\Z0197SP\div8-dwgs\8a bim cad\Cnsi\civil (pb sday, April 27, 2023 11:59:15 AM			

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Tuesday, May 2, 2023 5:31:44 PM	9. <b>DKAWN BY:</b> 10.	ප ග ග	7.	6.	4.	СНЕСКЕD ВУ: 3.	1. P 2.	G	9
TREE PROTECTION	OF REQUIRED TREE FENCING LIMITS. ALL EXISTING TREES, IN DESIGNATED PROTECTED AREAS, MUST BE PRUNED TO AVOID DAMAGE BY EQUIPMENT DURING CONSTRUCTION OPERATIONS (REF. SPECIFICATIONS)	CORE AERATE AND DEEP ROOT FERTILIZE TREES BY PROBE AND WATER INJECTION OF DAVEY ARBOR GREEN FERTILIZER. REFER TO MANUFACTURER'S MAXIMUM RECOMMENDED RATES PER TREE CALIPER INCHES. INJECT 18"-24" DEEP 5'-0" O.C. THROUGHOUT DRIP-LINE OF TREE.	ALL FINISHED PRUNING MUST BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES).	PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS BY A RECOGNIZED	TREES HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES SHALL BE WATERED THOROUGHLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER AS DIRECTED BY THE PROJECT ENGINEER. TREE CROWNS SHALL BE SPRAYED WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES. HEAVY CONSTRUCTION EQUIPMENT SHALL NOT OPERATE WITHIN 3' OF ANY	GRADING). FENCES SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES; FENCES SHALL BE LOCATED AT THE OUTERMOST LIMITS OF THE TREE BRANCHES (DRIP LINE); AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT. FENCES MAY BE MOVED OR REMOVED TO ENABLE THE PROGRESS OF CONSTRUCTION ONLY AS APPROVED BY THE PROJECT ENGINEER.	ALL TREES INDICATED ON THE DEMOLITION AND SITE PLANS TO BE PROTECTED SHALL BE PROTECTED WITH TEMPORARY FENCING THROUGHOUT CONSTRUCTION. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION AND/OR SITE PREPARATION WORK (CLEARING, GRUBBING OR	ENERAL TREE PROTECTION NOTES:	NOT USED
	Ann a								5
DRIP LINE OF		R R R			<ol> <li>PRUNE &amp; OF NEW</li> <li>PROVIDE</li> <li>TREE PF</li> </ol>	<ol> <li>PRUNE E CONSTR</li> <li>ALL WOR</li> <li>PAINT AI</li> </ol>	1. ALL TRE REMOVE	TREE R	NOT US

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REINFORCING STEEL NOTED IN PLAN SHALL BE LOCATED ACCORDING TO PLAN NOTES, TYPICAL VIEWS, AND SCHEDULES. HOOKS ARE INDICATED IN PLAN WHERE REQUIRED FOR NON-SCHEDULED REINFORCING STEEL. WHERE HOOKS ARE SHOWN, LENGTHS PROVIDED DO NOT INCLUDE A SINGLE ARROWED LINE INDICATES THE EXTENT OVER WHICH THE REINFORCING STEEL IS TO BE DISTRIBUTED WITH AN EQUAL SPACING A DOUBLE ARROWED LINE INDICATES THAT THE REINFORCING STEEL IS TO BE PROVIDED IN EACH DIRECTION UNTIL ONE OF THE FOLLOWING

CRSI

![](_page_21_Figure_13.jpeg)

CAST-IN-PLACE SEATING WALL WITH PRE-CAST NOSING / J 3/4" = 1'-0"

### **TYPICAL STRUCTURAL ABBREVIATIONS**

<u> </u>		D	
3	ANCHOR BOLT	DBA	DOWEL BAR ANCHO
F	ABOVE FINISH FLOOR	DBL	DOUBLE
CI	AMERICAN CONCRETE INSTITUTE	DET	DETAIL
)D'L	ADDITIONAL	DIA	DIAMETER
DJ	ADJACENT	DIAG	DIAGONAL
F	ABOVE FINISHED FLOOR	DIM(S)	DIMENSION(S)
-s	ARCH FINISH SURFACE	DL	DEAD LOADS
GGR	AGGREGATE	DT	DOUBLE TEE
SC	AMERICAN INSTITUTE OF STEEL	DS	DOWNSPOUT
SI	AMERICAN IRON AND STEEL INSTITUTE	DWG(S)	DRAWING(S)
_T		DWL(S)	DOWEL(S)
RCH	ARCHITECTURAL	_	
SCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	<u>E</u>	
	AMERICAN SOCIETY FOR TESTING AND	EA	EACH
S I IVI	MATERIALS	EAU	EDGE ANGLE OFFS
NS	AMERICAN WELDING SOCIETY	EDC	ELECTRICAL DISTRI
		EF	EACH FACE
		EIFS	EXTERIOR INSULAT
F	BACK FACE	EJ	EXPANSION JOINT
B	BOTTOM FLANGE BRACE	EL	ELEVATION
F	BELOW FINISH FLOOR	ELEC	ELECTRICAL
-	BLOCK LINTEL	ENGR	ENGINEER
E	BRACKET LEDGE ELEVATION	EOD	EDGE OF ROOF DE
K	BLOCK	EOS	EDGE OF FLOOR SL
KG	BLOCKING	EQ	
N	BEAM	EQUIV	EQUIVALENT
C	BOTTOM OF	EW	
DA	BACK OF ANGLE	EXIST	EXISTING
OS	BOTTOM OF STEEL	EXP	EXPANSION
ТС	BOTTOM	EXT	EXTERIOR
c	BASE PLATE	EX-STR	EXTRA STRONG
RG	BEARING	<u>F</u>	
RKT	BRACKET	FABR	FABRICATOR
E	BRICK LEDGE ELEVATION	FD	FLOOR DRAIN
ΓWN	BETWEEN	FDN	FOUNDATION
		FF	FINISHED FLOOR
,		FL	FLOOR
	CHANNEL	FLG	FLANGE
OMP	COMPRESSION	FM	FACTORY MUTUAL
ANT	CANTILEVER	FRP	FIBER REINFORCED
GS	CENTROID OF TENDONS	FS	FAR SIDE
Р	CAST IN PLACE	FTG	FOOTING
J	CONTROL JOINT	FP	FIREPROOF(ING)
-	CENTER LINE	FV	FIELD VERIFY
JP	COMPLETE JOINT PENETRATION		
R	CLEAR	<u>G</u>	
UN	CONCRETE MASONRY UNIT	GA	GAUGE
CL	COLUMN	GB	GRADE BEAM
OMP	COMPRESSION	GALV	GALVANIZED
NNC	CONNECTION	GC	GENERAL CONTRAC
ONC	CONCRETE	GR	GRADE
ONST	CONSTRUCTION	GYP BD	GYPSUM BOARD
DNT	CONTINUOUS		
ONTR	CONTRACTOR		
OR	CORNER		

S	E/	4	Т	
S	E/	4	Γ	

H	
H	HEIGHT
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
_	
Ī	
IBC	
INFO	
INT	
INTERM	INTERMEDIATE
ISO	ISOLATION
IT	INVERTED TEE
J	
 JBE	JOIST BEARING ELEVATION
JST	JOIST
JT	JOINT
<u>K</u>	
KIP	1000 POUNDS
KLF	KIP PER LINEAR FOOT
KSF	KIPS PER SOLIARE FOOT
KSI	
NOI	NF3 FEN SQUARE INCH
L	
L	ANGLE OR LENGTH
LB	POUNDS
Ld	TENSION DEVELOPMENT LENGTH AS SHOWN IN REINFORCING LAP SCHEDULE
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LONG	LONGITUDINAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LWC	LIGHT WEIGHT CONCRETE
<u>M</u>	
MAX	MAXIMUM
MC	
MECH	
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	
MTL	METAL
MIR	MATERIAL
N	
<u>IN</u>	NOT IN CONTRACT
NO OR #	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE (150 PCF)
····•	

)	ON CENTER
)	OUTSIDE DIAMETER
:	OUTSIDE FACE
1	OPPOSITE HAND
PNG(S)	OPENING(S)
_	
F	POWDER ACTUATED FASTENER
C Se	
iF	
	CONCRETE INSTITUTE
	POST-TENSIONING INSTITUTE
	PROFESSIONAL ENGINEER
MB	PRE-ENGINEERED METAL BUILD
NTR	PENETRATION
	PLATE
AM	PLASTIC LAMINATE
F	POUNDS PER LINEAR FOOT
)	PARTIAL PENETRATION
REFAB	PREFABRICATED
RELIM	PRELIMINARY
F	POUNDS PER SQUARE FOOT
51	POUNDS PER SQUARE INCH
	POST-TENSIONING
Υ	ΟΠΑΝΤΙΤΥ
	RADUIS
١F	RAISED ACCESS FLOOR
P	REINFORCED CONCRETE PIPE
)	ROOF DRAIN
F	REFER TO
INF	REINFORCING
QD	REQUIRED
EV	REVERSE
ID	ROUND
)	
Ū	ROOF TOP UNIT
HED	SCHEDULE(D)
CT	SECTION
-	SQUARE FOOT (FEET)
IT	SHEET
N	SIMILAR
'A	SPACE
ECS	SPECIFICATIONS
'EC'D	SPECIFIED
ÏFF	STIFFNER
ÎR	STIRRUPS
Ľ	STEEL
IBCONTR	SUB-CONTRACTOR
V	SIDEWALK
M	SYMMETRICAL

MP	TEMERATURE
	TENSION
RR	TERRAZO
К	THICK
В	TOP AND BOTTOM
В	TOP OF BEAM
F	TOP OF FOOTING
P	TOP OF PIER ELEVATION
S	TOP OF STEEL
SC	TOP OF STRUCTURAL CONCRETE
W	TOP OF WALL
Р	TYPICAL
10	UNLESS NOTED OTHERWISE
	SHEAR
RT	VERTICAL
6	WATERSTOP
PFG	WATERPROOFING
NF	WELDED WIRE FABRIC
3	WIND BRACE
-	WIND LOAD
	WITH
0	WITHOUT

![](_page_21_Picture_21.jpeg)

### **GENERAL**:

CODES, DRAWINGS AND SPECIFICATIONS . THE CONSTRUCTION DOCUMENTS ARE BASED ON THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE IBC 2021. ALL CODES AND SPECIFICATIONS LISTED ABOVE SHALL INCLUDE ALL AMENDMENTS AND ADDENDA IN FORCE AT THE DATE OF THE CONTRACT DOCUMENTS.

#### TYPICAL DETAILS:

- 1. TYPICAL DETAILS SHOWN ON THE DRAWINGS SHALL APPLY TO ALL SIMILAR LIKE CONDITIONS OCCURRING ON THE PROJECT WHETHER OR NOT THEY ARE KEYED IN AT EACH PARTICULAR LOCATION. MISCELLANEOUS:
- WHERE CONFLICTS EXIST BETWEEN THE VARIOUS PUBLICATIONS AS SPECIFIED HEREIN, THE STRICTER REQUIREMENTS SHALL GOVERN UNLESS NOTED OTHERWISE. WHERE CONFLICTS EXIST BETWEEN THE VARIOUS PARTS OF THE STRUCTURAL CONTRACT DOCUMENTS (STRUCTURAL DOCUMENTS, SPECIFICATIONS) AS SPECIFIED HEREIN, THE STRUCTURAL CONTRACT DOCUMENTS SHALL GOVERN.
- 2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND ERECTION IN THE FIELD.
- . THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE.
- 4. SLEEVES AND BLOCKOUTS REQUIRED FOR PASSAGE OF DUCTWORK, PIPING, DRAINS, CONDUIT, ETC., AND ANCHORS REQUIRED FOR ANCHORING EQUIPMENT AND PIPING ARE NOT GENERALLY INDICATED ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL DETERMINE SUCH REQUIREMENTS FROM OTHER SERIES DRAWINGS, SUBCONTRACTORS, AND SUPPLIERS AND SHALL COORDINATE THE LOCATIONS AND DETAILS FOR THESE ITEMS PRIOR TO FABRICATION OR CONSTRUCTION OF THE STRUCTURE. ANY CONFLICTS BETWEEN THESE ITEMS AND THE BUILDING STRUCTURE SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION.
- 5. VERIFY, OR ESTABLISH, LOCATIONS AND DIMENSIONS OF ALL FRAMED OPENINGS RELATED TO EQUIPMENT OR DUCTWORK, INCLUDING INSULATION, IF ANY. WHERE SUBSTANTIAL RELOCATION OR RECONFIGURATION IS REQUIRED, SUBMIT A DRAWING TO THE ARCHITECT FOR REVIEW. 3. MATERIALS OR PRODUCTS SUBMITTED FOR APPROVAL WHICH ARE NOT AS SPECIFIED IN THE DOCUMENTS SHALL BE ACCOMPANIED BY A CURRENT ES REPORT (BY ICC EVALUATION SERVICE, INC.) OR
- ICBO REPORT (BY INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS). MATERIALS OR PRODUCTS THAT DO NOT HAVE AN ES OR ICBO REPORT INDICATING THE SUBSTITUTED MATERIAL OR PRODUCT TO BE EQUAL TO THAT SPECIFIED, WILL NOT BE CONSIDERED. 7. IF CERTAIN FEATURES ARE NOT FULLY SHOWN OR SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SHOWN OR SPECIFIED IN SIMILAR CONDITIONS.
- 8. THE GENERAL CONTRACTOR SHALL COMPARE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND REPORT ANY DISCREPANCY BETWEEN EACH SET OF DRAWINGS AND WITHIN EACH SET OF DRAWINGS TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBERS.
- 9. ALL HEAVILY LOADED VEHICLES, CONCRETE TRUCKS AND CRANES SHALL NOT BE DRIVEN ACROSS GRADE BEAMS OR BUILDING SLABS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE SLAB INDUCED FROM THIS TYPE OF EQUIPMENT.
- 10. ERECTION OF STRUCTURAL STEEL MAY NOT BEGIN UNTIL CONCRETE FOUNDATION HAS CURED FOR A MINIMUM OF THREE DAYS. STRUCTURAL STEEL OR OTHER HEAVY LOADS SHALL NOT BE STOCKPILED ON ANY SLAB UNTIL IT HAS CURED FOR A MINIMUM OF SEVEN DAYS.
- 11. NOTE THAT THE GROUND FLOOR SLAB IS A GROUND SUPPORTED SLAB AT GRADE AS PER THE DESIGN RECOMMENDED IN THE SOIL REPORT. IT IS NOT A STRUCTURAL SLAB AND AS SUCH IT IS NOT DESIGNED FOR ANY EXTERNAL UPWARD OR DOWNWARD LOADS, IT IS INTENDED TO BE ENTIRELY SUPPORTED BY THE PREPARED GROUND UNDER THE SLAB. THE CONTRACTOR SHOULD NOTE THAT THE PERFORMANCE OF THE SLAB AS DESIGNED AND INTENDED BY THE SOIL ENGINEER IS HIGHLY DEPENDENT ON HOW WELL THE CONTRACTOR FOLLOWS THE SITE PREPARATION INSTRUCTION IN THE SOIL REPORT.
- 12. ALL STRUCTURAL ELEMENTS OF THE PROJECT HAVE BEEN DESIGNED BY THE STRUCTURAL ENGINEER TO RESIST THE REQUIRED CODE VERTICAL AND LATERAL FORCES THAT COULD OCCUR IN THE FINAL COMPLETED STRUCTURE ONLY. THE ABILITY OF THE STRUCTURAL FRAME TO RESIST THE REQUIRED CODE FORCES DERIVES FROM THE COMPLETE INSTALLATION OF THE LATERAL FORCE RESISTING SYSTEMS AND DIAPHRAGMS DESCRIBED BELOW. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL REQUIRED BRACING DURING CONSTRUCTION TO MAINTAIN THE STABILITY AND SAFETY OF ALL STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PROCESS UNTIL THE LATERAL-LOAD RESISTING OR STABILITY-PROVIDING SYSTEM IS COMPLETELY INSTALLED AND ALL DESIGNATED CONCRETE ELEMENTS (IF ANY) HAVE REACHED A MINIMUM OF 75% OF THEIR DESIGN STRENGTH.
- 13. THE STRUCTURE HAS BEEN DESIGNED FOR THE LOADS IDENTIFIED WITHIN THESE STRUCTURAL DRAWINGS THAT ARE ANTICIPATED TO BE APPLIED TO THE FINAL STRUCTURE ONCE COMPLETED AND OCCUPIED. THE CONTRACTOR SHALL NOT OVERLOAD THE STRUCTURE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING THE ADEQUACY OF THE STRUCTURE TO SUPPORT ANY APPLIED CONSTRUCTION LOADS, INCLUDING THOSE DUE TO CONSTRUCTION VEHICLES OR EQUIPMENT, MATERIAL HANDLING OR STORAGE, SHORING OR RESHORING, OR ANY OTHER CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED VERIFYING THE ADEQUACY OF THE STRUCTURE FOR ANY PROPOSED CONSTRUCTION LOADS THAT ARE IN EXCESS OF THE STATED DESIGN LOADS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE TO DESIGN OR CHECK THE STRUCTURE FOR LOADS APPLIED TO THE STRUCTURE FOR ANY CONSTRUCTION ACTIVITY.

### **DESIGN CRITERIA:**

#### DEAD LOADS:

- 1. DEAD LOADS INCLUDE THE WEIGHT OF THE STRUCTURAL COMPONENTS AND ALLOWANCES FOR PERMANENT PARTITIONS, PERMANENT FIXTURES, FINISHES, ROOFING MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION MATERIALS SHOWN OR SPECIFIED.
- 2. LOADINGS FOR MECHANICAL ROOMS ARE BASED ON THE WEIGHTS OF ASSUMED EQUIPMENT, AS INDICATED ON THE MECHANICAL DRAWINGS (INCLUDING THE WEIGHT OF CONCRETE PADS, WHERE INDICATED). ANY CHANGES IN TYPE, SIZE, LOCATION OR NUMBER OF PIECES OF EQUIPMENT SHOULD BE REPORTED TO THE ARCHITECT FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING MEMBERS PRIOR TO THE PLACEMENT OF SUCH EQUIPMENT.

#### LIVE LOADS:

1. DESIGN LIVE LOADING IS AS FOLLOWS:

STAIRWAYS AND EXITS

WIND LOADS:

100 PSF + 300# CONCENTRATED LOAD AT TREAD MIDSPAN

WIND PRESSURES ARE BASED ON THE PROVISIONS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-16 AND THE FOLLOWING CRITERIA:

- A. WIND DESIGN DATA (USED FOR PRESSURE DETERMINATION FOR THE DESIGN OF BUIDLING)
- 1. BASIC WIND SPEED, V 120 MPH (3-SECOND GUST) (ULTIMATE)
- 2. WIND OCCUPANCY CATEGORY 3. WIND IMPORTANCE FACTOR, I
- 4. WIND EXPOSURE CATEGORY 5. INTERNAL PRESSURE COEFFICIENT, Gcpi

+/-0.18

### **SPECIAL INSPECTIONS:**

SPECIAL INSPECTION WORK AND THE FINAL LETTER OF COMPLIANCE HAVE NOT BEEN INCLUDED IN THE STRUCTURAL ENGINEERS SCOPE OF SERVICES. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING THE SERVICES OF THE SPECIAL INSPECTOR AND THE TESTING LABORATORY. SPECIAL INSPECTIONS CAN BE PROVIDED BY AN INDEPENDENT SPECIAL INSPECTOR WHO IS APPROVED BY THE BUILDING AUTHORITY OR THE ENGINEER OF RECORD. THE SPECIAL INSPECTION WORK DOES NOT INCLUDE THE TESTING LABORATORY SERVICES AS CALLED FOR ON THE DRAWINGS. ARRANGEMENTS FOR SPECIAL INSPECTIONS SHOULD BE MADE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE OWNER IF SPECIAL INSPECTIONS ARE REQUIRED ON THE APPROVED PERMIT DRAWINGS AND FOR NOTIFYING THE TESTING LABORATORY AND SPECIAL INSPECTOR IN A TIMELY MANNER BEFORE CONSTRUCTION OPERATIONS CONTINUE. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK REQUIRING INSPECTIONS WITHOUT THE TESTING LABORATORY'S OR SPECIAL INSPECTOR'S PRESENCE. THE STRUCTURAL ENGINEER WILL NOT PROVIDE A FINAL LETTER OF COMPLIANCE AFTER THE WORK IS COMPLETE UNLESS HE HAS REVIEWED ALL SPECIAL INSPECTIONS/TESTING LABORATORY TEST RESULTS.

CHAPTER 17 OF THE 2021 INTERNATIONAL BUILDING CODE, INCLUDING ANY LOCAL AMENDMENTS, REQUIRES SPECIAL INSPECTION ON THE FOLLOWING ITEMS:

SOILS (SECTION 1705.6)

CONCRETE CONSTRUCTION (SECTION 1705.3)

### STRUCTURAL SUBMITTALS (NO LEEDS)

SPECIFICATION		
SECTION	ITEM	SUBMITTAL
03 10 00	FORMWORK SHOP DRAWINGS	FOR INFORMATION ONLY/SIGNED AND SEALE
03 10 00	MANUFACTURER'S PRODUCT DATA FOR APPROVAL	FOR APPROVAL
03 10 00	CONSTRUCTION JOINT LAYOUT	FOR INFORMATION ONLY
03 11 31	VOID FORM PRODUCT DATA	FOR APPROVAL
03 20 00	STEEL REINFORCING SHOP DRAWINGS	FOR APPROVAL
03 20 00	EMBEDDED METAL ASSEMBLY SHOP DRAWINGS	FOR APPROVAL
03 20 00	MANUFACTURER'S PRODUCT INFORMATION FOR BAR SUPPORTS	FOR APPROVAL
03 20 00	MILL TEST CERTIFICATE OF STEEL REINFORCING	FOR INFORMATION ONLY
03 20 00	QUALIFICATION DATA	FOR INFORMATION ONLY
03 20 00	WELDING CERTIFICATES	FOR INFORMATION ONLY
03 30 00	CONCRETE MIX DESIGN	FOR APPROVAL
03 30 00	SLAB ON GRADE AND COMPOSITE SLAB CONSTRUCTION JOINT LAYOUT AND POUR SEQUENCE	FOR APPROVAL
03 30 00	MATERIAL CERTIFICATES FOR CONCRETE RELATED PRODUCTS	FOR APPROVAL
03 30 00	PRODUCT DATA	FOR INFORMATION ONLY
03 30 00	QUALIFICATION DATA	FOR INFORMATION ONLY
03 30 00	MATERIAL TEST REPORTS	FOR INFORMATION ONLY
03 30 00	FLOOR SURFACE FLATNESS	FOR INFORMATION ONLY
03 30 00	FIELD QUALITY CONTROL REPORTS	FOR INFORMATION ONLY
03 30 00	MINUTES OF PREINSTALLATION CONFERENCE	FOR INFORMATION ONLY

DELEGATED STRUCTURAL DESIGN OF COMPONENTS

IS LOCATED.

- 1. A STRUCTURAL COMPONENT IS AN INDIVIDUAL STRUCTURAL MEMBER DESIGNED TO BE PART OF A STRUCTURAL SYSTEM. A LIST OF STRUCTURAL COMPONENTS THAT ARE TO BE DESIGNED BY THE COMPONENT SUPPLIERS'S ENGINEERS IS PROVIDED IN THESE PLANS AND SPECIFICATIONS.
- 2. A COMPONENT'S DELEGATED ENGINEER AND RESPONSIBLE CHARGE, SHALL BE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT

3. ALL DRAWINGS AND CALCULATIONS FOR COMPONENTS IN QUESTION, OR THEIR ASSEMBLY INTO STRUCTURAL SYSTEMS SHALL REQUIRE THE SEAL AND SIGNATURE OF THE DELEGATED ENGINEER WHO PREPARED THEM.

- 4. THE DESIGN OF PRE-ENGINEERED SYSTEMS SPECIFIED IN THE CONTRACT DOCUMENTS WHICH ARE DESIGNED/ENGINEERED BY THE SYSTEM SUPPLIER IS THE SOL RESPONSIBILITY OF THE SUPPLIER AND ITS DESIGN ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED. SUBMITTALS OF SUCH SYSTEMS TO THE STRUCTURAL ENGINEER OF RECORD SHALL BE REVIEWED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS WITH REGARD TO THE ARRANGEMENT AND/OR SIZES OF MEMBERS SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS AND THE SUPPLIERS INTERPRETATION OF THE DESIGN INFORMATION INCLUDED IN THE CONTRACT DOCUMENTS. SUCH REVIEW BY THE STRUCTURAL ENGINEER OF RECORD SHALL NOT IMPLY ANY RESPONSIBILITY FOR THE ACTUAL DESIGN OF SUCH SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DIMENSIONAL ACCURACY AND CONFORMANCE WITH THE INFORMATION CONTAINED IN CONTRACT DOCUMENTS.
- 5. SEE APPLICABLE SECTIONS OF GENERAL NOTES AND SPECIFICATIONS FOR THE APPROPRIATE DESIGN RESPONSIBILITIES OF THE SUPPLIER AND ITS LICENSED ENGINEER.

![](_page_22_Figure_47.jpeg)

![](_page_23_Figure_0.jpeg)

![](_page_23_Picture_2.jpeg)

![](_page_23_Figure_5.jpeg)

#### **CONCRETE MIX:** 1. CONCRETE SPECIFICATIONS SHALL BE AS FOLLOWS:

USAGE		CONCRETE MIX DESIGN SCHEDULE											
	:	28 DAY ST (P:	IRENGTH SI)		MAX	SLUMP	MAX	MAX CURE	CEMENT	MAX ALLOWABLE %			
	3000	3500	4000	5000	AGGREGATE SIZE (IN)	(IN)	W/C RATIO	(PCF)	IYPE	FLY ASH (REF CM5)			
1. PIERS			•		1 1/2	6-8	0.55	150	1/11	40			
2. FOOTINGS			•		1	3-5	0.50	150	1/11	30			
3. SLAB-ON-GRADE **			•		1	3-5	0.50	150	1/11	20			
5. GRADE BEAMS AND PLINTHS **			•		1	3-5	0.50	150	1/11	20			
6. COLUMNS			•		1	3-5	0.50	150	1/11	20			
7. BEAMS			٠		1	3-5	0.50	150	1/11	20			
8. WALLS **			٠		1	6-8	0.50	150	1/11	30			
9. BASEMENT WALLS **				•	1	6-8	0.50	150	1/11	30			
10. RETAINING WALLS **				•	1	6-8	0.50	150	1/11	20			
11. TILT-UP PANELS **				•	3/4"	3-5	0.50	150	1/11	15			
12. NORMAL WEIGHT SLAB ON COMPOSITE METAL DECK			•		1	3-5	0.45	150	1/11	20			
13. LIGHT WEIGHT SLAB ON COMPOSITE METAL DECK			•		1	3-5	0.45	117 ± 3	1711	20			
14. SLAB-ON-VOID FORMS **			•		1	3-5	0.50	150	1/11	20			
15. SLAB FOR EQUIPMENT PADS			•		1	3-5	0.45	150	1/11	20			
16. MASS CONCRETE(ALSO REFER TO MASS CONCRETE NOTES AT 56 DAYS)			•		1	3-5	0.40	150	11	40			
17. NON-COMPOSITE TOPPING SLAB		•			1	5-7	0.45	150	1/11	-			

\*\* - SPECIAL GC NOTE FOR CONCRETE WHICH IS PART OF A DEPRESSED AREA. SEE CONCRETE MIX NOTE 10. 2. PORTLAND CEMENT SHALL BE TYPE I OR TYPE III (CONFORM TO ASTM C150), EXCEPT AS FOLLOWS:

MASS CONCRETE ONLY CEMENT TYPE II

NORMAL WEIGHT AGGREGATE SHALL CONFORM TO ASTM C33. LIGHT WEIGHT AGGREGATE SHALL CONFORM TO ASTM C330. ALL AGGREGATE SHALL BE FROM A SINGLE SOURCE.

3. FLY ASH WILL NOT BE PERMITTED IN ARCHITECTURALLY EXPOSED CONCRETE. FLY ASH MAY BE USED ELSEWHERE, WITHIN THE SPECIFIED PROPORTION LIMITS, BUT THE CONTRACTOR SHALL FIRST VERIFY

COMPATIBILITY WITH CURING COMPOUNDS, SEALERS, BOND BREAKER, FLOORING ADHESIVES AND OTHER MATERIALS PROPOSED TO BE IN CONTACT WITH THE CONCRETE. 4. CONCRETE MIX DESIGNS SHALL BE SUBMITTED FOR REVIEW A MINIMUM OF 7 DAYS PRIOR TO THE START OF THE WORK FOR ENGINEER AND OWNERS TESTING LABORATORY APPROVAL, PRIOR TO THE PLACEMENT OF

CONCRETE. MIX DESIGNS MUST INDICATE CONFORMANCE WITH ACI 318-LATEST EDITION, CHAPTER 5, SECTION 5.3. 5. AT THE POINT OF DISCHARGE SLUMP TESTS, CONFORMING TO ASTM C143, SHALL BE TAKEN. SEE CONCRETE NOTE NO. 5 BELOW FOR RATE OF TESTS.

6. AIR CONTENT TESTS CONFORMING TO ASTM C173 (VOLUMETRIC METHOD FOR LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE; ASTM C231 PRESSURE METHOD FOR NORMAL WEIGHT CONCRETE) SHALL BE TAKEN FOR EACH DAY'S POUR FOR ALL TYPES OF AIR-ENTRAINED CONCRETE BEING USED.

7. CONCRETE TEMPERATURE SHALL BE TESTED HOURLY WHEN THE AIR TEMPERATURE IS 40 DEG F AND BELOW, 80 DEG F AND ABOVE AND EACH TIME A SET OF COMPRESSION TEST SPECIMENS ARE MADE. 8. ONE SET OF FOUR COMPRESSION TEST SPECIMENS CONFORMING TO ASTM C31 SHALL BE MOLDED AND STORED FOR LABORATORY-CURED SPECIMENS. COMPRESSIVE STRENGTH TESTS SHALL CONFORM TO

ASTM C39 AND SHALL CONSIST OF ONE SET FOR EACH DAY'S POUR EXCEEDING 5 CU. YDS. PLUS ADDITIONAL SETS FOR EACH 50 CU. YDS. MORE THAN THE FIRST 25 CU. YDS OF EACH CONCRETE CLASS PLACED IN ANY ONE DAY. ONE SPECIMEN SHALL BE TESTED AT 7 DAYS, TWO SPECIMENS SHALL BE TESTED AT 28 DAYS, AND ONE SPECIMEN SHALL BE RETAINED FOR LATER TESTING AS REQUIRED. 9. VERIFY THAT POST INSTALLED ANCHORS ARE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.

10. SPECIAL GC NOTE FOR CONCRETE WHICH IS PART OF A DEPRESSED AREA:

A. AT ALL DEPRESSIONS GREATER THAN OR EQUAL TO MINUS 6 INCHES FROM THE MAIN FINISH FLOOR THE GC SHALL PROVIDE XYPEX C-1000 ADMIXTURE (AT AN ASSUMED MINIMUM RATE OF 15 LBS/CU YD) INTO ALL OF THE CONCRETE. THE ADMIXTURE SHALL BE PLACED INTO THE MIX AT THE TIME OF BATCHING AT THE PLANT, DO NOT ADD DRY BAG MIX TO THE WET CONCRETE TRUCK ON-SITE. THE GC SHALL STRICTLY FOLLOW ALL MANUFACTURER'S INSTRUCTIONS FOR ADDITION, USE, HANDLING, ETC. THE ADD MIXTURE SHALL BE ADDED TO ALL OF THE CONCRETE WHICH MAKES UP ANY DEPRESSION GREATER THAN OR FOUAL TO MINUS 6 INCHES FROM THE MAIN FINISH FLOOR. THIS INCLUDES BUT IS NOT LIMITED TO: DEPRESSED SLABS (FULL THICKNESS). ALL VERTICAL STEM WALLS (FULL THICKNESS) AND/OR ANY GRADE BEAMS (FULL DEPTH AND THICKNESS) WHICH FORM ANY PORTION OF THE VERTICAL DROP AND ALL HORIZONTAL SLAB FOR THE DEPRESSED AREA. THIS DOES NOT REDUCE OR REVISE ANY WATERPROOFING TREATMENTS, LAYERS OR SUBSTRATES THAT ARE CURRENTLY REQUIRED BY THE STRUCTURAL, ARCHITECTURAL, AND/OR OTHER CONSULTANT DRAWINGS, THIS IS IN ADDITION TO THOSE CURRENT MEASURES. THE COST FOR THIS ADD MIXTURE SHALL BE ACCOUNTED FOR WITHIN THE BASE BID AND SHALL INCLUDE, BUT IS NOT LIMITED TO ALL AREAS ARCHITECTURALLY LABELED AS FOLLOWS: ORCHESTRA PIT, ALL ELEVATOR PITS, AND THE BELOW GRADE FLY-LOFT RIGGING PIT. PLEASE NOTE: XYPEX C-1000 HAS BEEN CHOSEN AS A NEUTRAL MIX ADDITIVE THAT IS NOT INTENDED TO CHANGE THE CURRENTLY PLANNED CONCRETE SET TIME. IF FOR SOME REASON THE SET TIME IS DESIRED TO BE INCREASED OR DECREASED XYPEX DOES HAVE ALTERNATIVE FORMULATIONS WHICH MAY BE USED; HOWEVER, THE GC MUST GET WRITTEN APPROVAL FROM THE EOR PRIOR TO ANY CHANGE IN THE XYPEX C-1000 FORMULATION. THE XYPEX C-1000 IS AN ADDITIONAL MOISTURE INTRUSION MITIGATION MEASURE THAT IS REQUIRED IN ADDITION TO THE SPECIFIED WATERSTOPS NOTED IN THE OTHER GENERAL NOTES AND DETAILS RELATED TO CONCRETE COLD-JOISTS AND OTHER CONCRETE TRANSITIONS OF PLANE.

### **CAST-IN-PLACE CONCRETE:**

1. CONCRETE SUPPLIER SHALL BE AWARE OF CEMENTS THAT CAN CAUSE LATE ETTRINGITE FORMATION IN THE CEMENT PASTE AND BE PREPARED TO SHOW THAT THE CEMENTS USED WILL NOT CAUSE THIS PROBLEM.

2. ALL MIXING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE; ACI 301 AND ACI 318, LATEST EDITIONS. 3. NO HORIZONTAL JOINTS WILL BE PERMITTED IN CONCRETE EXCEPT WHERE THEY NORMALLY OCCUR OR WHERE SHOWN ON THE DETAILS, VERTICAL JOINTS SHALL OCCUR AT CENTER SPANS OR AT LOCATIONS APPROVED BY THE STRUCTURAL ENGINEER.

- 4. ALL MIXING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE; ACI 301 AND ACI 318, LATEST EDITIONS.
- 5. ALL BASE PLATES AND ANCHOR BOLTS SHALL BE PROTECTED WITH 3" (MIN.) OF CONCRETE. ANCHOR BOLTS SHALL BE FABRICATED FROM FULL BODIED ASTM F1554, GRADE 36 LOW CARBON STEEL RODS HAVING THE SAME DIAMETER AS THE BOLT DIAMETER AND USING CUT THREADS. ROLLED THREADS ARE NOT ACCEPTABLE. BOLTS SHALL BE SET USING RIGID TEMPLATES.
- 6. AT HORIZONTAL CONCRETE FRAMING, FORMS SHALL NOT BE REMOVED UNTIL THE CONCRETE HAS REACHED 70 PERCENT OF THE 28-DAY COMPRESSIVE STRENGTH INDICATED. FLOOR SLABS AND BEAMS SHALL REMAIN SHORED UNTIL THE UPPER MOST LEVEL OF CONCRETE HAS REACHED 70 PERCENT OF THE 28-DAY COMPRESSIVE STRENGTH. FOR BUILDINGS WITH MORE THAN THREE STORIES IN HEIGHT, SHORING SHALL BE MAINTAINED FOR THREE LEVELS BELOW, UNTIL THE UPPER MOST LEVEL HAS REACHED 70 PERCENT OF THE SPECIFIED 28-DAY COMPRESSIVE STRENGTH. ALL CONDUITS AND PIPES EMBEDDED IN CONCRETE SHALL COMPLY WITH ALL PROVISIONS SPECIFIED IN ACI 318, SECTION 6.3, WITH THE FOLLOWING SPECIFIC REQUIREMENTS
- A. THE MAXIMUM OUTSIDE DIAMETER OF THE CONDUITS AND PIPES SHALL BE 1 1/2". NONE PERMITTED IN SLABS THINNER THAN 4 1/2".
- B. THE MINIMUM CLEAR DISTANCE BETWEEN CONDUITS AND PIPES SHALL BE 6". C. NONE PERMITTED IN SLABS-ON-GRADE WHICH WILL BE PERMANENTLY EXPOSED OR SCHEDULED TO RECEIVE THIN SET TILE. PLACE ALL PIPES AND CONDUITS IN THE FILL BENEATH THE VAPOR RETARDER. RE-COMPACT AS SPECIFIED. D. IN NON-EXPOSED SLABS-ON-GRADE, LIMIT SIZE TO 1" O.D. IN 5" SLAB SPACE 12" APART AND TIE TO UNDERSIDE OF REINFORCING MAT. WHERE LINES CONVERGE AT SOURCE, DOUBLE UP THE SLAB REINFORCING IN THE CONVERGENCE ZONE AND 3'-0" BEYOND. PLACE ALL LARGER LINES IN THE FILL BENEATH THE VAPOR RETARDER. E. NONE PERMITTED IN COLUMNS WITHOUT PRIOR APPROVAL.
- F. DO NOT DISPLACE REINFORCING STEEL FROM ITS PROPER POSITION. 8. PROVIDE SHEAR KEYS IN ALL CONSTRUCTION JOINTS IN BEAMS AND WALLS, IN ACCORDANCE WITH THE TYPICAL CONCRETE DETAILS.
- 9. PLACE WATERSTOPS IN ALL EXTERIOR CONSTRUCTION JOINTS BELOW GRADE AND ELSEWHERE AS CALLED FOR.
- 10. FLOORS ARE NOT DESIGNED TO SUPPORT FORMWORK AND WET CONCRETE WEIGHT OF NEXT LEVEL. CONTRACTOR SHALL DESIGN AND PROVIDE RE-SHORING TO PREVENT OVERSTRESSING THE STRUCTURE. 11. SET FORMS TO FOLLOW SLOPES AND GRADES DEFINED ON PLAN, KEEPING MEMBER DEPTHS CONSTANT AT DEPTHS DETAILED OR SCHEDULED, UNLESS NOTED OTHERWISE. SLOPE UNIFORMLY BETWEEN ELEVATIONS GIVEN. BUILD IN CAMBER WHERE SPECIFIED.
- 12. CONSTRUCTION JOINTS PERMITTED ONLY WHERE INDICATED ON DRAWINGS. WHERE NOT SPECIFICALLY INDICATED ON DRAWINGS, LOCATE THE JOINTS AS FOLLOWS:
- A. LOCATE JOINTS NOT INDICATED TO LEAST IMPAIR STRENGTH AND APPEARANCE OF STRUCTURE. LOCATE VERTICAL JOINTS IN MIDDLE THIRD OF SPANS OF NON-POST-TENSIONED SLABS, BEAMS OR GIRDERS, UNLESS A BEAM INTERSECTS A GIRDER AT MIDDLE LOCATION, IN WHICH CASE OFFSET JOINTS IN GIRDERS TWICE WIDTH OF BEAM. LOCATE VERTICAL JOINTS WITHIN THE END THIRD OF SPANS OF POST-
- TENSIONED CONTINUOUS SLABS, BEAMS OR GIRDERS WHERE TENDON PROFILE IS AT OR NEAR THE CENTROID OF THE CONCRETE CROSS SECTION. B. LOCATE HORIZONTAL JOINTS IN WALLS AND COLUMNS AT UNDERSIDE OF SUPPORTED ELEMENTS AT THE TOP OF THE WALL OR COLUMN AND AT THE TOP OF FOOTINGS OR FLOOR SLABS AT THE BOTTOM OF THE WALL OR COLUMN. ROUGHEN SURFACE OF HORIZONTAL OR NEARLY HORIZONTAL CONSTRUCTION JOINTS SO THAT AGGREGATE SHALL BE EXPOSED UNIFORMLY, LEAVING NO LAITANCE, LOOSENED PARTICLES OR DAMAGED CONCRETE.
- C. REFER TO PLANS FOR JOINTS IN GRADE SUPPORTED SLABS. D. JOINTS ARE NOT ALLOWED BETWEEN PILASTERS AND BEAM/WALL THAT ARE MONOLITHIC. E. SUBMIT CONSTRUCTION JOINT LAYOUT PLANS FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION.

13. <u>\*\*\***GC NOTE**\*\*\*</u>

A. AT ALL CONCRETE COLD JOINTS OR TRANSITIONS BETWEEN PLANES: VERTICAL TO VERTICAL POURS, HORIZONTAL TO HORIZONTAL POURS, HORIZONTAL TO VERTICAL POURS, AND VERTICAL TO HORIZONTAL POURS, THE GC SHALL PROVIDE A CONTINUOUS WATER STOP WITHIN EACH JOINT. WATERSTOP MANUFACTURERS AND TYPES SHALL BE AS APPROVED IN THE SPECS AND THE GENERAL NOTES. ALL WATER STOPS MUST BE APPROPRIATE FOR THE CONDITION BASED ON THE MANUFACTURER'S DATA. THE GC SHALL BE IN STRICT COMPLIANCE WITH ALL MANUFACTURERS' USE, HANDLING, AND INSTALLATION INSTRUCTIONS. AT A MINIMUM, THE GC SHALL ASSUME A DUMBBELL-TYPE WATER STOP WITH WINGS THAT EXTEND TO EACH SIDE OF THE CONCRETE FOR EACH JOINT UNLESS OTHERWISE NOTED WITHIN THE CD'S TO BE AN ALTERNATE ACCEPTABLE WATER STOP TYPE.

B. ADDITIONALLY, CONCRETE USED AT A SLAB DEPRESSION WITH A DEPTH GREATER THAN 6 INCHES, THE CONCRETE ADDITIVE XYPEX C-1000 SHALL BE INCLUDED IN THE CONCRETE MIX. REFER TO CONCRETE MIX. SCHEDULE FOR CONCRETE MIXES WHICH MAY REQUIRE XYPEX C-1000 AND CONCRETE MIX NOTE 10 FOR ADDITIONAL INFORMATION.

### **CONCRETE REINFORCEMENT:**

1. REINFORCING STEEL SHALL CONFORM TO ASTMA615. BARS SHALL BE NEW OR RECYCLED DOMESTIC BILLET STEEL OF A DOMESTIC MANUFACTURE. REINFORCING BARS SIZE #3 THROUGH #11 SHALL BE GRADE 60. REINFORCING BARS SIZE #11 THROUGH #18 SHALL BE GRADE 75.

2. DEFORMED BAR ANCHORS SHALL CONFORM TO ASTM A496, GRADE 70.

- 3. ALL WELDED WIRE FABRIC SHALL BE SMOOTH WIRE FABRIC CONFORMING TO ASTM A185, AND SHALL BE FURNISHED IN FLAT SHEETS.
- 4. CONCRETE COVERAGE AROUND REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 SECTION 7.7, LATEST EDITION, AND MEET REQUIREMENTS BELOW. THE REINFORCING STEEL DETAILER SHALL ADJUST REINFORCING STEEL CAGE SIZES AT INTERSECTING REINFORCING MEMBERS AS REQUIRED TO ALLOW CLEARANCE FOR INTERSECTING BARS. SLAB ON GRADE REINFORCEMENT SHALL BE SUPPORTED AT EVERY THIRD BAR. NOT TO EXCEED 45-INCH INTERVALS.

FOOTINGS/PIERS GRADE BEAMS SLAB ON GRADE

3 IN BOT; 2 IN SIDES (3" IF CAST AGAINST SOIL), 2 IN TOP 2 IN TOP

- SLAB BOTTOMS OVER VOID FORM COLUMNS NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND (TYP INTERIOR CONDITIONS) 1 5/8"
- 5. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ACI 315, LATEST EDITION. ALL HOOKED BARS SHOWN SHALL HAVE STANDARD HOOKS, U.N.O.
- 6. REINFORCING SHALL NOT BE WELDED WITHOUT APPROVAL FROM THE STRUCTURAL ENGINEER.
- 7. BOTTOM REINFORCING BARS SHALL BE SPLICED AT SUPPORTS AND CONTINUOUS TOP BARS SHALL BE SPLICED AT MID-SPAN.
- 8. ALL CONTINUOUS REINFORCEMENT SHALL BE LAPPED 56 BAR DIAMETERS AT SPLICE LOCATIONS. 9. WHERE BAR TYPES FROM THE BAR BENDING DIAGRAM ARE SPECIFIED, PROVIDE BARS ACCORDINGLY. OTHERWISE, DETAIL BARS IN BEAMS, COLUMNS, SLABS, AND WALLS AS FOLLOWS:
- A. RUN TOP AND BOTTOM BARS CONTINUOUS, WITH SPLICES AND HOOKS AS DESCRIBED BELOW. B. PROVIDE STANDARD 90 DEGREE HOOK ON TOP BARS AT CANTILEVER ENDS.
- C. SPLICE TOP AND INTERMEDIATE BARS AT THE CENTER LINE BETWEEN MEMBER SUPPORTS, UNLESS NOTED OTHERWISE. D. SPLICE BOTTOM BARS DIRECTLY OVER MEMBER SUPPORTS, UNLESS NOTED OTHERWISE.
- E. CENTER BARS NOTED AS "AT SUPT'S." OVER MEMBER SUPPORTS, AND CENTER BARS NOTED AS "BTWN. SUPT'S." BETWEEN SUPPORTS. F. PLACE BARS NOTED AS "2ND LAYER" BELOW THE PRIMARY TOP BARS (OR ABOVE THE PRIMARY BOTTOM BARS) AND PROVIDE #11 SPACER BARS PLACED AT INTERVALS OF 4'-0" BETWEEN THE TWO LAYERS OF BARS. G. ALL BAR SPLICES IN BEAMS, AND SLABS SHALL BE 30 BAR DIAMETERS, EXCEPT THAT SPLICES IN HORIZONTAL WALL BARS AND INTERMEDIATE BEAM BARS SHALL BE 66 BAR DIAMETERS. H. PROVIDE CORNER BARS FOR EACH HORIZONTAL BAR AT THE INSIDE AND OUTSIDE FACES OF INTERSECTING BEAMS OR WALLS. REFER TO TYPICAL CORNER BAR DETAIL ON.

![](_page_24_Figure_48.jpeg)

![](_page_24_Figure_49.jpeg)

![](_page_24_Figure_63.jpeg)

### TYPICAL STIRRUP AND TIE HOOK TYPES

DETAILING DIMENSION 

![](_page_24_Figure_66.jpeg)

		BEAM AND AN	GIRDER TE ND LAP SPL	ICE LENGT	/ELOPMEN <sup>-</sup> HS	Г	
		GRADE 60 RI	EINFORCEMEN	IT, NORMALWE	EIGHT CONCRE	TE	
		f'c = 30	000 PSI	f'c = 40	000 PSI	f'c = 50	000 PSI
BAR SIZE	LAP CLASS	BOTTOM BARS	OTHER BARS	BOTTOM BARS	OTHER BARS	BOTTOM BARS	OTHER BARS
"0	A	12	13	12	12	12	12
#3	В	16	17	16	16	16	16
	А	16	20	14	18	12	16
#4	В	21	26	19	24	16	21
ШГ	A	23	29	20	25	18	23
#5	В	30	38	26	33	24	30
#6	A	31	40	27	35	24	31
	В	41	52	36	46	32	41
	A	46	60	40	52	36	46
#1	В	60	78	52	68	47	60
#0	A	60	78	52	67	46	60
#8	В	78	102	68	88	60	78
#0	A	64	84	56	72	50	65
#9	В	84	110	73	94	65	85
#10	A	72	93	62	81	56	72
#10	В	94	121	81	106	73	94
щаа	A	85	110	74	96	66	86
#11	В	111	143	97	125	86	112

NOTES:

- THIS TABLE SHALL BE USED FOR BEAMS AND GIRDERS FOR OTHER MEMBERS.
- THE SCHEDULED "CLASS A" LAP SPLICE LENGTH.
- RΔR
- OTHER BARS THAT HAVE MORE THAN 12" OF FRESH CONCRETE BELOW THE BAR.
- WHEN LAP SPLICING BARS OF DIFFERENT SIZES, THE LAP LENGTH IS DETERMINED BY THE SMALLER BAR BUT MAY NOT BE LESS THAN THE "CLASS A" SPLICE LENGTH OF THE
- FOR CONCRETE STRENGTHS IN BETWEEN THOSE

![](_page_24_Figure_79.jpeg)

![](_page_24_Picture_80.jpeg)

![](_page_24_Picture_83.jpeg)

**DESIGN CRITERIA** 

LATERAL LOAD RESISTING SYSTEM

CONDUCT THE REVIEW/ANALYSIS.

OCCUR HEREON

MEMBERS.

DOCUMENTS

THE WORK WHEN F

CONTRACTOR QUALIFICATION

FUTURE EXPANSION

SUBSTITUTIONS:

![](_page_25_Figure_2.jpeg)

C. SITE CLASS:.... D. SEISMIC DESIGN CATEGORY, SDC E. DESIGN BASE SHEAR ..... 1% SEISMIC WEIGHT

#### <u>C&C - GROSS ULTIMATE WIND PRESSURES</u>

Cladding	Location	Effective	Coeffi	cients	ients Wind pres	
Туре	1.5 Albert Albert Albert 2003	Area (sf)	+GCp	-GCp	+p (psf)	-p (psf)
Wall	Interior	10	1.00	-1.10	+27.3	-29.7
		25	0.93	-1.03	+25.7	-28.0
		50	0.88	-0.98	+24.5	-26.8
		100	0.82	-0.92	+23.3	-25.6
		500	0.70	-0.80	+20.4	-22.7
Wall	Edge	10	1.00	-1.40	+27.3	-36.6
		25	0.93	-1.26	+25.7	-33.4
		50	0.88	-1.15	+24.5	-30.9
		100	0.82	-1.05	+23.3	-28.4
		500	0.70	-0.80	+20.4	-22.7
Roof	Interior	10	0.50	-0.90	+15.8	-25.0
		25	0.42	-0.86	+13.9	-24.1
		50	0.36	-0.83	+12.5	-23.4
		100	0.30	-0.80	+11.1	-22.7
		341	0.30	-0.80	+11.1	-22.7
Roof	Edge	10	0.50	-1.70	+15.8	-43.6
		25	0.42	-1.50	+13.9	-39.0
		50	0.36	-1.35	+12.5	-35.5
		100	0.30	-1.20	+11.1	-32.0
		500	0.30	-1.20	+11.1	-32.0
Roof	Corner	10	0.50	-2.60	+15.8	-64.4
		25	0.42	-2.36	+13.9	-58.9
		50	0.36	-2.18	+12.5	-54.7
		100	0.30	-2.00	+11.1	-50.5
		500	0.30	-2.00	+11.1	-50.5
Overhang	Interior	10	0.00	-2.20	+10.0	-51.0
	& Edge	25	0.00	-2.20	+10.0	-51.0
		50	0.00	-2.20	+10.0	-51.0
		100	0.00	-2.20	+10.0	-51.0
		500	0.00	-2.20	+10.0	-51.0
Overhang	Corner	10	0.00	-3.70	+10.0	-85.7
		25	0.00	-3.22	+10.0	-74.7
		50	0.00	-2.86	+10.0	-66.3
		100	0.00	-2.50	+10.0	-57.9
		500	0.00	-2.50	+10.0	-57.9
Parapet	Interior	10	2.70	-2.10	+62.6	-48.7
		25	2.43	-1.96	+56.3	-45.4
		50	2.23	-1.85	+51.6	-42.9
		100	2.02	-1.75	+46.9	-40.5
		500	1.90	-1.50	+44.0	-34.8
Parapet	Edge	10	3.60	-2.40	+83.4	-55.6
		25	3.29	-2.19	+76.3	-50.7
		50	3.06	-2.03	+70.8	-47.0
		100	2.82	-1.87	+65.4	-43.3
		500	2.70	-1.50	+62.6	-34.8

#### a = MINIMUM OF (10% OF LEAST HORIZONTAL DIMENSION OR 0.4h) BUT NOT LESS THAN 4% OF LEAST HORIZONTAL DIMENSION OR 3FT h = MEAN ROOF HEIGHT OF A BUILDING, EXCEPT THAT EAVE HEIGHT SHALL BE USED FOR ROOF

ANGLES LESS THAN OR EQUAL TO 10° (~2:12 ROOF PITCH) MEAN ROOF HEIGHT = THE AVERAGE OF THE ROOF EAVE HEIGHT AND HEIGHT TO THE HIGHEST POINT ON THE ROOF SURFACE.

![](_page_25_Figure_8.jpeg)

![](_page_25_Figure_9.jpeg)

#### SCOPE OF DRAWINGS:

REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE (RDPIRC) RESPONSIBLE CHARGE (RDPIRC) RESPONSIBLE FOR ENSURING THE PROJECT CONSTRUCTION DOCUMENTS ARE IN COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF ANY GOVERNING BUILDING AUTHORITIES. RESPONSIBLE FOR REVIEWING AND COORDINATING SUBMITTAL DOCUMENTS PREPARED BY OTHERS, INCLUDING PHASED AND DEFERRED SUBMITTAL ITEMS, FOR COMPATIBILITY WITH THE DESIGN OF THE BUILDING. TYPICALLY THIS IS THE ARCHITECT OR CIVIL ENGINEER-OF-RECORD.	10
STRUCTURAL ENGINEER-OF-RECORD STRUCTURAL CONSULTANT UNDER THE RDPIRC WHO IS RESPONSIBLE FOR ENSURING THE PRIMARY STRUCTURAL SYSTEM IS DESIGNED IN ACCORDANCE WITH THE APPLICABLE STRUCTURAL REQUIREMENTS OF ANY GOVERNING AUTHORITIES.	/ES

#### FOUNDATION DESIGN CRITERIA

- . GEOTECHNICAL REPORT: THIS FOUNDATION DESIGN IS BASED ON THE RECOMMENDATIONS PROVIDED IN SITE-SPECIFIC GEOTECHNICAL REPORT. IN DESIGNING THE FOUNDATION FOR THE PROPOSED STRUCTURE. THE FOUNDATION DESIGN ENGINEER DOES NOT ASSUME RESPONSIBILITY FOR THE ACCURACY OF THE GEOTECHNICAL ENGINEER'S REPORT OR ANY INFORMATION CONTAINED THEREIN. INFORMATION CONTAINED IN THE GEOTECHNICAL REPORT(S) REFLECTS CONDITIONS AS FOUND AT THE LOCATION OF THE BORINGS. ACTUAL CONDITIONS AT LOCATIONS BETWEEN AND SURROUNDING THE BORINGS MAY DIFFER FROM THE SOIL STRATIGRAPHY DEPICTED BY THE BORINGS. IF THERE ARE ANY CONDITIONS DIFFERING FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT, OR IF ANY CHANGES HAVE BEEN IMPOSED ON THE SOILS IN QUESTION SINCE THE REPORT WAS WRITTEN, THEN THE DESIGN ENGINEER OF RECORD SHOULD BE NOTIFIED IN WRITING PRIOR TO CONSTRUCTION OF THE FOUNDATION IN ORDER TO REVIEW THE EFFECTS ON THE PERFORMANCE OF THE DESIGNED FOUNDATION A. GEOTECHNICAL ENGINEER: GESSNER ENGINEERING
- B. JOB NUMBER: 22-1154 C. REPORT DATE: JULY 12, 2021
- 2. THE FOUNDATION DESIGN PARAMETERS PROVIDED WILL NOT ELIMINATE POST-CONSTRUCTION FOUNDATION MOVEMENT. AS SUCH, MEASURES SHALL BE TAKEN TO INCREASE THE TOLERANCE OF THE STRUCTURE SUPPORTED BY THE FOUNDATION. MEASURES INCLUDE BUT ARE NOT LIMITED TO FREQUENT CONTROL JOINTS FOR MASONRY/BRICK/STONE/STUCCO EXTERIOR VENEER (15'-0 MAXIMUM), VERTICALLY SLOTTED CLIPS TO ATTACH ROOF TRUSSES TO NON-LOAD BEARING WALLS, ETC. . ABNORMAL CONDITIONS: IF THE FOUNDATION IS INSTALLED DURING A DRY OR WET PERIOD, WHICH IS CONSIDERED EXTREME OR ABNORMAL, THEN THE BUILDER SHALL NOTIFY THE GEOTECHNICAL ENGINEER AND FOUNDATION ENGINEER PRIOR TO CONSTRUCTION FOR POSSIBLE SOIL CONDITIONING OR FOUNDATION RE-DESIGN
- 4. FOUNDATION MOVEMENT: THE FOUNDATION HAS BEEN DESIGNED WITH THE ASSUMPTION THAT MOVEMENT CAN BE TOLERATED WITHIN A STANDARD PERFORMANCE LIMIT: A. STANDARD PERFORMANCE DEFLECTION LIMIT: L/360 B. STANDARD PERFORMANCE THE LIMIT: 1%

CONSTRUCTION OF THE FOUNDATION HAS NOT COMMENCED WITHIN THIS TIME FRAME.

5. SOIL MOISTURE LEVEL: A REASONABLY UNIFORM SOIL MOISTURE LEVEL IS MAINTAINED AROUND THE FOUNDATION FOR THE LIFE OF THE STRUCTURE. 6. FOUNDATION MAINTENANCE: POSITIVE DRAINAGE AWAY FROM THE STRUCTURE SHALL BE MAINTAINED FOR THE LIFE OF THE STRUCTURE AND THE CONTRACTOR SHALL CONVEY THIS REQUIREMENT TO THE OWNER. THE INITIAL AND ALL SUBSEQUENT OWNERS MAINTAIN THE FOUNDATION IN ACCORDANCE WITH THE LATEST REVISION OF DOCUMENT NO. FPA-SC-07. "FOUNDATION MAINTENANCE AND INSPECTION GUIDE FOR RESIDENTIAL AND OTHER LOW-RISE BUILDINGS". AVAILABLE ON THE FOUNDATION PERFORMANCE ASSOCIATION'S WEBSITE: WWW.FOUNDATIONPERFORMANCE.ORG. CONTRACTOR SHALL PROVIDE THIS DOCUMENT TO OWNER. EXPIRATION: PLANS ARE VALID FOR 6-MONTHS FROM THE DATE THE PLANS ARE ISSUED OR REVISED BY THE ENGINEER. CONTACT ENGINEER FOR REVIEW IF PLANS HAVE EXPIRED OR IF

#### **INSPECTIONS:**

![](_page_25_Picture_20.jpeg)

. ALL LATERAL LOAD RESISTANCE AND STABILITY OF THE BUILDING IS PROVIDED EXCLUSIVELY BY VERTICAL LATERAL LOAD RESISTING SYSTEM. THE HORIZONTAL DIAPHRAGMS DISTRIBUTE THE LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE VERTICAL LATERAL LOAD RESISTING SYSTEM.

#### B. HORIZONTAL LATERAL LOAD RESISTING SYSTEM: WOOD STRUCTURAL PANEL ROOF DECK

STAIR, HANDRAILS, RESTROOM ACCESSORIES AND GUARDRAIL SPECIFICATIONS

1. ALL STAIRS, GUARDRAILS AND HANDRAILS SHALL BE DESIGNED BY A REGISTERED STRUCTURAL ENGINEER BASED ON THE FOLLOWING DESIGN CRITERIA:

a. Stair Stringers, treads and risers shall be designed to support 100 PSF Live Load. b. INDIVIDUAL STAIR TREADS SHALL BE DESIGNED TO SUPPORT A 300 LB CONCENTRATED LOAD PLACED IN A POSITION THAT WOULD CAUSE THE MAX STRESS.

- a. GUARD TOP RAIL AND HANDRAILS: THE TOP RAIL OF GUARDRAILS AND HANDRAILS SHALL BE DESIGNED TO WITHSTAND A LOAD OF 50 PLF APPLIED HORIZONTALLY AT RIGHT ANGLES, OR A 200 LB CONCENTRATED LOAD IN ANY DIRECTION. b. INTERMEDIATE RAILS, PANEL FILLER AND THEIR CONNECTIONS SHALL BE DESIGNED TO WITHSTAND A LOAD OF 50 PSF APPLIED HORIZONTALLY AT RIGHT ANGLES OVER THE ENTIRE
- TRIBUTARY AREA, INCLUDING OPENINGS AND SPACES BETWEEN RAILS.
- a. GRAB BARS, TUB AND SHOWER SEATS, FASTENERS, AND MOUNTING DEVICES SHALL BE DESIGNED TO RESIST A CONCENTRATED LOAD OF 250 POUNDS AT ANY LOCATION AND IN ANY

STRUCTURAL DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN WHICH REQUIRE STRUCTURAL ENGINEERING THAT ARE NOT SUBMITTED AT THE TIME OF THE APPLICATION BUT ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL AT A LATER DATE. DEFERRED SUBMITTALS SHALL BE SUBMITTED TO AND APPROVED BY THE BUILDING OFFICIAL PRIOR TO INSTALLATION OF ANY SAID WORK. 2. COMPLETE STRUCTURAL SHOP DRAWINGS FOR CONSTRUCTION OF EACH BUILDING COMPONENT NOT DESIGNED BY THE STRUCTURAL ENGINEER-OF-RECORD (SER) AND NOT SPECIFIED ON THE PROJECT CONSTRUCTION DOCUMENTS SHALL BE SEALED AND SIGNED BY A SPECIALTY STRUCTURAL ENGINEER (SSE) WHO IS A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS BEING CONSTRUCTED WHO IS QUALIFIED TO PERFORM SAID WORK. A SEAL BY A LICENSED PROFESSIONAL ENGINEER IS NOT REQUIRED FOR FITHER PRODUCTS WHICH HAVE BEEN TESTED AND CERTIFIED BY AN APPROVED AGENCY SUCH AS THE ICC. NOR FOR COMPONENTS WHICH ARE FABRICATED BY A FABRICATOR THAT IS CERTIFIED BY AN APPROVED AGENCY IN WHICH THE AGENCY SPECIFIED THAT SEALING OF THE SHOP DRAWINGS IS NOT REQUIRED (E.G. STEEL JOIST 3. THE SPECIALTY STRUCTURAL ENGINEER (SSE) SHALL SPECIFICALLY INDICATE IN A COVER PAGE AT THE FRONT OF THE SHOP DRAWING THAT THEY ARE THE STRUCTURAL ENGINEER IN RESPONSIBLE CHARGE FOR THE DEFERRED SUBMITTAL AND THAT THEY HAVE REVIEWED THE SHOP DRAWING TO ENSURE COMPLIANCE WITH THEIR DESIGN AND CALCULATIONS. 4. ALL STRUCTURAL DEFERRED SUBMITTALS SHALL BE REVIEWED BY THE SER AND MARKED AS EITHER NO EXCEPTIONS OR EXCEPTION NOTED, PRIOR TO SUBMITTING TO THE "FOR CONSTRUCTION" VERSION TO THE AUTHORITY

#### A. CURTAINWALL, STOREFRONT, WINDOWS (NOT REQUIRED IF USING CERTIFIED AND TESTED PRODUCTS/ASSEMBLIES) B. SUPPORT TO STRUCTURE FOR: HVLS FANS, OPERABLE PARTITIONS, MEP UTILITIES/EQUIPMENT

ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS OR MATERIAL PROCUREMENT.

. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT 2. REVIEW AND/OR ANALYSIS OF EQUIPMENT, MATERIAL STOCKPILING, ETC. TO BE PLACED ON THE STRUCTURE ARE NOT WITHIN THE STRUCTURAL ENGINEER OF RECORDS BASIC SCOPE OF SERVICES. THESE SERVICES CAN BE PROVIDED AS AN ADDITIONAL SERVICE OR THE CONTRACTOR CAN ENGAGE A SPECIALTY STRUCTURAL ENGINEER TO

3. THE CONTRACTOR IS RESPONSIBLE FOR QUALITY CONTROL, INCLUDING WORKMANSHIP AND MATERIALS FURNISHED BY SUBCONTRACTORS AND SUPPLIERS. 4. REFER TO DRAWINGS OTHER THAN STRUCTURAL FOR COMPLETE INFORMATION REGARDING: SLEEVES, CURBS, INSERTS, DEPRESSIONS, OPENINGS, ETC. 5. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST REVISIONS/ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO

6. THE USE OR REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, DUE TO ANY ERRORS THAT MAY 7. ALL WORK SHALL CONFORM TO OSHA STANDARDS. 8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY,

STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL CODES AND REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. 9. THE GENERAL CONTRACTOR SHALL COMPARE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND REPORT ANY DISCREPANCIES BETWEEN EACH SET OF DRAWINGS AND WITHIN EACH SET OF DRAWINGS TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBERS. 10. FRAMING LAYOUTS ARE PROVIDED TO REPRESENT DESIGN CONCEPTS AND SYSTEMS CONSTRUCTION. THE CONTRACTOR AND SUBCONTRACTORS ARE RESPONSIBLE FOR MATERIAL QUANTITIES AND ANY AND ALL UNSPECIFIED COMPONENTS REQUIRED FOR CONSTRUCTION 11. WHERE MEMBER LOCATIONS ARE NOT SPECIFICALLY DIMENSIONED, MEMBERS ARE EITHER LOCATED ON COLUMN LINES OR ARE EQUALLY SPACED BETWEEN THE LOCATED 12. IF CERTAIN FEATURES ARE NOT FULLY SHOWN OR SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SHOWN OR SPECIFIED IN SIMILAR CONDITIONS. 13. WHERE CONFLICT EXISTS AMONG THE VARIOUS PARTS OF THE STRUCTURAL CONTRACT DOCUMENTS, STRUCTURAL DRAWINGS, GENERAL NOTES AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN. 14. THE FLOOR DESIGN LIVE LOAD FOR EACH ELEVATED FLOOR STRUCTURE OR PORTION THEREOF THAT EXCEEDS 50 POUNDS PER SQUARE FOOT (PSF) SHALL BE STATED ON DURABLE SIGNS AND CONSPICUOUSLY POSTED BY THE OWNER IN THE APPLICABLE AREA(S) OF THE BUILDING. 15. ALL STRUCTURES REQUIRE PERIODIC MAINTENANCE TO EXTEND LIFESPAN AND ENSURE STRUCTURAL INTEGRITY FROM EXPOSURE TO THE ENVIRONMENT. A PLANNED

PROGRAM OF MAINTENANCE SHALL BE ESTABLISHED BY THE BUILDING OWNER. THIS PROGRAM SHALL INCLUDE SUCH ITEMS AS, BUT NOT LIMITED TO, PAINTING OF STRUCTURAL STEEL, PROTECTIVE COATING FOR CONCRETE, SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS EXPOSED TO A SALT ENVIRONMENT OR OTHER HARSH CHEMICALS. 16. THE STRUCTURAL ENGINEER'S ROLE DURING CONSTRUCTION A. THE ENGINEER SHALL NOT HAVE CONTROL NOR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR

PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT B. PERIODIC SITE OBSERVATION BY FIELD REPRESENTATIVES OF THE STRUCTURAL ENGINEER IS SOLELY FOR THE PURPOSE OF BECOMING GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE WORK COMPLETED AND DETERMINING, IN GENERAL, IF THE WORK OBSERVED IS BEING PERFORMED IN A MANNER INDICATING THAT I FTED, WILL BE IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE ORSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR. 17. WATERPROOFING OF THE BUILDING ENVELOPE IS OF CRITICAL IMPORTANCE TO LONG-TERM STRUCTURAL PERFORMANCE, WATERPROOFING DESIGN SHALL BE THE RESPONSIBILITY OF THE ARCHITECT/CONTRACTOR AND SHALL BE IN ACCORDANCE WITH BEST PRACTICES FOR THE LOCALITY AND THE PARTICULAR ASSEMBLY.

18. ANY SUSPENDED EQUIPMENT, CEILING, ETC. TO BE HUNG FROM THE STRUCTURE, SHALL NOT EXCEED THE ALLOWABLE HANGING CEILING & MECHANICAL LOAD IDENTIFIED IN THE DESIGN CRTIERA. FURTHERMORE, ANY CONNECTION TO THE STRUCTURE SHALL BE DONE TO WHERE THE LOAD IS CONCENTRIC TO THE MEMBER (I.E. BEAM CLAMPS ONLY ON ONE SIDE OF THE MEMBER ARE NOT ALLOWED).

1. WORK SHALL BE PERFORMED BY A QUALIFIED CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR EXPERIENCED IN THIS TYPE OF WORK. SUCH KNOWLEDGE SHALL INCLUDE MAKING ALLOWANCES FOR PERFORMING WORK OF THIS NATURE FOLLOWING INDUSTRY STANDARDS OF CARE. 2. THE CONSTRUCTION CONTRACTOR AND SUBCONTRACTORS SHALL UNDERSTAND THE NATURE OF DRAWING PRODUCTION AND COORDINATION BETWEEN CONSULTANTS AND SHALL NOT ENTER INTO A CONTRACT BASED ON DRAWINGS THAT ARE BELIEVED TO CONTAIN DISCREPANCIES OR ARE OTHERWISE INCOMPLETE UNLESS PROPER ALLOWANCES HAVE BEEN MADE FOR COST IMPLICATIONS THAT MAY ARISE DUE TO FUTURE DRAWING CHANGES MADE IN PREPARATION OF FINAL CONSTRUCTION DOCUMENT 3. IN THE COURSE OF PRODUCING AND ISSUING DRAWINGS, VARIOUS STAGES OF COMPLETION ARE DEVELOPED. THE CONSTRUCTION CONTRACTOR AND SUBCONTRACTORS SHALL UNDERSTAND THE PURPOSE AND CONTENT CONTAINED IN PERMIT, PRICING, AND CONSTRUCTION DRAWINGS. COST IMPLICATIONS AND CONTRACTIBILITY ARE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR AND SUBCONTRACTORS UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE WITH THE OWNER.

1. NO PROVISIONS FOR ANY FUTURE EXPANSION HAVE BEEN MADE IN THE STRUCTURAL DESIGN.

1. ALL REQUESTS FOR SUBSTITUTIONS OF MATERIALS OR DETAILS SHOWN IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED FOR APPROVAL DURING THE BIDDING PERIOD. ONCE BIDS ARE ACCEPTED, PROPOSED SUBSTITUTIONS WILL BE CONSIDERED ONLY WHEN THEY ARE OFFICIALLY SUBMITTED WITH AN IDENTIFIED SAVINGS TO BE

a. SHEET NUMBER, DETAIL AND/OR SPECIFICATION NUMBER IF APPLICABLE

. ANY DEVIATION FROM THE CONSTRUCTION DOCUMENTS IN A SUBMITTAL SHALL BE CLEARLY INDICATED AS A DEVIATION. FOR SPECIFIC REVIEW BY THE DESIGN TEAM. 2. CONSTRUCTION OR WORK FOR WHICH A PERMIT IS REQUIRED SHALL BE SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL AND SUCH CONSTRUCTION OR WORK SHALL REMAIN ACCESSIBLE AND EXPOSED FOR INSPECTION PURPOSES UNTIL APPROVED. REQUIRED TESTING INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING: g. FOOTING AND FOUNDATION INSPECTIONS SHALL BE MADE AFTER EXCAVATIONS FOR FOOTINGS ARE COMPLETE AND ANY REQUIRED REINFORCING STEEL IS IN PLACE. FOR CONCRETE FOUNDATIONS, ANY REQUIRED FORMS SHALL BE IN PLACE PRIOR TO INSPECTION. MATERIALS FOR THE FOUNDATION SHALL BE ON THE JOB, EXCEPT WHERE CONCRETE IS READY MIXED IN ACCORDANCE WITH ASTM C94, THE CONCRETE NEED NOT BE ON THE JOB. a. CONCRETE SLAB AND UNDER-FLOOR INSPECTIONS SHALL BE MADE AFTER IN-SLAB OR UNDER-FLOOR REINFORCING STEEL AND BUILDING SERVICE EQUIPMENT, CONDUIT, PIPING ACCESSORIES AND OTHER ANCILLARY EQUIPMENT ITEMS ARE IN PLACE, BUT BEFORE ANY CONCRETE IS PLACED OR FLOOR SHEATHING

a. FRAMING INSPECTIONS SHALL BE MADE AFTER THE ROOF DECK OR SHEATHING, ALL FRAMING, FIREBLOCKING AND BRACING ARE IN PLACE AND PIPES, CHIMNEYS AND VENTS TO BE CONCEALED ARE COMPLETE AND THE ROUGH ELECTRICAL, PLUMBING, HEATING WIRES, PIPES AND DUCTS ARE APPROVED. 3. SPECIAL INSPECTIONS - REFER TO THE STATEMENT OF SPECIAL INSPECTION FOR REQUIRED STRUCTURAL SPECIAL INSPECTIONS

- 1. SUBMITTAL LIST AND SCHEDULE A. THE GENERAL CONTRACTOR SHALL PREPARE A DETAILED LIST AND SCHEDULE OF ALL SUBMITTAL ITEMS TO BE SENT TO THE STRUCTURAL ENGINEER PRIOR TO THE START OF
- CONSTRUCTION. THIS LIST SHALL BE UPDATED AND REVISED AS THE JOB PROGRESSES. SUBMITTAL REQUIREMENTS A. ALL SUBMITTALS MUST BE REVIEWED AND ELECTRONICALLY STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL TO THE DESIGN TEAM AS NO EXCEPTIONS.
- B. ALL SUBMITTALS MUST INCLUDE A TRANSMITTAL SHEET WHICH INDICATES: a. SUBMITTAL NUMBER PER THE FOLLOWING FORMAT: E.G. 03 30 00-01.00 (DIVISION, SUBMITTAL # FOR DIVISION, ISSUE # - THE EXAMPLE INDICATES THE FIRST SUBMITTAL, FIRST ISSUE OF A CONCRETE SUBMITTAL) b. BRIEF DESCRIPTION OF SUBMITTAL CONTENTS
- c. DATE ISSUED d. REQUESTED RETURN DATE
- e. ISSUING PARTY INCLUDING NAME, PHONE NUMBER AND EMAIL CONTRACTOR SHALL PROVIDE THE SUBMITTAL IN ELECTRONIC (PDF) FORMAT. SUBMITTALS SHALL NOT BE SCANNED COPIES OF PRINTED DOCUMENTS.
- FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER SHOWN OR COMMENTED IN THE SHOP DRAWING E. THE CONTRACTOR MUST ALLOW A MINIMUM OF 14 DAYS FOR STRUCTURAL REVIEW OF ALL SUBMITTALS. THE CONTRACTOR CAN REQUEST AN EXPEDITED REVIEW AT AN AGREED UPON FEE WITH THE STRUCTURAL ENGINEER. A. STRUCTURAL STEEL SUBMITTALS MUST BE ACCOMPANIED BY THE SDS/2 OR TEKLA MODEL WHICH WILL BE USED BY THE DESIGN TEAM AS A VISUAL AID TO THE SHOP DRAWINGS.
- A. REFER TO THE SPECIFICATIONS FOR A LIST OF ALL THE REQUIRED SUBMITTALS.
- 3. ENGINEER REVIEW STAMP DESIGNATIONS: ALL DESIGNATIONS ARE INDICATIVE OF A REVIEW FOR GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. A. NO EXCEPTIONS
- a. NO ITEMS WERE FOUND TO BE IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS, NO "FOR REVIEW" RESUBMITTAL REQUIRED. B. EXCEPTIONS NOTED
- a. ITEMS WERE FOUND IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS AND NEED TO BE REVISED PRIOR TO SUBMITTING "FOR CONSTRUCTION" SUBMITTAL. C. REVISE AND RESUBMIT a. SIGNIFICANT ITEMS WERE FOUND IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS. THE SUBMITTAL NEEDS TO BE RESUBMITTED "FOR REVIEW".
- D. NOT REVIEWED a. THE SUBMITTAL WAS NOT STRUCTURAL.
- F. FOR INFORMATION ONLY a. THE SUBMITTAL DID NOT REQUIRE REVIEW BUT HAS BEEN FILED FOR THE RECORD.
- F. IMPACT TO STRUCTURE a. THE SUBMITTAL HAS BEEN REVIEWED FOR THE STRUCTURALLY IMPACT TO THE STRUCTURE ONLY.

#### DRAWING INTERPRETATION

- . DRAWING VIEWS LABELED AS TYPICAL A. PARTIAL PLANS, ELEVATIONS, SECTIONS, DETAIL OR SCHEDULES LABELED WITH "TYPICAL" AT THE BEGINNING OF THEIR TITLE SHALL APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE
- SUCH VIEWS SHALL APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. DECISIONS REGARDING APPLICABILITY OF THESE "TYPICAL" VIEWS SHALL BE DETERMINED BY THE STRUCTURAL 2. COLOR: THESE DRAWINGS ARE INTENDED TO BE VIEWED IN COLOR. IF THE FOLLOWING COLORS ARE NOT RED GREEN BLUE THEN THIS DRAWING SET IS NOT BEING VIEWED AS INTENDED.
- 3. SCALE: IF THE FOLLOWING LINE IS NOT EXACTLY 1" LONG, THEN THIS SET HAS BEEN SCALED.

#### REINFORCING STEEL - 03 20 00

- 1. DETAILING OF CONCRETE REINFORCEMENT BARS AND ACCESSORIES SHALL CONFORM TO THE RECOMMENDATIONS OF THE ACI DETAILING MANUAL ACI 315 AND SP-66 (ACI DETAILING MANUAL). 2. CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60, WITH SUPPLEMENTARY REQUIREMENTS.
- 3. COMPLETE REINFORCING PLACEMENT DRAWINGS PREPARED IN ACCORDANCE WITH ACI315 SHALL BE REVIEWED BY THE ENGINEER AND AVAILABLE ON THE JOB SITE PRIOR TO & DURING THE PLACING OF CONCRETE.
- OF REINFORCEMENT. IF ALTERNATE IS TO BE USED, PROPOSED CHAIR IS TO BE SUBMITTED IN WRITING AND APPROVED BY E.O.R. 5. END HOOKS, DEVELOPMENT LENGTHS, AND SPLICES SHALL CONFORM TO THE REQUIREMENTS OF ACI 318.
- 6. REINFORCEMENT MAY BE PLACED IN BUNDLES OF NOT MORE THAN TWO W/ THE CLEAR DISTANCE BETWEEN BUNDLES OF REINFORCEMENT OR TENDONS OF 3 INCHES MINIMUM. CONCRETE COVER NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH ACI 318. 7. COVERAGE: THE FOLLOWING SHALL BE THE MINIMUM REINFORCEMENT CONCRETE COVERAGE (INCLUDING TENDONS): B. CONCRETE EXPOSED TO EARTH OR WEATHER:
- a. NO. 6 AND LARGER .... b. NO. 5 BAR AND SMALLER .. C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND ........ 3/4"
- 8. UNO. ALL LAP SPLICES OF REINFORCEMENT IN GROUND SUPPORTED ELEMENTS (GRADE BEAMS, FOOTINGS, MAT FOUNDATIONS) SHALL BE A MINIMUM OF 48Ø, WHERE Ø = THE DIAMETER OF THE BAR, REINFORCEMENT IN ELEVATED STRUCTURES SHALL REFER TO THE TYPICAL LAP SPLICE DETAIL. REINFORCED CONCRETE - 03 30 00
- A. CONCRETE WORK SHALL CONFORM TO THE LATEST ED. OF ACI 301 (SPECIFICATIONS FOR STRUCTURAL CONCRETE) UNO IN THESE CONSTRUCTION DOCUMENTS. 2. MIX DESIGN: A. ALL CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED REGISTERED ENGINEER. MIX DESIGN DATA RESULTS EITHER COMPLYING WITH THE FIELD EXPERIENCE OR TRIAL MIXTURE METHOD PER ACI 301/318 SHALL BE SUBMITTED FOR EACH CONCRETE MIX. PROPORTIONS OF MATERIALS FOR CONCRETE SHALL BE ESTABLISHED TO: a. PROVIDE WORKABILITY AND CONSISTENCY TO PERMIT CONCRETE TO BE WORKED READILY INTO FORMS AND AROUND REINFORCEMENT UNDER CONDITIONS OF PLACEMENT TO BE
- EMPLOYED WITHOUT SEGREGATION OR EXCESSIVE BLEEDING b. MEET REQUIREMENTS FOR APPLICABLE EXPOSURE REQUIREMENTS.
- c. MEET OR EXCEED THE REQUIRED F'C. d. NOT EXCEED THE MAXIMUM W/C RATIO. B. THE CONTRACTOR MUST INDICATE THE PLANNED PLACEMENT METHOD FOR EACH CONCRETE MIX.
- C. WATER MAY NOT BE ADDED TO THE CONCRETE MIX IN THE FIELD TO ADJUST THE SLUMP (RETEMPERING) WITHOUT THE SPECIAL INSPECTOR BEING PRESENT TO CONFIRM THAT IT DOES NOT EXCEED THE W/C RATIO OR DESIGN SLUMP. THE READY-MIX COMPANY MUST INDICATE THE MAXIMUM WATER WITHHELD AT THE PLANT. IF THE AMOUNT, THE W/C RATIO OR DESIGN SLUMP IS EXCEEDED THEN THE CONCRETE SHALL BE REJECTED.
- D. SLUMP TESTS SHALL BE PERFORMED AT THE POINT OF PLACEMENT WITH THE EXCEPTIONS NOTED BELOW: a. IF THE POINT OF DELIVERY IS THE SAME AS THE POINT OF PLACEMENT (CONCRETE IS PLACED DIRECTLY FROM TRUCK) b. IF THE CONTRACTOR HAS DEVELOPED AN ACCEPTABLE (APPROVED BY SPECIAL INSPECTOR AND EOR) CORRELATION BETWEEN FRESH CONCRETE PROPERTIES AT THE POINT OF DELIVERY AND POINT OF PLACEMENT. E. AIR-ENTRAINED CONCRETE SHALL NOT BE USED IN ANY NORMALWEIGHT CONCRETE FLOOR SLAB THAT IS TO RECEIVE A HARD-TROWELED FINISH.
- 3. CONCRETE MATERIALS: A. HYDRAULIC CEMENT a. USE ASTM C150 TYPE I OR TYPE III OR ASTM C595 TYPE IL, EXCEPT WHERE SPECFICALLY INDICATED OTHERWISE IN TABLE BELOW. B. FLY ASH: a. FLY ASH MAY BE USED TO REPLACE A PORTION OF THE PORTLAND CEMENT, SUBJECT TO THE APPROVAL OF THE ARCHITECT AND STRUCTURAL ENGINEER NOT TO EXCEED THE AMOUNTS
- LISTED IN THE CONCRETE TABLE. b. USE ASTM C618 CLASS C OR F. C. NORMAL WEIGHT AGGREGATE:
- a. USE ASTM C33. b. MATERIAL CERTIFICATES FROM THE AGGREGATE SUPPLIER MUST BE SUBMITTED WITH THE CONCRETE MIX DESIGN. c. PEA STONE (PEA GRAVEL) AGGREGATES ARE NOT ACCEPTABLE. D WATER
- a. COMPLY WITH THE REQUIREMENTS OF ASTM C1602. 4. CHLORIDE ION
- A. FOR CORROSION PROTECTION OF REINFORCEMENT IN CONCRETE, MAXIMUM WATER SOLUBLE ION CONCENTRATIONS IN HARDENED CONCRETE AT AGES FROM 28 TO 42 DAYS CONTRIBUTED FROM THE THE INGREDIENTS INCLUDING WATER, AGGREGATES, CEMENTITIOUS MATERIALS, AND ADMIXTURES SHALL NOT EXCEED THE LIMITS INDICATED IN THE TABLE BELOW. 5. PLACEMENT:
- A. CONCRETE SHALL BE PLACED CAREFULLY SO AS NOT TO DEVIATE REINFORCEMENT FROM THE DESIGN LOCATION. B. CONCRETE SHALL BE PROPERLY VIBRATED, ESPECIALLY AROUND POST-TENSIONED ANCHORAGES AND CONGESTED AREAS SUCH AS COLUMN JOINTS. C. PLACEMENT OF CONCRETE SHALL BE COMPLETED WITHIN 90 MINUTES AFTER THE INTRODUCTION OF THE MIXING WATER, IN ACCORDANCE WITH ASTM C94. D. TOLERANCES FOR CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST ED. OF ACI 117 (SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS).

CONCRETE MIX REQUIREMENTS							
ELEMENT	f'c	EXPOSURE CATEGORY	MAX CL-	MAX FLY ASH	MAX W/CM RATIO	MAX COARSE AGG. SIZE	MIN. AIR CONTENT
INTERIOR SLABS-ON-GROUND <sup>A</sup>	3,500	F0,\$0,P(W)0,C1	0.30	20%	0.45	1"	N/A

CONCRETE FINISHING AND CURING

- 1. FINISHING: FINISHING OPERATIONS AND BULL FLOATING SHALL BE COMPLETED PRIOR TO THE ACCUMULATION OF BLEED WATER ON THE SURFACE. FINAL FINISHING SHOULD NOT BEGIN UNTIL THE BLEED WATER HAS EVAPORATED AND THE WATER SHEEN HAS DISAPPEARED FROM THE SURFACE. TROWELLING THE WET SURFACE WILL WEAKEN IT AND CAN RESULT IN SURFACE
- CRAZING AND DUSTING. REFER TO ARCHITECTURE FOR FINAL FINISHING REQUIREMENTS (STEEL TROWEL, BROOM FINISH, ETC.). 2. EXCESSIVE BLEED WATER REMOVAL: BLEEDING (FREE SURFACE WATER) OCCURS AS AGGREGATES SETTLE IN THE PLACED CONCRETE, DISPLACING WATER TO THE SURFACE. IF ALLOWED TO
- OF REMOVING BLEED WATER IS TO DRAG THE SURFACE WITH A GARDEN HOSE. 3. CONTROL JOINTS (SAW CUTS) IF REQUIRED, SHALL BE MADE AS SOON AS THE CONCRETE CAN SUPPORT THE WEIGHT OF WORKER AND THE EQUIPMENT. 4. CURING: IMMEDIATELY AFTER FINISHING THE SLAB, THE SLAB MUST BE CURED FOR A MINIMUM OF 7 DAYS BY EITHER:
- A. APPLYING A WATER-BASED DISSIPATING RESIN TYPE CURING COMPOUND WHICH CHEMICALLY BREAKS DOWN AFTER APPROXIMATELY 4 WEEKS. MEMBRANE FORMING COMPOUND SHALL ADHERE TO ASTM C 309, TYPE O OR 1D, CLASS B. THE COMPOUND SHALL BE APPLIED IN TWO COATS, EACH AT RIGHT ANGLES TO THE OTHER TO ENSURE A TIGHTLY SEALED

B. WET-CURED BY KEEPING THE SURFACE WET AFTER THE CONCRETE HAS SET AND FINISHING IS COMPLETE. CONCRETE CRACKS

\_\_\_\_\_

- . EVEN WITH PROPER DESIGN AND CONSTRUCTION ALL CONCRETE WILL CRACK. PLASTIC SHRINKAGE CRACKS CONTINUE TO OPEN AS THE SLAB AGES UP TO APPROXIMATELY ONE YEAR, AND REACH 50% OF THEIR FINAL SIZE IN APPROXIMATELY 30 DAYS, MANY PLASTIC SHRINKAGE CRACKS ARE VERY SMALL WHICH MAKE THEM BARELY NOTICEABLE AND INCONSEQUENTIAL TO THE STRUCTURAL PERFORMANCE OF THE CONCRETE, CRACKS WIDER THAN APPROXIMATELY 0.06" ARE LIKELY INDICATIVE OF CONCRETE THAT DID NOT ADHERE TO THE CONCRETE MIX
- REDUCE THE STRUCTURAL PERFORMANCE OF THE CONCRETE AND REQUIRE STRUCTURAL REPAIR (FILL CRACKS WITH EPOXY PRODUCT) OR REPLACEMENT. 2. PLASTIC SHRINKAGE CRACKS: OCCUR SOON AFTER THE CONCRETE IS PLACED AND WHILE IT IS STILL PLASTIC. IT IS CAUSED BY OVERLY RAPID DRYING OF THE SURFACE, USUALLY DUE TO HOT WEATHER, HIGH WIND, LOW HUMIDITY, OR A DELAY IN APPLYING THE CURING MEMBRANE.
- RETEMPERING (ADDING WATER TO CONCRETE ON-SITE)
- . WATER SHALL NOT BE ADDED TO THE MIX TRUCKS ON THE JOB SITE IN EXCESS OF THE VOLUME OF WATER THAT IS SPECIFICALLY INDICATED TO HAVE BEEN WITHHELD FROM THE READY MIX
- TOLERANCE AND THE READY MIX SUPPLIER HAD INDICATED THE VOLUME OF WITHHELD (TRIM) WATER.
- REQUIREMENTS, PLACEMENT, FINISHING AND CURING REQUIREMENTS. IN ADDITION TO BEING VISIBLY OBJECTIONABLE, IF THESE CRACKS EXIST IN REGULAR CONSISTENCY, THEY MAY
- 2. PRIOR TO ADDING WATER, THE CONTRACTOR SHALL CONFIRM THAT THE MIX IS NOT ALREADY WITHIN TOLERANCE ON SLUMP, WATER SHALL ONLY BE ADDED IF THE SLUMP IS BELOW

D. THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIALS REQUIRED BY THE CONTRACT DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF

THE SAME OR SIMILAR TO THE THOSE SPECIFICALLY SHOWN. THE APPLICABILITY OF THE CONTENT OF THESE VIEWS TO LOCATIONS ON THE PLAN CAN BE DETERMINED FROM THE TITLE OF THE VIEW.

4. ALL REINFORCING STEEL SHALL BE SUPPORTED AT DESIGNED DEPTH USING PLASTIC OR METALLIC CHAIRS SPACED AT 48" OC IN ALL DIRECTIONS TO SUPPORT FULL LENGTH

REMAIN ON THE SURFACE, IT DILUTES THE CEMENT CONTENT, SIGNIFICANTLY REDUCING THE STRENGTH NEAR THE SURFACE. THE CONTRACTOR SHALL REMOVE BLEED WATER. ONE METHOD

![](_page_25_Picture_134.jpeg)

#### STRUCTURAL STEEL - 05 12 00

![](_page_26_Figure_1.jpeg)

10. NAILS AND STAPLES

1000 10"

1200 12"

![](_page_26_Figure_2.jpeg)

THIS LEGEND IS AN EXAMPLE OF HOW TO READ THE STEEL STUD MFRS. ASSOCIATION (SSMA) COLD-FORMED MEMBER DESIGNATIONS. ACTUAL SIZE REQUIRED FOR THIS PROJECT ARE NOTED WITHIN THE PLANS, SECTIONS AND DETAILS. THE MATERIAL GRADE FOR ALL COLD-FORM STEEL MEMBERS SHALL FOLLOW THE CHART ABOVE.

SSMA - TYPICAL COLD-FORMED STEEL MEMBER DESIGNATION LEGEND

A. NAILS AND STAPLES SHALL CONFORM TO REQUIREMENTS OF ASTM F 1667. NAILS USED FOR FRAMING AND SHEATHING CONNECTIONS SHALL HAVE MINIMUM AVERAGE BENDING YIELD STRENGTHS AS FOLLOWS: 80 KIPS PER SQUARE INCH (KSI) (551 MPA) FOR SHANK DIAMETERS LARGER THAN 0.177 INCH (4.50 MM) BUT NOT LARGER THAN 0.254 INCH (6.45 MM), 90 KSI (620 MPA) FOR SHANK DIAMETERS LARGER THAN 0.142 INCH (3.61 MM) BUT NOT LARGER THAN 0.177 INCH (4.50 MM) AND 100 KSI (689 MPA) FOR SHANK DIAMETERS OF AT LEAST 0.099 INCH (2.51 MM) BUT NOT LARGER THAN 0.142 INCH (3.61 MM). 11. FASTENERS FOR FIRE-RETARDANT TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED STEEL OR STAINLESS STEEL.

### **ABBREVIATIONS**

LLH

IIV

1 SH

LSV

LWC

MAX

MECH

MEZZ

MF

MISC

OPH OPNG

OPP

PAF

PAR

PCC

PCF

PCY

PFRP

P IP

PRELIM

PROP

RAD

RFF

RFINF

reqd

RFV

RTU

SCHED

STRUCT

SYMM

SW

SYP

IOC

TOS

TYP

TOM

trans

UNO

VERT

WP

WS

WSP

WWR

XXS

WF (W)

SECI

MC

LONG

&	AND
# ~	NUMBER
	ROUND, DIAMETER
ADDL AFSS	ADDITIONAL ARCHITECTURAL EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
APPROX	APPROXIMATE
BO	BOTTOM OF
BOD	BOTTOM OF DECK
BOT	BOTTOM
BRDG	BRIDGING
	CAMBER
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST-IN-PLACE
CIP	CONSTRUCTION/CONTROL JOINT
CI	CENTERIINE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONSTR	CONNECTION
CONT	CONTINUOUS
COORD	COORDINATE
CTRS	CENTERS
db	BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DF DIA (Ø)	DUUGLAS FIR (WOOD) DIAMETER
DIM	DIMENSION
DWG	DRAWING
EA	EACH
EF	
EJ FL (FLFV)	EXPANSION JOINT FLEVATION
EMBED	EMBEDMENT, EMBEDDED
ENGR	ENGINEER
EQ	EQUAL
EQUIP	
EQUIV	EQUIVALENT EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FAB	
f'm	28 DAY MASONRY STRENGTH
FD	FLOOR DRAIN
FDN	FOUNDATION
FF	FARFACE
FIN FIP	FINISH(ED)
FS	FAR SIDE
FTG	FOOTING
FUT	FUTURE
FV	
ry Galv	CALVANIZE(D)
GEN	GENERAL
GR	GRADE
Н	HORIZONTAL REACTION
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
ID	INSIDE DIAMETER
INFO	
INI IT	INTERIUK
K	KIPS (1000 LBS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
rr?	
LLBB	LONG LEG BACK TO BACK

L	ONG LEG HORIZONTAL
L	ONG LEG VERTICAL
L	ONGITUDINAL
L	ONG SIDE HORIZONTAL
L	ONG SIDE VERTICAL
L	IGHTWEIGHT CONCRETE
Ν	AOMENT
Ν	AXIMUM
Ν	AOMENT CONNECTION
٨	/ECHANICAL
Ν	<i>I</i> EZZANINE
Ν	ANUFACTURER
F	IORIZONTAL MOMENT
Ν	/INIMUM
Ν	<i>MISCELLANEOUS</i>
Ν	ЛЕТАL
Ν	JEAR FACE
١	IOT IN CONTRACT
١	IEAR SIDE
١	IOT TO SCALE
١	IORMALWEIGHT CONCRETE
(	ON CENTER
(	DUTSIDE DIAMETER
(	OPPOSITE HAND
(	DPENING
(	OPPOSITE
(	DRIENTED STRAND BOARD (WOOD)
(	OVERSIZED HOLE
A	XIAL LOAD
P	OWDER ACTUATED FASTENER
P	PARALLEL
P	RECAST CONCRETE
P	OUNDS PER CUBIC FOOT
P	OUNDS PER CUBIC YARD
P	PERPENDICULAR
P	I ATF
P	OUNDS PER LINEAR FOOT
·	
P	RELIMINARY
P	ROPERTY
P	OUNDS PER SQUARE FOOT
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, P	OST-TENSION (ED)
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(	QUANTITY
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()       	QUANTITY /ERTICAL SHEAR REACTION PEFERENCE
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() () () () () ()	QUANTITY /ERTICAL SHEAR REACTION ADIUS EFFRENCE EINFORCEMENT EQUIRED EVISION
	QUANTITY VERTICAL SHEAR REACTION ADIUS REFERENCE REINFORCEMENT REQUIRED REVISION ROOF TOP UNIT
CV RRR RRR RRS	QUANTITY /ERTICAL SHEAR REACTION ADIUS REFERENCE REINFORCEMENT REQUIRED REVISION ROOF TOP UNIT LIP CRITICAL CHEDULE(D)
CVRRRRRRSSS	QUANTITY /ERTICAL SHEAR REACTION ADIUS REFERENCE REINFORCEMENT REQUIRED REVISION ROOF TOP UNIT LIP CRITICAL CHEDULE(D) FCTION
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C V R R R R R S S S S S S S S S S S S S S	QUANTITY VERTICAL SHEAR REACTION ADIUS VEFERENCE VERTICAL SHEAR REACTION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION VEVISION HEET IMILAR HORT LEG BACK TO BACK EISMIC LOAD RESISTING SYSTEM LAB-ON-GRADE PACING PECIFICATION QUARE TANDARD TIFFENER TEEL TRUCTURE, STRUCTURAL HEAR WALL YMMETRIC, SYMMETRICAL OUTHERN YELLOW PINE ORSION OP OF OP OF COLUMN OP OF OP OF CONCRETE OP OF MASONRY OP OF STEEL, TOP OF SLAB RANSVERSE
C V R R R R R S S S S S S S S S S S S S S	QUANTITY VERTICAL SHEAR REACTION ADIUS REFERENCE REINFORCEMENT REQUIRED REVISION ROOF TOP UNIT LIP CRITICAL CHEDULE(D) RECTION HEET IMILAR HORT LEG BACK TO BACK EISMIC LOAD RESISTING SYSTEM LAB-ON-GRADE PACING PECIFICATION QUARE TANDARD TIFFENER TEEL TRUCTURE, STRUCTURAL HEAR WALL YMMETRIC, SYMMETRICAL OUTHERN YELLOW PINE ORSION OP OF OP OF COLUMN OP OF OP OF CONCRETE OP OF STEEL, TOP OF SLAB RANSVERSE YPICAL
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C V R R R R R S S S S S S S S S S S S S S	QUANTITY VERTICAL SHEAR REACTION ADIUS SEFERENCE SEINFORCEMENT SEQUIRED SEVISION COOF TOP UNIT LIP CRITICAL CHEDULE(D) ECTION HEET IMILAR HORT LEG BACK TO BACK EISMIC LOAD RESISTING SYSTEM LAB-ON-GRADE PACING PECIFICATION QUARE TANDARD TIFFENER TEEL TRUCTURE, STRUCTURAL HEAR WALL YMMETRIC, SYMMETRICAL OUTHERN YELLOW PINE ORSION OP OF COLUMN OP OF OP OF CONCRETE OP OF MASONRY OP OF STEEL, TOP OF SLAB RANSVERSE YPICAL INLESS NOTED OTHERWISE VERTICAL VIDE FLANGE VORK POINT
C V R R R R R S S S S S S S S S S S S S S	QUANTITY VERTICAL SHEAR REACTION ADIUS VEFERENCE VEINFORCEMENT VEQUIRED VEVISION COOF TOP UNIT LIP CRITICAL CHEDULE(D) ECTION HEET IMILAR HORT LEG BACK TO BACK EISMIC LOAD RESISTING SYSTEM LAB-ON-GRADE PACING PECIFICATION QUARE TANDARD TIFFENER TEEL TRUCTURE, STRUCTURAL HEAR WALL YMMETRIC, SYMMETRICAL OUTHERN YELLOW PINE ORSION OP OF COLUMN OP OF OP OF CONCRETE OP OF MASONRY OP OF STEEL, TOP OF SLAB RANSVERSE YPICAL INLESS NOTED OTHERWISE VERTICAL VORK POINT VATERSTOP
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C V R R R R R S S S S S S S S S S S S S S	QUANTITY VERTICAL SHEAR REACTION ADIUS VEFERENCE VEINFORCEMENT VEQUIRED VEVISION COOF TOP UNIT LIP CRITICAL CHEDULE(D) ECTION HEET IMILAR HORT LEG BACK TO BACK EISMIC LOAD RESISTING SYSTEM LAB-ON-GRADE PACING PECIFICATION QUARE TANDARD TIFFENER TEEL TRUCTURE, STRUCTURAL HEAR WALL YMMETRIC, SYMMETRICAL OUTHERN YELLOW PINE ORSION OP OF COLUMN OP OF OP OF CONCRETE OP OF MASONRY OP OF STEEL, TOP OF SLAB RANSVERSE YPICAL INLESS NOTED OTHERWISE VERTICAL VIDE FLANGE VORK POINT VATERSTOP VOOD STRUCTURAL PANEL VELDED WIRE REINFORCEMENT XTRA STRONG (SCH. 40 PIPE)

![](_page_26_Picture_11.jpeg)

#### PERIODIC SPECIAL INSPECTION IS REQUIRED FOR FASTENING OF THE FOLLOWING SYSTEMS AND COMPONENTS: 1. ROOF COVERING, ROOF DECK AND ROOF FRAMING CONNECTIONS. 2. EXTERIOR WALL COVERING AND WALL CONNECTIONS TO ROOF AND FLOOR DIAPHRAGMS AND FRAMING

#### REQUIRED VERIFICATION AND INSPECTION OF SOILS (TABLE 1705.6)

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUI
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	-	Х	YES
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIALS	-	Х	YES
PERFORM CLASSIFICATION AND TESTING OF COMPACTED MATERIALS	-	Х	YES
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	Х	-	YES
PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THE SITE HAS BEEN PREPARED PROPERLY	-	Х	YES

#### REQUIRED VERIFICATION AND INSPECTION OF GRADING AND DRAINAGE FOR FOUNDATIONS ON EXPANSIVE SOILS

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
AFTER BUILDING CONSTRUCTION AND LANDSCAPING HAVE BEEN COMPLETED, FINAL GRADES SHALL BE VERIFIED TO DOCUMENT REQUIRED DRAINAGE	-	Х	YES
AFTER BUILDING CONSTRUCTION AND LANDSCAPING HAVE BEEN COMPLETED, DOWNSPOUTS SHALL BE INSPECTED TO CONFIRM CONFORMANCE.	-	Х	YES
GRADES AROUND THE STRUCTURE SHALL BE PERIODICALLY INSPECTED AND ADJUSTED AS PART OF THE BUILDING'S MAINTENANCE PROGRAM	-	Х	YES
PLUMBING LEAK "HYRDROSTATIC" TEST PERFORMED BY A LICENSED PLUMBER. TEST TO OCCUR AFTER ROUGH PLUMBING INSTALL	-	Х	YES
WHERE PAVING/FLATWORK ABUT THE FOUNDATION, A MAINTENANCE PROGRAM SHALL BE ESTABLISHED TO EFFECTIVELY SEAL AND MAINTAIN JOINTS AND PREVENT SURFACE WATER INFILTRATION.	-	Х	YES

REQUIRED VERIFICATION AND INSPECTION OF WOOD	CONSTRUCTION (§1)	705.5)	
VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRE
PREFABRICATED WOOD STRUCTURAL ELEMENTS (METAL PLATE CONNECTED WOOD TRUSSES) FABRICATION AND IMPLEMENTATION PROCEDURES (NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION	-	Х	YES
HIGH-LOAD DIAPHRAGMS A. INSPECT GRADE AND THICKNESS OF WOOD STRUCTURAL PANEL SHEATHING. B. VERIFY NOMINAL SIZE OF FRAMING MEMBERS AT ADJOINING PANEL EDGES, THE NAILS OR STAPLE DIAMETER AND LENGTH, THE NUMBER OF FASTENER LINES AND THAT THE SPACING BETWEEN FASTENERS IN EACH LINE AND AT EDGE MARGINS AGREES WITH THE APPROVED BUILDING PLANS	-	Х	NO
METAL-PLATE-CONNECTED WOOD TRUSSES WITH OVERALL HEIGHTS OF 60" OR GREATER A. VERIFY THAT INSTALLATION OF THE PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAIN/BRACING ARE INSTALLED IN ACCORDANCE WITH THE APPROVED TRUSS SUBMITTAL PACKAGE	-	X	YES
METAL-PLATE-CONNECTED WOOD TRUSSES SPANNING 60 FT OR GREATER A. VERIFY THAT TEMPORARY INSTALLATION RESTRAINT/BRACING ARE INSTALLED IN ACCORDANCE WITH THE APPROVED TRUSS SUBMITTAL PACKAGE	-	X	NO
INSPECTION OF NAILING, BOLTING, ANCHORING AND OTHER FASTENING COMPONENTS WITHIN THE SEISMIC / MAIN WIND FORCE RESISTING SYSTEM, INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, SHEAR WALLS AND HOLD-DOWNS. [EXCEPTION: SPECIAL INSPECTIONS ARE NOT REQUIRED FOR WOOD SHEAR WALLS, SHEAR PANELS AND DIAPHRAGMS, INCLUDING NAILING, BOLTING, ANCHORING AND OTHER FASTENING TO OTHER ELEMENTS OF THE MAIN WINDFORCE-RESISTING SYSTEM, WHERE THE SPECIFIED FASTENER SPACING AT PANEL EDGES IS MORE THAN 4 INCHES ON CENTER.]	-	X	YES
<ul> <li>MOISTURE CONTENT OF LOAD BEARING WOOD FRAMING:</li> <li>MOISTURE CONTENT JUST PRIOR TO INSTALLING SHEET ROCK SHOULD BE AT OR BELOW 15%. SPECIAL ATTENTION SHALL BE PAID TO MEMBERS ORIENTED WITH THEIR VERTICAL AXIS PERPENDICULAR TO THE VERTICAL PLANE (PLATES, JOISTS, TRUSS CHORDS, ETC.)</li> </ul>	-	X	YES

#### STRUCTURAL STATEMENT OF SPECIAL INSPECTIONS & TESTING

- 1. SPECIAL INSPECTIONS AND STRUCTURAL TESTING SHALL BE PROVIDED BY AN INDEPENDENT AGENCY EMPLOYED BY THE OWNER FOR THE ITEMS IDENTIFIED IN THIS SECTION AND IN OTHER AREAS OF THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS. (SEE IBC CHAPTER 17). 2. THE NAMES AND CREDENTIALS OF THE SPECIAL INSPECTORS TO BE USED SHALL BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL, DUDLEY ENGINEERING CAN BE SOLICITED TO PROVIDE SPECIAL INSPECTIONS. WE RECOMMEND THAT THE PROJECT GEOTECHNICAL ENGINEER BE SOLICITED TO PROVIDE SPECIAL INSPECTIONS FOR THE SOILS AND TESTING FOR THE SOIL AND CONCRETE.
- 3. DUTIES OF THE SPECIAL INSPECTOR: A. THE SPECIAL INSPECTOR SHALL REVIEW ALL WORK LISTED BELOW FOR CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AND THE IBC.
- B. THE SPECIAL INSPECTOR SHALL FURNISH SPECIAL INSPECTION REPORTS TO THE EOR, CONTRACTOR, OWNER AND BUILDING OFFICIAL ON A WEEKLY BASIS, OR MORE FREQUENTLY AS REQUIRED BY THE BUILDING OFFICIAL. ALL ITEMS NOT IN COMPLIANCE SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, AND IF UNCORRECTED, TO THE EOR AND THE BUILDING OFFICIAL. C. ONCE CORRECTIONS HAVE BEEN MADE BY THE CONTRACTOR, THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT TO THE BUILDING OFFICIAL STATING THAT THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AS WELL AS THE APPLICABLE WORKMANSHIP PROVISIONS OF THE IBC. 4. DUTIES AND RESPONSIBILITIES OF THE CONTRACTOR:
- A. THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE OWNER AND THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF WORK. IN ACCORDANCE WITH IBC 1704.4, THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED WITHIN THIS "STATEMENT OF SPECIAL INSPECTIONS". B. THE CONTRACTOR SHALL NOTIFY THE RESPONSIBLE SPECIAL INSPECTOR THAT WORK IS READY FOR INSPECTION AT LEAST ONE WORKING DAY (24 HOURS MINIMUM) BEFORE SUCH INSPECTION IS REQUIRED.
   C. ALL WORK REQUIRING SPECIAL INSPECTION SHALL REMAIN ACCESSIBLE AND EXPOSED UNTIL IT HAS BEEN OBSERVED BY THE SPECIAL INSPECTOR. 5. PLEASE SEE THE "SPECIAL INSPECTION SCHEDULE" FOR THE TYPES, EXTENTS AND FREQUENCY OF SPECIFIC ITEMS REQUIRING SPECIAL INSPECTIONS AND STRUCTURAL TESTS AS PART OF THIS PROJECT.
- 6. REFER TO ARCHITECTURAL AND/OR MEP DRAWINGS FOR ADDITIONAL SPECIAL INSPECTION REQUIRED. DUDLEY ENGINEERING HAS LISTED THE STRUCTURAL SPECIAL INSPECTIONS AND TESTING.

UIRED

WIND-RESISTING COMPONENTS (1705.11.3)

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS AND PLACEMENT.	-	Х	YES
INSPECTION OF ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN USED OR STRENGTH DESIGN IS USED.	-	X	YES
INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.	-	Х	YES
VERIFYING USE OF REQUIRED MIX DESIGN		Х	YES
AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	-	YES
INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	YES
INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURES AND TECHNIQUES	-	Х	YES
INSPECTION OF PRESTRESSED CONCRETE APPLICATION OF PRESTRESSING FORCES	X	-	NO
ERECTION OF PRECAST CONCRETE MEMBERS	-	Х	NO
VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	Х	YES
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		Х	YES

REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION (TABLE 1705.3)

STRUCTURAL STEEL - GENERAL			
THE SPECIAL INSPECTOR SHALL INSPECT THE FABRICATED OR ERECTED STEEL FRAME, AS APPROF SHOWN ON THE CONSTRUCTION DOCUMENTS, SUCH AS BRACES, STIFFENERS, MEMBER LOCATI DETAILS AT EACH CONNECTION.	Priate, to veri Ions and pro	FY COMPLIANCE PER APPLICATION	WITH THE DETAIL I OF JOINT
STRUCTURAL STEEL - ANCHOR RODS / EMBED PL	ATES		
THE SPECIAL INSPECTOR SHALL BE ON THE PREMISES FOR INSPECTION DURING THE PLACEMENT SUPPORTING STRUCTURAL STEEL FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. AS LENGTH OF THE ANCHOR RODS OR EMBEDDED ITEM, AND THE EXTENT OR DEPTH OF EMBEDME PRIOR TO PLACEMENT OF CONCRETE.	OF ANCHOR R S A MINIMUM, T INT INTO THE CO	CODS AND OTHER He Diameter, Gr Oncrete, Shall E	EMBEDMENT ?ADE, TYPE AND 3E VERIFIED
STRUCTURAL STEEL - WELDS			
VERIFICATION AND INSPECTION CON	NTINUOUS	PERIODIC	REQUIRED
INSPECTION TASKS PRIOR TO WELDING (AISC 360 TABLE N5.4-1)	1		
WELDING PROCEDURE SPECIFICATION (WPS'S) AVAILABLE	X	-	YES
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	Х	-	YES
MATERIAL IDENTIFICATION (TYPE / GRADE)	-	X	YES
WELDER IDENTIFICATION SYSTEM	-	X	YES
FIT-UP GROOVE WELDS	-	X	NO
CONFIGURATION AND FINISH OF ACCESS HOLES	-	X	NO
FIT-UP FILLET WELDS	-	Х	YES
CHECK WELDING EQUIPMENT	-	Х	YES
INSPECTION TASKS DURING WELDING (AISC 360 TABLE N5.4-2)	1		
USE OF QUALIFIED WELDERS	-	Х	YES
CONTROL AND HANDLING OF WELDING CONSUMABLES	-	X	YES
NO WELDING OVER CRACKED TACK WELDS	-	X	YES
ENVIRONMENTAL CONDITIONS (WIND SPEED WITHIN LIMITS, PRECIPITATION AND TEMPERATURE	-	X	YES
WPS FOLLOWED	-	Х	YES
SETTINGS ON WEDDING EQUIPMENT     TRAVEL SPEED     SET FOR THE DING MATERIALS			
<ul> <li>SELECTED WELDING MATERIALS</li> <li>SHIELDING GAS TYPE / FLOW RATE</li> <li>PREHEAT APPLIED</li> <li>INTERPASS TEMPERATURE MAINTAINED (MIN/ MAX)</li> <li>PROPER POSITION (F. V. H. OH)</li> </ul>			
WELDING TECHNIQUES  INTERPASS AND FINAL CLEANING  EACH PASS WITHIN PROFILE LIMITATIONS EACH PASS MEET CILIAUITY RECURPEMENTS	-	X	YES
WELDS CLEANED	_	X	YES
SIZE, LENGTH AND LOCATION OF WELDS	X		YES
	X		YES
CRACK PROHIBITION WELD / BASE-METAL FUSION CRATER CROSS SECTION WELD PROFILES WELD SIZE UNDERCUT			
POROSITY			
ARC SIRIKES	X	-	YES
	X	-	YES
	X	-	YES
	X	-	YES
DOCUMENT ACCEPTANCE OK KEJECTION OF WELDED JOINT MEMBER	X	-	1ES
	x	-	YES
BINCTURA STRL - GAMENA HIS PECCIA MARKED CONTRE FAMILARIO DE ORIGEN STELLANDE A AMPROPRIATE, TO MENTER STRUCTURAL STRL - AMCION ROOK / MARKED HIS PECCIA STRUCTURAL STRL - AMCION ROOK ROOK ROOK ROOK ROOK ROOK ROOK RO			
FILLET WELDS:	1		
MT TEST A MINIMUM OF 10% OF THE LENGTH OF EACH FILLET WELD EXCEEDING 5/16".	-	Х	YES
PERIODIC MT TESTING OF REPRESENTATIVE FILLET WELDS 5/16" AND LESS BUT NEED NOT EXCEED 10% OF ALL SUCH WELDS, EXCEPT AS REQUIRED FOR HIGH REJECTION RATES AS INDICATED IN THE FOLLOWING PARAGRAPH.	-	X	YES
INCREASE MT TESTING RATE FOR WELDERS HAVING A HIGH REJECTION RATE AS REQUIRED TO ENSURE ACCEPTABLE WELDS.	Х	-	YES
PARTIAL JOINT PENETRATION (PJP) WELDS INCLUDING FLARE BEVEL WELDS			
MT TEST A MINIMUM OF 25% OF THE LENGTH OF EACH PJP WELD EXCEEDING 5/16" EFFECTIVE THROAT.	-	X	YES
PERIODIC MT TESTING OF REPRESENTATIVE PJP WELDS 5/16" AND LESS BUT NEED NOT EXCEED 10% OF ALL SUCH WELDS, EXCEPT AS REQUIRED FOR HIGH REJECTION RATES AS INDICATED IN THE FOLLOWING PARAGRAPH.	-	X	YES
INCREASE MT TESTING RATE FOR WELDERS HAVING A HIGH REJECTION RATE AS REQUIRED TO ENSURE ACCEPTABLE WELDS	X	-	YES
COMPLETE JOINT PENETRATION (CJP) WELDS	1		
ALL CJP WELDS EXCEEDING 5/16" THICKNESS SHALL BE 100% UT TESTED PER AWS D1.1 CLAUSE 6 PART F. THE TESTING LABORATORY SHALL REVIEW THE CJP JOINTS TO DETERMINE WHERE GEOMETRY OR ACCESSIBILITY PRECLUDES THE USE OF STANDARD SCANNING PATTERNS PER AWS D1.1 CLAUSE 6 PART F. AT THESE LOCATIONS THE TESTING LABORATORY SHALL DEVELOP AND SUBMIT FOR APPROVAL A WRITTEN TESTING PROCEDURE IN ACCORDANCE WITH AWS D1.1 ANNEX S.	X	-	YES
PERIODIC MT TESTING OF REPRESENTATIVE CJP WELDS 5/16" AND LESS NOT TO EXCEED 10% OF ALL SUCH WELDS.	-	X	YES
INCREASE MT TESTING RATE FOR WELDERS HAVING A HIGH REJECTION RATE AS REQUIRED TO ENSURE ACCEPTABLE WELDS.	Х	-	YES

REQUIRED VERIFICATION AND INSPECTION OF STRUCTURAL STEEL CONSTRUCTION (§1705.2.1)

STRUCTURAL STEEL HIGH-STRENGTH BOLTS (SNUG-TIGHT) - INSPECTION TASKS PRIOR TO BOLTING					
VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED		
DOCUMENTATION AND ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	-	Х	YES		
STRUCTURAL STEEL HIGH-STRENGTH BOLTS (SNUG-TIGHT) - INS	SPECTION TASKS DUR	ING BOLTING			
VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED		
DOCUMENTATION OF ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS.	-	Х	YES		

![](_page_27_Picture_24.jpeg)

	PLAN	N LEGEND
STRUCTURAL REFERENCE SHEETS	FOUNDATION PERIMETER	
	SLAB ELEVATION CHANGE	
FOUNDATION DETAILS: <b>S4.0 S4.1</b>	FOOTING OUTLINE	
	RECOMMENDED CONTROL JOINT REF6 / \$4.0	
	SLAB DROP, REF PLAN NOTE 1	
	SLAB DROP W. SLOPE, REF PLAN NOTE 1	רודה רודה
PLAN NOTES         1. VERIFY ALL EDGE OF FOUNDATION DIMENSIONS WITH FINAL ARCHITECTURE FLOOR PLANS.         2. FORM DIMENSIONS: SLAB DROPS, SLOPES, ETC. ARE SHOWN AS AN AID TO THE CONTRACTOR ONLY.         VERIFY EXACT DIMENSIONS AND LOCATIONS WITH ARCH./OWNER.         3. DIMENSIONS ADD LOCATIONS WITH ARCH./OWNER.	SLOPE IN TOP SURFACE OF SLAB, REF ARCH FOR EXTENTS AND MAGNITUDE EXPOSED CONCRETE	G SLOPE DOWN REF ARCH
<ol> <li>BINELYSICIA ARE TO CE OF OKADE BEAWS OK EDGE OF SEAD ONLESS INCIDE OFFICIAL OFFICIAL CONTROL.</li> <li>REFER TO MEP DRAWINGS FOR PENETRATIONS AND UNDERGROUND UTILITIES. ALL PENETRATIONS SHALL BE SHOWN IN REBAR PLACEMENT DRAWINGS.</li> <li>CONTROL JOINTS (GROOVED OR SAW-CUTS) ARE RECOMMENDED TO REDUCE CRACKS IN SLAB WHICH WILL BE VISIBLE, BUT ARE NOT REQUIRED FOR STRUCTURAL REQUIREMENTS. FOR THE</li> </ol>	LIGHT BROOM FINISH	
RECOMMENDED MAXIMUM JOINT SPACING, REF DETAIL 6 / \$4.0 6. FOR FLATWORK OR PAVEMENT ABUTTING THE BUILDING FOUNDATION, REF DETAIL 13 / \$4.0	BASEPLATE TYPE, REF 1/S6.1	BP#
	EMBED PLATE TYPE, REF 3 / \$6.1	EP#

![](_page_28_Figure_1.jpeg)

SLAB GEC	METRY
AREA (SF)	1275
PERIMETER (FT)	154
SHAPE FACTOR	19
AREA AND PERIMETER ARE PROVIDED FOR F CALCULATING THE SF FOR THE SLAB ONLY NOT BE USED FOR / PURPOSE	R OF THE SLAB PURPOSES OF HAPE FACTOR AND SHALL ANY OTHER

BRAB / WRI PARAMETERS

0.95

1800

CLIMATIC RATING

SOIL SUPPORT INDEX

EFFECTIVE PI

ALLOW. BEARING (PSF)

MIN <u>PERIMETER</u> BEAM EMBEDMENT

BELOW <u>FINAL</u> GRADE / FLATWORK

			FOUNDA		ES		
FOUNDATIO	N TYPE:	BRAB TYPE III - STIFFENED NON-STRUCTURAL SLAB-ON-GROUND					
SLAB THICKN	VESS:	5"	5"				
SLAB REINFC	ORCEMENT:	#4 @ 16" OC EACH WAY - REF DETAIL 5 / \$4.0					
DESIGN MET	HOD:	ACI 318, ACI 360					
VAPOR RETA	ARDER:	MINIMUM 10 MIL (UNLESS THICKER REQ'D BY ARCHITECT)					
BEAM ID <sup>1</sup>	DESCR	PTION WIDTH DEPTH <sup>3</sup> TOP BOTTOM STIRRUPS <sup>2</sup>					
B1	TYPICA	CAL BEAM 12" 30" (2) - #6 (2) - #6 #3 @ 24" OC		#3 @ 24" OC			

NOTES: 1. BEAMS ARE TYPE B1 UNO. 2. LOCATE THE FIRST STIRRUP A M

 LOCATE THE FIRST STIRRUP A MAXIMUM OF 3" FROM FACE OF SUPPORT.
 BEAM DEPTH INDICATED IN THE SCHEDULE IS A STRUCTURAL MINIMUM THAT THE BEAM REINFORCEMENT CAGE MAY BE BASED UPON. REFERENCE GEOTECHNICAL REPORT FOR MINIMUM GRADE BEAM EMBEDMENT BELOW ADJACENT FINAL GRADE OR FLATWORK/PAVEMENT.
 N/R = NOT REQUIRED

REFERENCE DRAWING(S):

SLAB DIMENSIONS SHOWN ARE BASED UPON THE FOLLWING CAD (COMPUTER-AIDED DESIGN) REFERENCE FILE(S), BY OTHERS.
FILE FORMAT: DWG REVIT
FILE NAME: LEGENDS BOAT HOUSE FLOOR PLAN | LEGENDS BOAT HOUSE ELEVATIONS
DATE OF FILE: 1/20/2022

DATE OF FILE: 1/20/2022
FILE AUTHOR: ARC THREE STUDIOS

#### SUBGRADE AND BUILDING PAD NOTES (PER GEOTECHNICAL REPORT): 1. SUBGRADE IMPROVEMENT:

A. UNDERCUT UPPER **2** FEET OF EXISTING SOIL AND REPLACE WITH COMPACTED SELECT FILL TO TOP OF BUILDING PAD ELEVATION. THE SELECT FILL PAD MUST BE OF UNIFORM THICKNESS UNO BY GEOTECHNICAL ENGINEER.

- SITE PREPARATION:
   A. SOFT SOILS SHOULD BE REMOVED UNTIL FIRM SOIL IS REACHED. THE SOFT SOILS CAN BE AERATED AND PLACED BACK IN SIX-INCH LOOSE LIFTS AND COMPACTED TO 95% AS SPECIFIED BY ASTM D-698. TREE STUMPS, TREE ROOTS, OLD SLABS, OLD FOUNDATIONS AND EXISTING PAVEMENTS SHOULD BE REMOVED FROM THE STRUCTURE AREA. IF THE TREE STUMPS AND ROOTS ARE LEFT IN PLACE, SETTLEMENT AND TERMITE INFESTATION MAY OCCUR. ONCE A ROOT SYSTEM IS REMOVED, A VOID IS CREATED IN THE SUBSOIL. IT IS RECOMMENDED TO FILL THESE VOIDS WITH STRUCTURAL FILL OR CEMENT-STABILIZED SAND AND COMPACT TO 95% AS SPECIFIED BY ASTM D-698.
  - B. ANY LOW-LYING AREAS INCLUDING RAVINES, DITCHES, SWAMPS, ETC. SHOULD BE FILLED WITH STRUCTURAL FILL AND PLACED IN EIGHT-INCH LIFTS. EACH LIFT SHOULD BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS SPECIFIED BY ASTM D-698.
     C. THE EXPOSED SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE EXPOSED DE DE DEDENTE AT THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES FOUNDATION AREAS OR PER THE SUBGRADE SUBGRADE SHOULD BE SUBGRADE SUBGRADE
  - SUBGRADE IMPROVEMENT REQUIREMENTS. THE SUBGRADE SHOULD THEN BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY THE STANDARD MOISTURE DENSITY RELATIONSHIP (ASTM D-698). IN THE EVENT THAT THE UPPER SIX (6) INCHES CANNOT BE COMPACTED DUE TO EXCESSIVE MOISTURE, WE RECOMMEND THAT THESE SOILS BE EXCAVATED AND REMOVED OR CHEMICALLY STABILIZED TO PROVIDE A FIRM BASE FOR FILL PLACEMENT. PROOF ROLLING SHOULD BE PERFORMED USING A HEAVY TIRED LOADED TRUCK OR PNEUMATIC RUBBER-TIRED WEIGHING 20 TONS.
     D. THE SELECT FILL SOILS SHALL EXTEND AT LEAST 5-FEET BEYOND THE PERIMETER OF THE FOUNDATION.
  - E. THE FLOOR SLAB SHOULD BE PLACED AS SOON AS POSSIBLE AFTER THE BUILDING PAD IS PREPARED. IF THE BUILDING PAD IS LEFT EXPOSED TO RAINFALL, PERCHED GROUNDWATER CONDITIONS MAY DEVELOP WHICH WILL UNDERMINE THE INTEGRITY OF THE FLOOR SLAB. ALL TRENCHES (WATER, CABLE, ELECTRICAL) SHOULD BE PROPERLY BACKFILLED AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITIES. SAND OR PERMEABLE MATERIALS SHOULD NOT BE USED AS BACKFILL. IMPROPERLY BACKFILLED AND IMPROPERLY COMPACTED TRENCH, IF LEFT EXPOSED WILL ALSO BE ANOTHER SOURCE FOR PERCHED GROUNDWATER CONDITIONS. IN GENERAL PERCHED WATER TENDS TO BE TRAPPED WITHIN THE FILL. THE TRAPPED GROUNDWATER TENDS TO SOFTEN THE SUBGRADE. POSITIVE DRAINAGE SHOULD BE MAINTAINED
  - ACROSS THE ENTIRE BUILDING PAD. F. A QUALIFIED SOIL TECHNICIAN SHOULD MONITOR ALL EARTHWORK OPERATIONS. FIELD DENSITY TESTS SHOULD BE CONDUCTED ON EACH LIFT USING A NUCLEAR DENSITY GAUGE. THE GAUGE SHOULD BE CALIBRATED EVERY DAY. PRIOR TO FIELD DENSITY TESTS, A 50-POUND SAMPLE FROM THE SUBGRADE SOILS SHOULD BE OBTAINED. A SIMILAR SAMPLE SHOULD BE OBTAINED FROM THE FILL SOILS. A STANDARD MOISTURE DENSITY RELATIONSHIP (ASTM D-698) SHOULD BE PERFORMED ON EACH SAMPLE IN ORDER TO OBTAIN AN OPTIMUM MOISTURE CONTENT AND A MAXIMUM DRY DENSITY. THE FIELD DENSITY TESTS SHOULD BE COMPARED TO THESE RESULTS EVERY TIME THE SOILS ARE TESTED IN THE FIELD.
- LOW SWELL POTENTIAL STRUCTURAL FILL (SELECT FILL)

   LOW SWELL POTENTIAL STRUCTURAL FILL (SELECT FILL)
   LOW SWELL POTENTIAL SELECT FILL SHOULD CONSIST OF COHESIVE SOILS FREE OF ORGANICS OR OTHER DELETERIOUS MATERIALS AND SHOULD HAVE A PLASTICITY INDEX NOT LESS THAN <u>8 OR MORE THAN 18</u>. SANDY CLAYS ARE RECOMMENDED FOR USE. THE LOW SWELL POTENTIAL SELECT FILL SHOULD BE CLEANED AND FREE OF ORGANIC MATTER OR OTHER DELETERIOUS MATERIAL. THE FILL SHOULD BE PLACED IN MAXIMUM 8-INCH LOOSE LIFTS AND COMPACTED TO A MINIMUM OF <u>95</u>. PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698 (STANDARD PROCTOR). THE MOISTURE CONTENT AT THE TIME OF COMPACTION SHOULD BE <u>276</u>, <u>4276</u>. OF THE OPTIMUM VALUE AS DEFINED BY ASTM D 698. THE REFERENCED MOISTURE CONTENT AND DENSITY SHOULD BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.

#### HORIZONTAL MOISTURE BARRIER

4.

6.

7.

- . WHERE THE PERIMETER OF THE FOUNDATION DOES NOT HAVE LOW PERMEABILITY FLATWORK (SIDEWALK, PAVEMENT, PATIO, ETC.) ABUTTING THE FOUNDATION, A HORIZONTAL MOISTURE BARRIER VIA CLAY CAP AND VAPOR RETARDER MUST BE PROVIDED.
- CLAY CAP: A MINIMUM 5' WIDE LOW PERMEABILITY CLAY "CAP" SHALL BE PLACED ALONG THE EXTERIOR OF THE FOUNDATION TO HELP MINIMIZE MOISTURE INFILTRATION INTO THE SELECT FILL SOIL PADS. THE LOW PERMEABILITY, 1-FOOT THICK CLAY "CAP" SHALL HAVE A MINIMUM PLASTICITY INDEX (PI) OF 30.
   VAPOR RETARDER: BELOW THE CLAY CAP, A MIN 10 MIL VAPOR RETARDER MUST BE PROVIDED ON A MINIMUM
- 5% SLOPE. RETARDER MUST BE SECURED TO THE FOUNDATION.
   5. DRAINAGE

   A. ROOF DRAINAGE SHOULD BE COLLECTED BY A SYSTEM OF GUTTERS AND DOWNSPOUTS AND TRANSMITTED A MINIMUM DISTANCE OF 10' AWAY FROM THE FOUNDATION TO AN AREA WITH POSITIVE DRAINAGE AWAY FROM THE FOUNDATION,
  - PREFERABLY TO A PAVED SURFACE WHERE WATER CAN DRAIN RAPIDLY AWAY FROM THE STRUCTURE. SIDEWALKS, PARKING AREAS, BUILDING ACCESS DRIVES, AND THE GENERAL GROUND SURFACE SHOULD BE SLOPED SO THAT WATER WILL DRAIN AWAY FROM THE STRUCTURE. WATER SHOULD NOT BE ALLOWED TO POND NEAR THE BUILDING FOUNDATIONS.
- FINAL GRADES SHALL SLOPE A MINIMUM OF 5% FOR THE FIRST 10 FEET AWAY FROM THE FOUNDATION IN ALL DIRECTIONS. THIS SLOPE SHALL OCCUR IN THE SELECT FILL OR IN-SITU SOIL. MERELY SLOPING TOPSOIL IS NOT SUFFICIENT.
   LANDSCAPING
- A. DO NOT USE METAL EDGING OR OTHER DAMMING DEVICES WITHIN FIVE FEET OF THE FOUNDATION. THE ROOTS OF TREES AND LARGE PLANTS REMOVE LARGE QUANTITIES OF WATER FROM THE SOIL. IF THESE TREES AND SHRUBS ARE NEAR THE FOUNDATION AND IF SUFFICIENT WATER IS NOT SUPPLIED, THE SOILS MAY SHRINK IF EXPANSIVE, CAUSING SUBSIDENCE IN THE FOUNDATION. DURING DRY PERIODS, ENOUGH WATER SHOULD BE SUPPLIED TO TREES TO MINIMIZE SHRINKING OF EXPANSIVE SOILS AROUND THEM. MOST OF THE IRRIGATION WATER SHOULD BE APPLIED WELL AWAY FROM THE FOUNDATION TO ATTRACT THE TREE ROOTS IN THAT DIRECTION. WHEN TREES MATURE TO THE POINT OF SHADING THE ENTIRE LOT, REGULAR PRUNING WILL BE NEEDED TO REDUCE THEIR WATER UPTAKE. LANDSCAPING (PLANTS, SHRUBS, FLOWERS, ETC.) SHOULD NOT TRAP WATER AGAINST THE FOUNDATION. PROVIDE A SLOPE IN SOILS BELOW LANDSCAPE BEDDING AND IN THE BEDDING AWAY FROM THE FOUNDATION. ALTERNATIVELY, PROVIDE SWALES AROUND AND THROUGH THE LANDSCAPING TO DRAIN WATER AWAY. PROVIDE UNIFORM GROUND COVER AROUND THE
- FOUNDATION. THIS WILL HELP KEEP THE MOISTURE EVAPORATION RATE UNIFORM. IN AREAS THAT ARE NOT PLANTED, USE MULCH. EXTEND THE GROUND COVER AT LEAST FIVE FEET FROM THE FOUNDATION.
   B. ANY/ALL TREES SHALL BE PLANTED AT A MINIMUM DISTANCE EQUIVALENT TO THE HEIGHT OF THE TREE OR THE DRIP LINE PLUS 10 FEET WHICHEVER IS GREATER.
   SOIL MOISTURE
- A. EXPANSIVE SOILS HEAVE AND SUBSIDE DUE TO CHANGES IN MOISTURE CONTENT. CHANGES IN MOISTURE CONTENT CAN CAUSE VERY LARGE CHANGES IN SOIL VOLUME WHEN GOING FROM A DRY TO A SATURATED CONDITION, AND VICE VERSA. THIS MOVEMENT DOES NOT MEAN THE FOUNDATION IS IMPROPERLY DESIGNED OR THAT IT HAS FAILED. THE FOUNDATION DESIGN ENGINEER CANNOT CONTROL THE MOISTURE CONTENT OF THE SOIL, BUT OFTEN THE OWNER/TENANT CAN. UNIFORMITY IS THE KEY: UNIFORM MOISTURE CONTENT IN THE SOIL, UNIFORMLY MAINTAINED IN ALL AREAS AROUND THE FOUNDATION. IF CHANGES IN MOISTURE CONTENT ARE UNIFORM, THEN MOVEMENT OF THE FOUNDATION WILL BE UNIFORM AND LESS DISTRESS WILL BE CREATED IN THE STRUCTURE. IF CHANGES IN MOISTURE CONTENT ARE NON-UNIFORM, THEN THERE MAY BE DIFFERENTIAL MOVEMENT IN THE FOUNDATION. DIFFERENTIAL MOVEMENT CAN CAUSE GREATER (AND MORE OBVIOUS) DISTRESS IN THE STRUCTURE. LEAKING POOLS, LEAKING PLUMBING LINES, LEAKING DRAINS, DRIPPING FAUCETS, DRIPPING AIR CONDITIONING CONDENSATE LINES, AND MISDIRECTED WATER FROM CLOGGED AND BROKEN GUTTERS AND DOWNSPOUTS CAN CAUSE LOCAL HIGH MOISTURE CONTENTS THAT CAN RESULT IN DIFFERENTIAL MOVEMENT IN AREAS OF EXPANSIVE SOILS. THESE CONDITIONS SHOULD BE REMEDIED AS SOON AS POSSIBLE. TREES IN OR NEAR THE FOOTPRINT OF THE FOUNDATION, EITHER REMOVED OR PLANTED DURING CONSTRUCTION, CAUSE THE MAJORITY OF FOUNDATION PROBLEMS REQUIRING REPAIR IN THIS AREA. TREES REMOVED DURING CONSTRUCTION TEND TO CAUSE HEAVE OF EXPANSIVE SOILS DURING THE FIRST FEW YEARS, WITH
- INITIAL DISTRESS OFTEN EVIDENT AT THE TIME OF MOVE-IN. TREES PLANTED DURING OR AFTER CONSTRUCTION TEND TO CAUSE SUBSIDENCE OF EXPANSIVE SOILS. HOWEVER, SIGNIFICANT SUBSIDENCE DISTRESS WILL USUALLY NOT OCCUR FOR TEN TO TWENTY YEARS AS THE TREES MATURE.
   CLIMATE

   A. DURING PERIODS OF DRY WEATHER, THE SOIL AROUND THE FOUNDATION SHOULD BE IRRIGATED IF THE BUILDING IS LOCATED IN AN AREA WHERE EXPANSIVE SOILS ARE KNOWN TO OCCUR. THE MOST COMMONLY USED IRRIGATION
- SYSTEM IS ABOVEGROUND TIMED SPRINKLERS WITH A MANUAL OVERRIDE SO THEY CAN BE TURNED OFF IN RAINY WEATHER. AN AUTOMATIC BELOWGROUND IRRIGATION SYSTEM THAT SENSES THE MOISTURE CONTENT OF THE SOIL MAY ALSO BE USED. TEND TO KEEP THE IRRIGATION SYSTEM SET ON "MANUAL", AND ONLY USE IT IN DRIER PERIODS WHEN WILTING OF THE LAWN GRASSES AND OTHER VEGETATION OCCURS. THE IRRIGATION SHOULD BE DONE AT LEAST ONE TO TWO FEET AWAY FROM THE FOUNDATION, AND THEN LIGHTLY SO THAT TREE ROOTS ARE NOT ATTRACTED THERE. DO NOT ALLOW SPRINKLERS TO SPRAY WATER AGAINST THE STRUCTURE. IN EXTENDED DRY PERIODS, SHOULD THE SOIL CRACK AND PULL AWAY FROM THE FOUNDATION, DO NOT WATER DIRECTLY INTO THE GAP. 9. UTILITIES
- A. CONNECTIONS FOR UTILITIES (PLUMBING, ELECTRICAL, GAS, ETC.) THAT ARE UNDERNEATH, GO THROUGH OR ARE ATTACHED TO THE FOUNDATION SHALL HAVE BE FLEXIBLE TO ACCOMMODATE FOUNDATION MOVEMENT OF AT LEAST 2". ALL DRAINAGE PIPING, AND GENERAL PLUMBING SYSTEMS ASSOCIATED WITH THE FOUNDATION OR IN PROXIMITY TO THE FOUNDATION SHALL BE LEAK TESTED FOLLOWING INSTALLATION AND ON AN ANNUAL BASIS.
   10. ARCHITECTURAL FINISHES
  - A. TILE FLOORS SHALL BE JOINTED AT CONSTRUCTION, EXPANSION OR CONTROL JOINTS IN THE CONCRETE.
     B. TILE FLOORS SHALL HAVE AN UNCOUPLING POLYETHYLENE MEMBRANE BENEATH THE TILE THAT ALLOWS IN-PLANE
  - MOVEMENT. EXAMPLE PRODUCTS: SCHLUTER-DITRA, NUHEAT UNCOUPLING MEMBRANE C. WALL COVERINGS SHALL BE JOINTED ON EACH SIDE OF DOOR AND WINDOW OPENINGS.
  - D. ALL ARCHITECTURAL FINISHES SHALL MIRROR CONTROL, EXPANSION OR CONSTRUCTION JOINTS IN THE FOUNDATION.

![](_page_28_Picture_32.jpeg)

### GENERAL

PHOTO CELL RELAY TIME CLOCK CONTACTOR

HORN

KEYED NOTE NO. 2

# D WP, T, GFI, IG C, TV BELL **d**LV(2) HLVD(2)**4**os IC ICM S HS AMP M СВ FACP FAEX ANN F

### MOTOR, HP AS INDICATED CONTROLLER TO BE FURNISHED UNDER DIVISION 15 AND INSTALLED UNDER DIVISION 16 DISCONNECT SWITCH MAGNETIC MOTOR STARTER COMBINATION MOTOR STARTER/DISCONNECT SWITCH GROUNDING REFERENCE POINT. JUNCTION BOX, CEILING MOUNTED JUNCTION BOX, WALL MOUNTED BUZZER CEILING MOUNTED CLOCK WALL MOUNTED CLOCK WALL MOUNTED DOUBLE FACE CLOCK TRANSFORMER AS INDICATED AUTOMATIC TRANSFER SWITCH EQUIPMENT CONNECTION MECHANICAL EQUIPMENT DESIGNATION LUMINAIRES LUMINAIRE, CEILING OR WALL MOUNTED. SUBSCRIPT INDICATES ASSOCIATED SWITCHING. CAPITAL LETTER INDICATES FIXTURE TYPE. FIXTURE CEILING MOUNTED FIXTURE WALL MOUNTED WALLWASH FIXTURE CEILING MOUNTED EXIT LIGHT, CEILING MOUNTED WITH ARROWS EXIT LIGHT, WALL MOUNTED WITH ARROWS EMERGENCY FIXTURE (CONNECTED TO A LIGHTING INVERTER) EMERGENCY LIGHT, WALL MOUNTED POLE MOUNTED LUMINAIRE FLOOD LIGHT. ARROW INDICATES AIMING DIRECTION. TRACK LIGHT WITH HEADS AS INDICATED RACEWAYS CONDUIT CONCEALED IN WALL OR CEILING CONDUIT UNDER FLOOR OR CAST IN STRUCTURE BRANCH CIRCUIT HOMERUN 3/4"C, 3#12 AND 1#12 GND. MIN. BUS DUCT WITH TAKE OFF DEVICE

SWITCH LEG SURFACE RACEWAY TELEPHONE

### PANEL AND

PANELBOARD, SURFACE M PANELBOARD, FLUSH MO SWITCHBOARD OR DISTRI MOTOR CONTROL CENTER TRANSIENT VOLTAGE SUR PLYWOOD TELEPHONE BA WHITE PAINTED 4x8' PLYW

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*V////* SWBD MCC TVSS TELE

### ELECTRICAL SYMBOLS AND ABBREVIATIONS (SOME SYMBOLS MAY NOT BE APPLICABLE TO THIS PROJECT)

OMH#1

РВ

PP

 $\rightarrow$ 

TB

—— AP ——

—— AS ——

— AT —

—— UP ——

—— US ——

—— UT ——

SEC

DC

DL

CR

D

KP

ST

€M

#### SYMBOLS

OUTLETS

SIMPLEX RECEPTACLE

DUPLEX RECEPTACLE

D RELATED ITEMS	(SD)(SD)
MOUNTED.	
UNTED.	(SD) D
IBUTION BOARD	+[⊤]
R	HD
RGE SUPPRESSOR.	FS
ACKBOARD: PROVIDE WALL MOUNTED VOOD BACKBOARD	
	VS
	FS
	F F
	$\square$ $\heartsuit$
	DH
	PJ

S

DOUBLE DUPLEX RECEPTACLE
EMERGENCY RED DUPLEX RECEPTACLE
EMERGENCY RED QUAD RECEPTACLE
DUPLEX RECEPTACLE WITH USB PORTS
SPECIAL PURPOSE RECEPTACLE
ROUND FLOOR BOX WITH POWER AND DATA
SQUARE FLOOR BOX WITH POWER AND DATA
TELEPHONE OUTLET
TELEVISION OUTLET
VOICE/DATA OUTLET
SINGLE POLE SWITCH
SINGLE POLE SWITCH DOUBLE POLE SWITCH
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH CEILING FAN SPEED SWITCH
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH CEILING FAN SPEED SWITCH SWITCH WITH PILOT LIGHT IN HANDLE
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH CEILING FAN SPEED SWITCH SWITCH WITH PILOT LIGHT IN HANDLE WEATHERPROOF SWITCH
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH CEILING FAN SPEED SWITCH SWITCH WITH PILOT LIGHT IN HANDLE WEATHERPROOF SWITCH MOTOR RATED SWITCH
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH CEILING FAN SPEED SWITCH SWITCH WITH PILOT LIGHT IN HANDLE WEATHERPROOF SWITCH MOTOR RATED SWITCH LOW VOLTAGE SWITCH
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH CEILING FAN SPEED SWITCH SWITCH WITH PILOT LIGHT IN HANDLE WEATHERPROOF SWITCH MOTOR RATED SWITCH LOW VOLTAGE SWITCH WITH DIMMING
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH CEILING FAN SPEED SWITCH SWITCH WITH PILOT LIGHT IN HANDLE WEATHERPROOF SWITCH MOTOR RATED SWITCH LOW VOLTAGE SWITCH WITH DIMMING LOW VOLTAGE SWITCH SHOWING QUANTITY
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH CEILING FAN SPEED SWITCH SWITCH WITH PILOT LIGHT IN HANDLE WEATHERPROOF SWITCH MOTOR RATED SWITCH LOW VOLTAGE SWITCH WITH DIMMING LOW VOLTAGE SWITCH SHOWING QUANTITY LOW VOLTAGE SWITCH WITH DIMMING SHOWING QUANTITY
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH CEILING FAN SPEED SWITCH CEILING FAN SPEED SWITCH SWITCH WITH PILOT LIGHT IN HANDLE WEATHERPROOF SWITCH MOTOR RATED SWITCH LOW VOLTAGE SWITCH WITH DIMMING LOW VOLTAGE SWITCH SHOWING QUANTITY LOW VOLTAGE SWITCH WITH DIMMING SHOWING QUANTITY LOW VOLTAGE SWITCH WITH TOUCH SCREEN
SINGLE POLE SWITCH DOUBLE POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH CEILING FAN SPEED SWITCH CEILING FAN SPEED SWITCH SWITCH WITH PILOT LIGHT IN HANDLE WEATHERPROOF SWITCH MOTOR RATED SWITCH LOW VOLTAGE SWITCH LOW VOLTAGE SWITCH WITH DIMMING LOW VOLTAGE SWITCH SHOWING QUANTITY LOW VOLTAGE SWITCH WITH DIMMING SHOWING QUANTITY LOW VOLTAGE SWITCH WITH TOUCH SCREEN CEILING MOUNTED OCCUPANCY SENSOR AND SWITCH

DUPLEX RECEPTACLE; GFI=GROUND FAULT INTERRUPTING,

#### P.A./INTERCOM

REMOTE INTERCOM STATION
INTERCOM MASTER STATION
SPEAKER, CEILING MOUNTED
SPEAKER, WALL MOUNTED
AMPLIFIER AND ASSOCIATED EQUIPMENT
MICROPHONE JACK
INTERCOM CALL BOX

#### FIRE ALARM

FIRE ALARM CONTROL PANEL
FIRE ALARM EXPANSION PANEL
REMOTE FIRE ALARM ANNUNCIATOR
MANUAL PULL STATION
SMOKE DETECTOR; DASHED INDICATES BELOW RAISED FLOOR
SMOKE DETECTOR, DUCT MOUNTED
TEST SWITCH
HEAT DETECTOR
FLOW SWITCH
VALVE SWITCH
FLOW SWITCH
AUDIO-VISUAL ANNUNCIATOR (WALL, CEILING)
VISUAL ANNUNCIATOR (WALL, CEILING)
MAGNETIC DOOR HOLDER
FIRE FIGHTERS PHONE JACK
FIRE ALARM SPEAKER / VISUAL (VOICE EVACUATION)

### SITE UTILITY /H-INDICATES HOLE. E AS SPECIFIED ON CATIONS. ORMERS BOX ATV = CABLE ATIONS ED WIDE ANGLE O SET CAMERA 6" AND TILT; Z=ZOOM VEATHERPROOF ENCLOSURE WITH ANTI-FOG HEATERS. DOOR LOCK CARD READER ACCESS DURESS PUSHBUTTON KEYPAD DISTRIBUTION MOLDED CASE CIRCUIT BREAKER DRAWOUT POWER CIRCUIT BREAKER AIR, VACUUM OR SF AS SPECIFIED. DISCONNECT SWITCH FUSIBLE DISCONNECT SWITCH TRANSFORMER SHEILDED ISOLATION TRANSFORMER VOLTMETER AMMETER VOLTMETER SELECTOR SWITCH AMMETER SELECTOR SWITCH SHUNT TRIP CT AND METER ES, 2018 ATION CODE,

MANHOLE NUMBER 1; CMI COMMUNICATIONS MANHO
PULLBOX OR HANDHOLE A
POWER POLE
POLE MOUNTED TRANSFO
TELEPHONE TERMINAL BO
AERIAL PRIMARY
AERIAL SECONDARY
AERIAL TELEPHONE; CATY TELEVISION.
UNDERGROUND PRIMARY
UNDERGROUND SECOND
UNDERGROUND TELEPHONE/COMMUNICA
<u>SECURITY</u>
SECURITY PANEL
DOOR CONTACT
CCTV CAMERA WITH FIXE LENS WALL MOUNTED TO BELOW CEILING.
CCTV CAMERA: PT=PAN A

LENS WALL MOUNTED TO BELOW CEILING.	C
CCTV CAMERA; PT=PAN LENS	ŀ
EXTERIOR CAMERA IN W	/

#### \_\_\_\_\_ ≫—^—≪ \_\\_ \_\\_\_ $\frac{1}{2}$ VM AM VS AS

CODES
USE THE 2021 INTERNATIONAL CODES, 2018 INTERNATIONAL ENERGY CONSERVATION CODE, 2020 NATIONAL ELECTRICAL CODE, 2012 TAS, AND 2021 CITY OF BRYAN AMENDMENTS.

AMPERE(S)	MDP
ABOVE COUNTER	MECH
	MH
	MIN
ABOVE FINISHED GRADE	MEO
AIR HANDLING UNIT	MTG
ALUMINUM	MV
AUTOMATIC TRANSFER SWITCH	MW
AMERICAN WIRE GAUGE	NA
BUILDING	NC
CONDUIT	NF
CIRCUIT BREAKER	NL
CLOSED CIRCUIT TELEVISION	NO
CONTRACTOR FURNISHED,	NTS
	OC
CONDUCTOR	OFCI
	Р
	PA
DIAMETER	PB
DISCONNECT	PBX
DISTRIBUTION	PC
DOWN	P/C
DRAWINGS	PDP
EMPTY CONDUIT	PH,Ø
EXHAUST FAN	PNL
	PR
	PSI
EXHAUST	PWR
	QUAD
EXISTING	REFR
FIRE ALARM	S
FLUORESCENT	S.C.
FULL NEUTRAL	SCC
FEET, FOOT	SN
	SPD
GROUND FAULT INTERRUPTER	SQF1.
GROUND	SWBD
GALVANIZED RIGID STEEL	тс
HIGH INTENSITY DISCHARGE	TELE
HORSEPOWER	TSTAT
HAND OFF AUTOMATIC	TV
HIGH PRESSURE SODIUM	TVSS
HEATING/VENTILATING/AIR	UON
HERTZ	UPS
INSIDE DIAMETER	V
ISOLATED GROUND	VEND
INTERMEDIATE STEEL CONDUIT	VP
INCHES	W
INCANDESCENT	WP
JUNCTION BOX	XFMR
KILOVOLT	1P
KILOVOLT AMPERE	2P
KILOVOLT AMPERE CAPACTIVE	3P
KILOVOLT AMPERE REACTIVE	
KILOWATT	
KILOWATT HOUR	
MAXIMUM	

ABBREVIATIONS

Α

AC

A/C

AIC

AFF

AFG

AHU

AL , ALUM

ATS

AWG

BLDG

CB

CCTV

CFCI

CKT

COND

CPU

СТ

DCP

DIA

DC

DIST

DN

DWGS

EC

FF

EQMT

EWC

EXH

EXP

EXTG

FLUOR

FN

FT

GALV

GFCI

GFI

GND

GRD

HID

HP

HOA

HPS

HVAC

JB

ΚV

KVA

KVAC

KVAR

κw

ΜΑΧ

MCB

MCC

F/A , F.A.

MAIN CIRCUIT BREAKER

MOTOR CONTROL CENTER

MAIN DISTRIBUTION PANEL
MECHANICAL
METAL HALIDE
MINIMUM
MAIN LUGS ONLY
MOUNTED
MOUNTING
MERCURY VAPOR
NONFUSIBLE
NORMALLY OPEN
NOT TO SCALE
ON CENTER
OWNER FURNISHED CONTRACTOR INSTALLED OVERHEAD
POLE
PUBLIC ADDRESS
PUSHBUTTON
PRIVATE BUILDING EXCHANGE
PULL CHAIN
REFRIGERATOR
SECURITY
SPLIT CIRCUIT
STATUS COMMAND CENTER
SOLID NEUTRAL
SURGE PROTECTION DEVICE
SQUARE FOOT
SWITCH
TELEPHONE
THERMOSTAT
TRANSIENT VOLTAGE SURGE SUPPRESSOR
UNINTERRUPTABLE POWER SUPPLY VOLT(S)
VENDING
VAPOR PROOF
WIRE , WATT(S)
WEATHERPROOF
TRANSFORMER
INKEE PULE

MECH

MTD

NTS

PH,Ø

QUAD

REFR

SWBD

TELE

TSTAT

![](_page_29_Picture_34.jpeg)

![](_page_30_Picture_0.jpeg)

FUTURE BOATHOUSE CAM 2 CAM 3

![](_page_30_Figure_2.jpeg)

POLES TO BE LOCATED BASED ON MUSCO DRAWINGS. POLE CIRCUITS TO ROUTE TO MUSCO CONTROL PANEL.

REFER TO SHEET E1.0 FOR LOCATION.

![](_page_30_Picture_5.jpeg)

MARK	MANUFACTURER	MODEL
D 	LUMENPULSE	ALG7120 240 CSL M80 40K CR ARM: CS2 S1E F POLE: PL-M 4 STL R 12 M B ALG7120 208 CSL M80 40K CR ARM: CS2 S1E F POLE: PL-M 4 STL R 12 M B
NOTES:	* * * *	1. ALL FIXTURES SHALL BE SPEC GRADE UN 2. ALL TOGGLE SWITCHES TO BE MOUNTED 3. LIGHTING FIXTURES SHALL BE COORDINA 4. FOR ALL EMERGENCY LIGHT FIXTURES SI 5. CONTRACTOR SHALL COORDINATE ALL F 6. FIXTURE TO BE PROVIDED WITH PHOTOC 7. FIXTURE TO BE PROVIDED WITH A POLE N GENERAL NOTE

### LIGHTING FIXTURE SCHEDULE

	DIMENSION	MOUNTING	FIXTURE VA	VOLTAGE	LUMENS	TEMP	DESCRIPTION	
0 2 BK DIM CRC SP	18" DIA. X 12"	POLE	64	240	6610	4000	SINGLE PEDESTRIAN LIGHT	
( CRC							MOUNTED ON 12' POLE WITH DECORATIVE ARM	
QB6 BRK CRC AB								
0 2 BK DIM CRC SP	18" DIA. X 12"	POLE	64	208	6610	4000	SINGLE PEDESTRIAN LIGHT	
( CRC							MOUNTED ON 12' POLE WITH DECORATIVE ARM	
QB6 BRK CRC AB								
						-		

NLESS OTHERWISE NOTED.

D AT HEIGHTS TO COMPLY WITH ADA GUIDELINES UNLESS OTHERWISE NOTED. ATED WITH THE CEILING TYPE PRIOR TO ORDERING. SEE RCP TO VERIFY CEILING TYPES.

SHOWN WITH AN "E" SUFFIX, PROVIDE A 10W EMERGENCY BATTERY PACK. FINISHES WITH OWNER/ARCHITECT. DCELL RECEPTACLE. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL PHOTOCELL.

E MOUNTED GFI RECEPTACLE WITH A WEATHERPROOF "IN USE" COVERPLATE. MOUNT RECEPTACLE AS HIGH AS POSSIBLE ON THE POLE.

![](_page_31_Figure_7.jpeg)

![](_page_31_Figure_8.jpeg)

![](_page_31_Figure_9.jpeg)

- 1 NOT USED.
- 2 NOT USED. 3 NOT USED.
- 4 NOT USED.
- 5 NOT USED.
- 6 EXISTING PANEL 'DPD'.
- (7) NEW PANEL 'HVB'.
- 8 MUSCO CONTROL PANEL.
- EXISTING PANEL 'LD'. INSTALL A NEW 20A/2P BREAKER FOR LIGHTING CIRCUIT. SEE SHEET E0.1, KEYED NOTE 9.
- 10 NOT USED. 11 NOT USED. 12 NOT USED.

![](_page_31_Picture_22.jpeg)

MARK
2050
SY0100
lotes:

1.	Wet lo
2.	Cond
	Utility
3.	Provid
	EMT
4.	Motor
_	

![](_page_32_Figure_3.jpeg)

![](_page_32_Figure_4.jpeg)

	ELECTRICAL FEED	DER SCHEDULE	
K	CONDUIT	CONDUCTORS	
	1 - 3/4" Conduit	3 - #8 and 1 - #8 Ground	
)0	1 - 1-1/4" Conduit	4 - #3 and 1 - #6 Ground	

→ t location (underground or outdoors) use THWN. Otherwise THHN. nduit Types; underground - schedule 40 PVC; indoors - EMT; outdoor exposed - IMC. lity - riser poles (follow Utility guidelines or minimum schedule 80). ovide transitions to conduit changes prior to different environment (ex. Transition from IT to IMC prior to penetrating walls to the exterior). tor Connections shall be flexible non-metallic conduit for water equipment 5. All conduit penetrations in rated walls shall be firestopped.

6. See drawings for any special requirements.

						PANE	EL	Η	VB (AL	T 1	)				
:	STORAGE RO	ОМ		VOLT	AGE:	277/480	V		К	AIC:	18	BUSSING SHAL	L BE FULLY RATE	D	
G:	SURFACE			PH	ASE:	3	Р	/ 4	W COE	DES:	0=EQPT, 1=RCF	PT, 2=LTG, 3=A/C	, 4=HEAT		
RE:	NEMA 1	STYLE:	NF	BUSS	SING:	125	А				5=CONTINUOUS	S MOTORS, 6=LF	RGST MOTOR		
6:	BOLT-ON		(REF: SQUAR	ED)	MCB:	100	А		ACCESSORI	ES:	GROUND BUS, 4	42 SPACE			
S:	SERIES RATE	D. 75 DEGREE	TERMINALS		MLO:		А								
RKR		CIRCUIT USE			СКТ	LOAD	А	в	C LOAD	СКТ		CIRCUIT USE		BRKR	CODE
20/3	VOLEYBALL L	GHTING POLE	P1		1	945	X	П	945	2	VOLEYBALL LIG	HTING POLE P2		20/3	2
					3	945		Х	945	4					2
					5	945			K 945	6					2
20/3	VOLEYBALL L	GHTING POLE	P3		7	945	Х		945	8	VOLEYBALL LIG	HTING POLE P4		20/3	2
					9	945		Х	945	10					2
					11	945			K 945	12					2
					13		Х			14					
					15			Х		16					
					17			)	<	18					
					19		Х			20					
					21			Х		22					
					23			)	<	24					
					25		X			26					
					27			Х		28					
					29				<	30					
					31		X			32					
					33			Х		34					
					35				<	36					
					37		X			38					
					39			Х		40					
					41				<	42			-		
	EQPT VA	RCPT VA	LTG VA	AC/HEAT VA		MOTORS			CONN VA		FTL VA	PANEL VA	PHASE AMP		
	0	0	3780	0		0			3780			4725	17		
	0	0	3780	0		0		$\square$	3780			4725	17	ļ	
	0	0	3780	0		0		$\square$	3780			4725	17		
	0	0	11340	0		0			11340			14175			
PANEL	DESIGN KVA:	14.18								PAN	NEL SUBTOTAL:	17	AMPS		
RVE C	APACITY KVA:	2.84							F	RESE	RVE CAPACITY:	3	AMPS		
	TOTAL KVA:	17.01							PANEL	DES	SIGN CURRENT:	20	AMPS		

![](_page_32_Picture_9.jpeg)

![](_page_33_Figure_0.jpeg)

![](_page_33_Figure_1.jpeg)

![](_page_33_Figure_2.jpeg)

![](_page_33_Figure_3.jpeg)

HANDHOLE NOT SHOWN FOR CLARITY. RECEPTACLES SHALL ALTERNATE PHASES TO BALANCE LOAD ON CIRCUIT.

![](_page_33_Picture_5.jpeg)

![](_page_34_Figure_0.jpeg)

![](_page_34_Picture_3.jpeg)

- FIBER BY OTHERS (TYPICAL). CONDUITS BY CIVIL CONTRACTOR (TYPICAL). MULE TAPE BY SECURITY CONTRACTOR TIED AND SECURED IN HANDHOLE AND TELECOMM ENCLOSURE.

![](_page_34_Picture_6.jpeg)

![](_page_34_Picture_7.jpeg)

#### SS DROP IN CONCRETE ANCHORS (TYP.)

![](_page_35_Picture_1.jpeg)

NON METALLIC HEAVY DUTY STANCHION (UNDERGROUND DEVICES CR 36 OR EQUAL) MOUNT AS PER MANUFACTURER SPACING REQUIREMENTS BETWEEN HANGERS -----

> PROVIDE 2 COMPLETE STANCHION ASSEMBLES 2 SIDES HANDHOLE -----

DIGGING: A FIRM BASE FOR THE ENCLOSURE IS VERY IMPORTANT. A LAYER OF AT LEAST 6 IN. OF AGGREGATE IS RECOMMENDED UNDER THE ENCLOSURE. THIS IS FOR SUPPORT AS WELL AS DRAINAGE. EXCAVATE AN AREA ROUGHLY 12 IN. - 18 IN. LARGER THAN THE BASE OF THE BOX AND 6 IN. DEEPER TO ACCOMMODATE THE AGGREGATE. IDEALLY YOU WANT THE BOX AT FINAL GRADE, SO YOU NEED TO DETERMINE THE DEPTH OF THE HOLE COMPARED TO THE HEIGHT OF THE ENCLOSURE YOU ARE INSTALLING.

![](_page_35_Figure_5.jpeg)

<u>NOTES:</u> 1. SPLICE FROM POLE RECEPTACLE.

![](_page_35_Picture_7.jpeg)

2. ALL EQUIPMENT TO BE MOUNTED ON DINRAIL.

REFER TO CIVIL DRAWINGS FOR ADDITIONAL

- ANY DRILLING OR MODIFICATIONS TO THE ENCLOSURE SHOULD BE DONE WITH CARE. DO NOT CUT THE FLANGE, AS THIS IS THE SUPPORT HOOP. DO NOT USE SAND AS BACKFILL. SAND PROVIDES NO FRICTIONAL RESISTANCE TO MOVEMENT, AND ACTUALLY CREATES TREMENDOUS SIDE WALL PRESSURE.
- ALWAYS BACKFILL THE ENCLOSURE WITH THE COVER BOLTED IN PLACE.
- IT IS RECOMMENDED THAT A 10 IN. TO 12 IN. x 12 IN. CONCRETE COLLAR BE POURED AROUND THE ENCLOSURE IN AREAS WHERE IT IS EXPECTED THAT SOIL WOULD WASH AWAY OR OTHERWISE BE DISTURBED BY HEAVY LAWN MOWERS, ETC. IF ENCLOSURE IS BEING INSTALLED IN A SIDEWALL OR AREA WHERE IT MAY BE DRIVEN OVER IT SHOULD ALSO HAVE A CONCRETE COLLAR. THIS PROTECTS THE SIDEWALL OF THE RING, WHICH IS NOT MEANT TO WITHSTAND IMPACT.

![](_page_35_Figure_14.jpeg)

3 E5.0 NTS

![](_page_35_Figure_16.jpeg)

#### NOTES:

- HOFFMAN A12R1210HCR SHALL BE MOUNTED AT SAME 1 HEIGHT AS EXISTING POLE RECEPTACLE. REFER TO E-SHEETS.
- HOFFMAN A12R1210HCR SHALL INCLUDE DIN RAIL MOUNTED RECEPTACLE POE INJECTOR, 6 STRAND FIBER SPLICE CLOSURE, AND FIBER MEDIA CONVERTER (AXIS T8604/T8605). SUBMIT PANEL EQUIPMENT INSTALLATION ELEVATION PRIOR TO PURCHASE FOR ENGINEER REVIEW. PROVIDE AND INSTALL BACKPLANE (12N12P), POLE MOUNTING KIT (CPMK12), POWER STRIP (TRIPP LITE TLP404), AND DIN RAIL (ADNR1).
- 3. FIBER FROM HANDHOLE TO PANEL SPLICE CLOSURE IS BY OTHERS. PROVIDE MULE TAPE.
- 4. PROVIDE LIQUID TIGHT PVC COATED NIPPLES LISTED FOR INTENDED USE (ST, STG, STTB, STTTB, ETC.)

### LIGHT POLE SECURITY CAMERA DETAIL

![](_page_35_Picture_23.jpeg)

![](_page_36_Figure_0.jpeg)

## APPLICATIONS " 10 & 30 PRIMARY 3" SECONDARY 4" 30 COMMERCIAL SEC. 10' JOINT OF ALUMINUM , RISERS MUST BE INSTALLED PARALLEL AND CENTERED ON POLE. -GROUND LINE PRIMARY CONDULT 48" MINIMUM / SECONDARY CONDULT - 30" MINIMUM PRIMARY CONDUIT 60" MAXIMUM /SECONDARY CONDUIT - 36" MAXIMUM 2 PVC ELECTRICAL CONDUIT - SCH 40 NOTE: BTU WILL SUPPLY 1- LONG SWEEP ALUMINUM 90, 1-10' JOINT ALUMINUM CONDUIT AND 1-RISER BRACKET FOR THE

# deeper to accommodate the aggregate. Ideally you want the box at final grade, so you need to determine the depth of the hole compared to the height of the enclosure you are installing.

#### Excavate an area roughly 12-18" larger than the base of the box and 6"

Larger enclosures should be braced from the inside by use of 2x4's.

All conduits shall enter the enclosure through the open bottom.

ALWAYS backfill the enclosure with the cover bolted in place.

A firm base for the enclosure is very important. A layer of at least 6" of aggregate is required under the enclosure. A layer of at least 6" of aggregate is required within the base of the enclosure. This is for support as well as drainage.

#### Digging

**Base Preparation** 

<u>Important issues</u>

<u>Backfilling</u>

Please refer to local utility for installation guidelines. These installation guidelines are for reference only, proper installation shall be the sole responsibility of the contractor

![](_page_36_Picture_7.jpeg)

![](_page_36_Picture_8.jpeg)

![](_page_36_Picture_9.jpeg)

DESCRIPTION
REDUCED PRESSURE BACKFLOW PREVENTER
GAS COCK OR PLUG VALVE
PRESSURE RELIEF VALVE
TEMPERATURE AND PRESSURE RELIEF VALVE
FLOW SWITCH
FLOOR DRAIN, (TYPE)
FLOOR SINK, (TYPE)
AUTOMATIC AIR VENT PIPED TO DRAIN
GAUGE COCK
FLOW METER
PRESSURE SWITCH
GATE VALVE
TAMPER SWITCH
O.S.&Y VALVE
BUTTERFLY VALVE
SOLENOID VALVE
HOSE VALVE (UTILITY PURPOSES)
POST INDICATOR VALVE
SWING CHECK VALVE
NON-SLAM CHECK VALVE
BALL VALVE
BALL VALVE (MEMORY STOP)
PIPE RISE (R) OR DROP (D)
FLOW - IN DIRECTION OF ARROW
RISER DOWN (ELBOW)
RISER UP (ELBOW)
TEE (OFF BOTTOM)
RISE OR DROP
BRANCH CONNECTION OUT OF TOP
BRANCH CONNECTION OUT OF BOTTOM
BRANCH CONNECTION OUT OF SIDE
CAP ON END OF PIPE
PLUGGED TEE
CONCENTRIC REDUCER
ECCENTRIC REDUCER
UNION (SCREWED)
UNION (FLANGED)
CLEANOUT PLUG
FLOOR CLEAN OUT

SYMBOL
B.F.P.
<b>F</b> .S.
D FD-#
D FS-#
AV []
₽
Y
P.S.
X
+
$\rightarrow$
–−1⊗F––
<b>—</b>
+9
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, <u>+</u> ,
]
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<u>-+-+-</u> -+ <b>-</b> +
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Ø

# PLUMBING SYMBOLS AND ABBREVIATIONS USED IN THE DRAWINGS; REFERENCE ONLY THOSE THAT ARE APPLICABLE

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION		SYMBOL	DESCRIPTION
Y.C.O. Ø	YARD CLEAN OUT OR CLEAN OUT TO GRADE		COLD WATER PIPING	ABV AC	ABOVE ABOVE CEILING		INV IN	INVERT INCHES
ΤŢ				AD ADA AD.IUST	ACCESS DOOR AMERICANS WITH DISABILITIE	S ACT	MAX MECH MIN	MAXIMUM MECHANICAL MINIMUM
Ο, Ο	VALVE IN RISER (TTPE AS SPECID OR NOTED)		HOT WATER (POTABLE) PIPING	AFF AFG	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE		MTD NC	MOUNTED NORMALLY CLOSED
Р.А. ———————————————————————————————————	PIPE ANCHOR		HOT WATER RETURN (POTABLE) PIPING	ASSY AV	ASSEMBLY AIR VENT		NIC NO	NOT IN CONTRACT NORMALLY OPEN
— <u>—</u> —	PIPE GUIDE			AVIR BF	ACID VENT THRU ROOF BELOW FLOOR		NTS OFD OH	NOT TO SCALE OVERFLOW ROOF DRAIN OVERHEAD
			120° HOT WATER (POTABLE) PIPING	CLG CO	CAST IRON CEILING CI FANOUT		PD PLBG	PRESSURE DROP PLUMBING
	EXPANSION JOINT	<u> </u>	140° HOT WATER (POTABLE) PIPING	CONC CONNX	CONCRETE CONNECTION		PRESS PSI	PRESSURE POUNDS PER SQUARE INCH, GAUGE
₩.C.O.	WALL CLEAN OUT			CONT C.W.B.F.	CONTINUATION COLD WATER PIPING BELOW F	LOOR	PVC REC	POLYVINYL CHLORIDE RECEIVED
		160°	160° HOT WATER (POTABLE) PIPING	C.W.O.H. DEMO DIAG	COLD WATER PIPING OVERHE DEMOLISH	AD	REQ RD	REQUIRED ROOF DRAIN
	CLEAN OUT W/ACCESS DOOR	190°	190° HOT WATER (POTABLE) PIPING	D.I. DN	DUCTILE IRON DOWN		SHT SPEC(S)	SHEET SPECIFICATION(S)
	MECHANICAL GROOVED PIPE COUPLING			DWG, DRWG ELECT	DRAWING ELECTRICAL		SS STAT	STAINLESS STEEL STATIC
Ŷ			120° HOT WATER RETURN PIPING	ELEV EOD	ELEVATION EMERGENCY OVERFLOW DRA	IN	TEMP TMV	TEMPERATURE THERMOSTATIC MIXING VALVE
	FLEXIBLE PIPE CONNECTOR		140° HOT WATER RETURN PIPING	EXIST EXT ECO	EXISTING EXTENTION ELOOR CLEANOUT		TYP UG	TRAP PRIMER OR T.P. SUPPLY TYPICAL UNDERGROUND
				FD F.F.	FLOOR DRAIN FINISHED FLOOR		V VCP	VENT VITRIFIED CLAY PIPE
			160° HOT WATER RETURN PIPING	FIN FLR	FINISHED FLOOR		VTR WA	VENT THROUGH ROOF WATER HAMMER ARRESTOR
	WATER HAMMER ARRESTOR W/ ACCESS DOOR		190° HOT WATER RETURN PIPING	FS FT GAL(S)	FLOOR SINK FEET CALLON(S)		W/ W/	WALL HYDRAN I WITH WITHOUT
Π				GALV GPM	GALLON(S) GALVANIZED GALLONS PER MINUTE		YCO	YARD CLEANOUT
_Щ	THERMOMETER (STRAIGHT SCALE)	TW	TEMPERED WATER PIPING	GTRV HB	GREASE VENT THRU ROOF HOSE BIBB		TYPICAL NOTE:	
Π		S	SANITARY SEWER PIPING (WASTE)	HC HD HTR	HANDICAPPED HUB DRAIN			CATES EXISTING SLAB-ON-GRADE R TO BE REMOVED AND REPLACED;
<u> </u>	THERMOMETER WITH SEPARABLE SOCKET WELL	D		H.W.B.F. H.W.O.H.	HOT WATER PIPING BELOW FL HOT WATER PIPING OVERHEA	.OOR D	THE EXISTING SLA REPLACED AS FOL	AB-ON-GRADE SHALL BE REMOVED AND LOWS: SAW-CUT LIMITS OF
T(P)	DIAL THERMOMETER (PRESSURRE GAGE)	D	DRAIN FIFING				EXCAVATION TO 1 REINFORCING); JA	" DEPTH (DO NOT CUT STEEL CK-HAMMER CONCRETE TO BE
		V	SANITARY VENT PIPING (WASTE)				INSTALL NEW WOR DOWN AND TIE A 6	RK; BEND STEEL REINFORCING BACK "LONG RE-BAR (#3) ACROSS THE
		G	NATURAL GAS PIPING				BAR-CUT; REPOUF SMOOTH AFTER C	R NEW CONCRETE FLOOR AND GRIND URING.
	PLUMBING FIXTURES							
		G-MP	NATURAL GAS PIPING (MED PRESS)				CODES	
		RD	INTERIOR STORM DRAIN PIPING				USE THE 2021 IN	TERNATIONAL CODES, 2018
' HB		SD	SITE STORM DRAIN PIPING				2020 NATIONAL E 2021 CITY OF BR	LECTRICAL CODE, 2012 TAS, AND YAN AMENDMENTS.
<b>├</b> ┿ <sub>₩H</sub>	WALL HYDRANT	50						
	THERMOMETER OR CONTROL	——————————————————————————————————————	FORCED MAIN					
	TEST BULB WELL	CA	COMPRESSED AIR PIPING					
Ъ	AQUASTAT					PLUMBING GENERAL NOTES (APP	PLY TO ALL SHEETS):	
		MA	MEDICAL AIR PIPING			1. ALL MATERIALS AND CONSTRUD CONSTRUD CONSTRUD IN THESE DRAWINGS	CTION PROCEDURES	PERTAINING TO THE WORK THE REQUIREMENTS OF ALL
	PUMP	MV	MEDICAL VACUUM PIPING			AUTHORITIES HAVING JURISDICT	ION.	
		02				2. CONTRACTORS SHALL OBTAIN INSPECTIONS, AND TESTS REQU	RED BY AUTHORITIES	HAVING JURISDICTION.
3	NOTES (NEW CONSTRUCTION)					3. CONTRACTORS SHALL BE SOL CONDITIONS AT THE SITE AND NO	ELY RESPONSIBLE FOI DTING ALL DISCREPAN	R VERIFYING ACTUAL CIES TO THE OWNER PRIOR
(#)		NO	MED NITROUS OXIDE PIPING			TO WORK COMMENCEMENT; THE RESPONSIBILITY FOR ALL EXIST	REAFTER, THE CONTR NG CONDITIONS AND S	RACTOR ACCEPTS FULL SHALL BE SOLELY
		——N ——	MED NITROGEN PIPING			ACCOMMODATE NEW WORK AT N ADJUSTMENTS SHALL BE COOR	OTTABLE ADJUSTMEN	TS NECESSARY TO FO THE OWNER; ANY SUCH NER AND ARCHITECT
( <u>HW-#</u> )	EQUIPMENT IDENTIFICATION					4. CONTRACTORS SHALL INCORF	PORATE ALL DISCREPA	NCIES AND ADJUSTMENTS
P-4A	PLUMBING FIXTURE AND FOUIPMENT MARK	WAGD	WASTE ANESTHETIC GAS DISPOSAL PIPING			INTO THE CONSTRUCTION DOCU	MENTS.	
_		AW	WASTE PIPING (ACID RESISTANT)			5. CONTRACTORS SHALL COORD INCLUDE ALL NECESSARY MODIF	INATE ALL WORK WITH	OTHER TRADES AND ODATE THEIR WORK.
$\begin{pmatrix} CW \\ 1 \end{pmatrix} \begin{pmatrix} RD \\ 2 \end{pmatrix}$	PLUMBING RISER	AV	VENT PIPING (ACID RESISTANT)			6. CONTRACTORS SHALL COORD	INATE ALL WORK WITH	THE OWNER.
0						7. ALL MATERIALS AND WORKMA ONE YEAR FROM THE DATE OF IN	NSHIP SHALL BE GUAR ISTALLATION.	ANTEED FOR A MINIMUM OF
	(PROVIDE AND INSTALL ALL NECESSARY	F	FIRE PROTECTION PIPING			8. CONTRACTORS SHALL BE SOL	ELY RESPONSIBLE FOI	R THE SAFETY OF THEIR PERSONS IN THE AREAS OF
	TRANSITION FITTINGS)	——————————————————————————————————————	AUTOMATIC SPRINKLER			CONSTRUCTION. CONTRACTORS	SHALL ALSO BE RESP	PONSIBLE FOR THE SAFETY
$\frown$	DETAIL REFERENCE	SW	SOFT WATER PIPING			9. PLUMBING SERVICES THAT INT	ERFERE WITH ANY NE	W ARCHITECTURAL WORK
	NUMBER ON SHEET	DI	DEIONIZED WATER PIPING				SARY.	
XX	SHEET NUMBER	014				DOWNSTREAM SIDE (OUTLET) OF	BALL AND GLOBE VAL	LVES (NPS 2 AND SMALLER).
		Gw	GREASE WASTE PIPING					
RD-1 (4")	PRIMARY ROOF DRAIN (OUTLET SIZE)	GV	GREASE VENT PIPING					
		HT	HEAT TRACED (115° F) HOT WATER PIPING					
ر <u>ت</u> EOD-1 (6")	SECONDARY (EMERGENCY OVERFLOW DRAIN) ROOF DRAIN (OUTLET SIZE)	_						
			(WITH POWER CONNECTION POINT)					
		TP	TRAP-PRIMER PIPING (1/2" COPPER)	N	OTE: EXISTING PIPING, FITTINGS AND	EQUIPMENT WILL BE		
		PD	PERIMETER DRAIN PIPING	IN	IDICATED WITH A LIGHTER LINE WEIG	HT THAN NEW WORK.		
		RD	ROOF DRAIN PIPING (PRIMARY SYSTEM)	יח				
					IDICATED WITH A "HIDDEN" BROKEN L	INE TYPE.		

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![](_page_37_Picture_12.jpeg)

![](_page_38_Picture_4.jpeg)

![](_page_38_Picture_5.jpeg)

![](_page_38_Picture_6.jpeg)

![](_page_39_Picture_0.jpeg)

![](_page_39_Figure_1.jpeg)

![](_page_39_Figure_2.jpeg)

![](_page_39_Picture_3.jpeg)

![](_page_39_Figure_4.jpeg)

![](_page_39_Picture_5.jpeg)

SCALE: 1/4"=1'-0"

![](_page_39_Picture_6.jpeg)